

# Managing VoIP Telephones

## Introduction

The user can select predefined VoIP devices to be operated on this telephone number. There is a list of various VoIP telephones, DECT systems and VoIP gateway (for connecting a fax machine). The advantage for the user is that the VoIP devices from this list can be configured directly out of the AdminCenter.

The user can:

- ◇ Define several VoIP devices at its telephone line.
- ◇ Create a configuration and load it to the VoIP device.
- ◇ Check the registration status of the VoIP device.

The user can configure certain features on the telephone's programmable keys:

- ◇ Line keys
- ◇ Team key, extension key, busy display of other subscriber on the vPBX
- ◇ Direct dialing of a telephone number or a \*#-code
- ◇ etc.

The availability of features depends on the type of telephone used!

The user finds information how to proceed when misuse or fraud is done with its telephone line.

## Contents

- 1 Set up VoIP Devices for the Telephone Line
- 2 Transfer the Configuration Data to the VoIP Devices
  - ◆ 2.1 Initial Transfer of the Configuration Data to the VoIP Device
  - ◆ 2.2 Synchronize the Configuration Data to the VoIP Device
- 3 Rebooting the VoIP Device
- 4 Check the VoIP Device Registration Status
- 5 Support for Problems
- 6 Procedure at Loss of Critical Data and Misuse (Fraud)
- 7 Configuration
  - ◆ 7.1 Where to Configure this Feature
  - ◆ 7.2 Creating, Modifying and Deleting a VoIP Device
  - ◆ 7.3 Configure and Connect a VoIP Device
    - ◇ 7.3.1 Manage an "an IP-Telephone"
    - ◇ 7.3.2 Manage an "an Web-Telephone"
    - ◇ 7.3.3 Manage a VoIP Device via Redirection Service
    - ◇ 7.3.4 Manage a VoIP Device Manually via AdminCenter
    - ◇ 7.3.5 Manage DECT Handset
    - ◇ 7.3.6 Configuration of Function Keys
  - ◆ 7.4 Parameter Configuration
    - ◇ 7.4.1 Parameter: Telephone
    - ◇ 7.4.2 Parameter: Password for 'admin' / Administrator Password
    - ◇ 7.4.3 Parameter: User Name
    - ◇ 7.4.4 Parameter: Password for 'user' / User Password
    - ◇ 7.4.5 Parameter: MAC
    - ◇ 7.4.6 Parameter: MAC Provisioning
    - ◇ 7.4.7 Parameter: Base Unit
    - ◇ 7.4.8 Parameter: Type
    - ◇ 7.4.9 Parameter: Value

# Set up VoIP Devices for the Telephone Line

From a list of predefined VoIP devices, one or more can be selected which are to be operated simultaneously at this telephone line. VoIP telephones, DECT systems and a VoIP gateway (for the connection of a fax machine) are available from various manufacturers. The advantage for the user is that the VoIP devices can be configured from this list directly from the AdminCenter.

The selected VoIP devices of a telephone line have a common basic configuration and may have individual configurations, e.g. key assignments. For each of the selected VoIP devices, the telephone exchange creates its own configuration, which is identified by a unique access key.

The configuration contains the following data:

- ◇ Access data to the telephone exchange
- ◇ Data for the registration at the telephone exchange
- ◇ Displayed name of the telephone number
- ◇ Function key assignment
- ◇ etc.

If the VoIP device wants to load its configuration data from the telephone exchange, it must present its access key. The access key is provided by the telephone exchange as a URL link where the access key is contained filename, e.g.:

```
https://<VOIP_SWITCH_IP>:8448/81d381d7ee50e9c415b304e5d7a7616e1911ed2af727228c.cfg
```

The data transfer uses the HTTPS protocol, which encrypts the transmitted data.

## Note

VoIP devices, which are not included in the list, can also be operated at this telephone line. It is then the task of the user to collect all needed configuration data and to configure the VoIP device.

