

Product description IP system connection

SIP Business | tpl_sip.business

1. General

1.1 General terms and conditions

The general terms and conditions by toplink GmbH, hereinafter referred to as toplink, apply to all and any services used.

1.2 Hotline and support

Customer receive support via the toplink support hotline on workdays (Mo-Fr) between 8:00 AM and 6:00 PM, except on regional and national holidays. The technical support hotline is available to our customers 24/7 on 365 days a year. In case of problems that are not a fault of toplink, charges are incurred in accordance with the price list `tpl_service`.

1.3 Service levels

This service is initially implemented as a standard service level. A detailed description of this service level and further service levels (expanded and platinum) is attached in the form of the toplink service level definition „Service Level Agreement of voice and access“. Extended service levels can be applied for an extra charge.

2. General performance characteristics

2.1 General service description

The `tpl_sip.business` network solution provides a bi-directional IP telephony interface. The range of services consists of terminating calls that originate with the IP-enabled user as well as adding conversations which target the IP-enabled user. Via the `tpl_sip.business` product, the transport of the added traffic is carried out in the IP backbone of toplink as well as in the public internet. To ensure secure authentication of SIP business customers, a user name and password are required. Adequate internet connection is necessary to ensure high transmission quality.

2.2 `tpl_sip.business`

The product `tpl_sip.business` combines a number of voice channels with authentication data to allow a connection for the SIP telephony. It consists of a SIP account (basic account) and a maximum number of simultaneous, outbound voice channels. The following voice channel categories can be ordered:

- 2 voice channels (in projects)
- 4 voice channels (in projects)
- 6 voice channels
- 10 voice channels
- 20 voice channels
- 30 voice channels
- 50 voice channels
- 100 voice channels

In case of reaching the maximum number of parallel outbound voice channels, the next outgoing call will be indicated with a busy tone. The number of inbound voice channels is always unlimited, except when ordering the SIP Business International option. Here the voice channels are limited by the available bandwidth of the customer's internet connection.

2.3 Telephone numbers

2.3.1 German location-based telephone numbers

It is possible to order new German location-based telephone numbers. Telephone numbers can only be provided for the associated area code of the respective area, which are specified in the order form as the activation address. For example, customers in Munich can only receive the location-based telephone numbers 089.

When ordering multiple numbers in a local area, we will attempt to provide contiguous number blocks. However, should this not be possible, the customer will also receive non-contiguous telephone numbers.

2.3.2 International location-based telephone numbers

It is possible to order new international location-based telephone numbers. Telephone numbers can only be provided by the associated area code of the respective area.

When ordering multiple numbers in a local area, we will attempt to provide contiguous number blocks. However, should this not be possible, the customer will also receive non-contiguous telephone numbers.

The available countries are listed under section 2.4. Please note that even if a country is listed, this does not mean that numbers can be provided in all local networks of the country. A complete list of local networks within the various countries can be found in the corresponding order form international telephone numbers.

2.3.3 Service numbers

The provision of service numbers (e.g. 0800, 01805, etc.) is also possible on the `tpl_sip.business` system. If you are interested in integrating service numbers in your SIP environment, please contact us.

2.4 International SIP trunk option

International numbers or international SIP trunks can be added by toplink. This option is available for an additional charge and depends on the basic rate selected by the customer (for example, tpl_sip.business.channel.6).

In all cases the service delivery location is Germany. The phone charge still apply according to the applicable toplink connection fees. In the list below are the countries in which toplink offers a SIP Business International option:

Country	Emergency call yes/no	Porting yes/no	Country	Emergency call yes/no	Porting yes/no
ARGENTINA	No	No	LITHUANIA	Yes	Yes
AUSTRALIA	No	Yes	MALAYSIA	No	No
AUSTRIA	No	Yes	MEXICO	No	Yes
BELGIUM	Yes	Yes	NETHERLANDS	Yes	Yes
BRAZIL	No	Yes	NEW ZEALAND	Yes	Yes
BULGARIA	Yes	Yes	NORWAY	Yes	Yes
CANADA	Yes	Yes	PANAMA	No	Yes
CHILE	No	Yes	PERU	No	No
COLOMBIA	No	No	POLAND	No	Yes
CROATIA	No	Yes	PORTUGAL	Yes	Yes
CYPRUS	Yes	Yes	PUERTO RICO	Yes	Yes
CZECH REPUBLIC	No	Yes	ROMANIA	Yes	Yes
DENMARK	Yes	Yes	RUSSIA	Yes	No
DOMINICAN REPUBLIC	No	No	SLOVAKIA	Yes	Yes
EL SALVADOR	No	No	SLOVENIA	Yes	Yes
FINLAND	Yes	Yes	SOUTH AFRICA	No	Yes
FRANCE	Yes	Yes	SOUTH KOREA	No	No
GREECE	No	Yes	SPAIN	Yes	Yes
HUNGARY	No	Yes	SWEDEN	Yes	Yes
IRELAND	Yes	Yes	SWITZERLAND	Yes	Yes
ISRAEL	No	Yes	TURKEY	Yes	Yes
ITALY	Yes	Yes	UNITED KINGDOM	Yes	Yes
JAPAN	No	No	UNITED STATES	Yes	Yes
LATVIA	No	Yes			

