Training anSwitch V7

CONNECTING & MANAGING PHONES & SIP DEVICES

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INTRODUCTION & MOTIVATION

This training covers the topics:

- Assigning SIP-Phones to a PBX Extension
- Managing of SIP-Phones via Portal UI
- Connecting and Managing of DECT base-stations of the PBX
- How to check a SIP device registration

After this training, the trainee is enabled:

- To understand how and where to create new SIP devices
- To configure and manage SIP devices
- To check if a SIP device is registered
- To advise users and customers how to connect and manage SIP devices

IT'S NOT
MAGIC
IT'S "KNOW
HOW"

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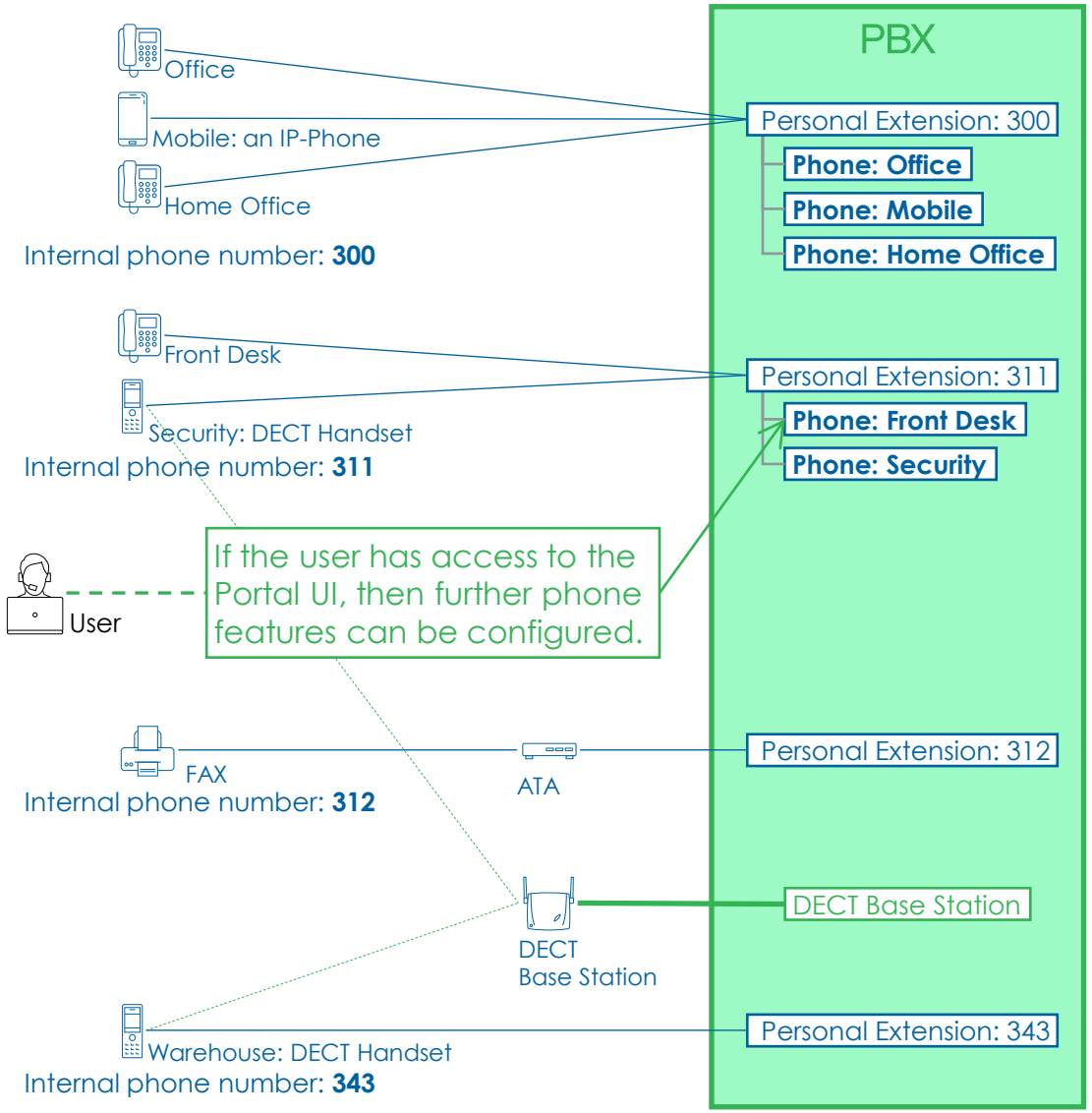
TIME TO EXERCISE

1 OVERVIEW SIP DEVICE MANAGING

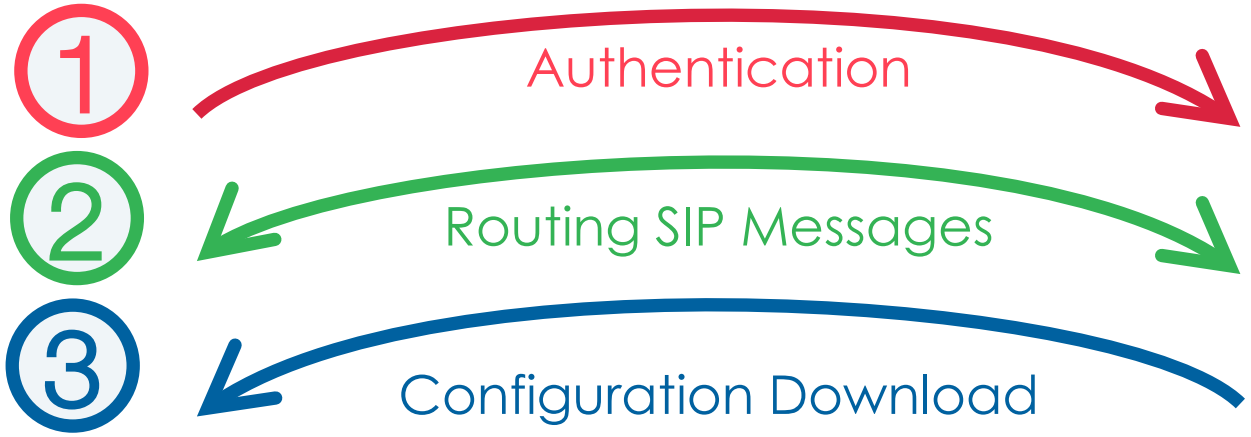
OVERVIEW SIP DEVICE MANAGING

- The anSwitch V7 allows the usage of a wide range of SIP device types:
  - Any type of SIP device can be registered to an extension: phones, ATAs, etc.
  - Any number of SIP devices can be registered to an extension.
- A selection of SIP device types can be configured, deployed and managed out of the Portal UI directly.
- Selected DECT Base stations types can be configured, deployed and managed as a PBX resource.



Note In the coming slides the term "phone" is used instead of SIP device.

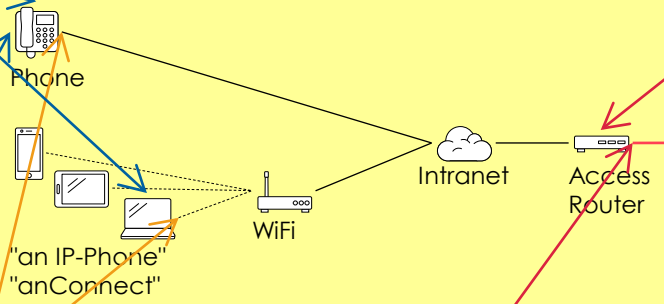
WORKING ENVIRONMENT FOR THE PHONES



The phone registers with the extension of the anSwitch.
This process approves:
- The Authentication
- The SIP message routing

Phone Configurations:
- Number
- SIP credentials
- IP/URL for SIP messages
- IP/URL for config download

Customer



The Access Router has an active NAT.

Internet

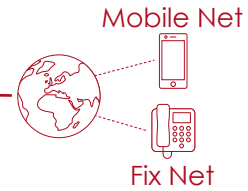
Telephony Provider

anSwitch

anSwitch Configurations:
- IP/URL Registrar & SIP messages
- IP/URL phone config download

PBX

Extension Configurations:
- Number
- SIP credentials
- IP address by Phone registration



IP address type:
- Changing private IP address by DHCP

IP address type:
- Changing public IP address
- Changing private IP address

IP address type:
- Fix public IP address
- Domain name

2 INTRODUCTION HOW TO PROVISION A PHONE

PROVISIONING OPTIONS OF THE CONFIGURATION OF A PHONE

- The anSwitch V7 offers different options for configuring the different types of phones.
- Provisioning options for standard SIP devices
  - Auto-provisioning for selected phone types:
    - The phone requests the download URL from a manufacturer redirection service and downloads its configuration from the Portal.
  - Configure the download URL for selected phone types:
    - The user gets a URL where the phone can download its configuration from the Portal and configures this URL directly on the phone.
  - Fully manual configuration:
    - The user gets the SIP credentials and phone number and configures them directly on the phone.

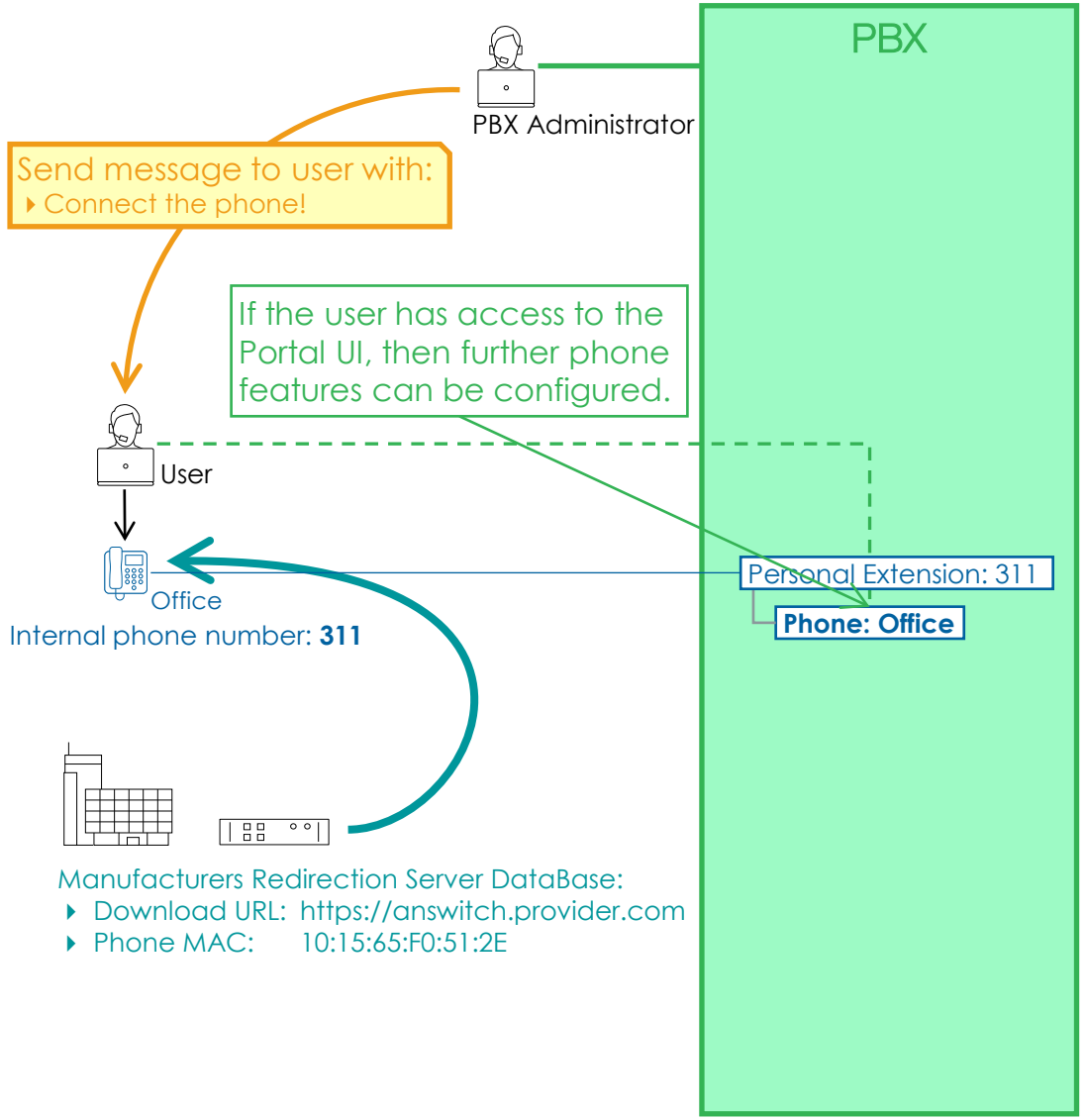
PROVISIONING OPTIONS OF THE CONFIGURATION OF A PHONE

- Provisioning options for Aarenet SIP devices and applications
  - Provisioning of an "an IP-Phone":
    - The user gets a QR-code which can be scanned by the application "an IP-Phone".
  - Provisioning of a "Webphone" web application and "Click-to-Call" Web button:
    - The user receives a Terminal-ID. This must be configured in the user's web client together with the username and password of the user account.
    - The Webphone application and Click-to-Call button must use the Aarenet CTI API.

