



# CryptoServer LAN V5

## Operating Manual

## Imprint

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# 1 Introduction

Thank you for purchasing our CryptoServer LAN V5 security system (referred to below also as CryptoServer LAN). We hope you are satisfied with our product. Please do not hesitate to contact us if you have any questions or comments.

The product bundle is downloadable from the following site:

<https://support.hsm.utimaco.com/support/downloads/>

You have to be registered for this download portal and access to a download area, e.g., „SecurityServer Se Gen2“, must have been granted.

## 1.1 About This Manual

In this operating manual you will find all the necessary information for using the hardware of the CryptoServer LAN as well as essential security instructions that are to be followed in order to ensure that the device can be operated safely.

### 1.1.1 Target Audience for This Manual

This manual is intended for system administrators who bring the CryptoServer LAN with a mounted CryptoServer CSe- or Se-Series Gen2 into service and administer it.

### 1.1.2 Contents of This Manual

After the introduction this manual is divided up as follows:

*Chapter 2* provides safety instructions that should be read carefully, before unpacking the CryptoServer LAN and bringing it into operation.

*Chapter 3* shows the different ports, interfaces and operating elements on the front and rear side of the CryptoServer LAN, and provides a general description of the procedure for bringing the CryptoServer LAN into service.

*Chapter 4* contains the maintenance tasks that a customer is permitted to perform on the CryptoServer LAN, i.e., to check the power level of the batteries (carrier battery and external battery) and, if necessary, to change the external battery in the battery compartment, as well as to remove/swap a power supply module.

*Chapter 5* provides instructions on how to switch off the CryptoServer LAN.

*Chapter 6* gives information about what needs to be taken into account when disposing of the CryptoServer LAN.

*Chapter 7* is an overview of the essential technical data of the CryptoServer LAN with AC power supply.

*Chapter 8* is an overview of the essential technical data of the CryptoServer LAN with DC power supply.

*Chapter 9* provides the manufacturer's contact data in case you have questions on CryptoServer LAN or problems occurred while operating the CryptoServer LAN.

### 1.1.3 Document Conventions

We use the following conventions in this manual:

<i>Convention</i>	<i>Usage</i>	<i>Example</i>
<b>Bold</b>	Items of the Graphical User Interface (GUI), e.g., menu options	Press the <b>OK</b> button.
<b>Monospaced</b>	File names, folder and directory names, commands, file outputs, programming code samples	You will find the file <code>example.conf</code> in the <code>/exmp/demo/</code> directory.
<i>Italic</i>	References and important terms	See <i>Sample Chapter</i> in the <i>CryptoServer - csadm - Manual</i> .

Table 1: Document conventions

We use special icons to highlight the most important notes and information.



*Here you find important safety information that should be followed.*



*Here you find additional notes or supplementary information.*

## 1.2 Other Manuals

The CryptoServer is supplied as a PCI-Express (PCIe) plug-in card in the following series:

- CryptoServer CSe-Series

- CryptoServer Se-Series Gen2

The CryptoServer LAN (appliance) is supplied in the following series:

- CryptoServer LAN CSe-Series
- CryptoServer LAN Se-Series Gen2

We provide the following manuals on the product CD for the CryptoServer PCIe CSe- and Se-Series Gen2 PCIe plug-in cards and for the CryptoServer LAN (appliance) CSe- and Se-Series Gen2:

## Quick Start Guides

You will find these Manuals in the main folder of the SecurityServer product CD. They are available only in English, do not cover all possible scenarios, and are intended as a supplement to the product documentation provided on the SecurityServer product CD.

- *CryptoServer LAN V5 - Quick Start Guide*

If you are looking for step-by-step instructions on how to bring the CryptoServer LAN into service, how to prepare a computer (Windows) for the CryptoServer administration and how to start administrating your CryptoServer with the Java-based GUI CryptoServer Administration Tool (CAT), read this document.

- *CryptoServer PCIe - Quick Start Guide for Linux*

If you are looking for step-by-step instructions on how to bring the CryptoServer PCIe card into service, how to install the CryptoServer driver on a computer with minimal RHEL installation and how to start administrating your CryptoServer with the CryptoServer Command-line Administration Tool (csadm), read this document.

- *CryptoServer PCIe - Quick Start Guide for Windows*

If you are looking for step-by-step instructions on how to bring the CryptoServer PCIe card into service, how to install the CryptoServer driver on a Windows computer and how to start administrating your CryptoServer with the CryptoServer Command-line Administration Tool (csadm), read this document.

## Manuals for System Administrators

You will find these manuals on the product CD in the following folder:

...Documentation\Administration Guides\. From version 4.01.0 of the SecurityServer product CD they are only provided in English.

- *CryptoServer – Administration Manual*

If you need to administer a CryptoServer PCIe card or a CryptoServer LAN using the CryptoServer Administration Tool (CAT), read this manual. Furthermore, this manual provides a detailed description of the CryptoServer functions, required for the correct and effective operation of the product.

- *CryptoServer LAN V5– Administration Manual*

If you need to administer a CryptoServer LAN (appliance), read this manual. Since a

CryptoServer PCIe card is mounted into the CryptoServer LAN, please read the *CryptoServer – Administration Manual*, as well.

- *CryptoServer - Troubleshooting*  
If problems occur while you are using a CryptoServer PCIe card or a CryptoServer LAN (appliance), read this manual.
- *CryptoServer - PKCS#11 P11CAT – Manual*  
If you need to administer the PKCS#11 R3 interface with the PKCS#11 CryptoServer Administration Tool (P11CAT), read this manual.
- *CryptoServer - csadm Manual*  
If you need to administer a CryptoServer PCIe card or a CryptoServer LAN using the CryptoServer Command-line Administration Tool (csadm), read this manual.

## Operating Manuals

You will find these manuals on the product CD in the following folder:

...Documentation\Operating Manuals\. They contain all the necessary information for using the hardware of the CryptoServer PCIe card respectively the CryptoServer LAN (appliance).

## 1.3 Import and Export Regulations



*The export and use of CryptoServer LAN outside Germany is subject to the legal foreign trade regulations of the Federal Republic of Germany and require the appropriate authorization.*

*The import of CryptoServer LAN is subject to the legal requirements or other regulations that apply in the particular destination (import license)*

*Please contact your own national customs authorities for more detailed information.*

## 1.4 Damage in Transit

By purchasing the CryptoServer LAN you have acquired a device that has been carefully tested and packed for delivery. Nevertheless, damage may occur during transport or improper temporary storage.

If you discover that the transport boxes are damaged when they arrive, please immediately contact your reseller or Utimaco (the e-mail address and telephone number are given in Chapter 9 of this manual). Please have the delivery note and the serial number of the device at hand.



## 1.5 Deliverables

The CryptoServer LAN deliverables include:

- one CryptoServer LAN V5
- two power supply cables
- one *CryptoServer LAN V5 Operating Manual* (this manual)
- one PIN pad
- ten smartcards for administering the CryptoServer LAN V5

## 2 General Safety Instructions



*Please follow all the warnings, safety notes and instructions given on the device or in this manual. If you fail to do so, Utimaco will not accept any liability for any resulting damage caused.*

The CryptoServer LAN includes a CryptoServer CSe- or Se-Series Gen2. If the predefined limit values for its internal temperature are exceeded (or not reached), an alarm will be triggered and all the data on the CryptoServer will be deleted.



*Before unpacking the device and bringing it into operation, please read the safety instructions below carefully to ensure that the device can be operated safely. Always keep these instructions handy, in a safe place.*

### 2.1 Moving and Storing

When moving and storing the device, please follow these instructions:

- Before moving the CryptoServer LAN, ensure that the power supply cables have been pulled out of the sockets and that all other connection cables have been unplugged from the other devices.
- CryptoServer LAN should only be moved and stored in its original packaging.
- You must make sure that CryptoServer LAN is always stored at temperatures between -10 °C and +55 °C (+14 °F to +131 °F).
- Although there is no motion detector in the CryptoServer LAN that could initiate the deletion of data, do not subject the device to impacts and vibrations or any other physical events that may damage the packaging.
- If the device is to be stored for a longer time period, ensure that the battery replacement time is not exceeded. For details, see 2.8 Batteries.
- Keep this manual together with your CryptoServer LAN so that it is handy if you need to reinstall the system.

## 2.2 Safely Transporting the CryptoServer LAN

### Prerequisites

- Ensure that the requirements in 2.1 Moving and Storing, are fulfilled.
- Prepare the new location of the CryptoServer LAN, see 2.4 19" Rack, or 2.5 Desktop.

To ensure the safe transport of the CryptoServer LAN over long or short distances from the old location to the new location, proceed as follows:

1. Check the state of the external battery either using csadm, the CryptoServer Administration Tool (CAT) or using the menu buttons on the front panel of the CryptoServer LAN.

- csadm example:

```
csadm Dev=192.168.123.123 GetBattState
```

- Using CAT.

Click **Show > Battery State**.

- Using the front panel.

Follow the steps in 4.1 Checking the Battery Status.

Verify the output for the external battery.

- If the external battery power is displayed as ok, for example,  
**External Battery: ok (3.068 V)**,  
continue with step 3.
  - If the external battery power is displayed as low, for example,  
**External Battery: low (2.650 V)**,  
continue with step 2.
2. Replace the external battery by a new one, see 4.2 Replacing the External Battery. Note that this external battery ensures the power supply of the CryptoServer PCIe card for at least 1,5 years.



*If the carrier battery does not provide enough power either, do not replace it on your own. The carrier battery must only be replaced by an employee of Utimaco IS GmbH or one of its certified sales partners.*

3. As a preparation for backing up databases described below, determine the Master Backup Key (MBK) that is used in MBK slot 3. To determine this MBK, you can either perform the csadm MBKListKeys command, see *MBKListKeys* in the [CryptoServer – csadm Manual](#) or use CAT, see *Retrieving MBK Information* in the [CryptoServer – CAT Manual](#).

4. Note down the name of this MBK.



*This MBK is used by the **csadm BackupDatabase** command to protect the backup file to be generated.*

*It is important to note down which MBK has been used because for a successful restoring of this backup file at a later date it is necessary that the same MBK is in MBK slot 3. Otherwise, for example, after the execution of a **csadm MBKImportKey** command or after an MBK rollover, the backup file is inaccessible, see Master Backup Key Rollover in the [CryptoServer – Administration Manual](#) for details.*

5. Verify that all shares of this MBK are available as keyfiles or on smartcards. To verify MBK shares on a smartcard, either perform the **csadm MBKCardInfo** command, see *MBKCardInfo* in the [CryptoServer – csadm Manual](#) or use CAT, see *Retrieving MBK Information* in the [CryptoServer – CAT Manual](#).
6. Back up the following databases.
  - ▣ User database (**user.db**)
  - ▣ Cryptographic key database (**CXIKEY.db**)
  - ▣ Audit log signature key (**auditkey.db**), if available
7. To do so, you can either perform the **csadm BackupDatabase** command, see *BackupDatabase* in the [CryptoServer – csadm Manual](#) or use CAT, see *Backing up Databases* in the [CryptoServer – CAT Manual](#).

Example:

```
csadm LogonSign=ADMIN,:cs2:cjo:USB0 BackupDatabase=CXIKEY.db BackupDatabase=user.db
BackupDatabase=auditkey.db
```

8. Switch off the CryptoServer LAN, see 5 Switching off the CryptoServer LAN.
9. Remove the CryptoServer LAN from the rack, see 6.2 Removing a CryptoServer LAN V5 from a Rack.
10. Put the CryptoServer LAN into the original packaging. If you need an original packaging, contact the manufacturer Utimaco IS GmbH.
11. Again, ensure that the requirements in 2.1 Moving and Storing, are fulfilled.
12. After reaching destination, mount the CryptoServer LAN and bring it into service, see 3 Bringing into Service.

## 2.3 Environmental Temperature

The CryptoServer LAN must only be operated and stored in a particular temperature range.