2.5 Security

2.5.1 Encryption

In the toplink voice network it is possible to encrypt the signalling via TLS (Transport Layer Security) and the media stream via SRTP (Secure Real Time Protocol). These methods allow a secure connection from one endpoint to another and not just during the call but already during call setup.

A secure connection can only be established if all involved devices or IP telephone systems support the encryption protocols TLS and SRTP.

2.5.2 Fraud detection

The telephone systems are monitored of abnormal telephony behavior by toplink. If a possible misuse scenario is detected, the system connection is temporarily blocked for outgoing calls by toplink.

Emergency calls in incoming calls are still possible.

The customer receives a form immediately after the blocking by which he can order the removal of the blocking provided that he is sure that no misuse exists.

2.6 Itemised billing record (IBR)

For each SIP account, the customer has several options regarding the connection data and the resulting itemised billing reports, which are described in details below. In principle, the monthly itemised billing will be created for free.

2.6.1 No IBR

If no itemised billing report is desired, the customer receives an invoice for the transacted calls. Unless immediate deletion of connection data after invoicing is desired, the connection data will be stored for 80 days by toplink. After 80 days, the connection data will be deleted.

2.6.2 IBR unabridged

If an itemised billing report is desired, the customer receives the connection data for its SIP account in full extent. It contains the complete information about all transacted calls. When you order itemised billing reports, the statutory provisions (e.g. Privacy policy) must be adhered.

2.6.3 IBR truncated

If a truncated itemised billing report is desired, the customer receives the connection data for its SIP account in full extent. It contains the complete information of all calls transacted, but the last three digits of each telephone number are replaced by an „X“. When you order itemised billing reports, the statutory provision (e.g. Privacy policy) must be adhered.

2.6.4 Immediate deletion of connection data after invoicing

By choosing this option, toplink will delete the connection data immediately after invoicing for each SIP account. So the customer loses all options of raising objections regarding an invoice when selecting this option.

2.7 Calling Line Identification Presentation (CLIP)

The definition of CLIP numbers for outgoing calls is done in two stages. If the SIP terminal is capable of sending CLIP information via RFC 3325 (P-Asserted-Identity/Privacy Fields), the dynamic CLIP information is analysed (e.g the end phone signalise that the extension is also sent or that the entire number is suppressed). If no information is available, the network provided number (NPN), which is assigned to the customer's telephone number range, is displayed.

2.7.1 CLIP-no-screening

In case of outgoing calls there can be random telephone number deposited. If the customer wants to have this function the telephone number that has been entered on the order form as CLIP-no-screening by the customer is displayed as CLIP. The CLIP function is indicated by the central VoIP platform. If the CLIP signalling via RFC 3325 is possible with the terminal device, the CLIP-no-screening settings will be overwritten. The CLIP-no-screening function is useful for smooth migration, i.e. outgoing calls via toplink VoIP and inbound calls via normal telephone. For example, the number of the telephone exchange can be transmitted for all VoIP calls as CLIP-no-screening. So the company still appears under one number to the outside, although you are calling via VoIP.

2.7.2 Suppressing the telephone number transmission (CLIR)

The customer can decide occasionally and manually to suppress the telephone number transmission.

2.8 Call forwarding (CF)

Incoming calls can be automatically forwarded to another extension. The forwarding protocol is hereby configured for the whole IP system connection. During forwarding two voice channels are occupied. Call forwarding can be performed directly in the toplink switching centre. It is important to note that you may be charged for forwarding depending on the desired destination call number.

The following call forwarding options are available.

- CF immediately (CFU – call forwarding unconditional)
- CF when busy (CFB – call forwarding busy)
- CF offline/no reply (CFNR – call forwarding no reply)

2.9 Phone book entry

It is possible to make entries in the public phone book. Entries must be submitted using the order form `tpl_sip.business.phonebook`.