## Transfer the Configuration Data to the VoIP Devices

### Initial Transfer of the Configuration Data to the VoIP Device

Two methods are available to transfer the configuration data to the VoIP device:

Variant 1 "Automatically via the manufacturer's redirection service" :

For various VoIP device types, their manufacturers provide a redirection service. This service informs a requesting VoIP device, where it can load its configuration data.

The VoIP device contacts "its Redirection Service" and supplies it with its own MAC address. Because of the MAC address, the Redirection Service finds the responsible telephone switch and requests the URL link with the access key for this VoIP device. The Redirection Service then transmits the URL link to the VoIP device, whereupon it can load its configuration data from the telephone exchange.

Variant 2 "Manually with instructions from the AdminCenter" :

The user can copy the URL link with the access key from the relevant web page of the AdminCenter and configure it there via the configuration interface of the VoIP device. The next time the VoIP device reboots, it will load its configuration data from the telephone exchange.

The advantage of variant 1 is that the user has nothing to do with the URL link. The VoIP device automatically loads its configuration. The provider, however, has the administrative effort to store the MAC addresses of its VoIP devices on the redirection server of the respective manufacturer.

The advantage of variant 2 is that it does not need a redirection service. However, the user has to cope with the configuration interface of the VoIP device.

**Note**

If the access key for a VoIP device has changed at the telephone exchange, the VoIP devices must be reconfigured in the manner described here. Otherwise it can not load its configuration because the old access key is no longer valid.

## Synchronize the Configuration Data to the VoIP Device

If certain configurations on the telephone exchange are modified or supplemented, these changes must be synchronized to the VoIP device. A synchronization can be successful only if the access key is unchanged.

Changes of the following data must be synchronized:

- ◇ Access data to the telephone exchange (this can only be changed by the vPBX administrator or provider)
- ◇ Data for the registration for the telephone number (this can only be changed by the vPBX administrator or provider)
- ◇ Displayed name of the telephone number
- ◇ Function key assignment

If the access key has changed, e.g. Because of misuse , then the VoIP device configuration must be updated via the manufacturer's Redirection Service or manually from the AdminCenter .

**Proceeding:**

The following steps are to be repeated for **each VoIP device** at this telephone line:

1. Open the "Device" tab
2. Click on the Button [ Synchronize ].
3. Check if the configuration was loaded:
  - Repeatedly click Button [ Refresh ]
  - If the configuration is successful,
    - 'Last Access' displays the date, time, and IP address of the VoIP device.

## Rebooting the VoIP Device

A VoIP device can be restarted from the AdminCenter if necessary.

**Proceeding:**

1. Open the "Device" tab
2. Click the Button [ Restart ... ]

This command is not available for all VoIP device types.

## Check the VoIP Device Registration Status

Without a successful registration, an incoming or outgoing call can not be established with a VoIP device. The user can check if a VoIP device is correctly registered.

**Proceeding:**

Go to the

→ Tab "Phones"

1. Click the Button [ State ... ]

2. In the list of "Registrations", check that:
  - ◆ An "User Agent" is listed that matches the VoIP device
  - ◆ An "IP address" is specified
  - ◆ In "Contact" the telephone number is included

If no registration is possible, see 'Support for Problems'.

## Support for Problems

In case of problems, check the article "Solve problems with VoIP Devices" before contacting the support of the provider.

## Procedure at Loss of Critical Data and Misuse (Fraud)

If the suspicion or the certainty is given that the SIP credentials or the configuration data has been published, it is necessary that the critical data in the telephone exchange and the configuration data on the VoIP devices of the telephone line must be replaced!

### Warning

In such a case, the configuration of **each VoIP device must be replaced** of the telephone line!

### Proceeding:

Contact the vPBX administrator or provider:

1. Inform the vPBX administrator or provider about the loss of critical data!
2. If necessary, block the telephone line for connections to the public telephony network!
3. Request **to configure new SIP credentials** for the account.
4. Wait for confirmation that the new SIP credentials are configured.