PROVISIONING OPTION: AUTO-PROVISIONING

- Auto-provisioning of phone types offered by the Portal :

1. The PBX Administrator creates the new phone for the extension and configures the MAC address of the phone.
2. The PBX Administrator informs the user that the phone can be connected.
3. The user makes sure that the phone is in factory-setting mode and connects the phone to the IP network.
   - During the start-up, the phone downloads its configuration from the Portal automatically.



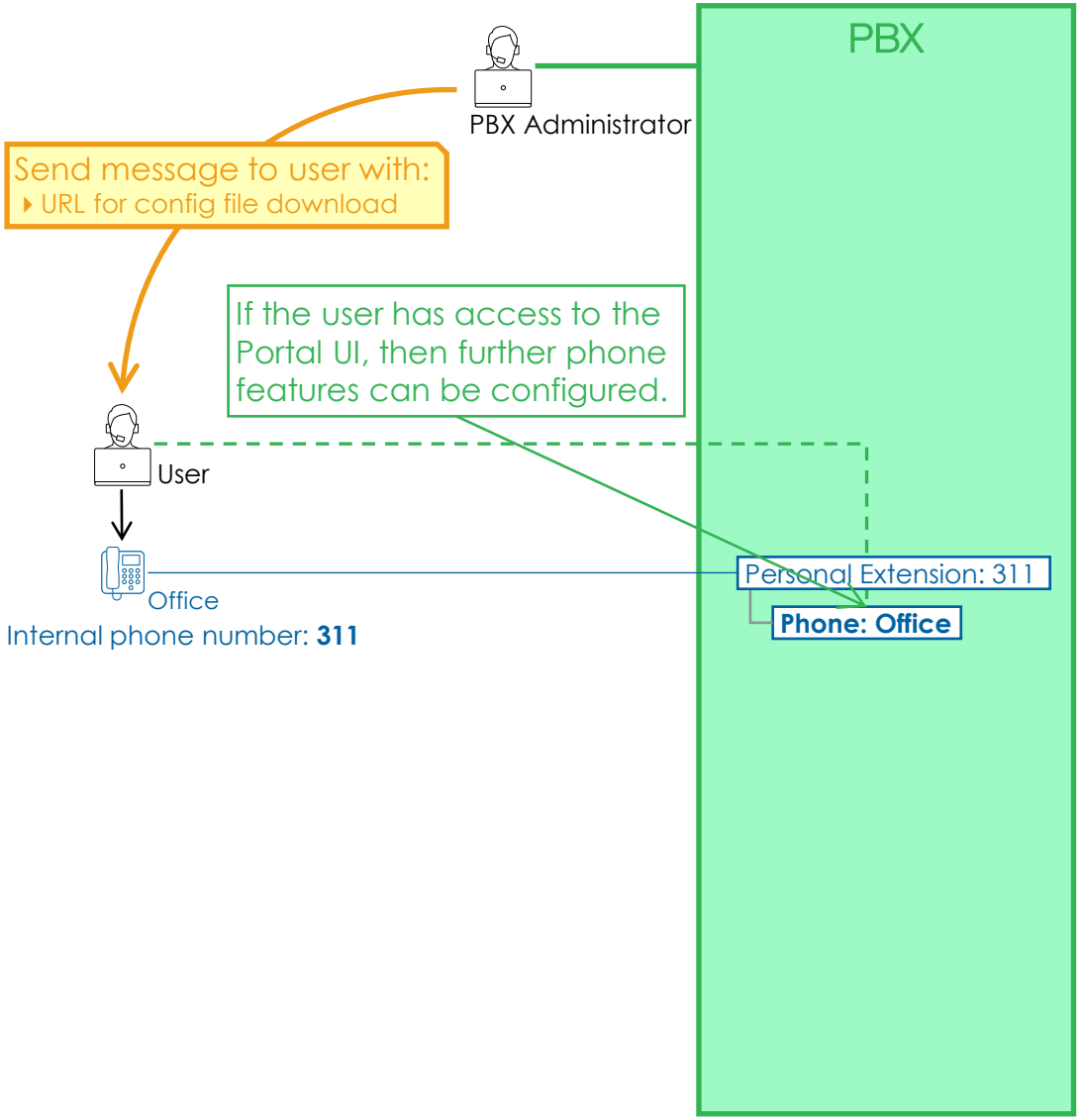
Note The phone must have Internet access to contact the redirection servers.

Note For more information about the redirection service see section:
Managing Manufacturer Redirection Service

PROVISIONING OPTION: CONFIGURE THE DOWNLOAD URL

- Configure the download URL for phone types offered by the Portal:

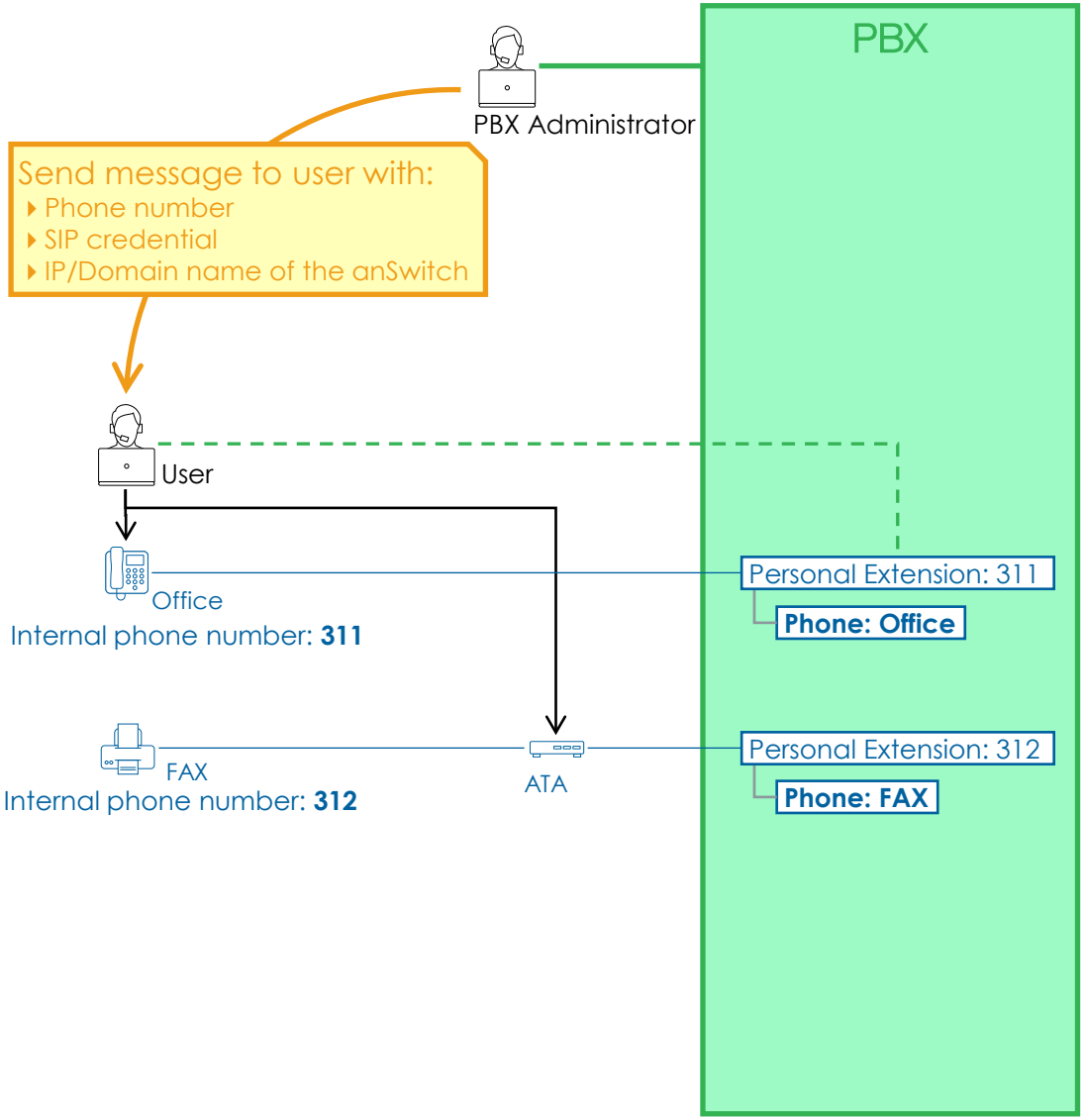
1. The PBX Administrator creates the new phone for the extension.
2. The PBX Administrator sends the URL for the configuration file download to the user.
3. The user configures the URL value on the phone via its configuration interface according the instructions of the manufacturer.
4. The user configures its extension and phone features via the Portal.



PROVISIONING OPTION: MANUAL CONFIGURATION OF SIP CREDENTIAL

- The manual configuration of any type of SIP devices:

1. The PBX Administrator creates a new phone/ device for the extension.
2. The PBX Administrator sends a message with the authentication values to the user.
3. The user configures the SIP credentials and phone number directly on the SIP device via its configuration interface according the instructions of the manufacturer.



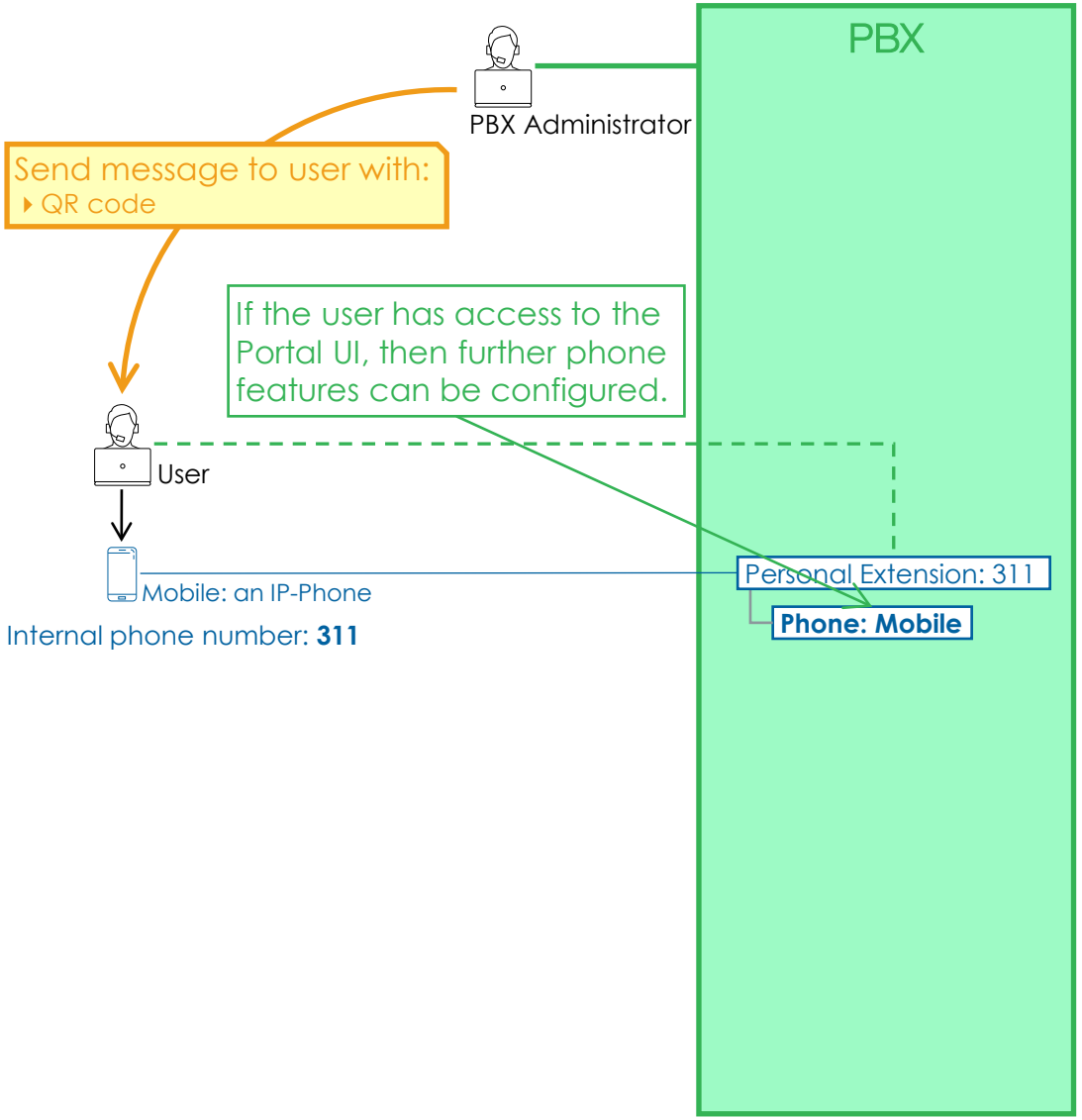
Note

- This works for all types of SIP devices but means handy work and consultation of the manufacturer's device manual.
- It may produce support efforts as there may be configurations error of the user.