- You must make sure that CryptoServer LAN is always stored at temperatures between -10 °C and +55 °C (+14 °F to +131 °F).
- You must make sure that CryptoServer LAN with a mounted u.trust Anchor PCIe card is always operated at temperatures between +10 °C and +50 °C (+50 °F to +122 °F).
- You must make sure that CryptoServer LAN with a mounted CryptoServer Se-Series Gen2 PCIe card is always operated at temperatures between +10 °C and +50 °C (+50 °F to +122 °F).
- You must make sure that CryptoServer LAN with a mounted CryptoServer CSe-Series PCIe card is always operated at temperatures between +10 °C and +40 °C (+50 °F to +104 °F).



*If the environmental temperature is out of the permitted range, there is a risk that the device sensor will delete all the data on it.*

*For security reasons, the CryptoServer LAN PCIe card implements a mechanism that actively protects the device from being used under extreme temperatures. For this purpose, the CryptoServer LAN PCIe card implements a temperature sensor that is located inside the CryptoServer LAN PCIe card and that permanently monitors the temperature to trigger an immediate action in case that the allowed range is exceeded. For the permitted temperature range of the temperature sensor, see Power Supply and Temperature in the [CryptoServer LAN V5 – Administration Manual](#). This section describes in detail at which temperatures the CryptoServer LAN is shut down or even an alarm is triggered, and all sensitive data is deleted. There is therefore a risk that the CryptoServer LAN is shut down and deletes all sensitive data because a too low or too high environmental temperature indirectly brings the inside temperature out of the permitted range.*

## 2.4 19" Rack

Brackets are attached to either side of the device so that CryptoServer LAN can be mounted on a 19" rack.

- You can use slide rails for the installation of the CryptoServer LAN in a 19" rack which you can purchase from the manufacturer Utimaco.
- To mount CryptoServer LAN in a 19" rack, simply attach the securing brackets to the 19" rack.
- The temperature inside the 19" rack may be higher than the temperature outside the 19" rack. This is particularly true if several devices are mounted on the same 19" rack. Please ensure that the temperature inside the 19" rack does not exceed the maximum permitted environmental temperature.
- Take care that, when you mount the device in a 19" rack, the ventilation slots (fan compartment grill on the front panel and grill openings on the rear side) are kept free to ensure that air circulates enough. Air is drawn in through the fan compartment grill on the

front panel and it is blown out through all the grill openings on the rear side to cool the device.

For details about mounting on a rack, see 3.1 Mounting the CryptoServer LAN V5 in a 19" Rack.

## 2.5 Desktop

If you do not want to mount CryptoServer LAN in a 19" rack, please follow these instructions:

- Place the device on a secure, stable surface. Avoid impacts and blows to the device.
- Never operate CryptoServer LAN close to water or other liquids. Never spill liquid on the device.
- Do not place objects, articles of clothing or papers on the device itself.
- Protect CryptoServer LAN against humid or dusty environments, vibrations, extreme temperature variations and direct sunlight. Do not place the device next to heating units, air conditioning units, etc.
- Ensure that the maximum permitted environmental temperature is not exceeded.
- Ensure adequate ventilation. Never mount the device in a cabinet or similar object in which the circulation of air is impeded. The ventilation slots (fan compartment grill on the front panel and grill openings on the rear side) on the device must never be covered. Air is drawn in through the fan compartment grill on the front panel and it is blown out through all the grill openings on the rear side to cool the device.
- Do not connect the device to sockets that are switchable or have timers.
- Avoid connecting the device to electrical circuits to which other power-hungry devices (such as motors, air conditioning units, photocopiers etc.) are connected. This would put the device at risk of sudden power fluctuations.



*This device has not been designed for use at a workstation within the user's field of vision. To avoid disturbing reflections, do not place this product at a workstation directly in the field of vision.*

## 2.6 Power Supplies and Power Supply Cables

The CryptoServer LAN is equipped with two redundant power supplies. Please find further technical details in Chapter 7 and Chapter 8.



*Check the power voltage. Connecting CryptoServer LAN to the incorrect power voltage may destroy the device.*



*Connect the two power cables to two different power circuits. This ensures that the CryptoServer LAN remains in operation continuously even if one of the power circuits fails.*

- Check the electrical connections to the power circuits to ensure they will not be overloaded.
- Ensure that the device's electrical connection is properly earthed. If you connect several devices together, their total power consumption may exceed the total safe limit.
- Handle the power supply cables carefully. Always disconnect them by pulling on the plugs, not on the cables themselves. Pulling on the cables loosens the contacts and can cause problems.
- Protect the power supply cables against physical damage. Never place furniture or other heavy objects on the power supply cables and do not drop any sharp-edged or heavy objects on it.
- Do not tie knots in the power supply cables.

## 2.7 Opening the Device

The CryptoServer LAN must only be opened by the employees of Utimaco or certified sales partners.



*If the CryptoServer LAN is opened by someone else, instead of an employee of Utimaco or a certified sales partner, Utimaco accepts no liability for any damage caused by opening the device.*

*However, if there is an urgent need to open the device, it is essential that the power supply plugs are removed from the sockets before the device is opened. Before opening the device please contact your reseller or directly us, the manufacturer Utimaco (see Chapter 9 for contact details). Please have the delivery note and the serial number of the device at hand.*

To ensure that CryptoServer LAN cannot be opened without anyone noticing, there are holographic security seals on the device itself.

- To avoid the risk of electrical shocks or fires, do not attempt to tamper with any components inside the device.

- Do not attempt to repair CryptoServer LAN in any way.
- If water, wires or other parts penetrate the device by accident, immediately disconnect the power supply cables and inform your dealer or Utimaco IS GmbH. If you operate the device in this condition, you risk either causing a fire, or electrical shocks.
- Do not insert any objects into the openings in the CryptoServer LAN casing because they may hit live components and cause a short circuit. This may result in a fire or a life-threatening electrical shock.
- Incorrect or improper use may seriously damage CryptoServer LAN.

## 2.8 Batteries

The CryptoServer LAN contains two batteries. These ensure that no security-critical information is lost or deleted in the CryptoServer when the device is switched off, or if operation is interrupted due to a power failure. The external battery is located in the battery compartment of the CryptoServer LAN. The carrier battery is placed on the CryptoServer PCIe card.



*These batteries are not rechargeable.*

*Using the wrong batteries may cause an explosion! Utimaco IS GmbH accepts no liability for damage caused by using any other batteries except the ones recommended by Utimaco IS GmbH.*

### 2.8.1 External Battery in the Battery Compartment

The external battery placed in the battery compartment behind a screw cap on the front panel of the CryptoServer LAN is a 3.6 V lithium battery (size A) made by Saft of type LS14500 or similar type which is directly connected to the CryptoServer.

This battery is already in use when the device is supplied.



*The external battery provides a guaranteed power supply for the CryptoServer for at least 1.5 years if the device is not supplied with power via the power cables.*

*Check the status of this battery at regular intervals. When the battery reaches a critically low power level, it must be replaced.*

Customers are permitted to change the external battery, see 4.2 Replacing the External Battery.



## 2.8.2 Carrier Battery of the CryptoServer

On the CryptoServer PCIe card, which is mounted into the CryptoServer LAN there is a 3 V lithium battery – the carrier battery. It is a FDK CR 12600 SE-T1 battery with soldering tags or similar type. It powers the sensor and the erase circuit when CryptoServer LAN is switched off and the external battery in the battery compartment does not have enough power to supply the CryptoServer.



*The carrier battery can power the CryptoServer for at least 6 months.*

*The carrier battery must only be replaced by an employee of Utimaco or one of its certified sales partners.*

## 2.9 Cleaning

- Clean CryptoServer LAN with a soft, clean cloth dampened with a mild soapy solution. Then dry the device with a clean dry cloth.
- If the device has become wet, wipe it with a clean, dry, soft cloth.
- Never use benzene, thinner, alcohol or other aggressive substances to clean the device.

## 3 Bringing into Service

Before you start up CryptoServer LAN, check whether all parts that belong to the delivery, as listed in Chapter 1.5 of this manual, are present.

### 3.1 Mounting the CryptoServer LAN V5 in a 19" Rack

There are two options to mount a CryptoServer LAN V5 on a 19" rack.

- Mounting without using slide rails purchased from Utimaco IS GmbH

In this case, you use your own slide rails or other devices to mount the CryptoServer LAN V5 in a rack on your own responsibility. The corresponding procedure is not documented in this documentation. The following conditions must be considered when selecting a suitable location in the rack:

- The temperature inside the 19" rack may be higher than the temperature outside the rack. This is particularly true if several devices are mounted on the same rack. Make sure that the temperature inside the rack does not exceed the maximum permitted environmental temperature, see 2.3 Environmental Temperature, 7 Technical Data of CryptoServer LAN V5 (AC Power Supply), or 8 Technical Data of CryptoServer LAN V5 (DC Power Supply).



*If the temperature is out of the permitted range, all data on the CryptoServer PCIe card in the CryptoServer LAN V5 is deleted.*

- When you mount the device on a rack, take care that the ventilation slots (fan compartment grill on the front panel and grill openings on the rear side) are kept free to ensure that air circulates enough. Air is drawn in through the fan compartment grill on the front panel and it is blown out through all the grill openings on the rear side to cool the device.
- Mounting with slide rails purchased from Utimaco IS GmbH  

You can use telescopic slide rails, which you can purchase from the manufacturer, Utimaco IS GmbH, to mount the CryptoServer LAN on a 19" rack.



Figure 1: Two slide rails

Each slide rail consists of an inner slide rail and an outer slide rail.



Figure 2: Inner slide rail and outer slide rail

The inner slide rails will be mounted on the CryptoServer LAN, and the outer slide rails will be mounted on the rack. Then the CryptoServer LAN with the inner slide rails will be mounted on the outer slide rails.

Perform the following steps.

13. Verify that the telescopic slide rail is long enough for the depth of the rack. Two sizes of slide rails are available, 20" - 28" (for rack depth 51 cm - 71.5 cm) and 28" - 36" (for rack depth 71.5 cm - 91.5 cm).
14. Select a location in the rack where to position the CryptoServer LAN V5. Consider the following conditions.
  - ▣ The temperature inside the 19" rack may be higher than the temperature outside the rack. This is particularly true if several devices are mounted on the same rack. Make sure that the temperature inside the rack does not exceed the maximum permitted environmental temperature, see 2.3 Environmental Temperature, 7 Technical Data of CryptoServer LAN V5 (AC Power Supply), or 8 Technical Data of CryptoServer LAN V5 (DC Power Supply).



*If the temperature is out of the permitted range, all data on the CryptoServer PCIe card in the CryptoServer LAN V5 is deleted.*

- When you mount the device on a rack, take care that the ventilation slots are kept free to ensure that air circulates enough.

15. Determine whether you have round or square style holes on the mounting posts of the rack.



Figure 3: Square style hole mounting posts

16. The CryptoServer LAN V5 is delivered with two bags of screws.



*Only use the screws in these two bags. Do not use the screws shipped with the slide rails.*

- A bag labeled **2RALXX348000 SCREWS FOR RAIL 2X/4X**

This bag contains 2 lens head screws and 4 flat head screws. Both screw types are used to attach the CryptoServer LAN V5 to the inner slide rail. The flat head screws used here are tight-fit screws.

- A bag labeled **2RALXX187901 SCREWS FOR RACK 2X/8X**

This bag contains 2 long lens head screws and 8 short lens head screws.

The long screws are used to fix the position of the CryptoServer LAN V5 that is mounted on the inner and outer slide rails within the rack so that it cannot move.

If you have round style holes on the mounting posts of the rack, the short screws are used to attach the outer slide rail to the rack. However, if you have square style holes in the mounting posts, these short screws are not needed.

Verify that all needed screws listed above are available.

17. The slide rails have a bracket at each end to be mounted on a mounting post of the rack. The following figure shows a slide rail with a bracket in the square hole position and a slide rail with a bracket in the round hole position.

