Intercom Server S6

High performance Intercom server for rack mounting

Up to 448 subscribers | VirtuoSIS on board | IoIP® and SIP | Easy to expand | Backwards compatible | 16kHz eHD Voice

The ultimate Intercom appliance

In 2013, Commend introduced the worldwide first 100% software-based Intercom server. However, VirtuoSIS was only available for virtualised IT environments so far. The Intercom server S6 brings all VirtuoSIS features into common server rooms as well.

The cost-efficient and compact total package of hardware and software can be extended flexibly. Therefore, no extra hardware is needed – it is only necessary to activate the desired licences.

A strong software provides all VirtuoSIS benefits. This means that the S6 combines reliability, crystal-clear intelligibility, easy maintenance as well as low costs. And, of course, the S6 is fully compatible to earlier Commend systems – such as Intercom servers or stations.

Features and highlights

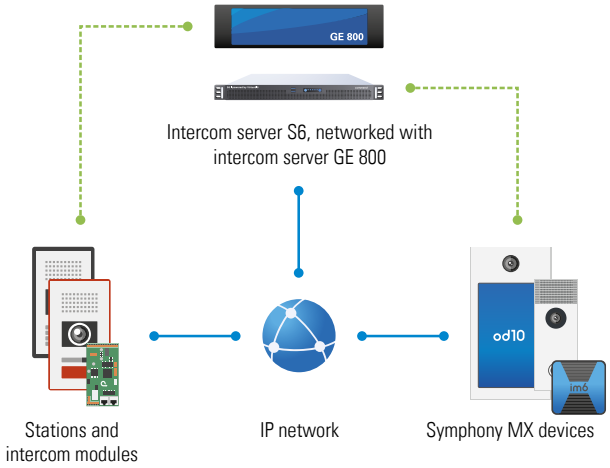
- Compact Intercom server including VirtuoSIS Professional
- Redundant hot-plug power supply unit available separately
- Easy to expand using the desired licences
- Backwards compatible to expand existing Commend systems
- High energy efficient
- Supports IP-based, digital and analogue Intercom stations as well as Commend SIP stations and third-party SIP phones
- VoIP connectivity to PSTN via SIP gateways
- IPv4 for IoIP®
- IPv4 and IPv6 for SIP clients/trunk connections (audio and video)
- Supports all Intercom functions and feature levels
- High availability through operation in a high-availability cluster
- Networkable with all IP Intercom servers via LAN or WAN
- Networkable with the Intercom servers S3, GE 800 and VirtuoSIS via NET
- IP interfaces: ICX over IPv4/IPv6, RTP, SIP over TLS and (S)RTP as well as IoIP®
- Central configuration via the configuration software CCT 800
- Supports Commend Solution Apps, e.g. ComPLC
- Requires no key subscribers
- Optimised for rack mounting

Examples of use

Below, typical application scenarios for the Intercom server S6 are shown. These applications can also be combined individually.

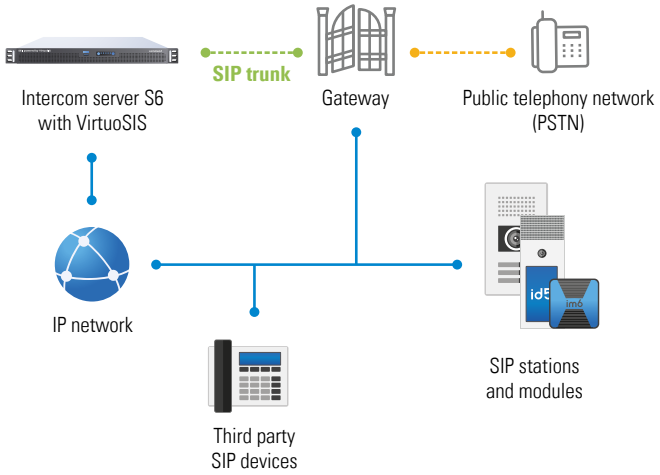
Expansion of an existing system

The Intercom server S6 is integrated as additional server in an existing system in order to use up to 448 additional IP or SIP subscribers.



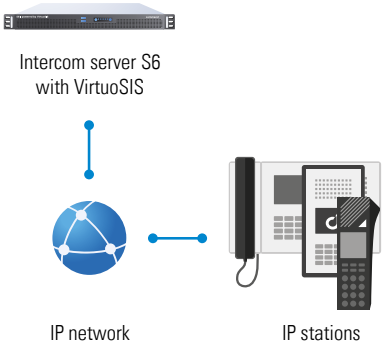
SIP solution

The Intercom server S6 is used for up to 448 SIP subscribers. A cost-efficient start is already possible with the licence L-SIS-SIP-8A.