PROVISIONING OPTION: "AN IP-PHONE"

- Apply an "an IP-Phone:

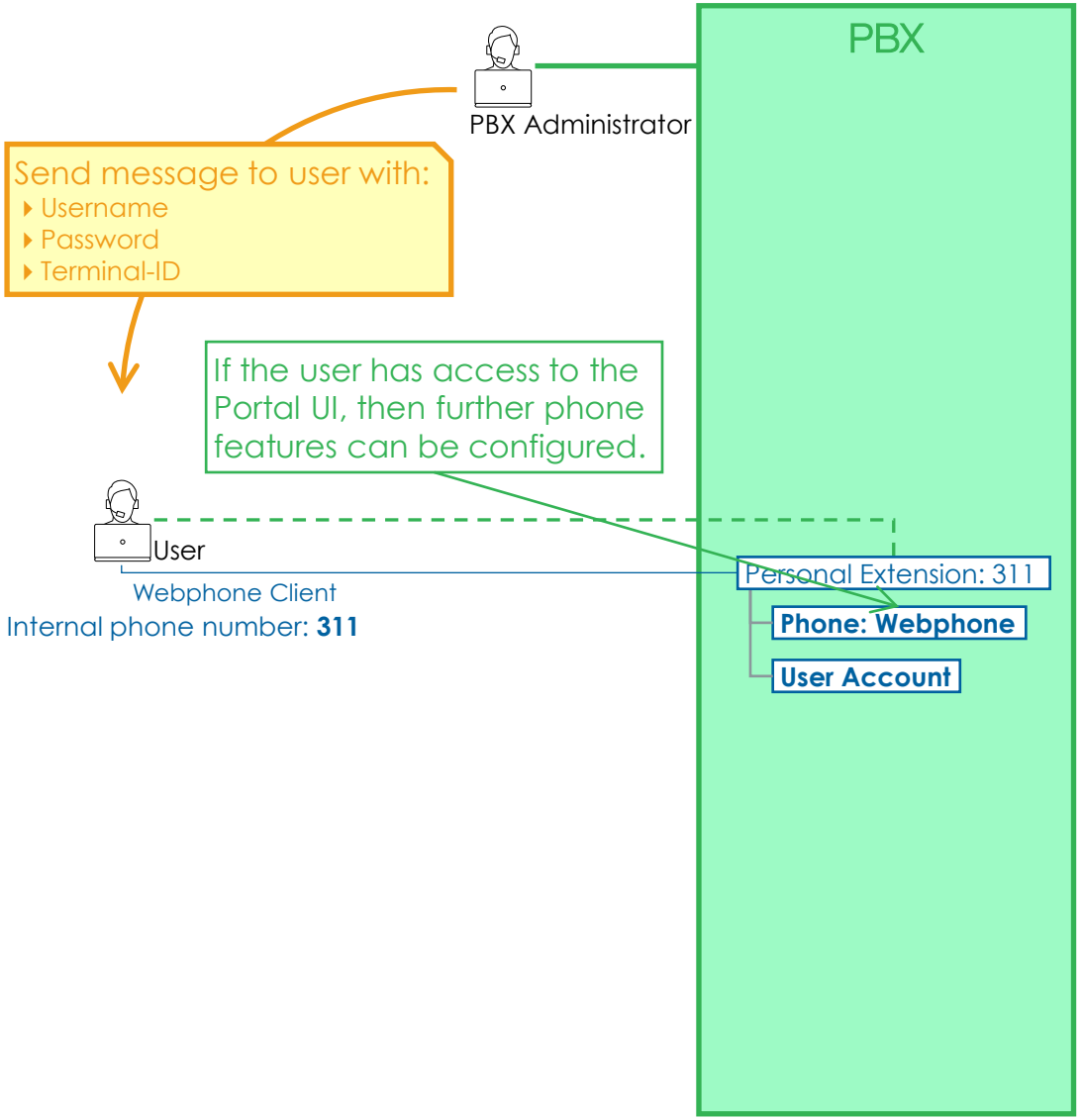
1. The PBX Administrator creates a new "an IP-Phone" for the extension.
2. The PBX Administrator sends the user the generated QR code.
3. The user must do on its mobile/cell phone:
   - Install the application "an IP-Phone"
   - Start the "an IP-Phone" application and scan the QR-code.



PROVISIONING OPTION: "WEBPHONE"

- Apply a "Webphone" or "Click-To-Call" web button:

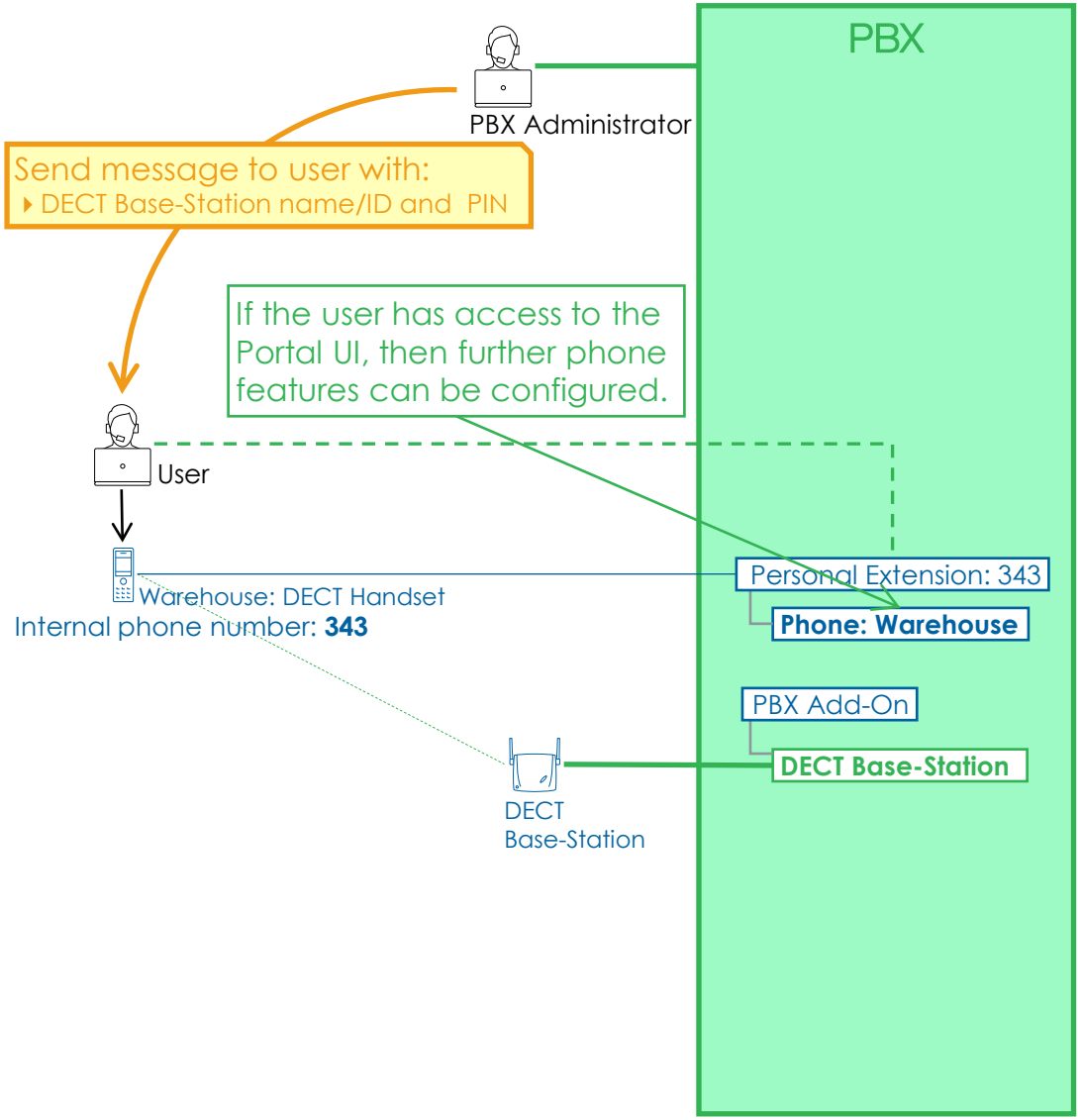
1. The PBX Administrator creates a new "Webphone" for the extension.
2. The PBX Administrator sends the user the presented terminal-id and if not yet known by the user account username and password.
3. The user must configure on its web client:
   - The Terminal-ID
   - The user account's authentication data



PROVISIONING A "DECT BASE-STATION" & ASSIGN "DECT HANDSET"

- Provisioning a "DECT Base-Station" & assign "DECT Handset":

1. The PBX Administrator creates a new "DECT Base-Station" as add-on equipment of the PBX.
2. The PBX Administrator assigns "DECT Handsets" to the extensions.
3. The PBX Administrator sends the user the DECT base-station PIN.
4. The user must do on the DECT handset:
   - Start the DECT handset
   - Couple to the correct DECT base-station and enters the PIN according the instructions of the manufacturer.



SECURITY ASPECTS FOR THE PHONE PROVISIONING

- The anSwitch generates a unique configuration for each phone with a one-time key and unique SIP credentials.
- The used transfer protocol is HTTPS.
  - ➔ The configuration file is transferred encrypted!
- Whenever possible use a configuration file download procedure:
  - ➔ The SIP credentials and the other configuration data remains hidden by the encrypted configuration file and the used transfer protocol!
  - ➔ The download of a configuration file to a phone is granted just 1 time!

Note

Whenever there is a suspicion that a phone has been misused/frauded in any way, then the phone should be re-provisioned immediately. The re-provisioning provides:
- New SIP credentials
- New one-time key

Page Deploy a Re-Provisioning: Problems with Downloads and Fraud describes how to recreate the configuration file for a phone.

3 CREATE A PHONE FOR AN EXTENSION

PREPARE THE PHONE SETTINGS

- Depending on the selected provisioning option and phone type various values are not needed:

Topic	Example	Value	Description
Phone			
Provisioning Option	Auto-Provisioning	……..	Mandatory: Selection of the provision type: ▸ Auto-Provisioning ▸ Configuration of the provisioning file URL ▸ Manual configuration of SIP-Credentials ▸ an IP-Phone ▸ Webphone
Telephone Type	Yealink T40	……..	Select the desired phone type
Name	Boss Office Phone	……..	Choose a good name for uniquely identifying the phone. Note: The phone name is used in different places of the Portal UI for the identification of a phone.
Password for Web access	**********	……..	Select a good password.
MAC Address	10:15:65:F0:51:2E	……..	For auto-provisioning configure the MAC address of the phone.
Time Zone	Europe/Zurich	……..	Select the time zone which must be used for the time display on the phone.

