Product description of the virtual telephone system

vPBX – virtual telephone system

1. General information

1.1 General terms and conditions

All services used are subject to the general terms and conditions of toplink GmbH, hereinafter referred to as toplink. The general terms and conditions are available at www.toplink.de

1.2 Hotline and support

The customer receives support from the toplink support hotline from Monday to Friday from 8 a.m to 6 p.m., except on regional and national holidays. The telephone hotline is available to the customer 24/7, 365 days a year. In the event of problems, which are not due to a fault on the part of toplink, billing shall be based on the tpl_service price list.

2. General scope of service

2.1 General service description

With tpl_pbx (virtual telephone system), toplink GmbH provides the customer with a central virtual telephone system based on VoIP. The tpl_pbx (virtual telephone system) is hosted on a high-performance server in toplink's data center. The customer uses this system on a rental basis and can expand the number of extensions at any time. The service includes hardware and software maintenance and all associated costs. The customer shall pay a monthly final fee for the use of the system and the number of extensions beyond its extension stage.

The Internet connection required to access the tpl_pbx (virtual telephone system) is not part of this contract. It is recommended to use tpl_dsl products for this purpose.

SIP access, the telephone connection of toplink (tpl_sip.business), required to the switching of calls from the public telephone network and into the public telephone network is a prerequisite for the extensive use of the tpl_pbx (virtual telephone system).
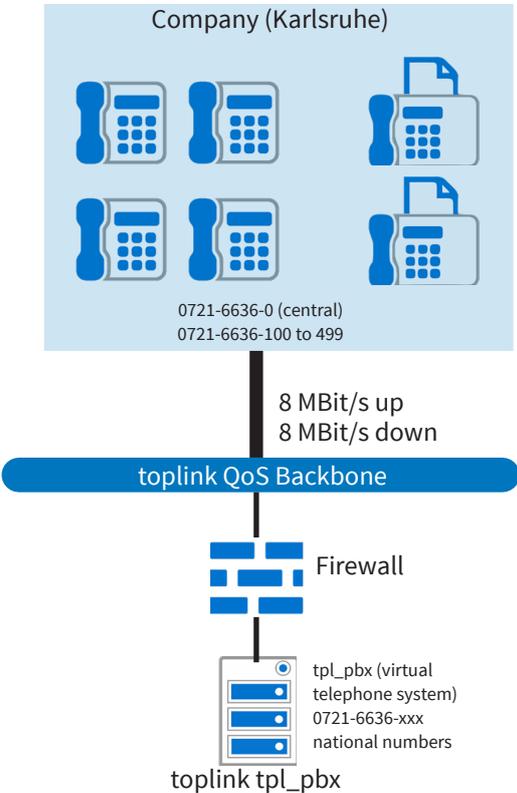
2.2 Availability

The service offered by toplink is guaranteed on the basis of an annual average with an availability of 99.9%.