3. Detailed information

3.1 Signalling

Currently, the SIP protocol is supported; other protocols, such as the older standard H.323, are currently not available. The following applies:

- SIP (RFC 3261)

3.2 On-net calls

An on-net call is a voice or data connection during which the caller (participant A) and the recipient (participant B) are located within the internal voice network of toplink. Both participants are connected exclusively over an IP communication protocol.

3.3 Off-net calls

An off-net call is a voice or data connection using the SIP protocol or a similar protocol used for the voice/data communication over IP (internet protocol) during which the recipient is not located within the internal voice network of toplink. The connection duration of off-net calls is calculated by minute.

3.4 Voice coding and bandwidth requirements

The following audio codecs are supported.

- G.711 a-law (approx. 100 kbps per call)
- G.729 (8 kbps per call)
- G.726 (32 kbps per call)

3.5 NAT/Firewall

Basically the operation for VoIP components behind firewalls is supported with and without NAT (Network Address Translation). In both cases inbound and outbound connections must be allowed on the ports and IPs listed below. If NAT is used, it is also important to ensure that inbound connections are accordingly passed through to the VoIP component via port forwarding.

Protocols for outbound connections:

- DNS (UDP port 53)
- SIP via UDP (port 5060)
- SIP via TLS (TCP port 5061)
- RTP/RTCP (UDP port 10000-65535)

Protocols for inbound calls:

- SIP via UDP (port 5060)
- SIP via TLS (TCP port 5061)
- RTP/RTCP (UDP port 10000-65535)

IP addresses for inbound and outbound voice data:

- 195.2.163.96/28
- 213.218.12.0/24
- 213.218.21.0/24
- 213.218.22.0/24
- 213.218.28.0/24
- 2001.4180.3.2::/64
- 2001.4180.3.3::/64
- 2001.4180.3.4::/64

IP addresses for inbound and outbound signalling:

- 213.218.12.0/24
- 213.218.22.0/24
- 213.218.28.0/24
- 2001.4180.3.1::/64

The connections must accept reply packet to outbound requests after a timeout of up to 70 seconds (UDP timeout 70s). The „SIP ALG“ function must be disabled on firewalls and routers on the local network.

3.6 FAX

The transmission of fax based on the G.711 codec and T.38 fax relay is supported.

3.7 Format of telephone numbers

All outgoing calls must meet the E.164 standard. Calls that do not meet this standard will not be terminated successfully. Should fees for such unsuccessful connections occur, will they be charged to the customer.

3.8 Emergency calls

Emergency calls to the telephone number 911 and 112 are fully supported. An emergency call is made to the appropriate emergency call centre which is associated with the activation address of the connection. The so called „Röchelruf“ (German emergency calls where the caller is unable to talk) is fully supported. It is the responsibility of the customer to use the tpl_sip.business connection exclusively at the requested activation address. The customer is obliged to immediately report any changes to the activation address to toplink (for example, moving or nomadic use).

For international numbers or international SIP trunks section 2.4 must be observed. The emergency call functionality is not in all countries available. The customer is obliged to make the user at the appropriate locations aware of this technical restriction or to implement appropriate alternative solutions (for example, transmission of emergency calls only via mobile device).

3.9 Blocked numbers

The use of value added services, premium services, information services and call-by-call offerings are generally not supported. Following number ranges are blocked by default:

- world 4 & world 4 mobile (SK_15)
- satellite (SK_16)

Removing this call number lock by toplink can be commissioned at the request of the customer at any time for a charge. In addition, there is a possibility to block more ranges according to toplink specification. Setting up a blocking class is carried out by toplink within 72 hours after order confirmation. An express assignment for establishing/removing block ranges take place via the central hotline number. The hotline is available 24/7. The support will send the customer the `tpl_express.service` order form by e-mail or fax. The customer sends the completed and signed `tpl_express.service` order form back to the support and the desired block range is activated/deactivated.

4. Tariffs

4.1 Setup fee

toplink charges a one time setup fee for the provision of service.

4.2 Basic monthly charge

toplink charges monthly provision fee depending on the selected configuration level of the IP system connection. Phone calls are charged separately according to the current connection price list.

4.3 Volumen-based minutes consumption

The volumen-based rate of voice traffic is calculated as follows: Completed calls are billed based on destination number and talk time; the call costs are charged exact to the minute. For the current connection prices please refer to the connection price list.