CREATION & CONFIGURATION OF THE PHONE SETTINGS

1. Access the Portal with sufficient rights, usually: PBX Administrator

   > Menu: PBX or Department Administrator
   > Sub-Menu: Extension
   > Click the row of the desired extension
   > Click button: + New Phone

2. With the wizard configure the basic phone parameters and finalize.

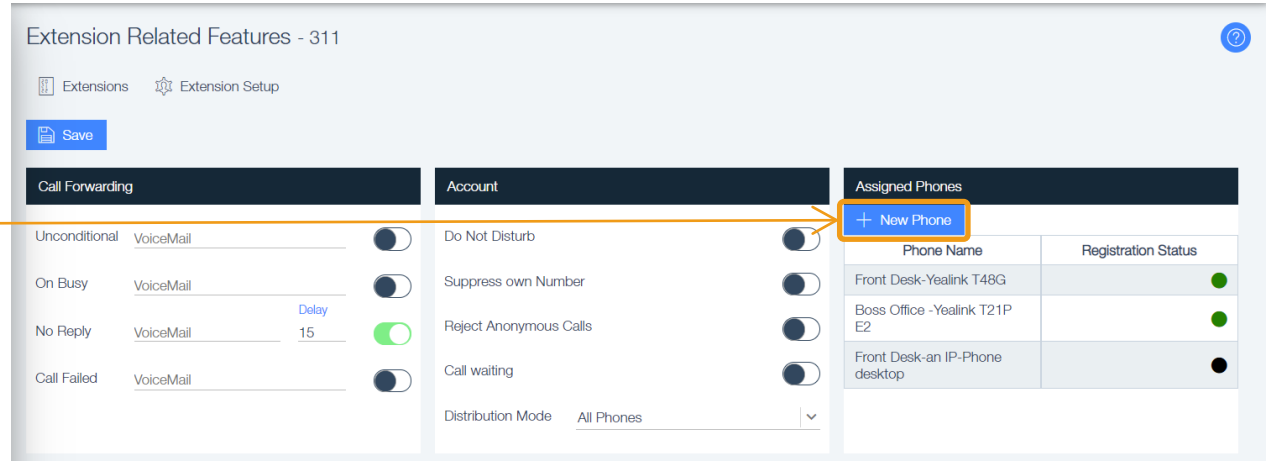
   > Configure the prepared Phone Setup parameters
   > Click button: Save

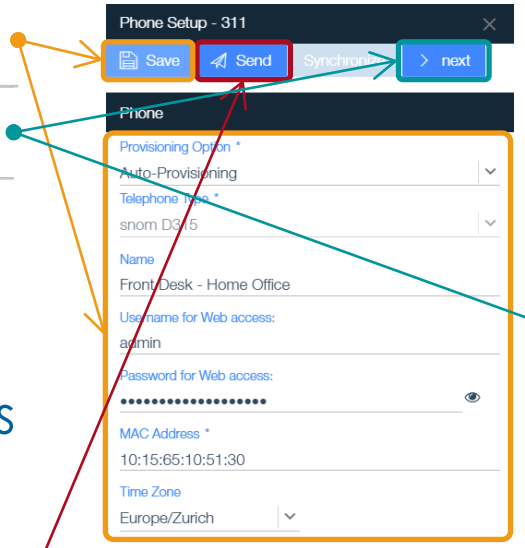
   > For displaying the provision instructions, click button: > Next

3. Follow the installation and provisioning instructions for the phone.

4. Optionally send the provision instructions to the e-mail address of the associated user account.

   > Click button: Send

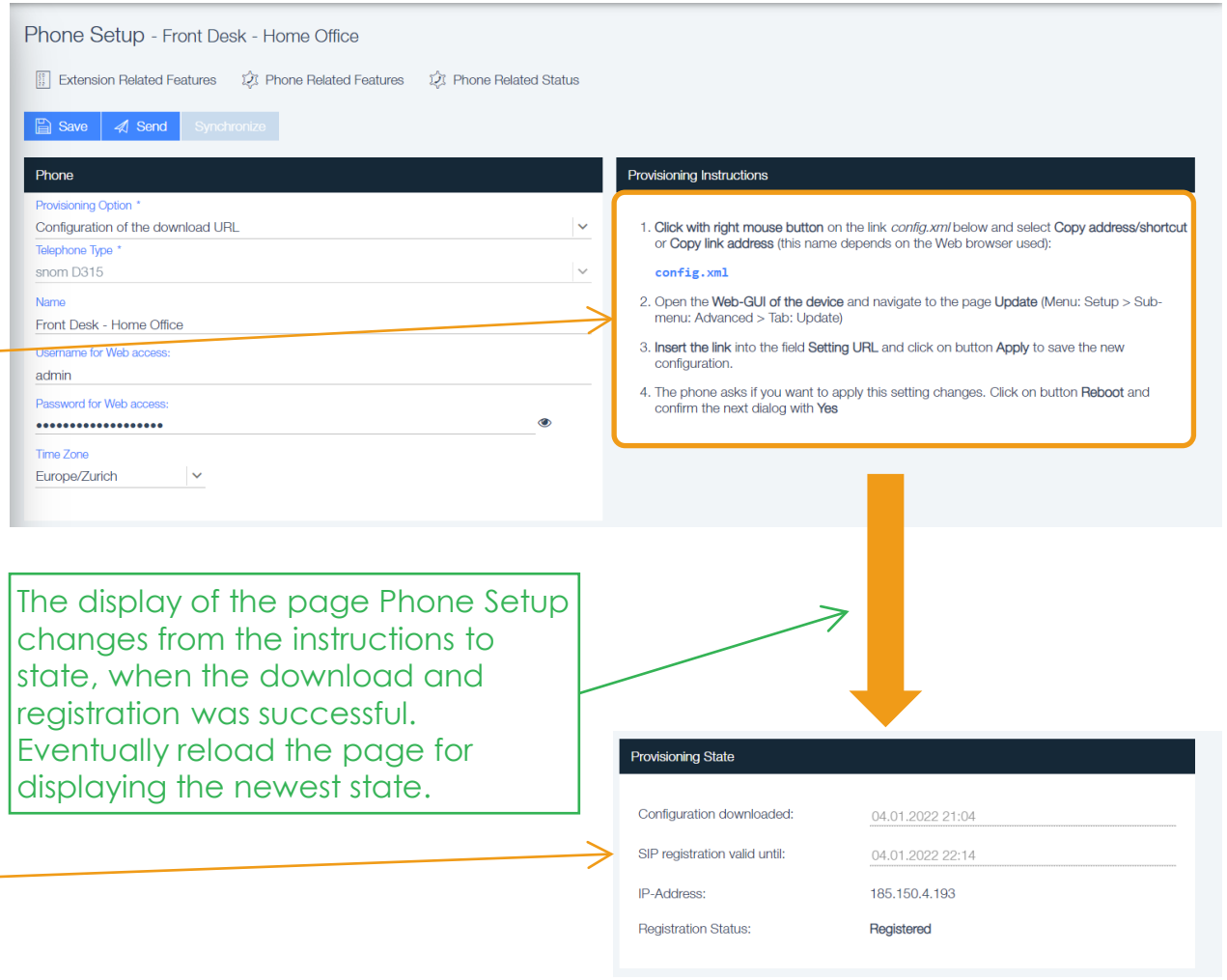




PROVISION THE CONFIGURATION TO THE PHONE

1. Set the phone to factory settings and connect the phone to the IP network.
2. Follow the installation and provisioning instructions for the phone.
   > Menu: PBX Administrator
   > Sub-Menu: Phones
   > Click on the row of the desired phone
3. When a phone has downloaded its configuration then it automatically:
   - registers to its PBX Extension.
   - configures its keys and other features according the phone settings in the Portal UI.

- Display of a successful configuration download and registration is displayed



The display of the page Phone Setup changes from the instructions to state, when the download and registration was successful. Eventually reload the page for displaying the newest state.

Note

If the provisioning is not successful, then:
- Make sure that the phone is powered on, connected to the IP network and has contact to the PBX network.
- Perform a factory re-start of the phone in order to reset to a defined state.

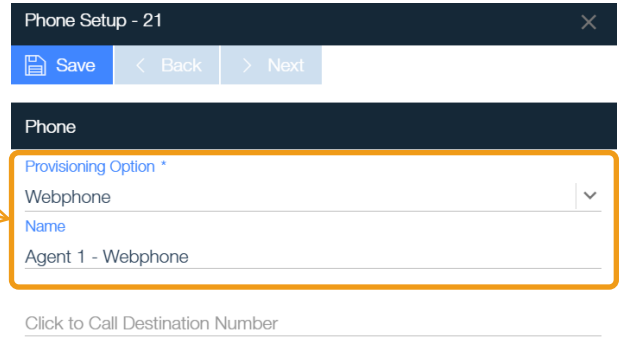
ASSIGN A "WEBPHONE" TO A PBX EXTENSION

1. Assign the Web phone client as "Webphone" to the PBX Extension

> Click menu: PBX
> Click sub-menu: Extensions
> Select the desired PBX extension

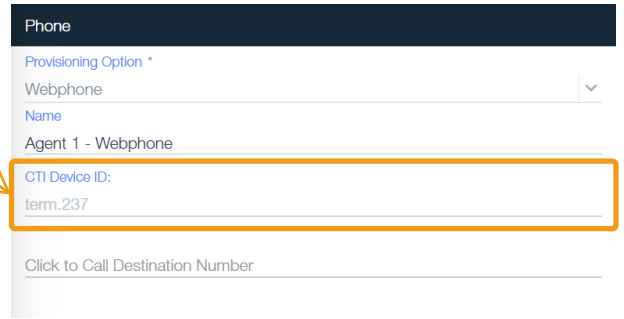
> Tile 'Assigned Phones' click button: + New Phone
> Configure:
- Select Provisioning Option: Webphone
- The name for the terminal

> Click button: Save



2. Check the assigned unique CTI device ID:

> Find the page of the newly created Webphone: Phone Setup
> Check the parameter: CTI Device ID



3. For the configuration of the web phone client the following information are needed:

- The username and password of the user assigned to the PBX Extension.
- The CTI Device ID

4 CREATE A DECT SYSTEM FOR A PBX

OVERVIEW OF A DECT SYSTEM HANDLING

- A DECT base-station is created and managed as add-on of a PBX by the PBX Administrator.
  - It is possible to assign several DECT base-stations to a PBX.
  - The provisioning options and process are like the SIP phone ones.
  - The provisioning of the base station is accomplished by the DECT wizard of the Portal UI.
- The DECT handsets are added to a DECT base-station and assigned to a PBX Extension.
  - The assigning of the handsets is accomplished by the DECT wizard of the Portal UI.
- After assigning the DECT handsets to a PBX Extension the user can manage its handset as any other phone in its extension.

PREPARE THE DECT BASE-STATION SETTINGS

- The provisioning of a SIP DECT base-station follows the same rules as for a SIP phone:

Topic	Example	Value	Description
Phone			
Provisioning Option	Auto-Provisioning	……..	Mandatory: Selection of the provision type: ▸ Auto-Provisioning ▸ Configuration of the provisioning file URL
Device Type	Yealink W60B	……..	Select the desired device type
Name	Warehouse – Yealink W60B	……..	Choose a good name for uniquely identifying the phone device. Note: The device name is used in different places of the Portal UI for the identification of a device.
Password for Web access	**********	……..	Select a good password.
Base-Station PIN	*******	……..	Define an access PIN for the DECT base-station.
MAC Address	10:15:65:F0:51:36	……..	For auto-provisioning configure the MAC address of the device.

Note Only the offered DECT base-station types at parameters "Device Type" can be used in this PBX.