3. Functionalities

In principle, voice connections are always made via the tpl_pbx (virtual telephone system) – so the tpl_pbx (virtual telephone system) can also be used for multiple customer locations. With these solutions, all functions can be used by all users, regardless of the location of the required telephony workstation.
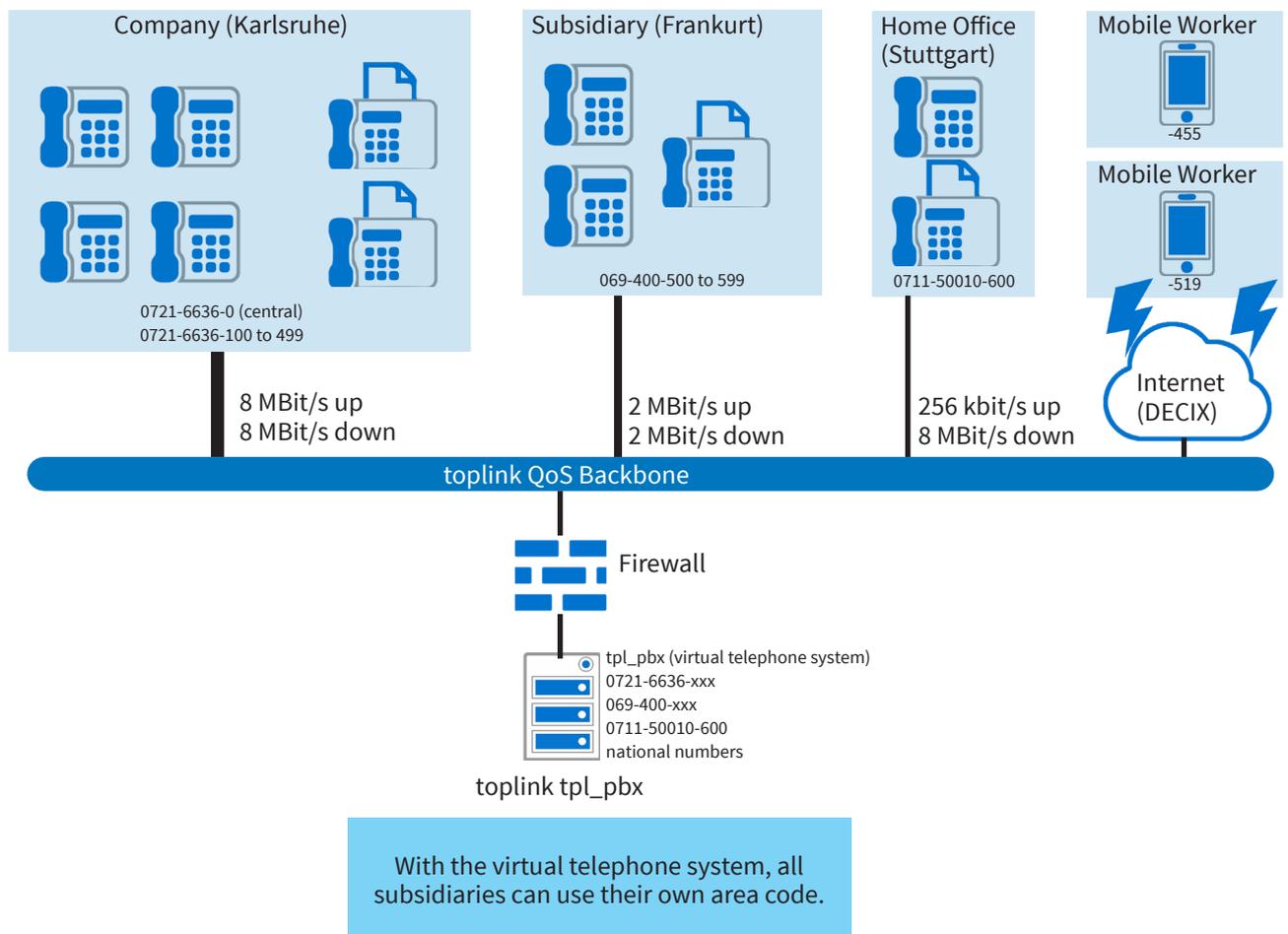
3.1 Single location

When the location is connected, the telephone numbers of the company location are used. Phone calls between extensions are routed via vPBX and are free of charge. Calls to and from the public telephone network are switched or routed via tpl_sip.business. You benefit from the flexibility and can connect additional locations at any time, integrate home office workstations or simply grow withou any further investment costs.

Company (Karlsruhe)