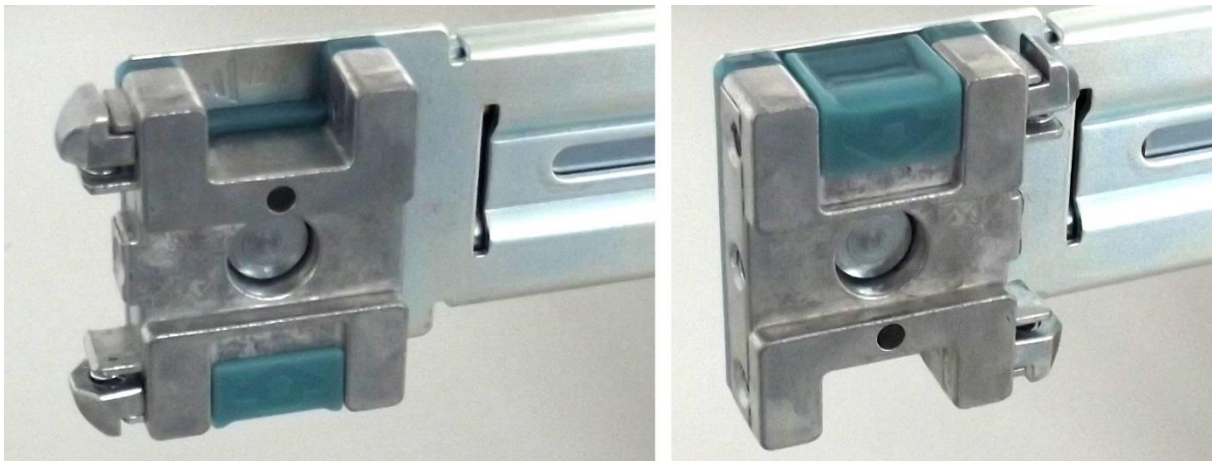


Figure 4: Bracket in the square hole position and in the round hole position

18. If the bracket is not in the position you need, perform the following substeps.
  - a) Press the colored button, and rotate the bracket 180 degrees.

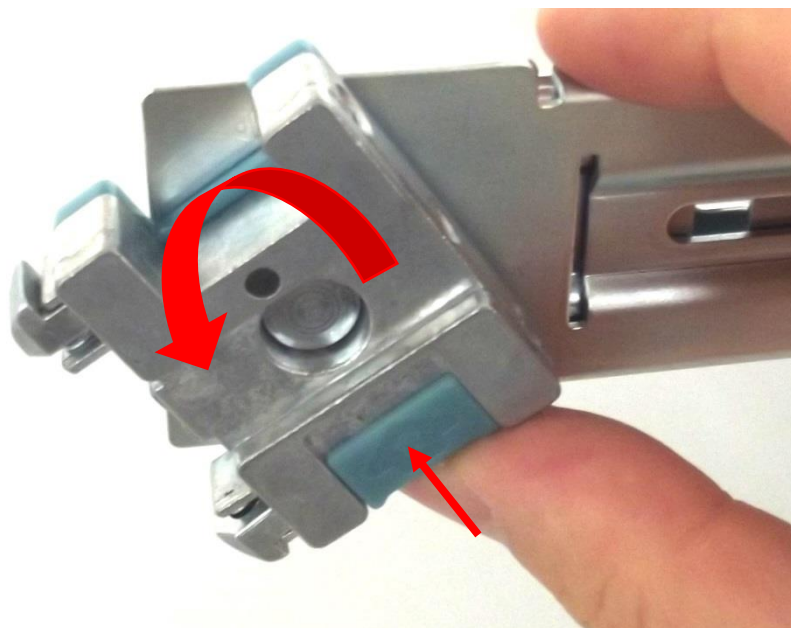


Figure 5: Example: Rotating the bracket from square hole position to round hole position

If the bracket is difficult to rotate, press the colored button, keep it pressed, press the silver bolt on the inner side of the bracket with the tip of a screw driver, and rotate the bracket 180 degrees.

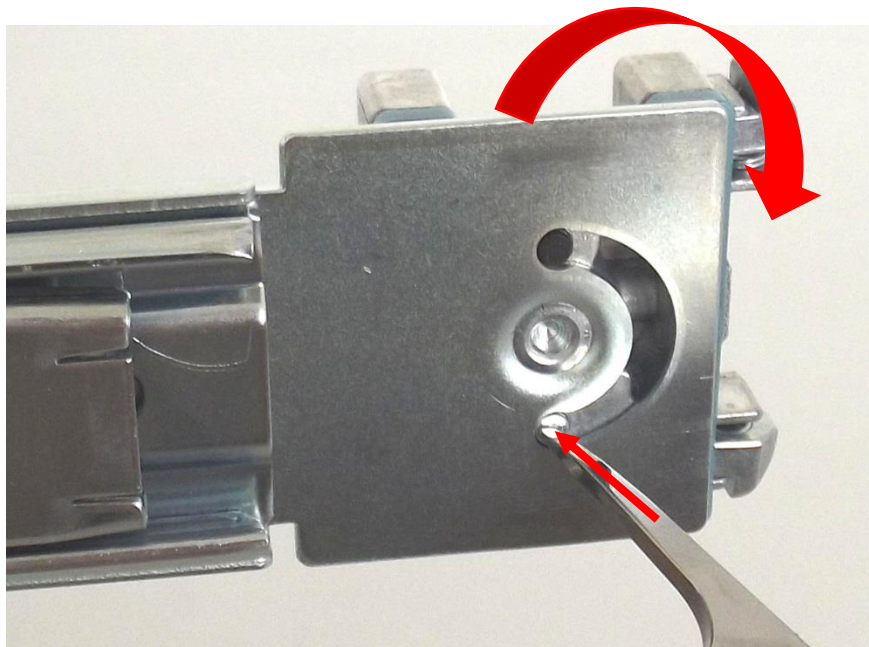


Figure 6: Pressing the bolt on the inner side of the bracket

- b) Repeat step 18a) for the other end of the slide rail.
  - c) Repeat step 18a) for the ends of the second slide rail.
19. Move the inner slide rail outward. A locking mechanism stops the inner slide rail halfway through.

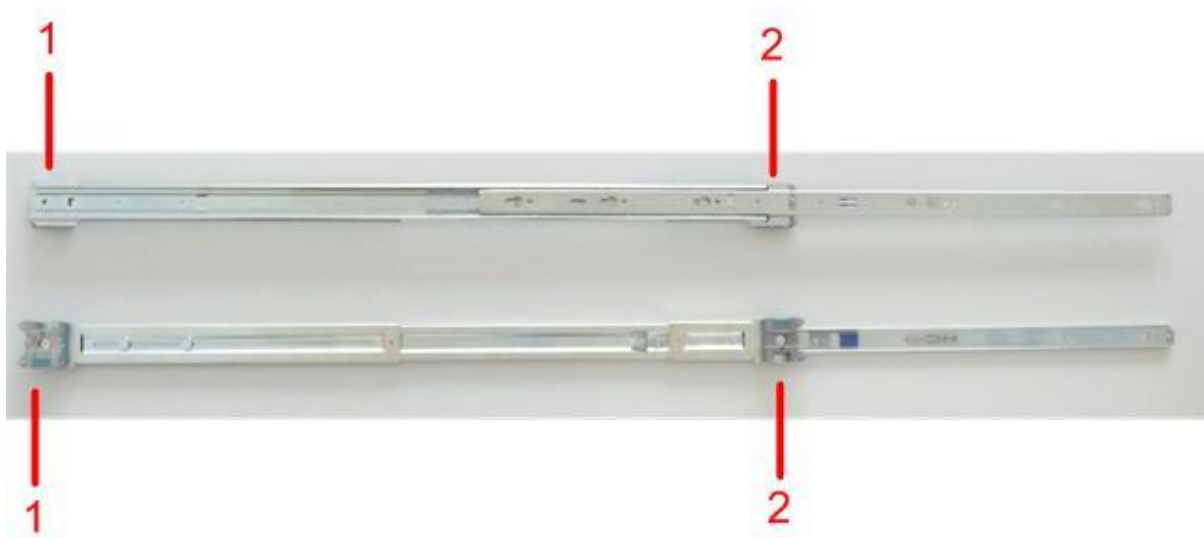


Figure 7: Two slide rails in the locked position



- 1: Rear end of the outer slide rail
  - 2: Front end of the outer slide rail
20. Note that the end (item 2 in the figure above) of the outer slide rail with the extended inner slide rail is the front end of the outer slide rail. This front end will be mounted on the front of the rack, and the rear end will be mounted on the rear of the rack.
21. There is a colored pin-lock latch on the outer side of the inner slide rail. Slide it outward.

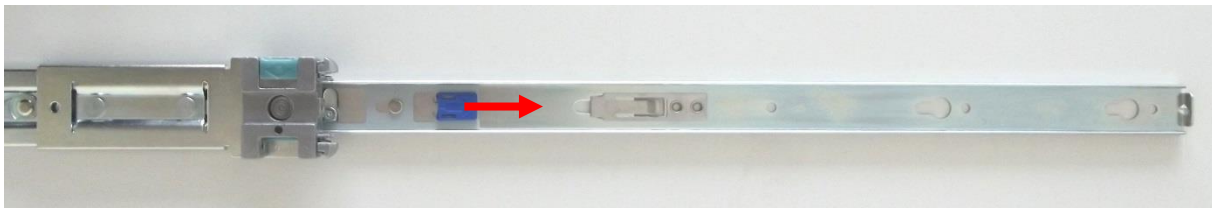


Figure 8: Sliding the pin-lock latch

22. If the mechanism is difficult to move, move the locking bolt on the inner side of the inner slide rail with the tip of a screwdriver while sliding the pin-lock latch.

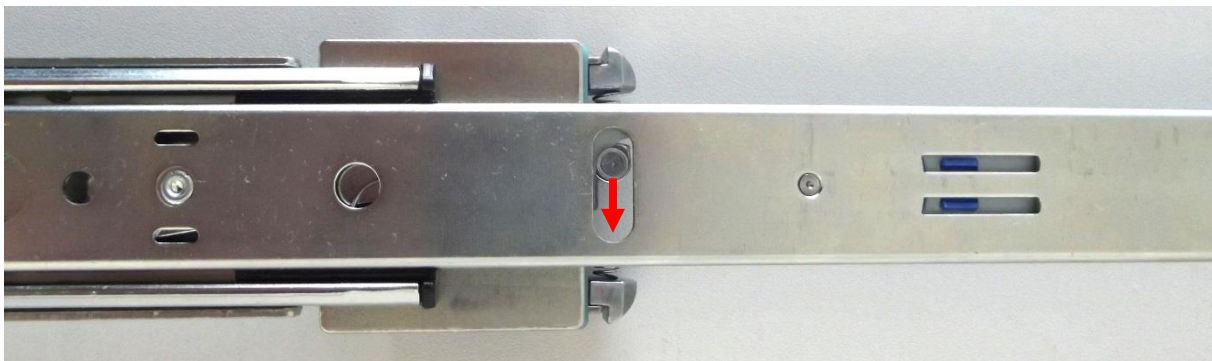


Figure 9: Moving the locking bolt

23. While sliding the pin-lock latch outward, slide the inner slide rail outward, and remove the inner slide rail completely from the outer slide rail.



Figure 10: Inner slide rail and outer slide rail

24. Remove the inner slide rail of the second slide rail as well from the outer slide rail.
25. The CryptoServer LAN V5 has 4 holes and 2 bolts on the left side and on the right side.