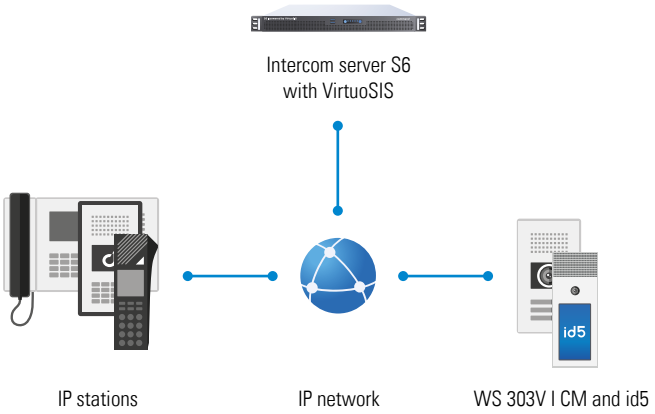
IoIP® solution

The Intercom server S6 is used for up to 448 IP subscribers.



Mixed solution

The Intercom server S6 is used as a part of a mixed system with IoIP® as well as SIP subscribers and SIP trunks.

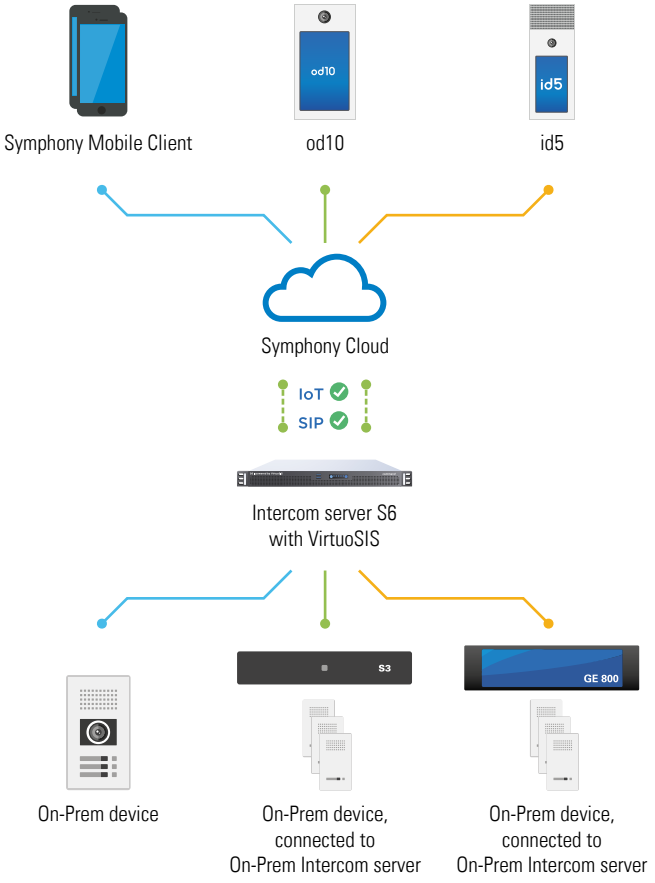


More examples of use

Below, typical application scenarios for the Intercom server S6 are shown. These applications can also be combined individually.

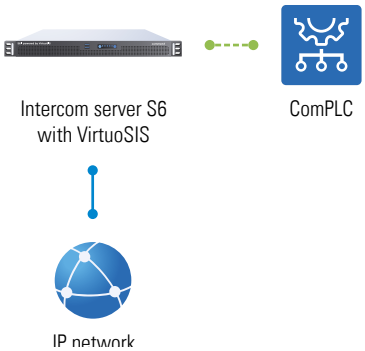
Cloud integration with Symphony Bridge

The on-prem Intercom server S6 in combination with Symphony Bridge provides versatile networking options with Symphony Cloud, including a number of system functions.



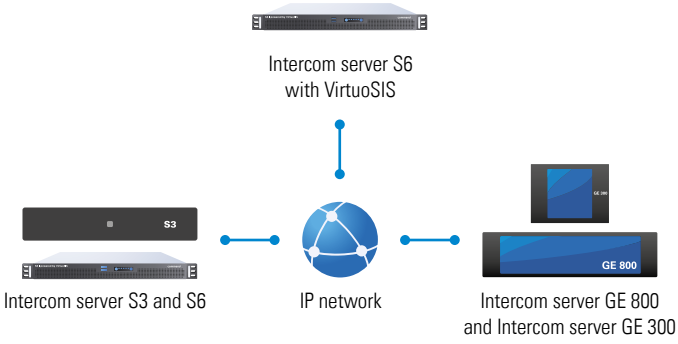
Latest Commend Solution Apps

The Intercom server S6 is integrated as additional server in an existing system in order to use the latest Commend Solution Apps. For this application, the interfaces ICX, KNX and MODBUS are available.



Networked server infrastructure

The Intercom server S6 can be networked with other servers via LAN, WAN or NET.