0721-6636-0 (central)
0721-6636-100 to 499

8 MBit/s up
8 MBit/s down

toplink QoS Backbone

Firewall

tpl_pbx (virtual
telephone system)
0721-6636-xxx
national numbers

toplink tpl_pbx

3.2 Subsidiary with the respective area code

If serveral locations are connected, the telephone numbers of the respective company location can be used. This way, you display regional proximity to your customers, but only need a central telephone system. Phone calls between extensions and subsidiaries are routed via vPBX and are free of charge. Calls to and from the public telephone network are switched or routed via tpl_sip.business. You benefit from the flexibility and can connect additional locations at any time, integrate home office workstations or simply grow without any further investment costs.
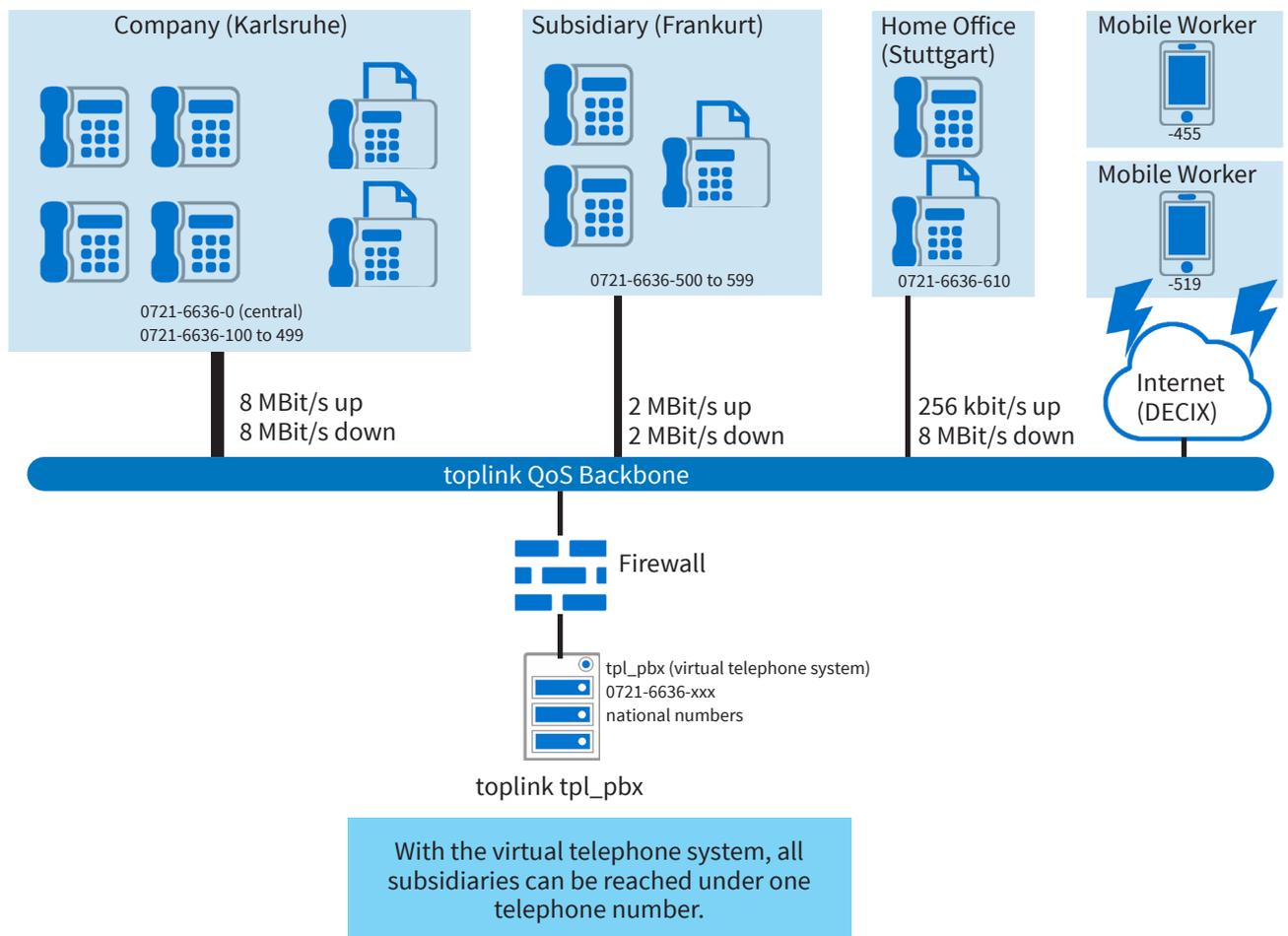
Company (Karlsruhe)

0721-6636-0 (central)
0721-6636-100 to 499

Subsidiary (Frankurt)

069-400-500 to 599

Home Office (Stuttgart)

0711-50010-600

Mobile Worker

-455

Mobile Worker

-519

Internet (DECIX)

8 MBit/s up
8 MBit/s down

2 MBit/s up
2 MBit/s down

256 kbit/s up
8 MBit/s down

toplink QoS Backbone

Firewall

tpl_pbx (virtual telephone system)
0721-6636-xxx
069-400-xxx
0711-50010-600
national numbers

toplink tpl_pbx

With the virtual telephone system, all subsidiaries can use their own area code.

3.3 Subsidiary with one central telephone number

If several locations are connected, the telephone numbers of the company headquarters can be used. In terms of communication, all subsidiaries grow into one single large company. The telephone exchange can therefore be seamlessly carried out centrally for the subsidiaries. Telephone calls between extensions and subsidiaries are routed via the vPBX and are free of charge. Calls to and from the public telephone network are switched or routed via tpl_sip.business. You benefit from the flexibility and can connect additional locations at any time, integrate home office workstations or simply grow without any further investment costs.