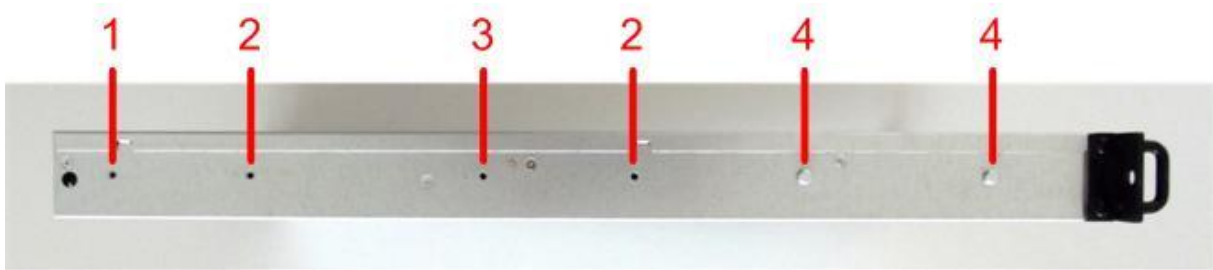


Figure 11: Left side of the CryptoServer LAN V5

- 1: Hole for a lens head screw
- 2: Unused hole
- 3: Hole for a flat head screw
- 4: Bolt



*The figures in this chapter show a 28"-36" long slide rail. If you use a 20"-28" long slide rail, there is only one unused hole and 2 holes for flat head screws.*

26. Align the holes at the front end of the inner slide rail to the 2 bolts of the CryptoServer LAN V5, and move the inner slide rail forward to snap it in place.



Figure 12: Aligning the inner slide rail





Figure 13: Inner slide rail attached to the bolts

- 1: Hole for lens head screw
- 2: Hole for flat head screw
- 3: Bolt

If you use a 28"-36" long slide rail, 2 of the 4 holes remain visible. If you use a 20"-28" long slide rail, 3 of the 4 holes remain visible.

27. Tighten one lens head screw from the bag labeled **2RALXX348000 SCREWS FOR RAIL 2X/4X** in the hole at the rear end of the CryptoServer LAN V5.

If you use a 28"-36" long slide rail, tighten a flat head screw from the same bag in the remaining hole. If you use a 20"-28" long slide rail, tighten 2 flat head screws in the remaining 2 holes.



Figure 14: Inner slide rail mounted on the CryptoServer LAN V5

28. Perform step 26 to step 27 for the second inner rail and the right side of the CryptoServer LAN V5.
29. Verify once more which end of the outer slide rail is the front end and the rear end, see Figure 7.
30. If you have square style holes on the mounting posts of the rack, snap in the front and rear end of the outer slide rail to the front and rear mounting posts of the rack. Make sure that the outer slide rail is mounted horizontally.
31. If you have round style holes on the mounting posts of the rack, position the outer slide rail in the desired horizontal location of the rack, and use 4 short lens head screws from the bag labeled **2RALXX187901 SCREWS FOR RACK 2X/8X** to secure the outer slide rail in place. Consider that you mount the front end of the outer slide rail on the front mounting post and the rear end of the outer slide rail on the rear mounting post.

32. Mount the second outer slide rail on the rack.
33. Carefully align the inner slide rails attached to the CryptoServer LAN V5 with the notches of the outer slide rails attached to the rack. Once aligned, slide the CryptoServer LAN V5 toward the rack.



*Two people are required to perform this step.*

34. Push halfway through until it is in the locked position.



Figure 15: CryptoServer LAN V5 in the locked position

35. Pull the pin-lock latches on both sides to release the locks and allow to slide the CryptoServer LAN V5 all the way to the rack until it reaches its final position.



Figure 16: Pulling the pin-lock latch on the left side of the CryptoServer LAN V5



Figure 17: CryptoServer LAN V5 in its final position

36. To secure the CryptoServer LAN V5 in place, attach the left bracket of the CryptoServer LAN V5 to the front bracket of the left outer slide rail by tightening a long lens head screw from the bag labeled **2RALXX187901 SCREWS FOR RACK 2X/8X**.

The left and right brackets of the CryptoServer LAN V5 are marked by red rectangles in the next figure.



Figure 18: Brackets of the CryptoServer LAN V5

37. Perform step 36 for the right bracket as well.
38. Now the CryptoServer LAN V5 is mounted on the rack. Connecting the cables is described in the chapters below.



Figure 19: CryptoServer LAN V5 mounted on a rack

### 3.2 Ports and Interfaces on the Rear Side

The CryptoServer LAN V5 with power supply might be supplied with slightly different ports and interfaces on the rear side as shown in the following figure, while the front panel remains the same as in Figure 31. The following figure shows the rear side of the alternative current variant.

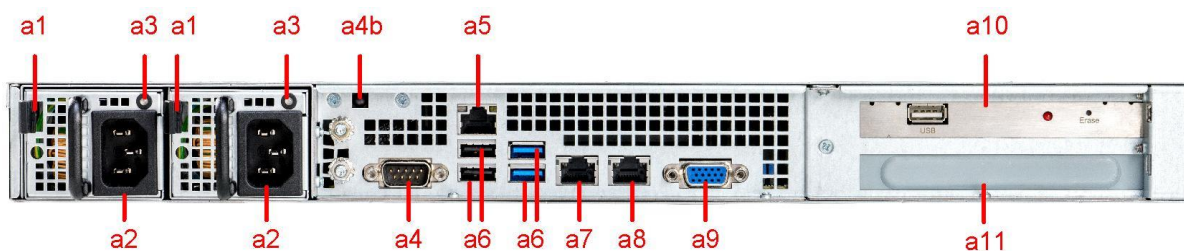


Figure 20: CryptoServer LAN V5 (AC) – Sockets and ports on the rear side

Air is blown out through all the grill openings on the rear side to cool the device.

Port/Interface	Description
a1	Locking of the power supply module

Port/Interface	Description
a2	Power supply socket 100 V - 240 V (AC) Right power supply module = no. 1 Left power supply module = no. 2
a3	Control light for the operation status of a power supply module (Green: Normal operation).
a4	Serial port
a4b	Mute key for the signal tone that sounds if a power supply fails or is switched off
a5	Ethernet port 10/100/1000 (RJ45) / IPMI port (Intelligent Platform Management Interface). For details, see <a href="#"><i>CryptoServer LAN V5 – Administration Manual</i></a> .
a6	USB port for the CryptoServer LAN
a7	eth0 Ethernet port 10/100/1000 (RJ45) The control lights of the eth0 Ethernet port have the following meanings: <ul style="list-style-type: none"><li>■ Upper left corner<ul style="list-style-type: none"><li>▣ Green – 10/100 Mbit/s link</li><li>▣ Orange – 1000 Mbit/s link</li></ul></li><li>■ Upper right corner<ul style="list-style-type: none"><li>▣ Yellow – Data traffic</li></ul></li></ul>
a8	eth1 Ethernet port 10/100/1000 (RJ45) The control lights of the eth1 Ethernet port have the following meanings: <ul style="list-style-type: none"><li>■ Upper left corner<ul style="list-style-type: none"><li>▣ Green – 10/100 Mbit/s link</li><li>▣ Orange – 1000 Mbit/s link</li></ul></li><li>■ Upper right corner<ul style="list-style-type: none"><li>▣ Yellow – Data traffic</li></ul></li></ul>
a9	VGA connector (screen)



Port/Interface	Description
----------------	-------------

**a10** CryptoServer CSe-Series or Se-Series Gen2 PCIe card

■ **CryptoServer CSe-Series PCIe card**



Figure 21: CryptoServer CSe – Sockets and ports on the rear side

- ▣ **A** – Erase pushbutton
- ▣ **B** – USB 2.0 port of the CryptoServer CSe

■ **CryptoServer Se-Series Gen2 PCIe card**



Figure 22: CryptoServer Se-Series Gen2 – Sockets and ports on the rear side

- ▣ **C** – Erase pushbutton
- ▣ **D** – LED flash light – indicates the activation of the Erase push-button
- ▣ **E** – USB 2.0 port of the CryptoServer Se-Series Gen2

■ **u.trust Anchor PCIe card**

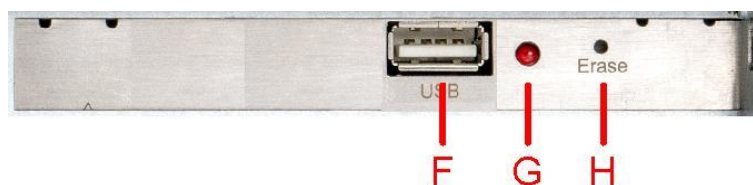


Figure 23: u.trust Anchor PCIe card – Sockets and ports on the rear side

- ▣ **F** – USB 2.0 port of the u.trust Anchor PCIe card
- ▣ **G** – LED flash light – indicates the activation of the Erase push-button
- ▣ **H** – Erase pushbutton

**a11** As of CSLANOS v5.1, the lower PCIe slot can be optionally be equipped with, for example, a PCIe clock card, a copper network interface card or an optical fiber network interface card. See below for details.

Table 2: Ports and interfaces on the rear side of CryptoServer LAN V5 (AC)

The lower PCIe slot can be equipped with a PCIe clock card.



Figure 24: PCIe clock card on the rear side of CryptoServer LAN V5

Port/Interface	Description
a11	PCIe clock card
a12	Left BNC port for connecting the antenna. Do not use this port.
a13	Status LEDs
a14	Right BNC port for connecting the antenna
a15	Serial port of the PCIe clock card

Table 3: PCIe clock card on the rear side of CryptoServer LAN V5

The lower PCIe slot can be equipped with an optical fiber network interface card.

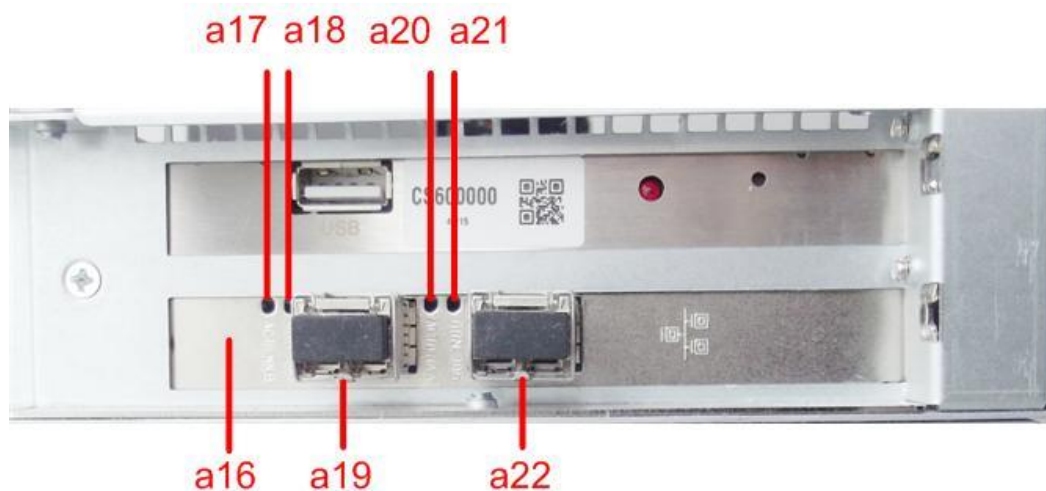


Figure 25: Optical fiber network interface card on the rear side of CryptoServer LAN V5

Port/Interface	Description
a16	Optical fiber network interface card
a17	ACT/LNK B status LED
a18	GRN=10G status LED
a19	eth2 network port
a20	ACT/LNK A status LED
a21	GRN=10G status LED
a22	eth3 network port

Table 4: Optical fiber network interface card on the rear side of CryptoServer LAN V5



The last figure above shows an optical fiber network interface card with dummy plugs. The next figure shows the card without the dummy plugs.



Figure 26: Optical fiber network interface card without dummy plugs

Depending on your situation, it might be necessary to remove the delivered SFP transceiver modules and replace them by the SFP transceiver modules you use (SFP: Small form-factor pluggable). The incorporated additional ethernet adapter X520-DA2 supports several SFP transceiver modules. The following SFP transceiver modules have been tested by the development:

- Intel FTLX8571D3BCV-IT Dual Rate 1000BASE-SX 1GbE
- Intel FTLX8571D3BCV-IT Dual Rate 10GBASE-SR 10GbE

The following tables list the supported optical SFP transceiver modules.