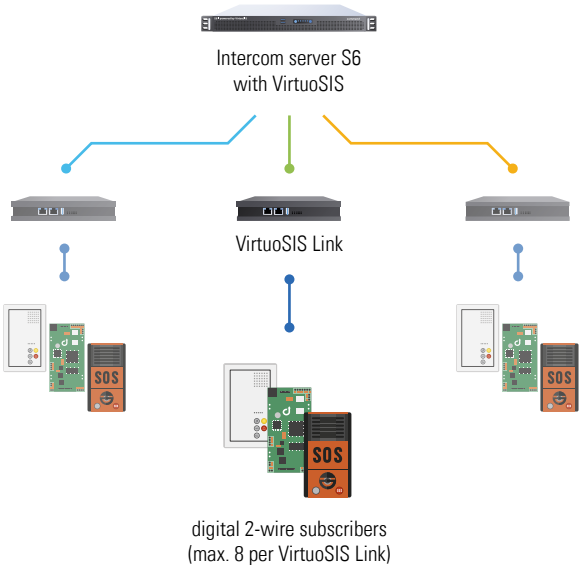


More examples of use

Below, typical application scenarios for the Intercom server S6 are shown. These applications can also be combined individually.

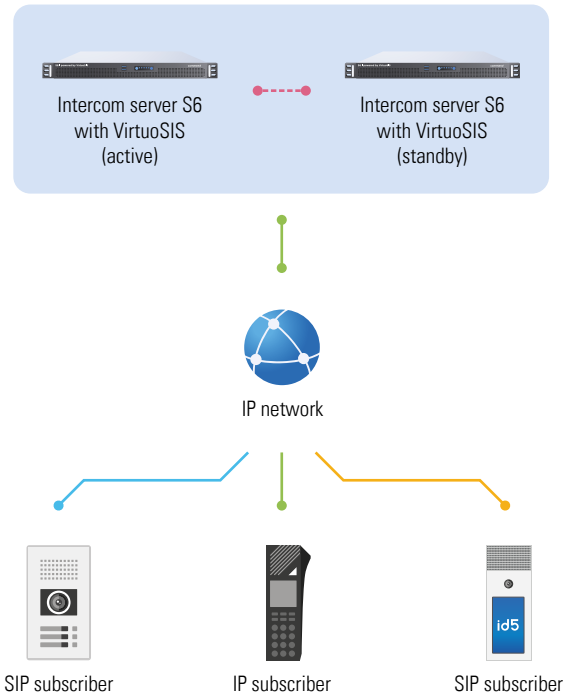
System upgrade with VirtuoSIS Link

Upgrade existing Intercom systems based on digital 2-wire technology using Intercom Server S6 and VirtuoSIS Link.



High availability through redundancy

Ensure uninterrupted service availability with redundant server infrastructure.