DECT SYSTEM WIZARD: CONFIGURE THE DECT BASE-STATION

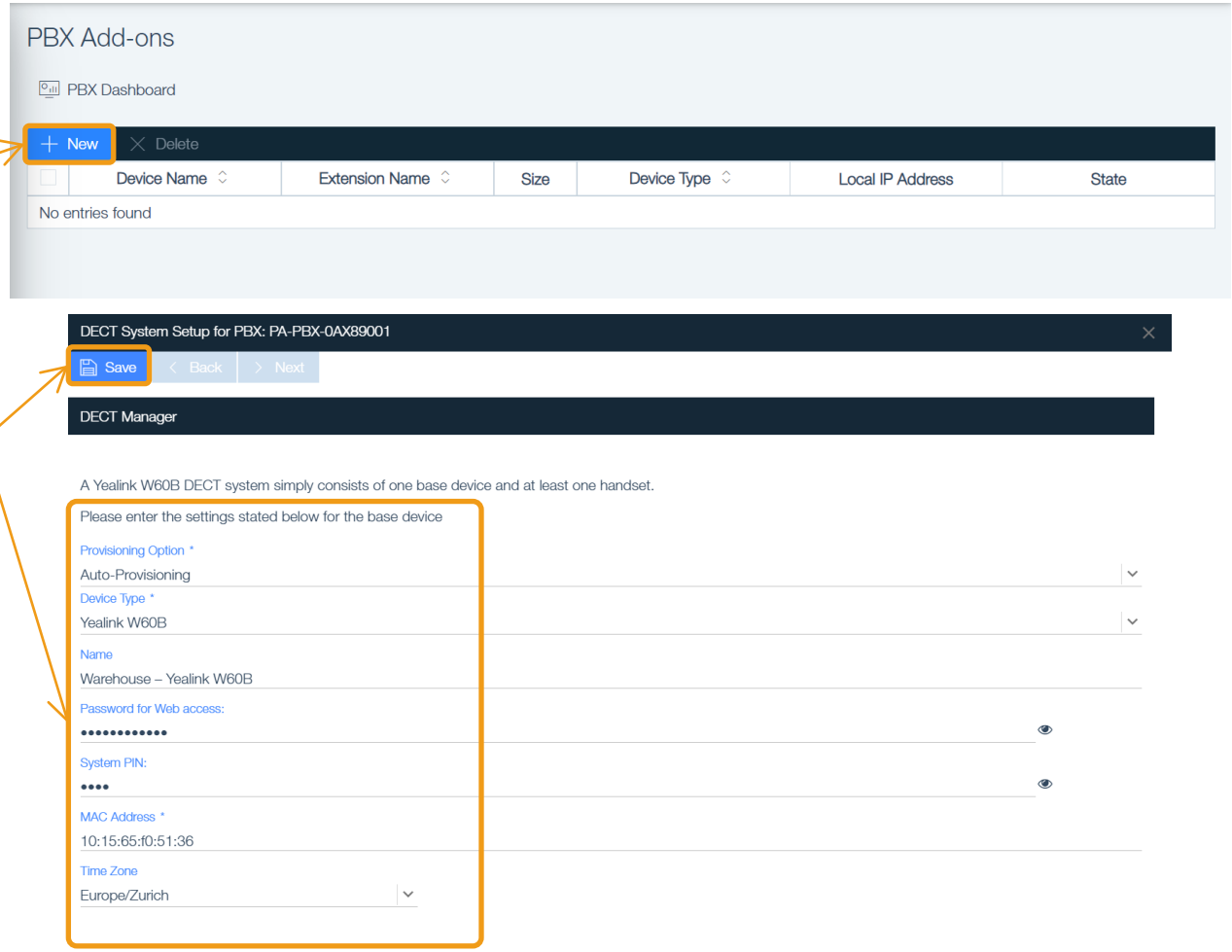
1. Access the Portal with sufficient rights, usually: PBX Administrator

   > Menu: PBX
   > Sub-Menu: +Add-ons
   > Click button: + New

2. With the wizard configure the basic base-station parameters.

   > Configure the prepared DECT System Setup parameters
   > Click button: Save

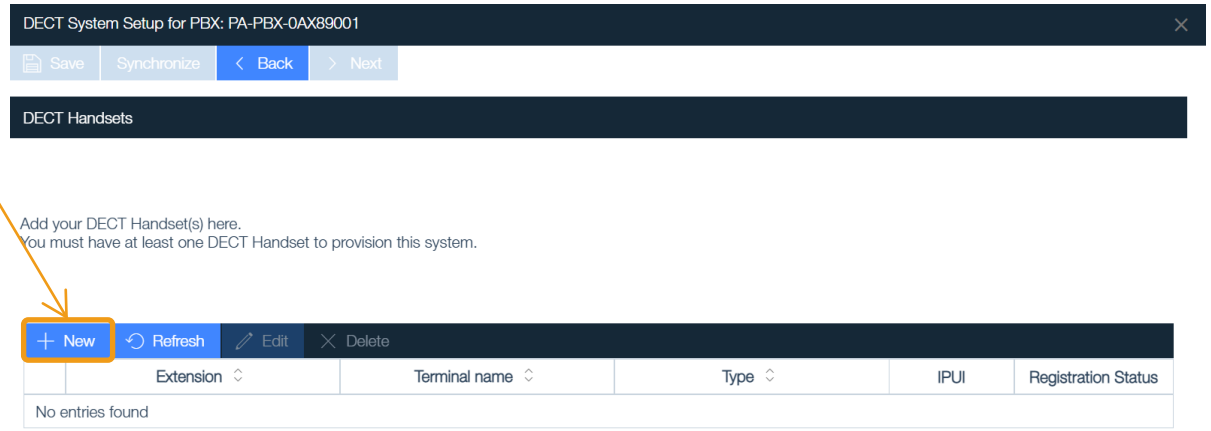
   > For adding a DECT handset to this base-station, click button: > Next



DECT SYSTEM WIZARD: ASSIGN THE DECT HANDSETS

3. Assign DECT handsets to this base-station

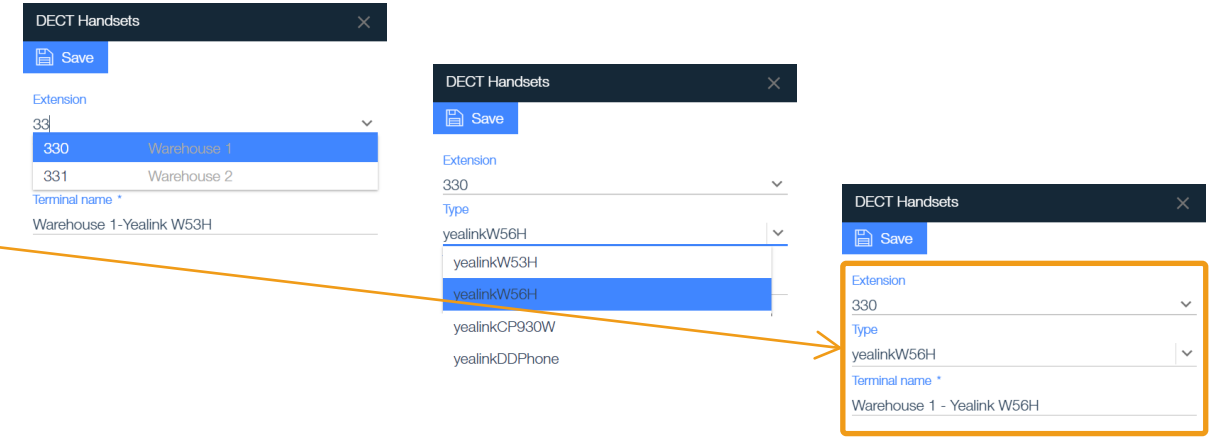
> Click button: + New



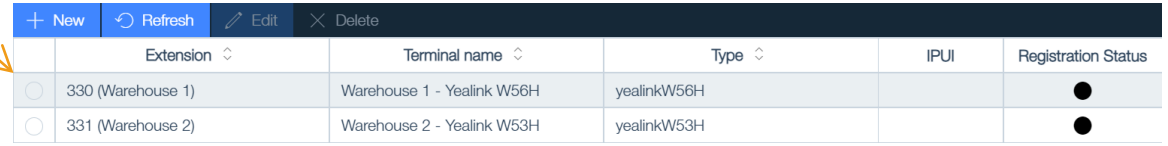
4. In the wizard dialog "DECT Handset" configure the parameters

> Configure:
- Extension: Select the number of the desired PBX Extension
- Type: Select the desired DECT handset type
- Terminal name: Insert a good name

> Click button: Save



- Repeat step 4. for all DECT handset that must be associated with this DECT base-station.

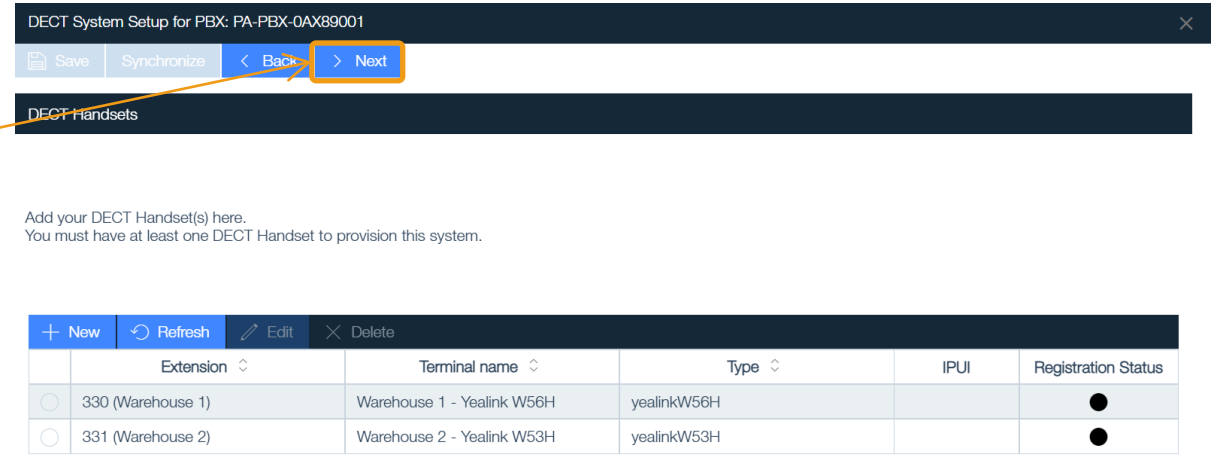


DECT SYSTEM WIZARD: PROVISION THE DECT BASE-STATION

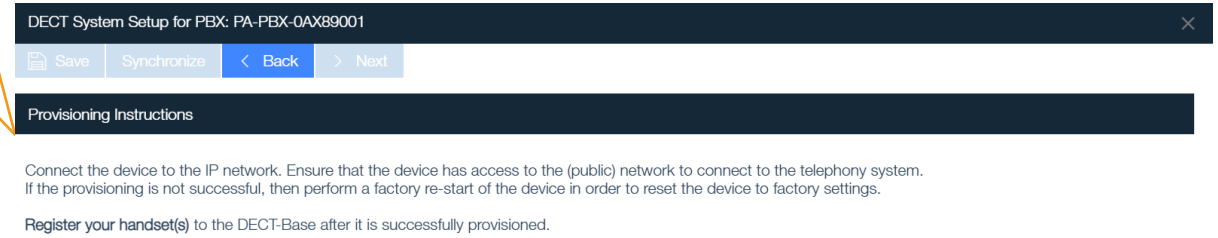
5. Finalize and provision the DECT base-station configuration

> Click button: + Next

> For displaying the provision instructions, click button: > Next

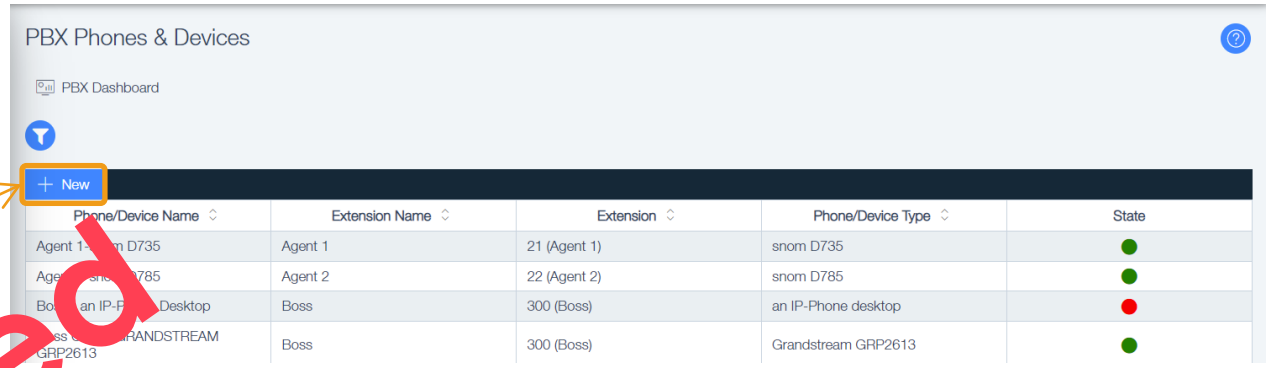


6. Follow the installation and provisioning instructions for the DECT base-station.

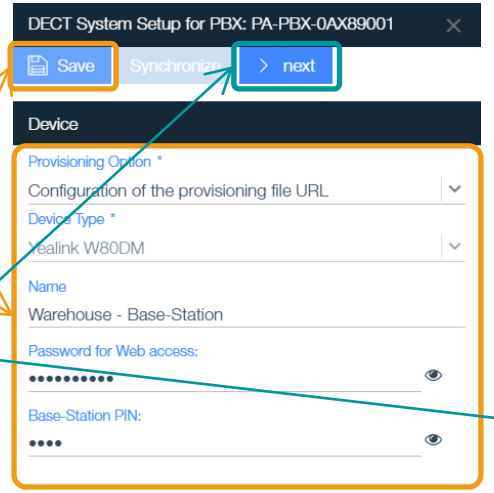


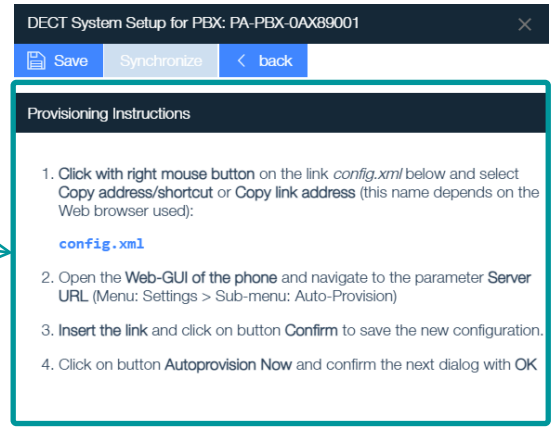
DEPRECATED: CREATION & CONFIGURATION OF THE DECT BASE-STATION SETTINGS

1. Access the Portal with sufficient rights, usually: PBX Administrator
   - > Menu: PBX
     - > Sub-Menu: Phones
       - > Click button: + New Phone



2. With the wizard configure the basic phone parameters and finalize.
   - > Configure the prepared DECT Base-Station Setup parameters
     - > Click button: Save
       - > For displaying the provision instructions, click button: > next





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3. Follow the installation and provisioning instructions for the DECT base-station.