The following SFP transceiver modules with the peripheral type "SR Optic Modules" and the description "Intel Ethernet SFP+ SR Optics" are supported:

<i>Product code</i>	<i>Supplier part number</i>	<i>Type</i>
E10GSFPSR	FTLX8571D3BCV-IT	Dual Rate 1000BASE-SX 1GbE and 10GBASE-SR 10GbE
E10GSFPSR	AFBR-703SDZ-IN2	Dual Rate 1000BASE-SX 1GbE and 10GBASE-SR 10GbE
E10GSFPSR	FTLX8571D3BCVIT1	Dual Rate 1000BASE-SX 1GbE and 10GBASE-SR 10GbE
E10GSFPSR	FTLX8574D3BCV-IT	Dual Rate 1000BASE-SX 1GbE and 10GBASE-SR 10GbE
E10GSFPSR	AFBR-709DMZ-IN2	Dual Rate 1000BASE-SX 1GbE and 10GBASE-SR 10GbE
E10GSFPSR	AFBR-709DMZ-IN3	Dual Rate 1000BASE-SX 1GbE and 10GBASE-SR 10GbE
E10GSFPSRG1P5	FTLX8571D3BCV-I3	Dual Rate 1000BASE-SX 1GbE and 10GBASE-SR 10GbE

<i>Product code</i>	<i>Supplier part number</i>	<i>Type</i>
E10GSFPSRG1P5	FTLX8571D3BCVI31	Dual Rate 1000BASE-SX 1GbE and 10GBASE-SR 10GbE
E10GSFPSRG1P5	FTLX8574D3BCV-I3	Dual Rate 1000BASE-SX 1GbE and 10GBASE-SR 10GbE
E10GSFPSRG2P5	AFBR-709DMZ-IN7	Dual Rate 1000BASE-SX 1GbE and 10GBASE-SR 10GbE
E10GSFPSRG2P5	AFBR-710DMZ-IN2	Dual Rate 1000BASE-SX 1GbE and 10GBASE-SR 10GbE
E10GSFPSRG1P5	FTLX8574D3BCV-I5	Dual Rate 1000BASE-SX 1GbE and 10GBASE-SR 10GbE

Table 5: Supported SFP transceiver modules with the peripheral type "SR Optic Modules" and the description "Intel Ethernet SFP+ SR Optics"

The following SFP transceiver modules with the peripheral type "SR Optic Modules" and the description "Intel Ethernet SFP+ Optics - SRX (Extended Temp)" are supported:

<i>Product code</i>	<i>Supplier part number</i>	<i>Type</i>
E10GSFPSRX	FTLX8574D3BNL-IT	Single Rate 10GBASE-SR 10GbE

Table 6: Supported SFP transceiver modules with the peripheral type "SR Optic Modules" and the description "Intel Ethernet SFP+ Optics - SRX (Extended Temp)"

The following SFP transceiver modules with the peripheral type "LR Optic Modules" and the description "Intel Ethernet SFP+ LR Optics" are supported:

<i>Product code</i>	<i>Supplier part number</i>	<i>Type</i>
E10GSFPLR	FTLX1471D3BCV-I3	Dual Rate 1000BASE-LX 1GbE and 10GBASE-LR 10GbE
E10GSFPLR	FTLX1471D3BCVI31	Dual Rate 1000BASE-LX 1GbE and 10GBASE-LR 10GbE

Table 7: Supported SFP transceiver modules with the peripheral type "LR Optic Modules" and the description "Intel Ethernet SFP+ LR Optics"

You find the complete list of supported SFP transceiver modules here:

<https://compatibleproducts.intel.com/ProductDetails?activeModule=Intel%C2%AE%20Ethernet&prdName=Intel%C2%AE%20Ethernet%20Converged%20Network%20Adapter%20X520-DA2>



Figure 27: Optical fiber network interface card without SFP transceiver modules

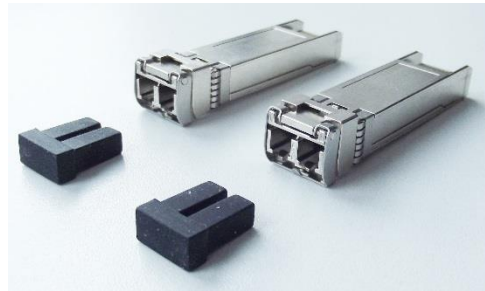


Figure 28: Dummy plugs and SFP transceiver modules

The lower PCIe slot can be equipped with a copper network interface card.



Figure 29: Copper network interface card on the rear side of CryptoServer LAN V5

Port/Interface	Description
a23	Copper network interface card

<i>Port/Interface</i>	<i>Description</i>
<b>a24</b>	eth2 network port
<b>a25</b>	eth3 network port

Table 8: Copper network interface card on the rear side of CryptoServer LAN V5

The CryptoServer LAN V5 with direct current power supply differs on the rear side only by the power supply modules.

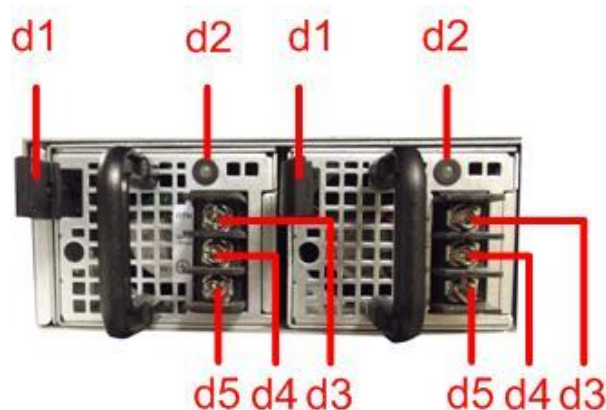


Figure 30: CryptoServer LAN V5 (DC) – Power supply modules on the rear side

<i>Port/Interface</i>	<i>Description</i>
<b>d1</b>	Locking of the power supply module
<b>d2</b>	Control light for the operation status of a power supply module (Green: Normal operation).
<b>d3</b>	RTN (return connection)
<b>d4</b>	-36 to -72 Vdc, 12-6A
<b>d5</b>	Earth ground

Table 9: Power supply modules on the rear side of CryptoServer LAN V5 (DC)

### 3.3 Ports and Operating Elements on the Front Panel



Figure 31: CryptoServer LAN V5 – Ports and operating elements on the front panel



Figure 32: CryptoServer LAN V5 – Front panel with removed fan compartment grill

Port/ Op. element	Description
f1	Extractable identification strip with CryptoServer LAN serial number and CryptoServer serial number
f2	Battery compartment for the external battery of the CryptoServer LAN
f3	Fan compartment grill. Air is drawn in through this fan compartment grill to cool the device.
f4	Two USB 2.0 ports ( <b>Host1</b> and <b>Host2</b> ) of the CryptoServer LAN. Generally, these ports are used for connecting the delivered PIN pad.
f5	USB 2.0 port ( <b>HSM</b> ) of the CryptoServer used for the CryptoServer administration
f6	Display
f7	Buttons for CryptoServer LAN menu control
f8	On/off switch (Switch for turning on/off the CryptoServer LAN)
f9	<b>Erase</b> push-button for performing an external erase on the mounted CryptoServer
f10	Fan module containing two fans. They are administered as fan 5 and fan 6. Air is drawn in through this fan module to cool the device.
f11	Fan module containing two fans. They are administered as fan 3 and fan 4.

Air is drawn in through this fan module to cool the device.

**f12**

Fan module containing two fans. They are administered as fan 1 and fan 2.

Air is drawn in through this fan module to cool the device.

Table 10: Ports and operating elements on the front panel of the CryptoServer LAN V5

### 3.3.1 Menu Control Buttons

There are the following menu control buttons.



Figure 33: Menu control buttons of the CryptoServer LAN V5

<i>Button</i>	<i>Function</i>
ESC	Quit the currently displayed menu level or menu item
ENTER	Select the menu level or confirm the menu item
↑	Move up in the menu control
→	Move to the right in the menu control
↓	Move down in the menu control
←	Move to the left in the menu control

Table 11: Menu control buttons and their functions

## 3.4 Bringing the CryptoServer LAN V5 into Service

To bring the device into service, follow these steps:

1. Put the CryptoServer LAN in a 19" rack, see 3.1 Mounting the CryptoServer LAN V5 in a 19" Rack.
2. Put it in the place where you want it to stay.
3. Connect the power supply sockets on the rear side of CryptoServer LAN to a power supply using the power supply cables supplied with the device.

4. Connect the eth0 ethernet port on the rear side of the CryptoServer LAN to your network with a twisted pair cable (RJ45).
5. Press the on/off switch on the front panel of the device.

After a few seconds you will hear a short signal tone and see the first messages on the display panel on the front of the device.

After approximately 90 seconds, CryptoServer LAN will be ready for use. You will see, for example, the following status information one after another on the display panel:

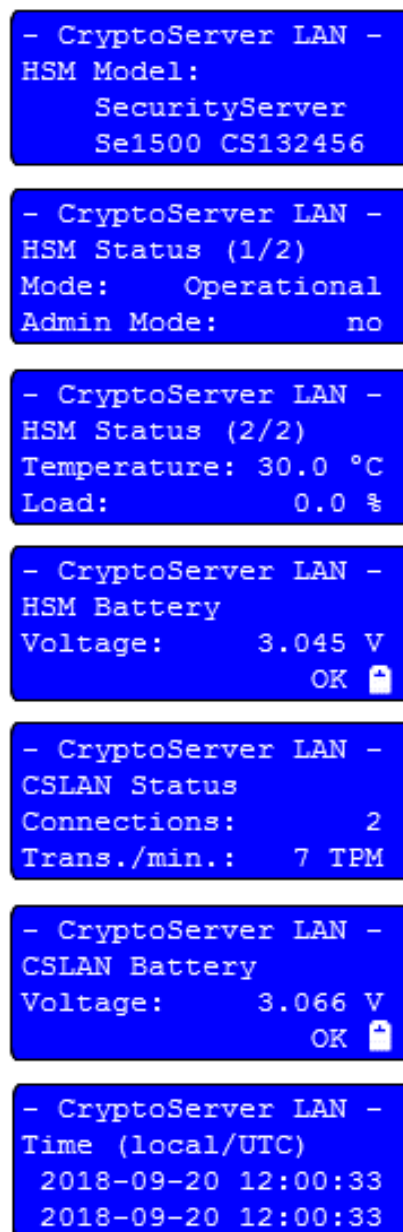


Figure 34: Display of CryptoServer LAN V5 – initial views



The entries displayed in the figure above have the following meaning.

- **HSM Model:** The CryptoServer model (for example, **Se1500**) and the unique serial number of the CryptoServer's PCIe card (for example, **CS123456**)

- **Mode:** Operating mode (values: **Operational**, **Maintenance**, **Bootloader**)

The most important thing at this point is that the CryptoServer is running in Operational Mode (**Mode: Operational**) after it has been booted and is therefore ready for use.

- **Admin Mode:** Indication whether the operating mode has been set to *Operational Mode – Administration-Only* (values: **yes** and **no**). If set to yes, only functions needed for the CryptoServer administration are available, and all cryptographic functions are blocked. See also *SetAdminMode* and *SetStartupMode* in the [CryptoServer – csadm Manual](#).

- **Temperature:** Current temperature of the CryptoServer in °C

- **Load:** CryptoServer load for the last 60 seconds in %

- **HSM Battery:** The voltage and the status of the carrier battery

- **Connections:** The number of IP client connections to the CryptoServer

If, for example, a *csadm GetState* command is performed, which takes a fraction of a second, **Connections** is increased by 1 for this period of time.

- **Trans./min.:** The number of transactions number per minute

- **CSLAN Battery:** The voltage and the status of the external battery

- **Time (local/UTC):** The local time and the UTC (Coordinated Universal Time) of the CryptoServer LAN (not of the CryptoServer PCIe card)

6. Connect the delivered PIN pad to the computer that you want to use for the remote administration of the CryptoServer LAN/CryptoServer PCIe card and configure the PIN pad on the computer.