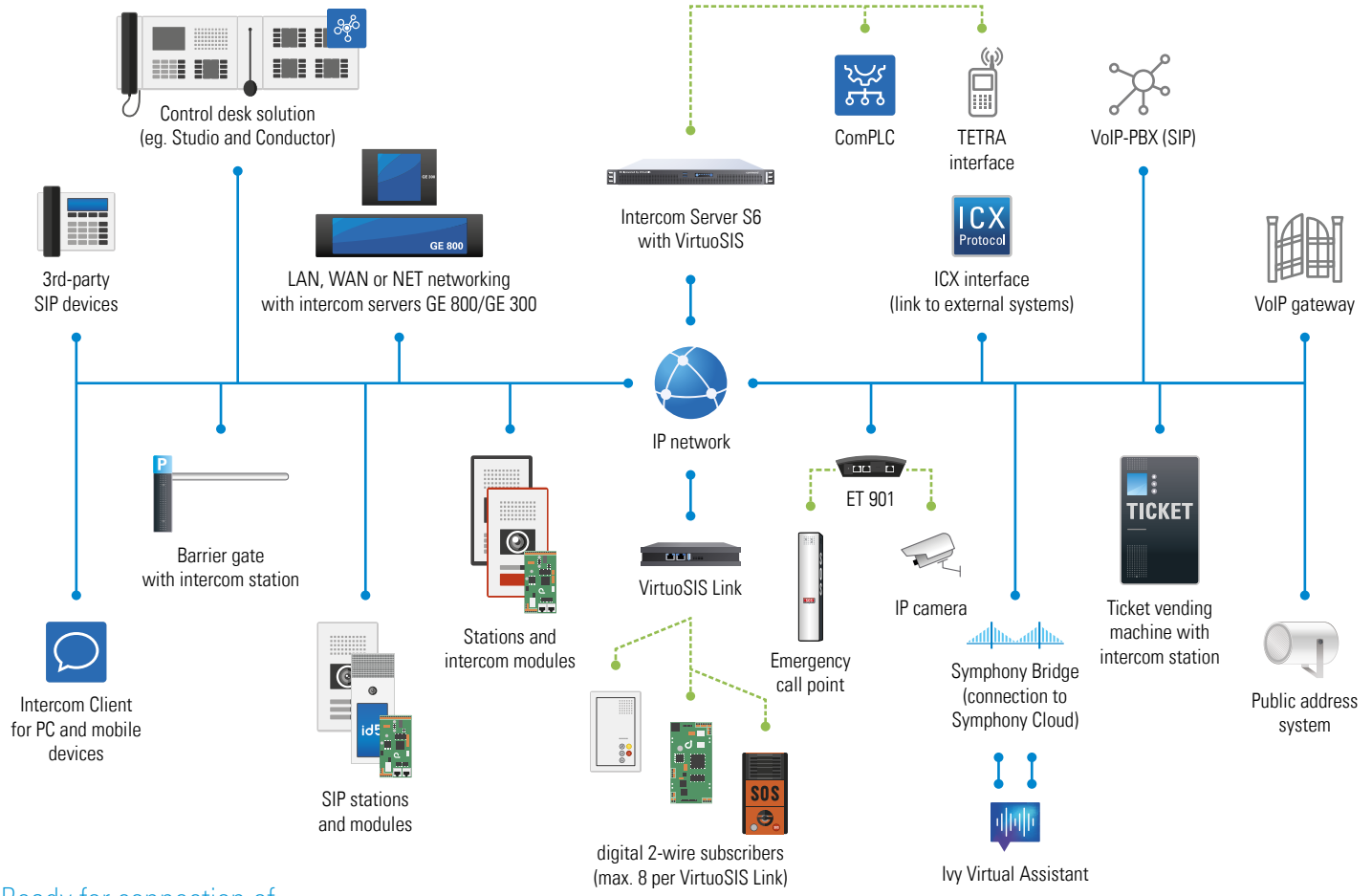
Commend Intercom platform

Voice communication with 16 kHz sound experience

Commend's 16 kHz audio standard transmits voice communication, emergency calls and especially music with previously (literally) unheard-of clarity. At the same time, the IP Intercom servers double as PA servers to enable the combination of public address and Intercom on a single platform.

Intercom solutions by Commend

Data networks enable the transmission of all kinds of data. For Intercom transmissions, Commend has developed a specific technology: IoIP®, short for Intercom over IP. As a logical further development of the Voice over IP standard, IoIP® provides better speech quality and higher data security and serves as the Commend standard for the professional integration of Intercom stations, control and display functions, networking of Intercom servers, and especially for security and communication solutions.



Ready for connection of

- IP Intercom stations
- Commend SIP stations and third-party SIP phones
- 2-wire Intercom stations (with VirtuoSIS Link or IP Intercom box ET 901-D)
- 4-wire Intercom stations (with IP Intercom box ET 901-A)

100% flexible, 100% compatible

VirtuoSIS adapts easily and flexibly to your project requirements while remaining fully compatible with previous system generations. The server supports all IP-based, digital and analogue Intercom stations by Commend; third-party systems can be integrated easily via Intercom eXchange protocol (ICX).

Integration of Commend Solution Apps

Thanks to direct integration of any Commend Solution App into VirtuoSIS, no further hardware or software is needed. That's why it is easy to use third-party systems e.g. TETRA by simply licensing the appropriate interface on the Intercom server.

Highlights from more than 150 features

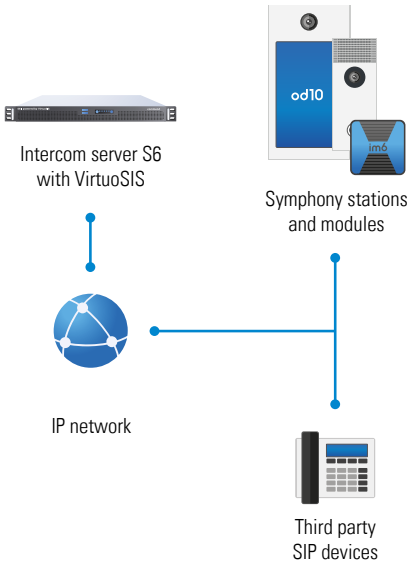
- Control desk functions
- Functional monitoring of microphone, loudspeaker and Intercom station lines
- Control functions (video, doors and gates etc.)
- Pre-recorded voice messages for customised announcements (waiting, information, alarm messages etc.)
- Audio monitoring for automated call triggering, e.g. at a scream or shout
- Audio recording interfaces
- All Calls and group calls with automated response function
- Conference calls with any number of subscribers
- Call forwarding
- Integration of third-party systems (OPC, TETRA etc.)
- Seamless VoIP integration via SIP
- And many more ...

Increased possibilities through SIP

SIP subscribers can be integrated – first and foremost the versatile and multi-functional Commend SIP series – directly into the Intercom network. This makes it possible for a vast range of VoIP devices to communicate with each other over the Intercom network and to fulfill basic Intercom features.