The following steps are to be repeated for **of each VoIP device** at this telephone line:

1. Open the "Device" tab.
2. Create the new configuration data:
  - Click the Button [ New Access Key ... ]
  - (The existing configurations of the function keys are preserved)
3. Transfer the new configuration data to the VoIP device:
  - Version 1:
    - Transfer configuration data for a VoIP device via Redirection Service
  - Or Variant 2:
    - Transfer configuration data for a VoIP device manually

Contact the vPBX administrator or provider:

1. If necessary, de-block the telephone line for connections to the public telephony network!

### Best Practice

To limit an economic damage in case of misuse, it is strongly recommended to have a charge limit "TopStop" configured!  
TopStops can be configured at the level of the vPBX, account and telephone number .



# Configuration

## Where to Configure this Feature

As vPBX administrator:

- Tab "PBX"
- Tab "Settings"
- Tab "Phones"

As user:

- Tab "Settings"
- Tab "Phones"

## Creating, Modifying and Deleting a VoIP Device

Create a new VoIP device:

1. At an empty "Telephone" select the desired VoIP device type
2. Click Button [ + Save ].

Edit a new or existing VoIP device:

1. At the desired "telephone", click Button [ Details ... ].
  - A dialog is opening which allows:
    1. Generating and transmitting the configuration data:
      - This allows the VoIP device to register and make incoming and outgoing connections.
      - Proceedings for:
        - The Smartphone App "an IP-Telephone"
          - Note:  
The name of the app can be different on this telephone exchange! Check with your provider or vPBX administrator.
        - The Web browser-based "an Web-Telephone"
        - A VoIP device via Redirection Service
        - A VoIP device manually via AdminCenter
        - A DECT handset
      - 2. Create and transmit the configurations for the key assignments:
        - Configuration of function keys

Deleting a VoIP device:

<b>Note</b>	<p>Only the configuration data on the telephone exchange will be deleted! The configuration on the VoIP device is <b>not</b> deleted!</p> <p>If the VoIP device is to be reused, ensure that you know the access data of the device in order to bring it into the condition as delivered by the manufacturer (factory setting).</p>
-------------	---

# Configure and Connect a VoIP Device

## Manage an "an IP-Telephone"

**Note** It may be that the "an IP-Telephone" is not available on this telephone exchange. Check with your provider or vPBX administrator.

### Proceeding:

1. Click Button [ New ].  
A QR code is displayed.
2. Start the app "an IP-Telephone" on the smartphone and scan the QR code.  
Wait for the app to load the configuration.
3. Check if the configuration was loaded:
  - ◆ Repeatedly click Button [ Refresh ]  
If the configuration data is successfully transferred,
    - 'Last Access' displays the date, time, and IP address of the VoIP device.
4. Check if the "an IP-Telephone" was successfully registered:
  - In the AdminCenter check whether the "an IP-Telephone" successfully registered ].
  - Check on the "an IP-Telephone" display whether it registered successfully.
  - Make outgoing and incoming connections.

## Manage an "an Web-Telephone"

**Note** It may be that the "an Web-Telephone" is not available on this telephone exchange. Check with your provider or vPBX administrator.

To use the "an Web-Telephone" you need:

1. An RTC-enabled web browser, e.g. Goggle Chrome  
Note: Mac Safari is not sufficient currently!
2. In the Web browser, call the WebRTC login, for example URL:  
`https://<VOIP_SWITCH_IP>:8449/webphone.jsp`  
Check with your provider or vPBX administrator how the URL is.
3. Enter the user name and password of the AdminCenter account in the WebRTC login.  
The window will open the "an Web-Telephone" GUI
4. Verify that the "an Web-Telephone" was successfully registered:
  - In the AdminCenter check whether the [#SubscPhoneRegistrationCheck | "an Web-Telephone"].
  - Check on the "an Web-Telephone" display whether it registered successfully.
  - Make outgoing and incoming connections.

## Manage a VoIP Device via Redirection Service

For various VoIP device types, their manufacturers provide a redirection service, which allows the VoIP device to be identified by its MAC address and assigned to the responsible telephone exchange. The telephone exchange will then generate the URL link with the access key based on the MAC address and send it to the VoIP device via the Redirection Service. The VoIP device can then load its configuration from the telephone exchange.