- On a computer with Windows operating system, install the USB PIN pad driver for Windows. For installation requirements and procedure, see *Installing the PIN pad Driver* in the [CryptoServer – Administration Manual](#).

- On a computer with a Linux operating system, define a special udev rule for the usage of the USB PIN pad. For details, see *Configuring the PIN Pad* in the [CryptoServer – Administration Manual](#). There is no need to install any dedicated PIN pad driver for Linux.

7. Change the password for the users *root* and *csagent* of the CryptoServer LAN, see *Passwords for the root and csagent Users* in the [CryptoServer LAN V5 – Administration Manual](#).

8. Configure the IP address for the CryptoServer LAN and for the default gateway.

- If you want to use static IP addresses, see *Setting up Static IP Addresses* in the [CryptoServer LAN V5 – Administration Manual](#).



- ▣ If you want to use automatic IP configuration via DHCP for the CryptoServer LAN and for the default gateway, see *Setting up Dynamic IPv4 Addresses With the Front Panel* in the *CryptoServer LAN V5 – Administration Manual*.
- 9. If you want to be able to access the CryptoServer LAN remotely, enable the SSH daemon, see *Enabling the SSH Daemon* in the *CryptoServer LAN V5 – Administration Manual*.
- 10. Install the SecurityServer product CD on the computer you want to use for the CryptoServer LAN's remote administration, see *Installing the Host Software and CryptoServer Simulator* in the *CryptoServer – Administration Manual*.

## 4 Maintenance

The maintenance tasks that a customer is permitted to perform on the CryptoServer LAN are to check the power level of the batteries (carrier battery and external battery) and if necessary to change the external battery in the battery compartment, as well as to remove/swap a power supply or a fan.



*When the external battery reaches a critically low power level, see Chapter 4.1), it must be replaced, see Chapter 4.2.*

Apart from this, no maintenance tasks should be carried out on the CryptoServer LAN.



*If you should open CryptoServer LAN for any other maintenance work, all liability claims against Utimaco IS GmbH become null and void.*

### 4.1 Checking the Battery Status

The CryptoServer LAN displays **LOW** when the external battery in the battery compartment or the carrier battery of the CryptoServer CSe/Se-Series Gen2 reaches a critical power level.

To find out which of the batteries of the CryptoServer LAN has reached this critical power level by using the menu control of the CryptoServer LAN, follow these steps:

1. Click **ENTER**.
2. Click the ▼ button to select the **HSM admin.** menu item.
3. Click **ENTER** to confirm.
4. Click **ENTER** to select the **HSM Info** menu item.
5. Use the ▼ button to go to the **Battery State** menu item.
6. Click **ENTER** to confirm.

In the CryptoServer LAN display, the battery status is shown for example as follows:

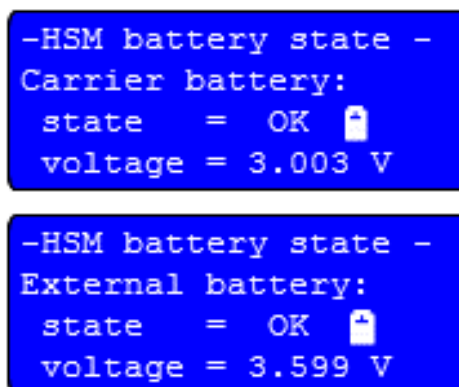


Figure 35: CryptoServer LAN V5 display - Battery state

7. Use the button to go to the second part of the **Battery State** menu item.



*If the system could not find out the battery status, because the CryptoServer register is currently being accessed by another process, you should try to find out the battery state again after waiting a few minutes.*



*In the case of CryptoServer LAN you can change the external battery.  
The carrier battery of the CryptoServer must only be replaced by the manufacturer, Utimaco IS GmbH or a certified sales partner.*

- If the external battery state displayed is **LOW**, it means the power level of the CryptoServer external battery has sunk to a critical level. You must now immediately, and whilst the device is in operation, replace the external battery in the battery compartment.
- If the carrier battery state displayed is **LOW**, it means the power level of the CryptoServer carrier battery has sunk to a critical level. In this case, contact Utimaco IS GmbH or a certified sales partner and have them replace the carrier battery of the CryptoServer.

## 4.2 Replacing the External Battery

To replace the external battery in the battery compartment of the CryptoServer LAN you will need a new 3.6 V lithium battery made by Saft of type LS14500 or similar type which you can purchase from Utimaco IS GmbH.



*This battery is not rechargeable.*

*Using the wrong batteries may cause an explosion.*

*Utimaco IS GmbH accepts no responsibility for damage caused by any batteries other than those recommended by Utimaco IS GmbH.*

*Please ensure you dispose of spent batteries in accordance with the manufacturer's instructions and in an environmentally responsible manner.*



*You should replace the battery whilst the device is running normally so that the CryptoServer will continue to be supplied with power.*

To replace the external battery proceed as follows:

1. Turn the black screw cap of the battery compartment counterclockwise to open it.



Figure 36: Turning the screw cap of the battery compartment of the CryptoServer LAN V5

2. Open the battery compartment.



Figure 37: Opening the battery compartment of the CryptoServer LAN V5

3. Remove the screw cap of the battery compartment.



Figure 38: Removing the screw cap of the battery compartment

4. Take the battery out of the compartment.



Figure 39: Removing the external battery of the CryptoServer LAN V5

5. Make sure the contacts of the new battery and the metal plate inside the black screw cap are clean and grease-free.
6. Now place the new battery in the battery compartment. Make sure that the positive pole of the battery contacts the black screw cap of the battery compartment.



Figure 40: Placing the new battery in the battery compartment

7. Screw on the black screw cap of the battery compartment to close it, by slightly pushing the screw cap with your finger and turning it clockwise with the other hand.





*Do not misthread the black screw cap when screwing it on battery compartment.*



Figure 41: Screwing on the screw cap of the battery compartment for the external battery

8. Check the battery state, see 4.1 Checking the Battery Status, of this manual.



*The battery power level shown in the display of the CryptoServer LAN is not updated very frequently. Therefore, we recommend to wait for at least three minutes before checking the battery state.*

If the state of the external battery is shown as **absence**, check that the new battery has been connected correctly.

### 4.3 Removing/Swapping a Power Supply Module

You can remove or swap out a power supply module (AC or DC) while the CryptoServer LAN is running normally.





*Be sure to wear gloves when removing a power supply module to prevent being burned. The temperature of the failed power supply module might be around 50 ~ 60 °C.*

If a power supply module fails, and needs to be replaced, follow these steps:

1. Disconnect the power cable from the relevant power supply module.



Figure 42: The power supply modules on the rear side of the CryptoServer LAN V5

2. Press the locking of the power supply module to be changed.



Figure 43: Pressing the locking of a power supply module

3. Use the handle to carefully pull the power supply module.



Figure 44: Using the power supply handle

4. Pull the power supply module out of the CryptoServer LAN's case.



Figure 45: Pulling the power supply module out of the case

5. Put the new power supply module in place.



Figure 46: Putting the new power supply module in place

6. Press the handle to safely position the new power supply module in the case.



Figure 47: Pressing the handle of the new power supply module

7. Plug the power cable into the new power supply module.

If you have installed the power supply module correctly and provided it with power, the green control light above the power supply socket lights up.

## 4.4 Removing/Swapping a Fan Module

You can remove or swap out a fan module while the CryptoServer LAN is running normally. A fan module consists of two fans. Single fans cannot be swapped.



*Do not remove or swap two or three fan modules simultaneously.*

If a fan fails, and needs to be replaced, follow these steps:

1. Turn the knurled screw of the fan compartment grill counterclockwise to open the cover.



Figure 48: Turning the knurled screw

2. Open the fan compartment.



Figure 49: Opening the fan compartment

3. Use the handle to carefully pull the fan module to be replaced out of the CryptoServer LAN's case.





Figure 50: Pulling out the fan module

4. Put the new fan module in place.



Figure 51: Putting the new fan module in place

5. Place the cover in its position.



Figure 52: Placing the cover

6. Turn the knurled screw of the fan compartment clockwise to close the cover.



## 5 Switching off the CryptoServer LAN

You can switch off the CryptoServer LAN by using the menu control.



*Before you switch off the CryptoServer LAN, please close all the applications that access it.*

The initial status message in the display panel, as shown for example in Figure 34, is the reference point for the next steps.

If you are currently working in a particular menu level or an input screen, quit this by pressing the **ESC** button. You may need to do this several times.

Then use the menu control to switch off the CryptoServer LAN as follows:

1. Click **ENTER**.
2. Select the **CSLAN admin.** menu item.
3. Click **ENTER** to confirm the selection.
4. Use the **↓** button to go to the **Shutdown** menu item.
5. Click **ENTER** to confirm the selection.
6. Respond [ ] **Yes** to the confirmation prompt **Confirm shutdown** by pressing the **←** or the **→** button to insert the x in the brackets select **[x] Yes**.
7. Click **ENTER**.  
This shuts down the device.

When the device is switched off, the message in the display panel disappears.



*The CryptoServer LAN should be kept running constantly to prevent the batteries from being used.*

*If a system is inactive for a long period, the batteries will be used up. After a while this can result in the CryptoServer no longer being supplied with power, and all the data will be deleted. The resulting maintenance tasks are not covered by Utimaco IS GmbH's liability. On the other hand, a brief interruption to the power supply (if the device is being moved around etc.) does not place a serious demand on the batteries and consequently there is no danger of data and settings etc. being deleted.*

## 6 Disposing of the CryptoServer LAN

In this chapter you can find out what you need to take into account when you want to dispose of your CryptoServer LAN.



*Of course, you also have the option of returning the CryptoServer LAN that you no longer require to us, Utimaco IS GmbH, as the manufacturer. In this case, we will take care for disposing of the CryptoServer LAN and the batteries in an environmentally friendly way.*

### 6.1 Deleting All Sensitive Data



*You must delete all sensitive data in your CryptoServer LAN before disposing of it.*

To delete all sensitive data in your CryptoServer LAN proceed as follows:

1. Push the **ERASE** push-button by using an appropriate screwdriver.

If a CryptoServer PCIe card CSe-Series has been mounted in the CryptoServer LAN, pushing the **ERASE** push-button is only effective if the CryptoServer LAN has been switched on.

If pushing the **ERASE** push-button should be applied to a CryptoServer PCIe card Se-Series Gen2 in the CryptoServer LAN, it is not necessary that the CryptoServer LAN has been switched on.



Figure 53: ERASE push-button for performing External Erase on a CryptoServer LAN V5

An External Erase has been performed on the CryptoServer, and an Alarm has been triggered.

2. Make sure that the CryptoServer is in Maintenance Mode and an alarm has been triggered. You can retrieve the CryptoServer status information by using the CryptoServer LAN menu control buttons:
  - a) On the front panel of the CryptoServer LAN, press the **ENTER** button.
  - b) Use the **ENTER** button to open the **HSM admin.** menu item.
  - c) Use the **↓** button to select **HSM Info** and press the **ENTER** button to open the menu item.
  - d) Use the **↓** button to select **State** and press the **ENTER** button to open the menu item.

The following information is shown by way of example on the display of the CryptoServer LAN:

```

----- HSM state -----
mode    = Maintenance
state   = INITIALIZED
temp    = 30.0 °C

----- HSM state -----
temp    = 30.0 °C
alarm   = ON
bl_ver  = 0.00.8.15

----- HSM state -----
bl_ver  = 0.00.8.15
hw_ver  = 5.01.3.1
uid     =

----- HSM state -----
uid     =
80 53 4D 33 | .SM2
33 03 21 22 | 21xS

----- HSM state -----
33 03 21 22 | 21xS
adm1    =

----- HSM state -----
adm1    =
53 65 31 35 | SE15
30 30 20 20 | 00
  
```

Figure 54: CryptoServer LAN display – status output after deletion of sensitive data

Use the **↓** and **↑** buttons to switch between the parts of the **State** menu item. In addition to the figure above, the **adm2** and **adm3** parameters are shown as well.