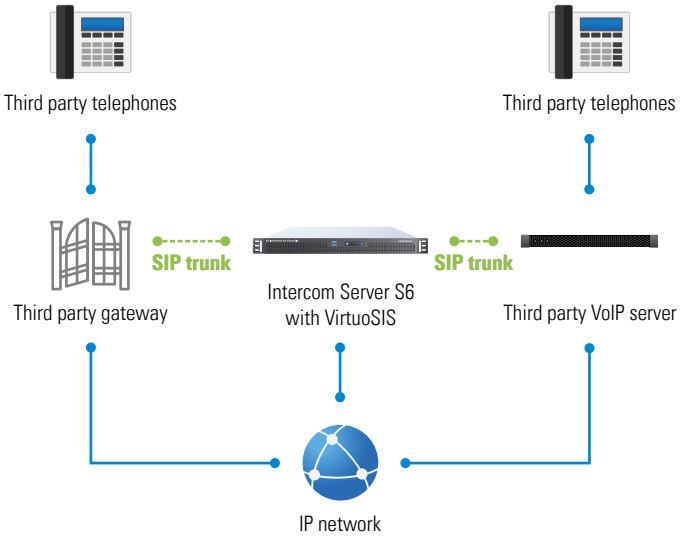
What is SIP-C?

Via the virtual SIP-C card, it is possible to use SIP clients (SIP-C) like third-party SIP phones and Commend SIP stations into VirtuoSIS directly. For this, only a simple IP network connection is necessary.



What is SIP-T?

Using a SIP trunk (SIP-T), VirtuoSIS can be connected to one or several third-party SIP servers. As soon as a SIP-T connection is established, there is a huge mutual benefit: all servers are able to use numerous of features and functions of the other one.



Highlights SIP-C features

- Line monitoring for SIP-T and SIP-C subscribers
- Triggering call requests, optionally with calm down message and/or with assigned video camera
- Door station with a contact triggered via DTMF
- Listening to radio channels
- Receiving All Calls, group calls and door ringing calls
- Participant radio conference
- Control desk function
- Receiving call requests and corresponding ICX messages
- OpenDuplex® conferences
- Protocols used for SIP-C: UDP, TCP and TLS
- Supported video codec: H.264/MPEG-4 AVC

Start smart with feature level A subscribers

- Ideal for small-sized systems
- Basic Intercom functions: privacy call, conversation, group ringing to group 0 and door opener via DTMF after-dialling
- Expandable to feature level B with the upgrade licence L-UG-8B or to feature level D with the upgrade licence L-UG-1D

Highlights SIP-T features

- Each channel can be assigned to a separate trunk
- Up to 8 SIP trunks per card
- The trunk automatically selects one of the free assignment channels
- Line monitoring
- Configuration of dial-prefixes, pre-dialling and code numbers for easy call numbers within the system
- Call history with up to 20 entries (0T)
- Basic Intercom functions (e.g. calls)
- Executive-secretary transfer chain
- Initiator conference
- Alarm receiver
- Control desk function
- Auto dialler mode
- Audio mixing for speech recording
- PA function (for phone call by direct outward dialling)
- Radio feed-in (4T, 6T)
- Protocols used for SIP-T: UDP, TCP and TLS
- Supported video codec: H.264/MPEG-4 AVC

Intercom Server S6
Technical specifications

Technical data

Registered subscribers:	IP/SIP: 112 per instance (448 total
Parallel calls:	IoIP conversations (audio): max. 32 per instance SIP conversations (audio): max. 32 per instance SIP conversations (audio/video): max. 64 per master A single conversation may use one or more channels. For further information on the concurrent use of SIP audio channels, see manual **"Intercom Server Configuration"**.
Concurrent video calls for group ringing	max. 128
Concurrent channels in use:	SIP channels (audio): max. 128 SIP channels (audio/video): max. 128
VirtuoSIS Instances:	1 VirtuoSIS Master mit max. 4 VirtuoSIS Instanzen
Compliance:	EN 55032 Class A, EN 55035, EN 61000-6-2, EN 61000-6-3, FCC Part 15 Class A, ICES-003 Class A, IEC/EN 62368-1
Operating system:	Linux Debian 13 (64 bit)
Intercom Server software:	VirtuoSIS (pre-installed)
Network interfaces:	up to 2
Data rate:	up to 1 Gbps per Ethernet port
Rated current:	max. 0.14 A (240 V)/max. 0.34 A (100 V)
Power supply:	max. 300 W, min. 88 % efficiency (80Plus Gold) 100 – 240 V (50/60 Hz)
Power consumption:	with a single power supply: idle: 22 – 23 W full load: 34 – 37 W with redundant power supply: idle: 25 – 26 W full load: 42 – 44 W
Operating temperature range:	0 °C to +40 °C (+32 °F to +104 °F)
Storage temperature range:	–25 °C to +60 °C (–13 °F to +140 °F)
Relative humidity:	5 % to 85 %, not condensing
Installation:	Installation in a server rack (1 RU to 19"), rack mount kit included in extent of supply
Dimensions (W x H x D):	427 x 44.4 x 381 mm (16.8 x 1.74 x 15 in)
Weight incl. package:	approx. 10.5 kg (23.15 lbs)

Line length in LAN

The maximum line length of Cat. 5 cabling in a LAN is 100 m (328 ft) – e.g. from switch to Intercom station.