**Note**

It may be that the Redirection Service is not available for this type of VoIP device or MAC address on this telephone exchange. Refer to your provider or vPBX administrator.

#### Proceeding:

1. Ensure that the VoIP device has:
  - ◆ A configuration as delivered by the manufacturer (Factory Settings)!
  - ◆ No power supply connected!
2. Open the "Device" tab.
3. If the following parameters are present, configure them:
  - ◆ The Password for "admin"
  - ◆ The Username and the Password for "user"
4. Set at parameter MAC the MAC address of the VoIP device (the MAC address is usually printed on the nameplate).
5. Set the parameter MAC-Provisioning to "once".
6. Save the configuration on the attendant console, Button [ Save ].
7. Connect the VoIP device:
  - ◆ Connect the power supply
  - ◆ Connect the patch cable to the IP network and ensure that:
    1. The VoIP device can obtain an IP address via DHCP!
    2. The Internet is accessible.
    3. The telephone exchange is reachable via the IP network.
8. Check if the configuration was loaded:
  - ◆ Repeatedly click Button [ Refresh ]
  - If the configuration data is successfully transferred, then
    - The parameter 'MAC Provisioning' displays "done"
    - 'Last Access' displays the date, time, and IP address of the VoIP device.
9. Check if the VoIP device could register successfully:
  - In the AdminCenter check whether the VoIP device successfully registered .
  - Check the display or log of the VoIP device whether it registered successfully. If the device has a display its telephone number and possibly the user name are displayed usually.
  - Make outgoing and incoming connections.

## Manage a VoIP Device Manually via AdminCenter

With this method, VoIP devices can be easily configured with their configuration data. The basic procedure is that the telephone exchange provides the URL link with access keys. The user copies the URL link with the access key from the relevant web page of the AdminCenter and configures it via the configuration interface of the VoIP device. The next time the VoIP device is rebooted, it will load its configuration data from the telephone exchange.

#### Proceeding:

1. Connect the VoIP device:
  - ◆ Connect the power supply
  - ◆ Connect the patch cable to the IP network and ensure that:
    1. The VoIP device can refer to an IP address via DHCP!
    2. The telephone exchange is reachable via the IP network.
2. Open as administrator the VoIP device configuration interface, usually a web GUI.
3. Open the "Device" tab.
4. If the following parameters are present, configure them:
  - ◆ The Password for "Admin"
  - ◆ The Username and the Password for "User"
5. Save the configuration on the telephone exchange, click Button [ Save ].
6. Click Button [ Manual configure ... ]
  - A dialog is displayed with the exact instructions how to proceed:  
**Follow these instructions carefully!**
  - Basically the following is done:
    1. Copy the link with the access key on the AdminCenter web page.
    2. Where and how in the configuration interface of the VoIP device this link must be configured.
    3. Where and how in the configuration interface of the VoIP device the download of the configuration is started.
7. Check if the configuration was loaded:
  - ◆ Repeatedly click Button [ Refresh ]
  - If the configuration data is successfully transferred, then
    - 'Last Access' displays the date, time, and IP address of the VoIP device.

8. Check if the VoIP device could register successfully:
  - In the AdminCenter check whether the VoIP device successfully registered .
  - Check the display or log of the VoIP device whether it registered successfully. If the device has a display its telephone number and possibly the user name are displayed usually.
  - Make outgoing and incoming connections.

## Manage DECT Handset

The desired DECT handset type must only be assigned to a DECT base station. The DECT handset obtains its configuration data from its DECT base station.

### Proceeding:

1. Open the "Device" tab.
2. Select the desired DECT base station.
3. Depending on the DECT type, additional data may have to be configured:  
In this case, consult the vPBX Administrator or the manufacturer's user guide.

## Configuration of Function Keys

Most VoIP phones have configurable keys on their keypad. The AdminCenter supports the configuration of the most important features, e.g.:

- \* Access to the VoiceMail Box
- \* Access to the telephone book of vPBX
- \* Configure a direct dialing of any telephone number or a \*#-code
- \* Configuration of busy line (BLF) within a vPBX
- \* Configuration of team keys within a vPBX
- \* Configuration of an extension telephone number within a vPBX
- \* Configuration of a line selection

Depending on the VoIP telephone type more or less feature configurations for the keys are possible! Non-listed features can be set via the user interface of the VoIP telephone. In this case the user is responsible that there are no overlap with the key configurations via the AdminCenter.