Regardless of whether you have performed an External Erase (pressing the **ERASE** push-button) or not, the following applies:

If you remove the CryptoServer PCIe card from the CryptoServer LAN and remove any battery from this PCIe card, the sensitive data on this PCIe card is deleted automatically in any case after a maximum of 30 minutes.

## 6.2 Removing a CryptoServer LAN V5 from a Rack

To remove a CryptoServer LAN V5 from a rack, proceed as follows:



The described procedure only applies if slide rails provided by Utimaco IS GmbH have been used for mounting the CryptoServer LAN V5 on the rack, see 3.1 Mounting the CryptoServer LAN V5 in a 19" Rack.

1. The following figure shows a CryptoServer LAN V5 in a rack. In this example, the rack has square style hole mounting posts.



Figure 55: CryptoServer LAN V5 mounted on a rack

2. Switch off the CryptoServer LAN V5, see 5 Switching off the CryptoServer LAN.

3. Remove all cables connected to the CryptoServer LAN V5.
4. Remove both screws securing the CryptoServer LAN V5 in place from the left and right bracket of the CryptoServer LAN V5. The left and right brackets are marked by red rectangles in the next figure.



Figure 56: Brackets of the CryptoServer LAN V5



*Do not throw the screws away. Note down at which location the screws have been used. This is necessary in order not to confuse the different screw types. Exactly these screws are needed if the CryptoServer LAN V5 is mounted again on a rack. Do not use other screws. The same is valid for other screws that are mentioned below.*

5. Pull the CryptoServer LAN V5 until it is in the locked position.

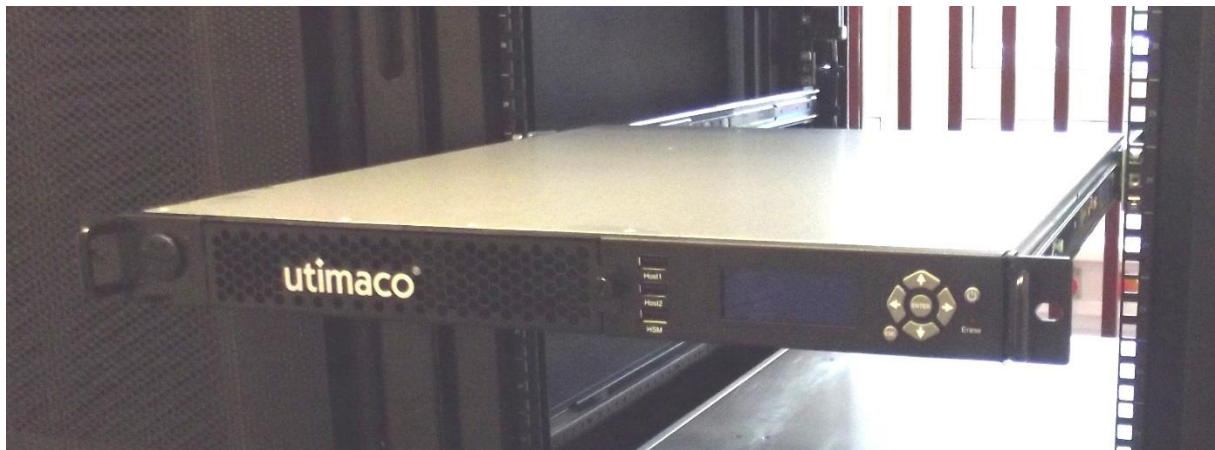


Figure 57: CryptoServer LAN V5 in the locked position

6. Consider the following hint before you perform the next step.



*Two people are required to perform the next step.*

7. Pull the colored pin-lock latches on both sides to release the locks, and pull the CryptoServer LAN V5 all the way out of the rack.



Figure 58: Releasing the pin-lock latch on the left side of the CryptoServer LAN V5

The two inner slide rails are mounted on the CryptoServer LAN. The two outer slide rails mounted on the rack.

8. If you use mounting posts with square type holes, see Figure 55, press the colored button, and remove the outer rail from the rack.

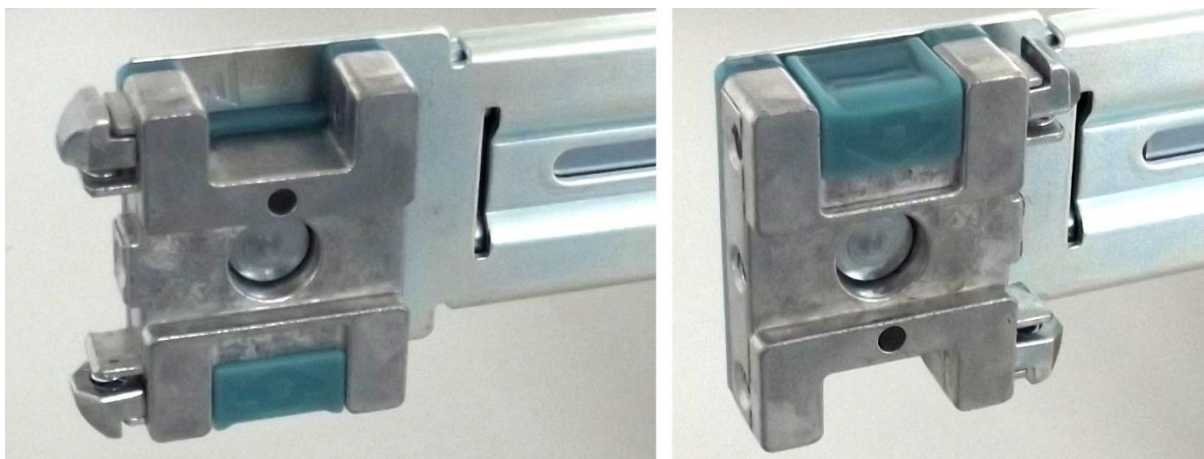


Figure 59: Bracket in the square hole position and in the round hole position



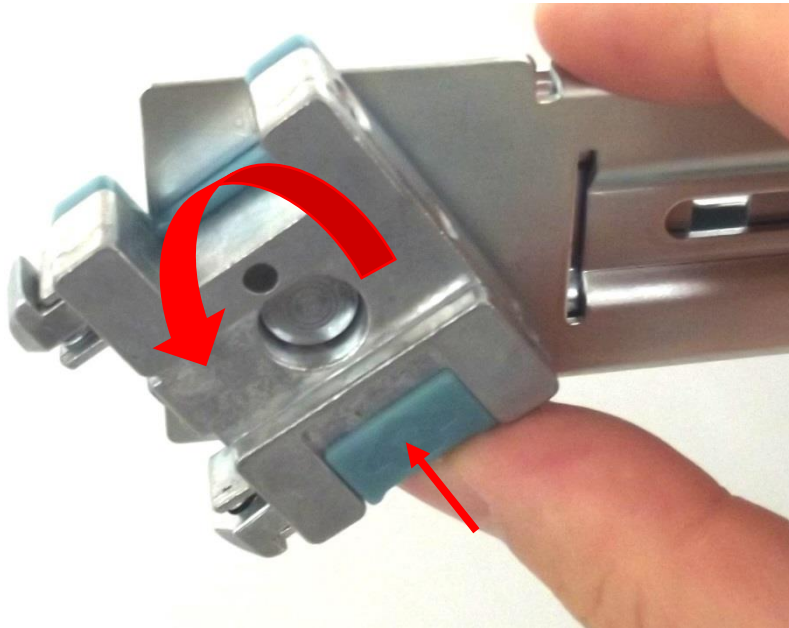


Figure 60: Example: Rotating the bracket

If it is difficult to press the colored button, try to press the colored button, keep it pressed, press the silver bolt on the inner side of the bracket with the tip of a screw driver, and rotate the bracket.

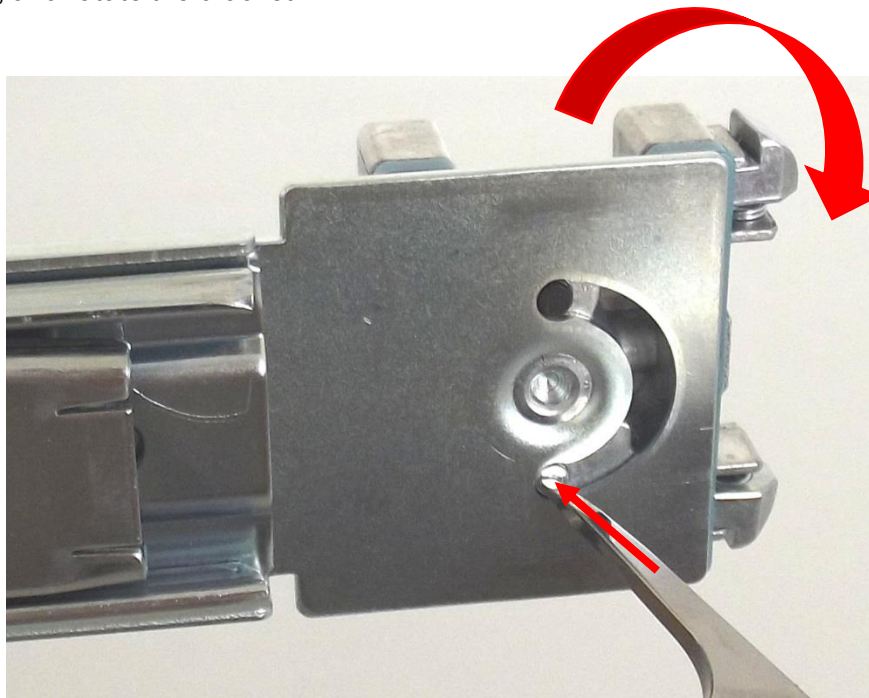


Figure 61: Pressing the bolt on the inner side of the bracket

9. If the outer slide rail is mounted on the rack by using screws (round style holes on the mounting posts), remove these 4 screws, and remove the outer slide rail from the rack.
10. Remove the second outer slide rail from the rack.



11. The inner slide rail is still mounted on the CryptoServer LAN V5.



Figure 62: Inner slide rail mounted on the CryptoServer LAN V5

There are two sizes of telescopic slide rails, 20"-28" and 28"-36". The figures of the slide rails in this documentation always show the large size.

12. If you use a 28"-36" long slide rail, it is mounted on the CryptoServer LAN V5 with 2 screws. If you use a 20"-28" long slide rail, it is mounted with 3 screws.

Note that one lens head screw is used. The other screws are flat head screws.

Remove all screws from the inner slide rail, and remove the inner slide rail from the CryptoServer LAN V5.

The inner slide rail is still separated from the outer slide rail.



Figure 63: Inner slide rail and outer slide rail

13. Carefully align the inner slide rail with the notches in the outer slide rail. Once aligned, slide the inner slide rail toward the outer slide rail until the inner slide rail is in the locked position.



Figure 64: Inner slide rail in locked position

14. There is a colored pin-lock latch on the outer side of the inner slide rail. Slide it outward.

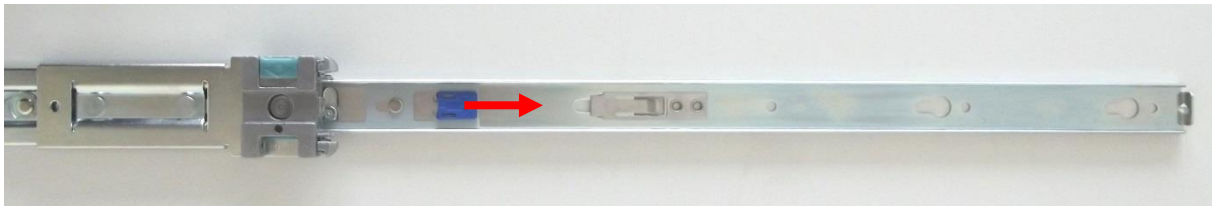


Figure 65: Sliding the pin-lock latch outward

15. If the mechanism is difficult to move, move the locking bolt on the inner side of the inner slide rail with the tip of a screwdriver while sliding the pin-lock latch.