Extent of supply

- Server
- Tool-free mountable slide rail set
- VirtuoSIS Professional licence L-SIS-x
- Short reference

Power cable

For the S6, the power cable with country-specific plug is available separately:
- C-KAB-C13-AU (Australia)
- C-KAB-C13-EU (Europe)
- C-KAB-C13-UK (United Kingdom)
- C-KAB-C13-US (USA)

Options

Intercom server S6 is equipped with one power supply. Install the redundant power supply improve resilience against downtimes.
- C-PA1-S6 AA: Redundant power supply
  Note: Appropriate power cable not included.

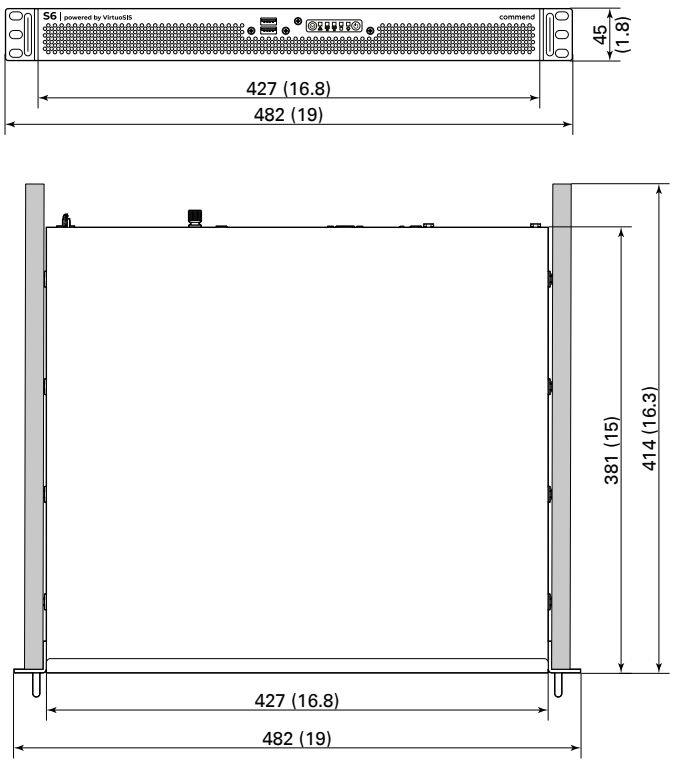
Accessibility

Default IP address (br0): **10.10.0.1/16**

Intercom Server S6
Installation instructions

Dimensions

Measuring units in mm (in), not to scale!

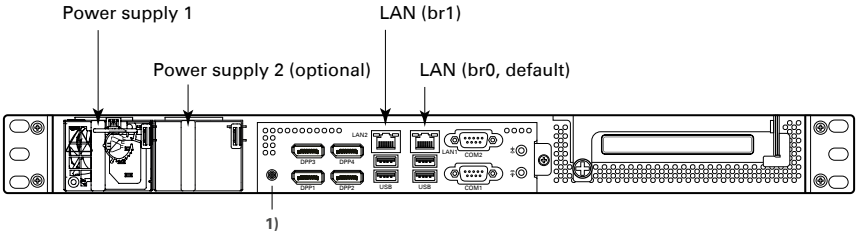


Installation instructions

- Do not expose the server to extreme temperatures.
- Observe the country-specific standards for installation, mounting and configuration.
- When installing the rack, make sure that the anti-tilt mechanism is fitted correctly.
- Rack mounting instructions
  - Elevated Operating Ambient – If installed in a closed or multi-unit rack assembly, it must be placed in a restricted access area. The operating ambient temperature of the rack environment may be greater than room ambient.
    Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.
  - Reduced Air Flow – Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
  - Mechanical Loading – Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
  - Circuit Overloading – Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
  - Reliable Earthing – Reliable earthing of rackmounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).
- For installation in a rack, use the supplied rack mount kit and follow the mounting instructions in the respective short reference.
- The equipment is intended for installation in restricted access areas.
- Stability hazard: The rack may tip over causing serious personal injury.
  - Before extending the rack to the installation position, read the installation instructions.
  - Do not put any load on the slide-rail mounted equipment in the installation position.
  - Do not leave the slide-rail mounted equipment in the installation position.