Company (Karlsruhe)

0721-6636-0 (central)
0721-6636-100 to 499

Subsidiary (Frankurt)

0721-6636-500 to 599

Home Office (Stuttgart)

0721-6636-610

Mobile Worker

-455

Mobile Worker

-519

8 MBit/s up
8 MBit/s down

2 MBit/s up
2 MBit/s down

256 kbit/s up
8 MBit/s down

Internet (DECIX)

toplink QoS Backbone

Firewall

tpl_pbx (virtual telephone system)
0721-6636-xxx
national numbers

toplink tpl_pbx

With the virtual telephone system, all subsidiaries can be reached under one telephone number.

3.4 Technical prerequisites

Prerequisite for tpl_pbx (virtual telephone system) is at least one IP access to the toplink IP network. For the connection of the tpl_pbx (virtual telephone system) to public telephony (PSTN), a virtual telephone system connection from toplink is required, a SIP trunking product that enables the assignment of extensions via an acount. The required end devices can be obtained from toplink if required. The end devices and their functions are not part of the product tpl_pbx (virtual telephone system). The tpl_pbx (virtual telephone system) can be used with SIP-enabled devices (SIP telephones, software clients, IP adapters, SIP-enabled fax machines or fax adapters). toplink can only provide support for end devices that have been purchased from toplink and are approved for this product. toplink does not provide support for any other end devices used (SIP telephones, SIP-cabable fax machines or fax adapters, adapters and soft clients).

3.5 Voice encoding & bandwidth requirements

The following voice encodings are supported by tpl_pbx (virtual telephone system):
- G.711a, G.711μ (approx. 100 kbit/s per call)
- G.722 (high-definition-audio, approx. 100 kbit/s per call)
- G.726-32 (approx. 32 kbit/s per call)
- T.38 (Fax up to 14,4 kbit/s)

4. Implementation

toplink provides its customers with various implementation variants for the virtual telephone system, provided that the connection is technically and operationally possible for toplink and makes economic sense. Not all connection variants can be implemented at individual locations under certain circumstances.

4.1 VDSL

tpl_vdsl.flat is suitable for locations with more than five extensions. With this product, the customer has a high-quality Internet acces that meets the requirements for the connection of IP telephony. For further information and availability, please refer to the „DSL" product description.

4.2 Leased Line

tpl_line.flat is suitable for large company locations with several extensions. With this product, the customer has a high-quality Internet acces that meets the requirements for the connection of IP telephony. For further information and availability please refer to the product description „tpl_line.flat".

4.3 Internet access via third party providers

tpl_pbx (virtual telephone system) can also be used for individual locations and teleworks via other Internet connections. In this case, the customer acknowledges that toplink cannot make any predictions or provide any guarantees with regard to quality of the connection line or the Internet service and therefore has no claim to un-disturbed operation. The implementation of this Internet access is not part of tpl_pbx (virtual telephone system). Should a malfunction occur with regard to Internet access, the corresponding Internet provider must be notified.

5. Connection to the public telephone network

The connection to the public telephone network (PSTN) takes place via the central toplink VoIP switching platform withthe additional telephone system connection tpl_sip.business to be ordered. The number of simultaneous calls to the public telephone network corresponds to the number of voice channels orderd by tpl_sip.business. The quality of the calls depends on the quality and utilization of the Internet connection and the codec used.

5.1 Geographical assignment of extensions to exchange numbers

The network termination point designates the assignment of a geographical telephone number. A network termination point refers to the customer's network connection. The assignment of the extension to the individual geographical telephone numbers is the responsibility of the customer. Should the customer move, the assignments must be adjusted accordingly by the customer. This is particularly necessary for the correct transmission of emergency calls. No claims can be asserted against toplink as a result of the customer's failure to assign or reassign extensions to their geographical telephone numbers.

6. Released end devices

toplink offers IP telephones and IP adapters for use with the tpl_pbx. Support is provided by toplink for end devices purchased and released by toplink in case of malfunctions. The connection of any SIP-enabled and SIP-standard-compliant end devices is possible, but toplink will not support these devices in case of malfunctions. For further information on the configuration of the released end devices, please refer to the respective configuration guide.

A complete list of devices supported by toplink vPBX can be found in the list of the current order form tpl_hardware.vpbx.

7. Configuration

The configuration performed by toplink is based on a standard configuration. Among other things, the tpl_sip.business account will be set up on the system.