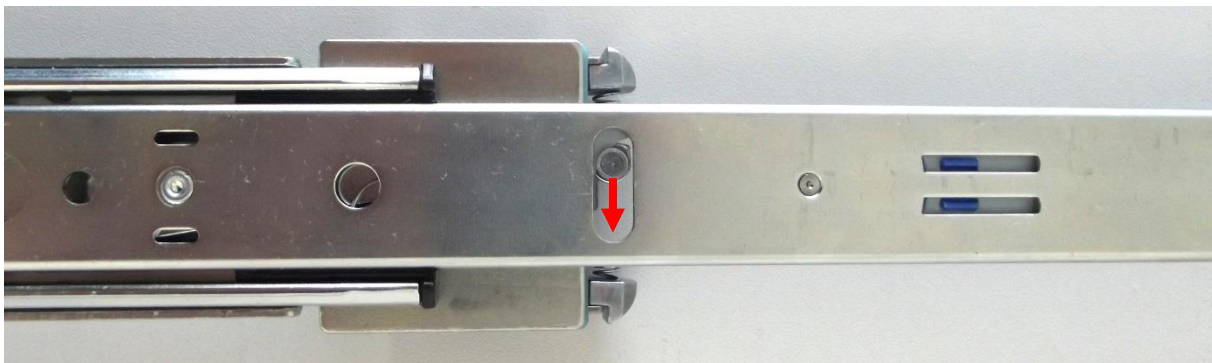


Figure 66: Moving the locking bolt

16. While sliding the pin-lock latch outward, slide the inner slide rail inward until it is in its final position.
17. Perform step 12 on page 62 to step 16 on page 63 for the second inner rail and outer rail.



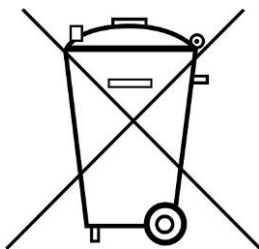
Figure 67: Two slide rails

## 6.3 Disposing of Batteries

In the CryptoServer LAN you will find three batteries which must be disposed of in an environmentally friendly way.

- The 3.6 V lithium battery made by Saft of type LS 14500 or similar type  
The (external) battery is located inside the battery compartment. The battery compartment is accessible by the screw cap on the front panel of the CryptoServer LAN.
- The 3 V lithium battery made by FDK of type CR 12600 SE-T1 or similar type  
The (carrier) battery is located on the CryptoServer PCIe card CSe- or Se-Series Gen2, which is inside the CryptoServer LAN.
- The 3 V lithium coin cell battery for the mainboard of the CryptoServer LAN.  
This battery is located on the mainboard of the CryptoServer LAN.

Remove all batteries from the CryptoServer LAN and note the following general information about rechargeable and non-rechargeable batteries (in accordance with the German Notice Requirement according to §18 BattG, the Law concerning Batteries).



*You are not permitted to throw away used batteries in the normal household waste.*  
*Consumers are obliged to bring batteries to a suitable municipal or commercial collection point.*  
*Used batteries can contain harmful materials or heavy metals that can damage the environment and health.*  
*Batteries are reused. They contain important raw materials such as iron, zinc, manganese or nickel.*

You can either dispose of the CryptoServer LAN's battery at a suitable municipal or commercial collection point, or send it to us, Utimaco IS GmbH, as the manufacturer.

## 7 Technical Data of CryptoServer LAN V5 (AC Power Supply)

<b>Dimensions</b>	Height	44 mm (1 slot (height unit))
	Width	446 mm without attachment bracket (19" rack mount)
	Depth	533.4 mm excluding handles
<b>Weight</b>	10 kg	
<b>Voltage</b>	100 to 240 Vac, 50-60 Hertz, 5-3A x2	
<b>Power supply</b>	300 W x2	
<b>Power consumption (effective/apparent)</b>	Typically 45 W/66 VA, maximum 50 W/70 VA	
<b>Heat dissipation</b>	171 BTU/h	
<b>Interfaces on the front side</b>	1 x USB "Host1" and 1 x USB "Host2"	USB ports of the CryptoServer LAN
	1 x USB "HSM"	USB port of the CryptoServer PCIe card
<b>Interfaces on the rear side</b>	1 x DB15	VGA connector (screen)
	2 x RJ45	10/100/1000 Mbit Ethernet
	2 x USB	USB ports of the CryptoServer LAN
<b>Interfaces on the CryptoServer slot bracket</b>	1 x USB	USB port of the CryptoServer PCIe card
<b>Environmental temperature</b>	in operation	u.trust Anchor PCIe card: +10 °C to +50 °C (+50 °F to +122 °F) CryptoServer Se-Series Gen2: +10 °C to +50 °C (+50 °F to +122 °F) CryptoServer CSe-Series: +10 °C to +40 °C (+50 °F to + 104 °F)
	in storage	-10 °C to +55 °C (+14 °F to +131 °F)
<b>Humidity</b>	10% to 95% relative humidity, non-condensing	
<b>MTBF</b>	CryptoServer Se-Series Gen 2: 125,322 hours CryptoServer CSe-Series: 98,244 hours at 25 °C/77 °F, environment GB, GC – Ground Benign, Controlled	
<b>RoHS compliance</b>	Yes	

<b>WEEE</b>	National register for waste electric equipment (Elektro-Altgeräte-Register EAR) DE65203472
<b>Conformity</b>	<p>Electromagnetic compatibility:</p> <p>EN 55011:2009 + A1:2010</p> <p>EN 55032:2015 / AC:2016</p> <p>CISPR 32: 2015 (ed 2.0) / C1:2016</p> <p>EN 61000-6-4: 2007 + A1:2011</p> <p>EN 61000-3-2: 2014</p> <p>EN 61000-3-3: 2013</p> <p>EN 61000-6-2: 2005 / AC: 2005 (EN 55024:2010 + A1: 2015),</p> <p>IEC 61000-4-2: 2008; IEC 61000-4-3: 2006 + A1: 2007 + A2: 2010;</p> <p>IEC 61000-4-4: 2012; IEC 61000-4-5: 2014; IEC 61000-4-6: 2013;</p> <p>IEC 61000-4-8: 2009; IEC 61000-4-11: 2004</p> <p>ETSI EN 300 386 V2.1.1</p> <p>FCC 47 CFR Part 15 Class A</p> <p>Equipment safety: IEC/EN 60950-1 (CB scheme)</p> <p>UL</p> <p>Climatic and mechanical conditions: ETSI EN 300 019: Storage class 1.1, Transportation class 2.1 (with temperature range restricted to the storage environmental temperature given above), stationary use in environments that are protected from the weather class 3.1</p>

## 8 Technical Data of CryptoServer LAN V5 (DC Power Supply)

<b>Dimensions</b>	Height	44 mm (1 slot (height unit))
	Width	446 mm without attachment bracket (19" rack mount)
	Depth	533.4 mm excluding handles
<b>Weight</b>	10 kg	
<b>Voltage</b>	-36 to -72 Vdc, 12-6A x2	
<b>Power supply</b>	300 W x2	
<b>Power consumption</b>	Typically 50 W, maximum 55 W	
<b>Heat dissipation</b>	188 BTU/h	
<b>Interfaces on the front side</b>	1 x USB "Host1" and 1 x USB "Host2"	USB ports of the CryptoServer LAN
	1 x USB "HSM"	USB port of the CryptoServer PCIe card
<b>Interfaces on the rear side</b>	1 x DB15	VGA connector (screen)
	2 x RJ45	10/100/1000 Mbit Ethernet
	2 x USB	USB port of the CryptoServer LAN
<b>Interfaces on the CryptoServer slot bracket</b>	1 x USB	USB port of the CryptoServer PCIe card
<b>Environmental temperature</b>	in operation	CryptoServer Se-Series Gen2: +10 °C to +50 °C (+50 °F to +122 °F)  CryptoServer CSe-Series: +10 °C to +40 °C (+50 °F to +104 °F)
	in storage	-10 °C to +55 °C (+14 °F to +131 °F)
<b>Humidity</b>	10% to 95% relative humidity, non-condensing	
<b>MTBF</b>	CryptoServer Se-Series Gen 2: 125,322 hours  CryptoServer CSe-Series: 98,244 hours  at 25 °C/77 °F, environment GB, GC – Ground Benign, Controlled	
<b>RoHS compliance</b>	Yes	
<b>WEEE</b>	National register for waste electric equipment (Elektro-Altgeräte-Register EAR) DE65203472	
<b>Conformity</b>	Electromagnetic compatibility:	

	<p>EN 55011:2009 + A1:2010</p> <p>EN 55032:2015 / AC:2016</p> <p>CISPR 32: 2015 (ed 2.0) / C1:2016</p> <p>EN 61000-6-4: 2007 + A1:2011</p> <p>EN 61000-3-2: 2014</p> <p>EN 61000-3-3: 2013</p> <p>EN 61000-6-2: 2005 / AC: 2005 (EN 55024:2010 + A1: 2015),  IEC 61000-4-2: 2008; IEC 61000-4-3: 2006 + A1: 2007 + A2: 2010;  IEC 61000-4-4: 2012; IEC 61000-4-5: 2014; IEC 61000-4-6: 2013;  IEC 61000-4-8: 2009; IEC 61000-4-11: 2004</p> <p>ETSI EN 300 386 V2.1.1</p> <p>FCC 47 CFR Part 15 Class A</p> <p>Equipment safety:  IEC/EN 60950-1 (CB scheme)</p> <p>UL</p> <p>Climatic and mechanical conditions: ETSI EN 300 019: Storage class 1.1,  Transportation class 2.1 (with temperature range restricted to the storage  environmental temperature given above), stationary use in environments  that are protected from the weather class 3.1</p>
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## 9 Contact Address for Support Queries

If an error occurs while operating the CryptoServer, read [CryptoServer Troubleshooting](#) to solve it.

If the error still occurs, prepare diagnostic information in a .txt file on your computer as described in [CryptoServer Troubleshooting](#).

If you have any further questions on CryptoServer, feel free to contact us.

You can reach us from Monday to Friday 09.00 a.m. to 05.00 p.m., apart from German public holidays and other customs days.

Utimaco IS GmbH

Germanusstr. 4

52080 Aachen

Germany

### ■ RMA query

If you need to send the CryptoServer back to the Utimaco IS GmbH, i.e., open a new RMA case, we request that you use the following web address. RMA cases cannot be opened by email or phone.

<https://support.hsm.utimaco.com/support/rma/new>

### ■ For other support queries, use the following contact data:

#### ▣ By mail (preferred contact method)

[support@utimaco.com](mailto:support@utimaco.com)

Attach the diagnostic information to your email.

#### ▣ By web portal

<https://support.hsm.utimaco.com/support/cases/new>

The diagnostic information will be requested in our response if necessary.

#### ▣ By phone

□ AMERICAS: +1-844-UTIMACO (+1 844-884-6226)

□ EMEA: +49 800-627-3081

□ APAC: +81 800-919-1301

The diagnostic information will be requested in our response if necessary.

## References

<i>Title/Company</i>	<i>Document No.</i>	<i>Location</i>
CryptoServer – csadm Manual /Utimaco IS GmbH.	2009-0003	Product Bundle ...Documentation\Administration Guides
CryptoServer – CAT Manual /Utimaco IS GmbH.	2021-0055	Product Bundle ...Documentation\Administration Guides
CryptoServer LAN V5 – Administration Manual /Utimaco IS GmbH.	2018-0010	Product Bundle ...Documentation\Administration Guides
CryptoServer – Administration Manual/Utimaco IS GmbH.	M010-0001-en	Product Bundle ...Documentation\Administration Guides
CryptoServer Troubleshooting /Utimaco IS GmbH.	M011-0008-en	Product Bundle ...Documentation\Administration Guides