Intercom Server S6
Installation instructions

Connection diagram



Startup

1. Install the Intercom Server S6 in a rack

2. Power up the Intercom Server S6

3. Set up the Intercom Server S6 via VirtuoBRO or PuTTY

4. Configure the Intercom Server S6 via CCT 800

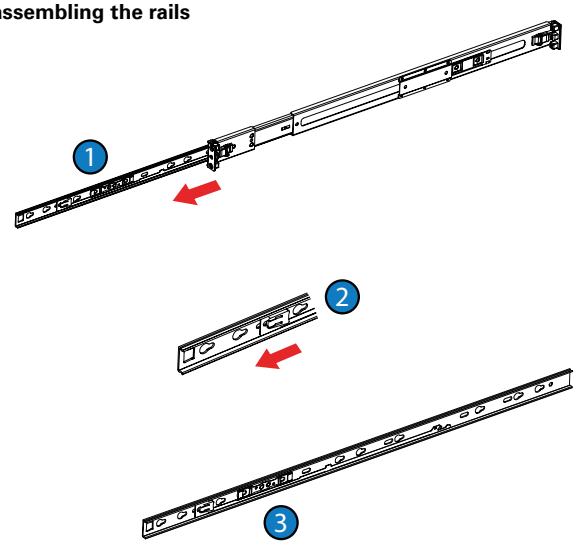
Safety instructions

- The server may only be installed by authorised service engineers.
- For safety reasons and because of its weight and size, at least two persons are required to install the server in a rack.
- When connecting and disconnecting cables, observe the relevant instructions in the manual supplied with the corresponding rack.
- For ventilation clearance, at least 200 mm space has to be left from the front and rear of the server.
- Power supply units must be disconnected from the power supply (switched off or unplugged) before being inserted or removed
- Install or store this device out of the reach of children and do not allow persons unfamiliar with the device and these instructions to handle and operate the device.
- Do not extend more than one unit out of the rack simultaneously – even if the tilt protection is in place. If several units are simultaneously extended from the rack, there is a risk that the rack could tip over. For further information, see the safety information supplied with the rack.
- Before using this device, ensure all cables are connected correctly and are not damaged.
- Allow the device to cool down completely before touching any parts.
- All changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.
- All connected circuits shall fulfil the following requirements:
  - Safety Extra Low Voltage (SELV) and Limited Power Source (LPS) according to IEC/EN 60950-1 or
  - ES1, PS2 circuits and Annex Q (Limited Power Source) according to IEC/EN/UL 62368-1
- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a industrial installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee 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 the equipment and receiver.
  - Connect the equipment into an outlet on a circuit different from that to which the receiver is con-nected.
  - Consult the dealer or an experienced radio/TV technician for help.
- The external DC input on the motherboard must never be powered [1].
- Caution: Shock hazard. Disconnect all power sources from the device before doing any maintenance work.

Intercom Server S6
Installation instructions

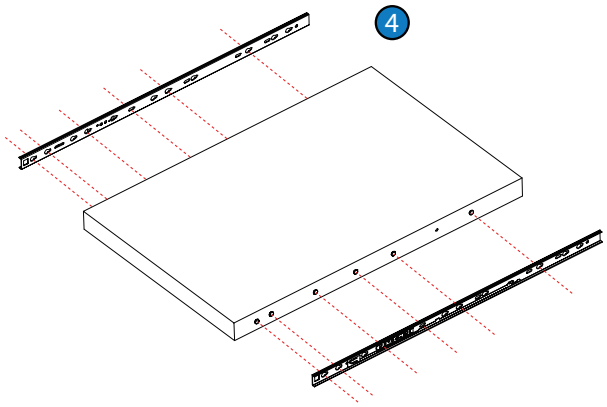
Rack installation with the rack mount kit included in extent of supply

Disassembling the rails



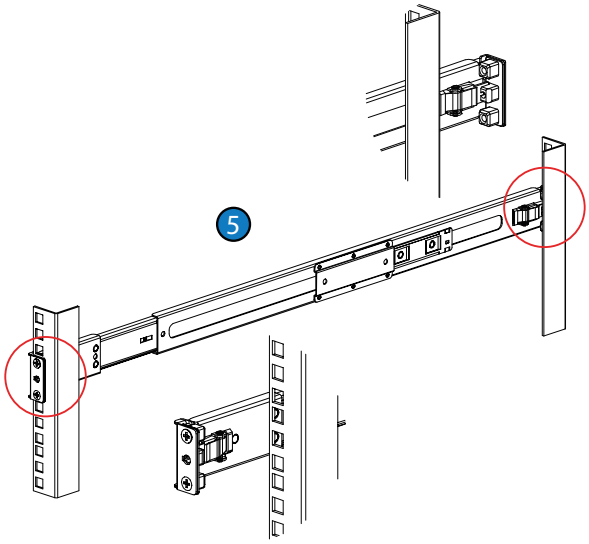
1. Pull the inner rail out of the slide rail.
2. Pull the white locking bars at the upfront end forward.
3. Take the inner rail off the slide rail.

Mounting the inner rails



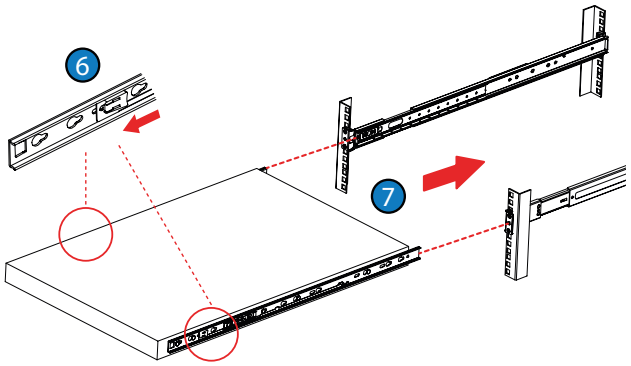
4. Mount the inner rails on the server chassis.