5 CONFIGURE PHONE KEYS AND RINGTONES

OVERVIEW PHONE KEY AND RINGTONES

- After a phone is created, the phone's freely configurable keys can be configured with selected features and the ringtones for internal or external calls can be configured too.

Note	The configurations for phone keys and ringtones via this web page are only possible for those phones which were created via the web page "Extension Related Features". For other phone types, their own user interfaces must be used for such configurations.

- For most phone types, the following functions are available for configuration on the keys:
  - "Speed Dial"
  - "Team Key"
  - "Parking Space"
  - "Line"

Note	▸ The available features and functionality depend on the manufacturer's phone implementation. ▸ Check the exact feature functionality of the phone in the manual of the manufacturer.

CONFIGURE PHONE KEYS

1. Access the Portal with sufficient rights, usually: PBX Member

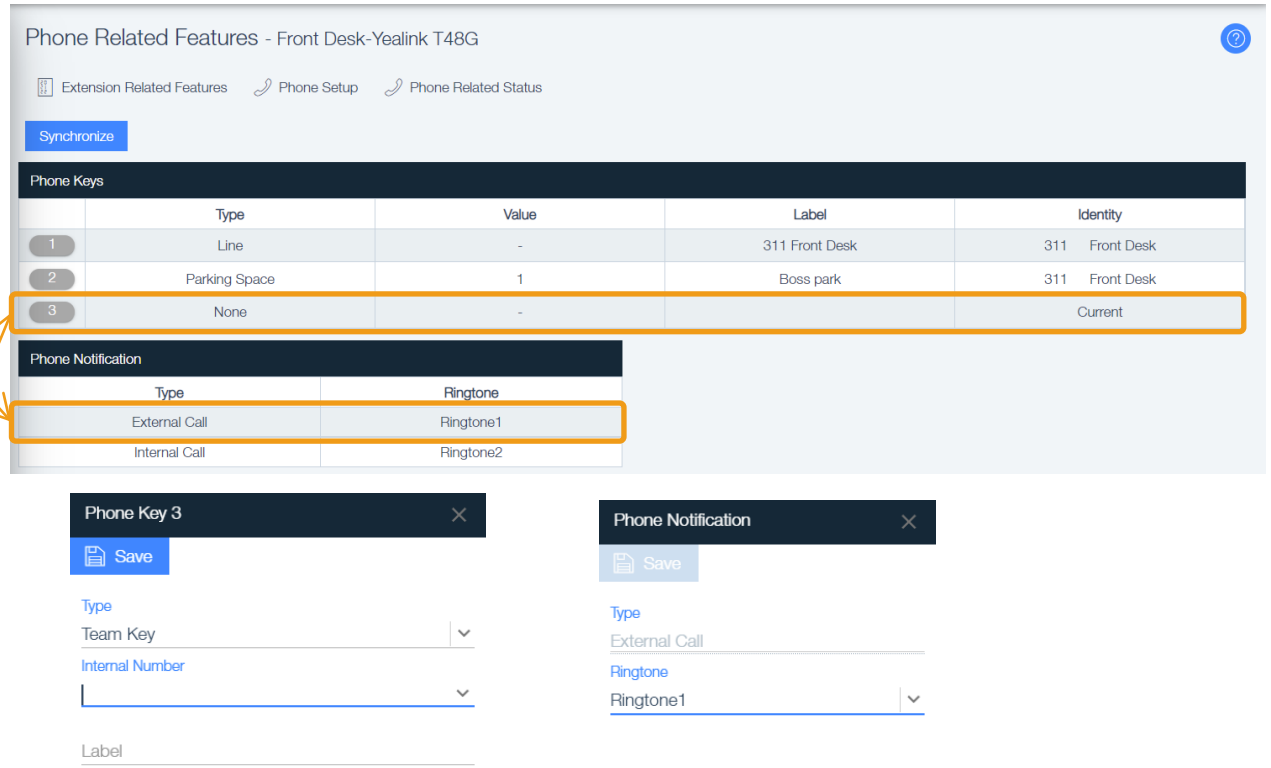
> Menu: PBX Member
> > Sub-Menu: Features
> > > Click on the row of the desired phone

Variant for the PBX Administrator

> Menu: PBX Administrator
> > Sub-Menu: Phones
> > > Click on the row of the desired phone

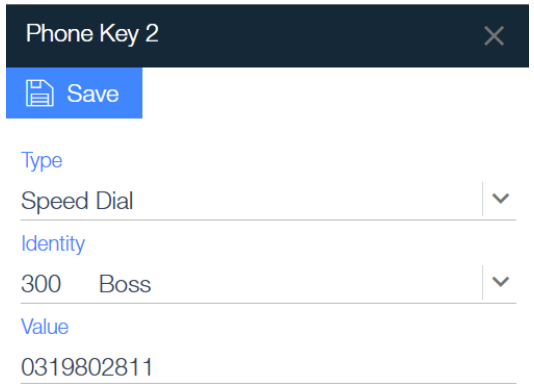
2. Configure the phone keys as described on the next pages:

> Click on the row of the desired key or ringtone



CONFIGURE PHONE KEY FEATURE: SPEED DIAL

- With feature "Speed Dial" the configured number will be immediately dialed.
  - Any dialable phone number or #*-code can be configured
    Examples:
    - 315 : PBX internal number
    - 0319802811 : National number
    - 0041319802811 : International number
    - *14 : Tell my number
    - *86 : Connect to the VoiceMail Box of this PBX Extension
    - *86315 : Connect to the VoiceMail Box of the PBX Extension 315
  - At the destination, the configured identity is displayed.
- Phone key "Speed Dial" configuration:



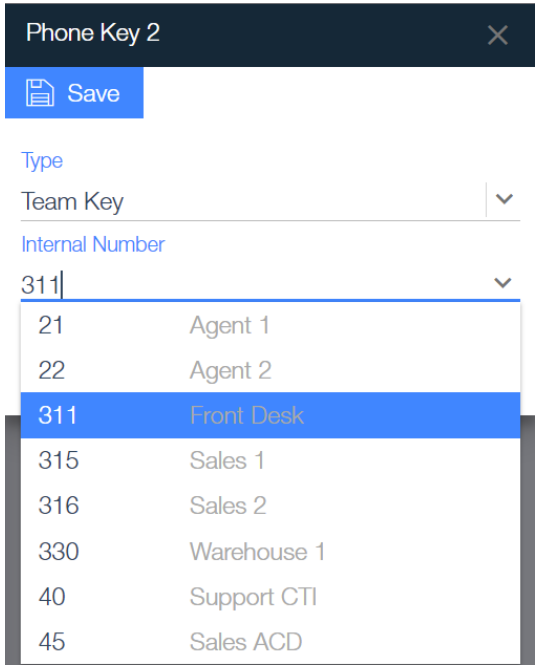
CONFIGURE PHONE KEY FEATURE: TEAM KEY

- With feature "Team Key" you can do with the configured internal number:
  - Place a call to the internal number by pressing the key.
  - Pickup an incoming call to the internal number by pressing the key.
  - The state of the internal number is often monitored and indicated with a LED light:
    - Idle state – LED is off
    - Ringing State – LED is blinking
    - Connected State – LED is on

Note

This is a very popular and handy feature for PBX internal communication.
Therefore, there exists a lot of different names for this feature, like: Busy Lamp Field BLF, extensions, call pick up …
Check the manufacturers manual for the name used on the phone type.

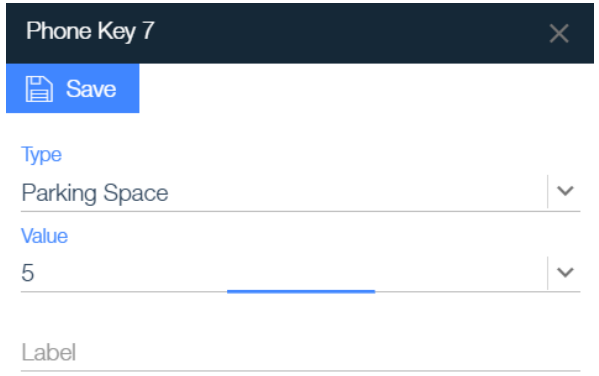
- Phone key "Team Key" configuration:



CONFIGURE PHONE KEY FEATURE: PARKING SPACE

- With feature "Parking Space" you can place the call on 10 PBX parking spaces.
  - Park the call:
    - By pressing the parking key
      - When a call is parked then it is indicated on the key.
  - Pickup a parked call from any phone of the PBX:
    - If the phone has configured the "Park Space" on a key: Press this key
  - Use the parking spaces without configured parking keys.
    - Use *-code *77SpaceNumber
    - For example, using park space number 2:
      Park a call, dial: *772
      Pickup a call, dial: *772

- Phone key "Park Space" configuration:
  - Select the desired parking space number



Note

To park a call is not the same as put a call on hold:
- Call on Hold:
  You can retrieve the call only on the same phone on which it was put on hold.
- Call Parked:
  You can retrieve the call on any phone of the PBX.

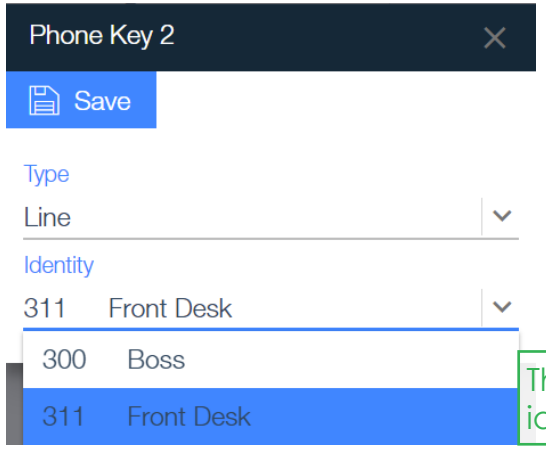
CONFIGURE PHONE KEY FEATURE: LINE

- With feature "Line" you can place an outgoing call with a different identity:
  - Place an outgoing call with a different identity by pressing the line key and dial the destination number.
  - Pickup an incoming call to the line by pressing the line key.
  - The state of the line is often monitored and indicated with a LED light:
    - Idle state – LED is off
    - Ringing State – LED is blinking
    - Connected State – LED is on

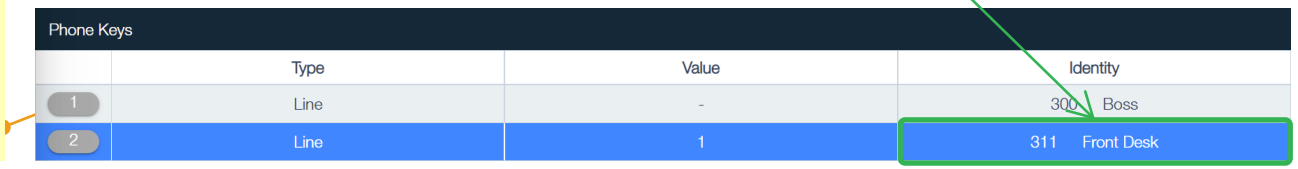
Note

The purposes of a "Line" is different than that of a "Team Key" even when they seem to be similar:
- A "Team Key" is used for fast PBX internal communication.
- A "Line" is primarily used for changing the own identity for an outgoing call.