The internal area prefixes for mobile phones in other countries can change or new ones can be added without toplink having influenced them. In these cases the same price is valid for the modified or new area prefixes for existing mobile destinations in these countries. toplink reflects such changes without delay in the updated price list.

4.4 Flat rate options

The following flat rate options are additionally available to the selected configuration level of the IP system connection and will be charged with a monthly fee. Calls to other countries and networks are charged separately according to the minute price list. The possible combinations of flat rate options can be seen in the order form.

- The „flat rate landline Germany“ option includes a flat rate for calls to landlines in Germany.
- The „flat rate mobile Germany“ option includes a flat rate for calls to all German mobile networks.
- The „flat rate landline Euro 1“ option includes a flat rate for calls to landlines of the countries from tariff zone Euro 1.

4.5 Terms of use of the flat rate options

A requirement for the billing of the flat rate option is that the customer uses the toplink services exclusively for business operations and no further connections of other providers for the telephone service.

Excluded from the usage are providers of telecommunication services, value added services or mass communication services especially providers of fax broadcast services, call centre or telemarketing services. Furthermore, the flat rate options may not be used for mass communication or be provided as services to third parties as telecommunication services. Telephone systems, telephone system networks and voice service networks which allow telephone traffic to be routed internally to one or more sites to concentrate the requested connection service to single terminals, are excluded from the usage of the flat rate tariffs unless such a flat rate was agreed upon for all voice ports connected to the system network or voice service network in the toplink expansion area.

Excluded from the pricing of each flat rate are the connections that the caller makes to provide telecommunication services to third parties or that he provides for payment or for other benefits to third parties. Excluded are also connections which do not aim to establish direct voice or fax calls to other participants, in particular connections by which the customer has access to the internet or serve as data dial.

Excluded are also connections dialed via callback method. The pricing of the flat rate also excludes connections where the customer or a third party obtain financial benefits of the connection dependent on the duration of that connection including. In particular access to advertisement hotlines. As long as the above mentioned conditions are not fulfilled or connections are excluded from the pricing according to the flat rate options, these connections are charged according to our connection price list.

In the event of improper use of the toplink subscriber network toplink is entitled to set a deadline to settle the resulting connection charges using the tariff valid in accordance with the connection price list or to terminate the improperly used product or module or alternatively to terminate the contract without a notice. toplink reserves the right of claims for damages based on the costs incurred in connection with the misuse of call charges.

For existing customers who wish to switch to a flat rate option the existing term of the IP system connection (SIP Business) will be adjusted according to the availability date of the flat rate option. If the remaining term is less than 12 months, the contract duration is extended by 24 months. If the remaining term is more than 12 months and less than 24 months, the contract duration is extended by 36 months. If the remaining term is more than 24 months and less than 36 months, the contract duration is extended by 36 months.

4.6 Tariff changes

toplink is entitled to change service content and charges with reasonable notice and to make improvement. In such a case the customer will receive a written notice. The amendments are approved if the customer does not object in writing within one month of the notification of change. toplink advises its customers in writing that this option is available.

4.7 Minimum contract term and cancellation periods

Contract term and cancellation periods are set in accordance with the order form and/or terms and conditions of toplink GmbH or in accordance with contract conversion to flat rate options (see section 5.5).

5. Test and IP quality requirements of the SIP terminal (client) – SIP proxy (toplink)

This test determines if an acceptable IP connectivity exists between the toplink SIP proxy and the customer. Acceptable means:

- latency period < 150 ms total delay and < 50 ms one way delay
- packet loss < 2 %
- jitter < 20 ms
- maximal network workload: 50 %

6. Customer responsibilities

6.1 Adherence to specifications

Data must only be transmitted via the use and legal recognition of the standardised communication protocol stated in the technical specifications. The technical specifications may be adjusted by toplink. Only standardised interfaces and components (or interfaces and components provided by toplink) in accordance to the technical specifications may be used. Other interfaces may only be used with explicit written consent from toplink. No device, systems, software or data may be used that can cause changes to the physical or logical structure of the network or the provided terminal device. The access information for services provided by toplink and the services themselves must not be abused. In particular, networks belonging to toplink or other parties may not be modified.

6.2 Resellers

The resale of `tpl_sip.business` or products based on `tpl_sip.business` to third parties is not permitted without written permission of toplink.

6.3 Liability

The customer is liable for any damage to the switching system or any other parts of the toplink infrastructure as well as other parts of the toplink infrastructure or the systems of their „third party clients“.