Mounting the inner rails



5. Mount the slide rails to the frame of the rack. Attach the ends to the frame and press the bracket to fix the rail onto the frame.

Completing the installation



6. Slide the release tabs at the outer ends back on both rails.
7. Slide the fully assembled server into the rack.

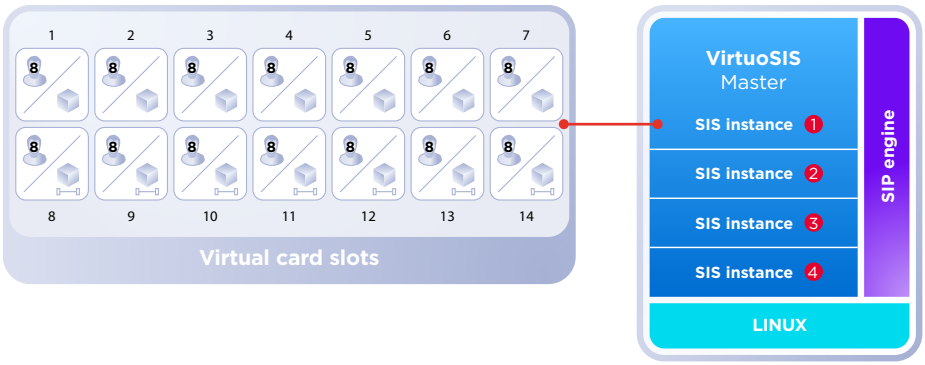
Intercom Server S6
Complementary information

Licensing scheme

The Intercom server S6 provides an ideal solution for small as well as large systems. The supplied base licence VirtuoSIS Professional ("L-SIS-16") can be used for up to 448 IP/SIP subscribers and 4 VirtuoSIS Instances.

VirtuoSIS Professional

- for up to 448 IP/SIP subscribers
- up to 4 VirtuoSIS Instances
- Slot 1 to 14 usable for subscriber and interface cards
- Slot 8 to 14 usable for networking cards
- Slot 15 reserved for networking cards (NET or LAN)



Available licences

Base licence

The Intercom server S6 already comes with a base licence for VirtuoSIS Professional. The base licence must match the software version installed (eg. VirtuoSIS version 16 and base licence L-SIS-16). Per VirtuoSIS Master, one base licence is required.

Upgrade licences

L-UG-1D	Upgrade licence for 1 subscriber from feature level A, B or C to feature level D (for IoIP and SIP subscribers)
L-UG-8B	Upgrade licence for 8 subscribers from feature level A to feature level B (for SIP subscribers only)

A VirtuoSIS upgrade subscription ensures that always the latest software licence for the corresponding software version can be used. This ensures that all the latest security improvements, features and problem fixes are always available.

Network licences

L-SIS-LAN-4	Licence for 4 LAN connections
L-SIS-LAN-8	Licence for 8 LAN connections
L-SIS-WAN-8	Licence for 8 WAN connections
L-SYM-BRIDGE	Licence for Symphony Bridge

High-availability licence

L-SIS-HA	Licence for 1 VirtuoSIS node in a high-availability cluster. Base licence also required.

SIP-C licences

L-SIS-SIP-8A	Licence for 8 SIP subscriber, feature level A
L-SIS-SIP-2B	Licence for 2 SIP subscribers, feature level B
L-SIS-SIP-8B	Licence for 8 SIP subscribers, feature level B
L-SIS-SIP-2D	Licence for 2 SIP subscribers, feature level D
L-SIS-SIP-8D	Licence for 8 SIP subscribers, feature level D

SIP-T licences

L-SIS-SIPT8B	Licence for SIP trunk, 8 channels, feature level B
L-SIS-SIPT1D	Licence for SIP trunk, 1 channel, feature level D
L-SIS-SIPT8D	Licence for SIP trunk, 8 channels, feature level D

IP licences

L-SIS-IP-2B	Licence for 2 subscribers, feature level B
L-SIS-IP-8B	Licence for 8 subscribers, feature level B
L-SIS-IP-32B	Licence for 32 subscribers, feature level B
L-SIS-IP-2D	Licence for 2 subscribers, feature level D
L-SIS-IP-8D	Licence for 8 subscribers, feature level D

Interface licence

L-SIS-ICX	Single licence for ICX interface

Further licences

In addition, various platform independent licences are available (e.g. Intercom Client, Mobile Client, Studio and ComPLC).

Quality tested. Reliable. Smart.

COMMEND products are developed and manufactured by Commend International in Salzburg, Austria.

The development and manufacturing processes are certified in accordance with **EN ISO 9001:2015**.

AUSTRIA OBSESSIVE ABOUT QUALITY

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A strong worldwide network

COMMEND is represented all over the world by local Commend Partners and helps to improve security and communication with tailored Intercom solutions.

www.commend.com