- Use case of a line:
  - The boss wished to do outgoing calls without displaying the own direct call number 0987654300 at the called side.
  - The boss wishes to do these outgoing calls with the identity of the Front Desk 0987654311. So that call backs go first to the Front Desk.
  - Phone key configuration:



This phone key has the identity of 311 Front Desk



MAKE AVAILABLE THE 'LINE' IDENTITY TO ANOTHER PBX PHONE

- In order that a 'Line' key can be configured on a phone (e.g. 300 Boss), the PBX Extension (e.g. 311 Front Desk) whose identity is needed must give the grant to the other phone (e.g. 300 Boss) to use its identity.

1. Access the Portal with sufficient rights, usually: PBX Member

   > Menu: PBX Member → Activate the Expert-Mode
   > > Sub-Menu: Features
   > > > Click button: Add Phone

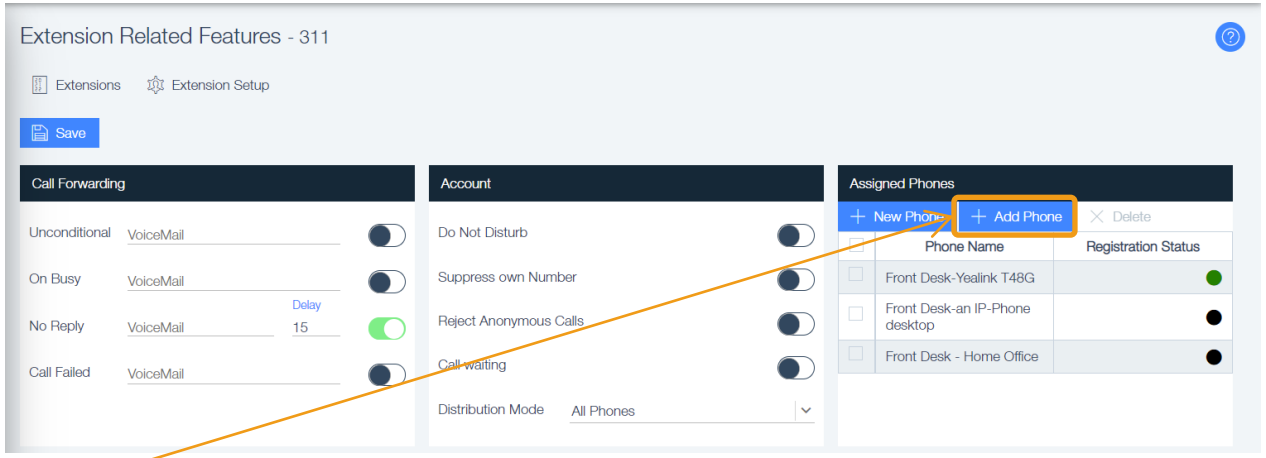
   Variant for the PBX Administrator

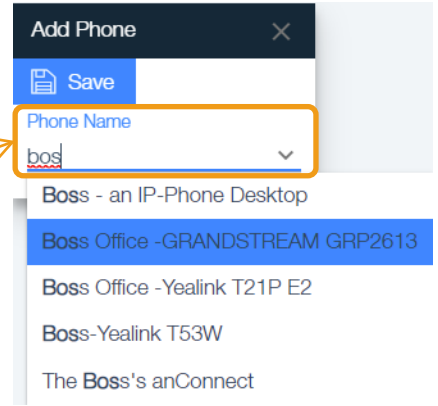
   > Menu: PBX Administrator → Activate the Expert-Mode
   > > Sub-Menu: Extension
   > > > Click on the row of the extension (e.g. Front Desk)
   > > > > Click button: Add Phone

2. Add the PBX phone (e.g. Boss Office -Grandstream) that needs the identity of this PBX Extension

   > Select the phone that must have granted the identity
   > > Click button: Save

3. Configure the "Line" on the other phone (e.g. 311 Front Desk)



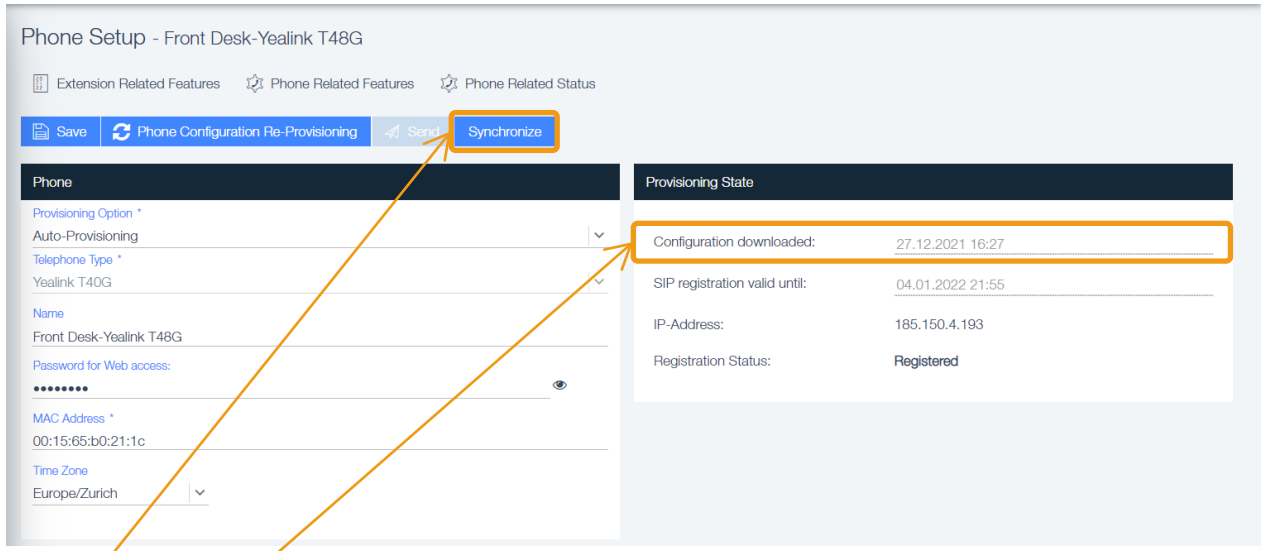


6 MANAGE AND SYNCHRONIZE THE CONFIGURATION TO THE PHONE

OVERVIEW PHONE MANAGEMENT AND SYNCHRONIZATION

- Any configuration of the phone basic settings or key features are first saved in the database.
- If the phone is connected to the IP network and has registered, the changes are automatically synchronized to the phone.
  - If it happens that a phone does not synchronize automatically, then you must start the synchronization manually

    On different pages it is possible to:
    > Click button: Synchronize
  - The successful synchronization can be checked by comparing the date/time of the last download.



Note

The devices of the different manufacturers react differently to a synchronization. Some accept the changes immediately, while others restart several times.

7 RE-PROVISIONING THE CONFIGURATION TO THE PHONE

OVERVIEW RE-PROVISIONING THE PHONE

- The re-provisioning of a phone becomes necessary when:
  - The phone is defect and must be replaced.
  - The phone must be replaced by another phone type.
  - The device was able to download its configuration successfully. But could not complete the configuration for some reason. If the device was able to register, but the configuration data in the device may be incomplete or incorrect.
  - The phone was already registered but no longer behaves properly.
  - The configuration data of the device has been frauded.

OVERVIEW RE-PROVISIONING THE PHONE

- With a re-provisioning you can avoid that the phone at the extension must be deleted and completely set up again.

- Re-provisioning of a device replaces in its configuration:
  - The SIP Credentials
    → This ensures that only this phone can register.

  - The one-time key of the configuration file
    → This ensures that the previous configuration file can no longer be downloaded.

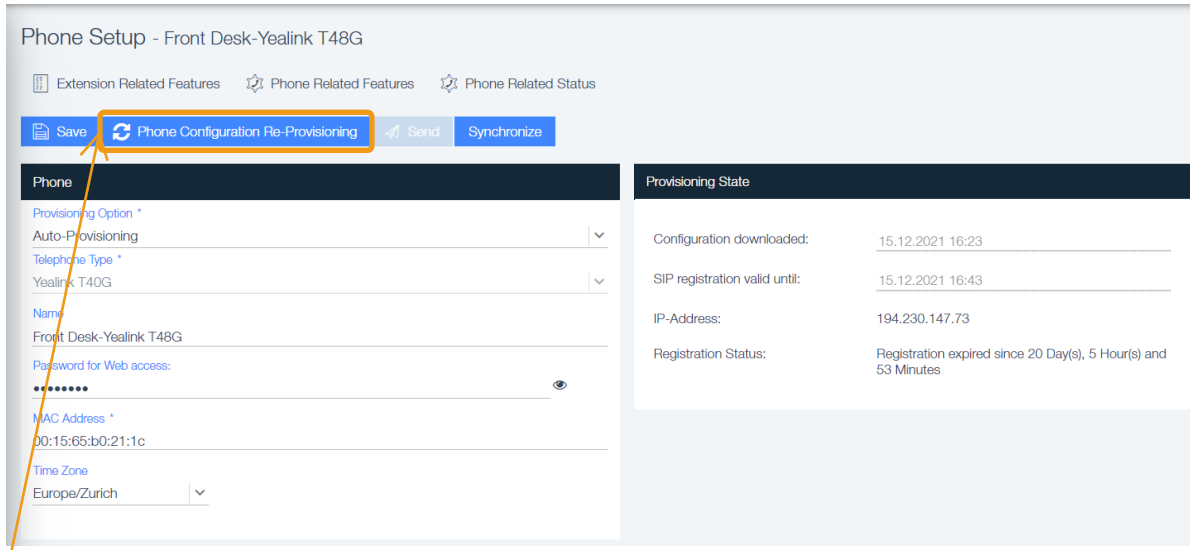
Note	The device must have already been registered once for re-provisioning to be possible.

RE-PROVISIONING THE CONFIGURATION TO THE PHONE

Re-provisioning procedure:

1. Reset the device to factory settings.
2. If it is new phone check and adjust the Phone basic configuration e.g.:
   - New telephone type
   - New MAC address
3. Execute the re-provisioning

> Menu: PBX Administrator
> > Sub-Menu: Phones
> > > Click the row of the phone that must be re-provisioned
> > > > Click link: Phone Setup
> > > > Click button: Phone Configuration Re-Provisioning



Note

Make sure when it is a new device that it get the same IP address as the old device.