7.1 Installation

toplink provides the customer with access to the configuration interface of the tpl_pbx (virtual telephone system). The customer is responsible for the proper installation of the end devices. The assignment of the extensions to name, assignment of trunk authorizations, speed dial numbers, group assignments and all other customer-specific settings are also carried out by the customer.

7.2 Configuration service

toplink optionally provides the customer with various service options. Any work to be carried out at the location is limited to setting up and connecting the necessary toplink hardware.
Installations are carried out Monday to Friday between 8 a.m. and 6 p.m. Installation work that has been started will be continued after 6 p.m. until it is successfully completed. On weekdays, except public holidays, outside business hours, toplink charges a surcharge of 75%. toplink charges a surcharge of 125% on weekends and holidays. In the event of assignments lasting several days, accommodation costs and expenses incurred will be charged. You will be charged for every quarter of an hour or part thereof.
This pricing does not apply to locations that can only be reached by special means of transport (ferry, train, plane, cable car). Individual agreements are required for such orders. We assume that the service technician has access to the required premises without any waiting times and that all installation work can be carried out without interruption. The length of the power supply cables and the DSL socket must be suitable for the local condition and the number of sockets, network cables and switches must be sufficient.
If additional time or material additional expenses arise as a result of deviations from these specifications for which toplink is not responsible, they will be charged retroactively against verification. The service price includes only one journey per location. Should a location have to be visited several times for reasons, for which toplink is not responsible, these expenses will be charged retroactively.

8. Requirements for operation

The following requirements must be met for the use of tpl_pbx (virtual telephone system):

- Network cabling (Ethernet, IEEE 802.1). Available Internet access for each IP phone.
- Internet connection with at least 256 kbit/s upload bandwidth. 128 kbit/s are also sufficient for individual telephony workstations.
- Sufficient bandwidth for the use of parallel telephone calls.

8.1 NAT/Firewall

Generally, private IP addresses in the customer LAN and firewall-protected Internet access are supported. NAT (Network Address Translation) devices and firewalls must support the following connections from the private network to the Internet or external network

Outgoing connections for the protocols

- DNS (UDP Port 53)
- HTTP (TCP Port 80)
- HTTPS (TCP Port 443)
- SIP via UDP/TCP (UDP/TCP Port 5060)
- SIP via TLS (TCP Port 5061)
- RTP, SRTP and RTCP (UDP Port 10000-65535)

The connections must accept packets that respond to outgoing requests after a timeout of up to 70 seconds (UDP Timeout 70s).

9. Availability

toplink makes every effort to remedy any malfunctions as quickly as possible. In order to be able to ensure the availability of the service, it is maintained by toplink or a third party commissioned by toplink. The service includes the correction of all faults and errors that are the responsibility of toplink or the third party commissioned by toplink. If toplink is called about a fault and it is determined that there is no fault affecting tpl_pbx (virtual telephone system) or that the fault has been caused by the customer, the customer shall reimburse toplink for the costs incurred in accordance with the applicable hourly rate (tpl_service) (see toplink GTC). toplink GmbH can guarantee technical availability according to the Service Level Agreement for SIP services.

toplink reserves the right to temporarily suspend or restrict the services for maintenance, security or capacity reasons. toplink has set up a support hotline for the acceptance of faults on weekdays Monday to Friday 8 a.m. to 6 p.m.; a 24/7 hotline can be called outside business hours Monday to Friday 6 p.m. to 8 a.m., Saturdays, Sundays and public holidays.

10. Transfer of service

The beginning of the service takes place with the transmission of the access data to the e-mail address, fax number or postal address provided with the order.

11. Technical parameters

The tpl_pbx (virtual telephone system) is based on the general standard SIP (Session Initiation Protocol).
The standardization of SIP is carried out by the IETF (Internet Engineering Task Force).

12. Emergency calls

Emergency calls to the police (110) an the fire department (112) are fully supported.

Emergency calls are transferred to the responsible control center of the address of the assigned tpl_sip. business connection. This applies in particular to the use of extensions on the move (nomadic use).

When using the vPBX across locations, the customer must ensure that each location has an appropriate tpl_sip.business connection and that the extensions of the location are assigned to the correct tpl_sip.business connection.