### Note

The user manual of the manufacturer must be used for to learn the exact function of the features.

Various VoIP telephone types have optional expansion modules with additional keys. These extension modules appear as own "tab" in the AdminCenter. The keys are configured identically to those on the telephone itself.

### Proceeding:

1. Open the tab "Keys".
2. Configure the keys with the desired functions:
  - ◆ Select the feature
  - ◆ If necessary, further values may be configured
3. Save the configuration on the telephone exchange:  
Click Button [ Save ].
4. Make sure the VoIP telephone is connected.
5. Transfer the configuration to the VoIP device:  
Click Button [ Synchronize ].

# Parameter Configuration

## Parameter: Telephone

<b>Description:</b>	Defines the VoIP device type for this telephone number.
<b>Configuration:</b>	Selection Menu: Selection of VoIP devices
<b>Default:</b>	None
<b>Version:</b>	AdminCenter V5.7

## Parameter: Password for 'admin' / Administrator Password

<b>Description:</b>	Defines the password for the configuration access of the administrator to the VoIP device. <b>Warning</b> If no password is entered, a random 40-digit password is generated automatically. This automatic password is never disclosed.
<b>Configuration:</b>	Configuration String: ◇ Password ◇ 4 - 9 digit, no characters
<b>Default:</b>	None
<b>Version:</b>	AdminCenter V5.7

## Parameter: User Name

<b>Description:</b>	Defines the user name for the user's configuration access to the VoIP device.
<b>Configuration:</b>	Configuration String: ◇ Any string
<b>Default:</b>	None
<b>Version:</b>	AdminCenter V5.7

## Parameter: Password for 'user' / User Password

<b>Description:</b>	Defines the password for the configuration access of the user to the VoIP device. <b>Warning</b> If no password is entered, a random 40-digit password is generated automatically. This automatic password is never disclosed.
<b>Configuration:</b>	Configuration String: ◇ Password ◇ 4 - 9 digit, no characters
<b>Default:</b>	None
<b>Version:</b>	AdminCenter V5.7

## Parameter: MAC

<b>Description:</b>	Defines the MAC address of the VoIP device. The MAC address can usually be read on the type label of the device.
<b>Configuration:</b>	Configuration String:  ◇ 12 character string, e.g.: 00041345C9BF
<b>Default:</b>	None
<b>Version:</b>	AdminCenter V5.7

## Parameter: MAC Provisioning

<b>Description:</b>	Defines whether the VoIP device is configured via the manufacturer's redirect service.  Settings: <ul style="list-style-type: none"><li>• no : The configuration via the manufacturer's redirect service is switched off</li><li>• once : The configuration is allowed once by the telephone switch. If the configuration has to be repeated, then it has to be set to "once" again.</li><li>• done: This is the indication that the configuration has taken place via the Redirection Service.</li></ul>
<b>Configuration:</b>	Selection Menu:  no once done
<b>Default:</b>	no
<b>Version:</b>	AdminCenter V5.7

## Parameter: Base Unit

<b>Description:</b>	Defines the DECT base station to which the DECT handset must connect.
<b>Configuration:</b>	Selection Menu:  List of all available DECT base stations for this DECT handset type
<b>Default:</b>	None
<b>Version:</b>	AdminCenter V5.7

## Parameter: Type

<b>Description:</b>	Defines the feature configured on the button.
<b>Configuration:</b>	Selection Menu:  List of all available features
<b>Default:</b>	None
<b>Version:</b>	AdminCenter V5.7

## Parameter: Value

<b>Description:</b>	Defines the value that the performance feature should use.  Depending on the VoIP telephone and selected feature, a list is available or any (meaningful) value can be configured.
<b>Configuration:</b>	
<b>Default:</b>	None
<b>Version:</b>	AdminCenter V5.7