13. Functions

The following functions are available:

Calls	Call holding (querying) Alternating Accepting held calls (with authorization check) Accepting a transfered call Redialing of outgoing, incoming and missed calls Call waiting (can be switched on/off) On-hold music Call list with date, time and telephone number (outgoing, incoming, missed calls) Transfer (internal/external) with and without queries Waiting field function for all accounts and call groups DTMF outgoing Busy on busy Executive/secretary functions (via call groups) Call screening (e.g. anonymous callers must state their name) Callback when busy Callback if not reachable
Mobile phones	Parallel call to mobile phone Call-thru from e.g. mobile phones Notification on the mobile phone when a new mailbox message is Received call back functions (outgoing calls, mailbox) iPhone integration with the BRIA app
CLIP/CLIR, Anonymous calls	Caller ID display for incoming calls (CLIP) Supression or display of own call number (CLIR) Reject/allow/show as busy for incoming anonymous calls/mailbox CLIP-no-screening configuration per extension
Call forwarding/DND	Forwarding all calls (internal/external) Forwarding when busy (internal/external) Forwarding after time activation (freely definable; internal/external) Forwarding with deregistered subscriber (internal/external) DND/Do not disturb
Answering machine/Voicemail	Recording of messages for individual answering machine/mailbox for each account (voicemail) Automatic e-mail notification of new messages Announcement mode can be specified Access can be specified for other users Maximum size of voicebox definable (also possible per voicebox) Seperate voicemail for each account can be configured Remote query Individual greeting Moving of mailbox messages between mailbox accounts Saving of telephone call recordings in the mailbox
Call groups	User groups can be defined Several registrations per extension possible Three-step call group (definition by time) Individual ring tone per call group Night activation for call groups

Agent groups	Individual ring tone per agent group Individual music on hold per agent group Night activation for agent groups Automatic call distribution to free or booked accounts Call center inbound with queue when busy Automatic announcements and interval definition Freely definable pause for employees between calls Special key assignment for agent groups Dialy reports and CDRs per agent group via web interface and optionally via e-mail E-mail confirmation when logging in and logging out Escalation agents Definition of minimum number of agents (logout block)
Auto attendant	Accounts/extensions can be excluded from the Auto attendant Individual announcements can be recorded Cancellation of menu selection as long as phone rings Auto attendant automatically accepts calls when busy, time or DND (if no forwarding is defined)
IVR (Interactive Voice Response)	Flexible handling of incoming calls Individual announcement texts Call guidance based on caller identification (e.g. based on area codes) Call guidance based on the called number Call guidance based on DTMF inputs
Conferences	Any number of conference rooms Conference calls with any number of participants PIN authentication Transfer call to conference Scheduled and spontaneous conferences E-mail invitation to scheduled conferences (appointment in Outlook) Recording and announcement of the name of conference topics User and moderator mode Conference recording and download via web interface
Call schemes	Unlimited number of call schemes per virtual telephone system Individual call scheme for each account possible
Fax	Integration of fax possible (Fax-to-VoIP adapter) T.38 pass-through Fax-to-Mail per account
Security	Encryption of internal calls possible (SIP via TLS + SRTP) Reliability thanks to high-performance data center
Address book	Central and personal address book on the tpl_pbx (virtual telephone system) Import of an address book possible (from CSV format) Address book contains name, phone number and defined speed dial Name depiction of incoming calls based on address book
Location coupling	Cross-location tpl_pbx (virtual telephone system) Integration of external participants (e.g. home offices or field staff) Hot Desking (simple „taking along" of extensions to any vPBX extensions)
Status display	Status display of accounts or extension numbers Status display of lines Display of system version Display of active calls Call history Real-time overview of system messages E-mail (per account) for e.g. missed calls, mailbox messages, status changes

14. Rates

14.1 Billing object

The monthly vPBX usage fees shall be calculated on the basis of the number of vPBX users (extensions) per month using the telephone system. The fees are listed in the price list valid at the time.

14.2 Billing period

The monthly usage fees are due for the entire month in which the corresponding extension was set up. The actual use of an extension is not relevant to the fee.

For all rates, the basic fees are payable monthly in advance. Variable charges incurred (e.g. call minutes or number of extensions/users set up) are due monthly after billing.

14.3 Configuration changes

Configuration changes requested by the customer, in particular changes to the assigned password, must be ordered from toplink in writing, stating the customer number. toplink charges a fee according to the valid price list tpl_service for the implementation of the configuration change.

15. Service Level Agreements

The Service Level Agreements for SIP services of toplink GmbH apply.