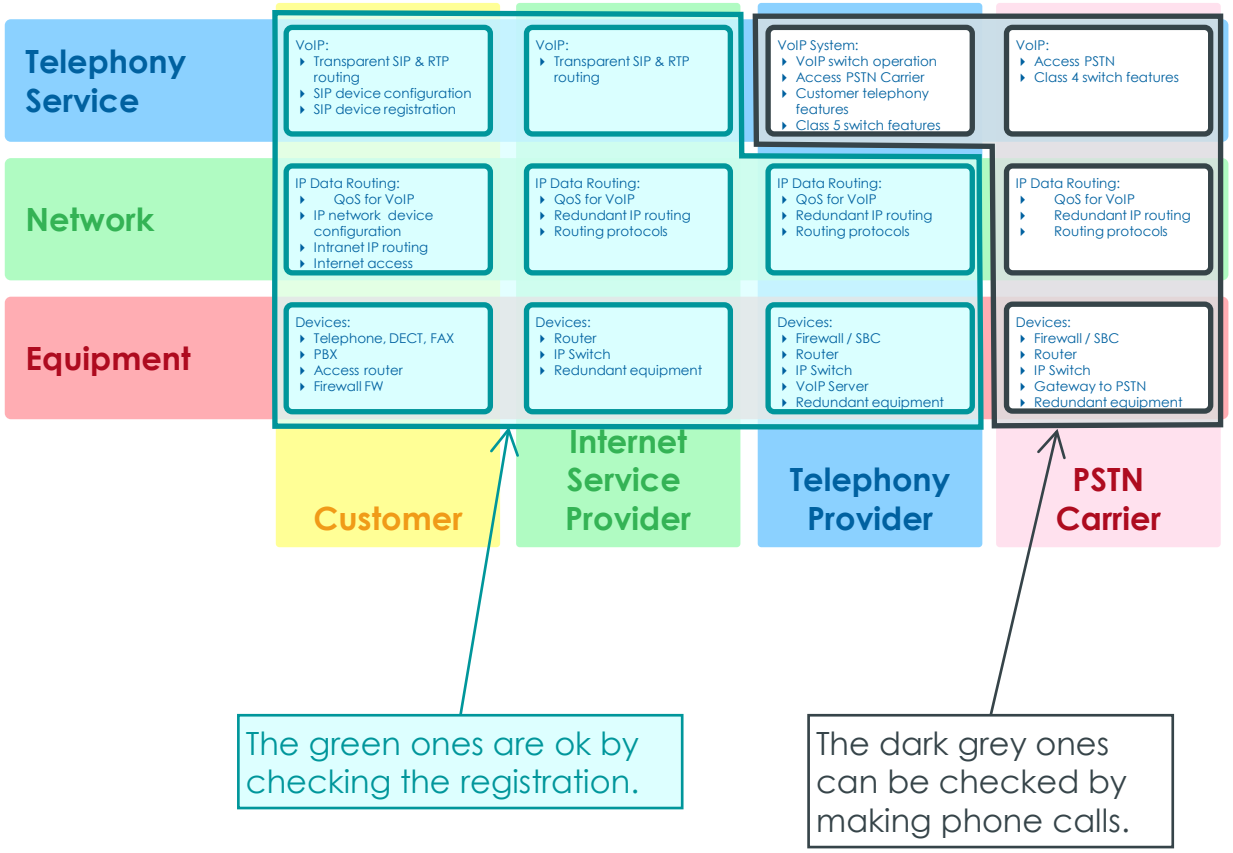
8 CHECK THE SIP DEVICE REGISTRATION

WHY CHECKING THE REGISTRATION IS IMPORTANT

- By checking the registration, we learn:

1. All equipment is running!
2. The IP network is working between the anSwitch and the phone
3. The phone is online and has the correct SIP credentials.

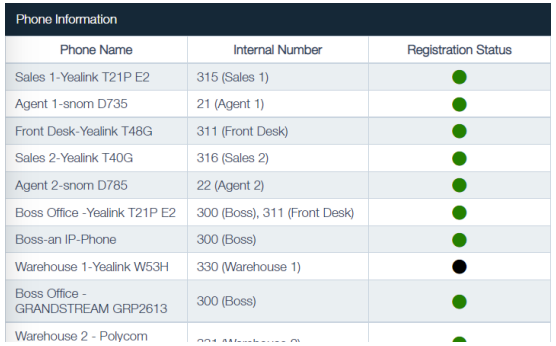
➔ For a safety of ~90% you know that the telephony service is ok!



HOW TO CHECK THE REGISTRATION STATUS

- There are several locations in the Portal where a general overview of the registration situation is given:
  - Green: At least one phone has registered
  - Red: No active registration currently, but there were registered phone already
  - Black: No phone registered ever

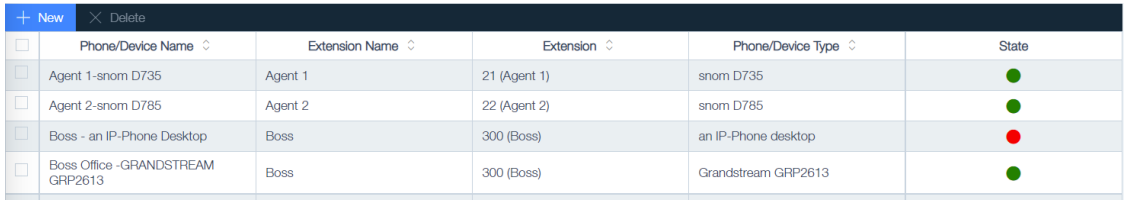
- Overview in the PBX Dashboard:



Phone Information

Phone Name	Internal Number	Registration Status
Sales 1-Yealink T21P E2	315 (Sales 1)	
Agent 1-snom D735	21 (Agent 1)	
Front Desk-Yealink T48G	311 (Front Desk)	
Sales 2-Yealink T40G	316 (Sales 2)	
Agent 2-snom D785	22 (Agent 2)	
Boss Office -Yealink T21P E2	300 (Boss), 311 (Front Desk)	
Boss-an IP-Phone	300 (Boss)	
Warehouse 1-Yealink W53H	330 (Warehouse 1)	
Boss Office - GRANDSTREAM GRP2613	300 (Boss)	
Warehouse 2 - Polycom		

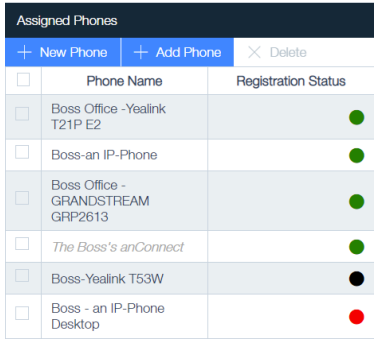
- Overview in the Phone List:



New Delete

Phone/Device Name	Extension Name	Extension	Phone/Device Type	State
Agent 1-snom D735	Agent 1	21 (Agent 1)	snom D735	
Agent 2-snom D785	Agent 2	22 (Agent 2)	snom D785	
Boss - an IP-Phone Desktop	Boss	300 (Boss)	an IP-Phone desktop	
Boss Office -GRANDSTREAM GRP2613	Boss	300 (Boss)	Grandstream GRP2613	

- Overview in the extension:



Assigned Phones

New Phone Add Phone Delete

Phone Name	Registration Status
Boss Office -Yealink T21P E2	
Boss-an IP-Phone	
Boss Office - GRANDSTREAM GRP2613	
The Boss's anConnect	
Boss-Yealink T53W	
Boss - an IP-Phone Desktop	

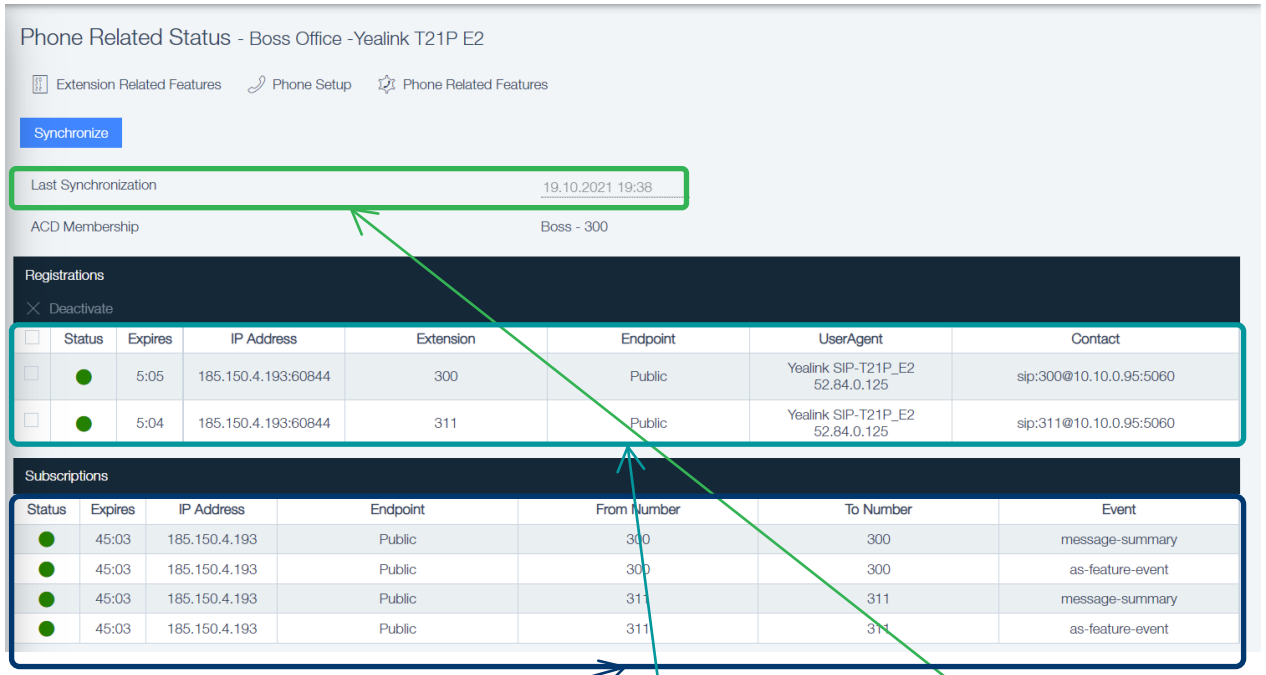
HOW TO CHECK THE REGISTRATION DETAILS

- Detailed information about the SIP registration and presence/message subscriptions can be found in the phone status.

1. Access the Portal with sufficient rights, usually: PBX Administrator

   > Menu: PBX Administrator
   > > Sub-Menu: Phones
   > > > Click the row of the phone that must be checked
   > > > > Click link: Phone Related Status

2. Analyze the SIP registration and subscription details



Subscriptions for signaling:
- New VoiceMail Box messages
- Team key status changes
- Line key status changes

Phones and other SIP devices that have registered to the extension.
Note:
The registrations of Line keys are also displayed.

Information when the configurations where the last time synchronized to the phone.

Note

Information about debugging registration problems, see the training presentation:
- training_answitch_301_support_debugging

9 MANAGING OFFERED PHONE TYPES

ADD PHONE TYPES

- Aarenet is offering only a limited number of built-in Phone Types.
- Additional phone types can be added by uploading Phone Type Templates. This eases:
  - Finding the best suiting configuration
  - Doing interop test with the anSwitch V7
  - etc.

Note	The supported features in phones configured using uploaded Phone Type Templates is lower than for those configured using the built-in Phone Types.

  - Aarenet maintains a repository of Phone Type Templates
    - These Phone Type Templates are provided by Aarenet and are also contributed by various customers.
    - Contact your your Aarenet account manager which Phone Templates are available.
- The uploading of Phone Type Templates is described in document:

  "Managing Phone Types & Phone Templates"

CREATING PROPRIETARY PHONE TYPE TEMPLATES

- It is possible to create proprietary Phone Type Templates.
  - For proprietary Phone Type Templates, it can be defined that only their owner can select them.
- Creating proprietary Phone Type Templates can be useful in situations like
  - Unsupported phone devices
  - Specific phone setups for a customer's sales agents
- Aarenet can support you with the creation of proprietary Phone Type Templates.
  - Contact your your Aarenet account manager for the realization of proprietary Phone Type Templates
- The creation of Phone Type Templates is described in document:

  "Phone Type Toolkit"

MANAGING OFFERED PHONE TYPES IN THE PORTAL UI

- The selectable phone types in the Phone Setup dialog of the Portal UI can be customized according to the needs of the customers.
- Specific phone sets can be provided for the system, per tenant and even per PBX.
  - Contact your your Aarenet account manager for the realization of specific phone sets.
- The realization is described in document:

  "Managing Phone Types & Phone Templates"

10 PHONE SPECIALS

MEDIA STREAM: CODECS, PACKET TIME

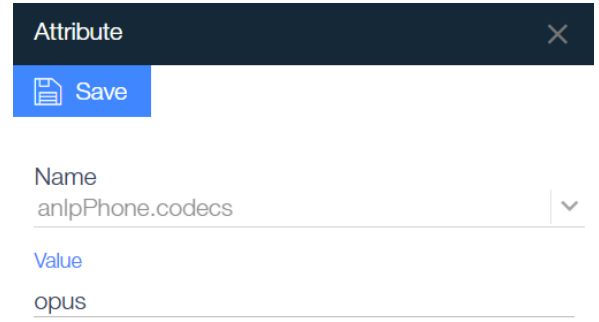
- The anSwitch V7 defines for the phone configurations the following default list of audio codecs:
  - Prio 1: Opus
  - Prio 2: G.722
  - Prio 3: G.711 aLaw, PCMA
  - Prio 4: G.711 uLaw, PCMU
  - Prio 5: G.729
- The packet time is set by default to : pTime=20ms
- Other available audio codes are:

```
opus,g722,pcma,pcmu,g729,
gsm,g723,g726x16,g726x24,g726x32,g726x40
aal2xg726x16, aal2xg726x24,aal2xg726x32,aal2xg726x40
g723x53,g723x63,ilbc20,ilbc30
```

- The anSwitch MediaControl transcodes automatically the media streams if in a connection the call legs use different codecs of the list above.

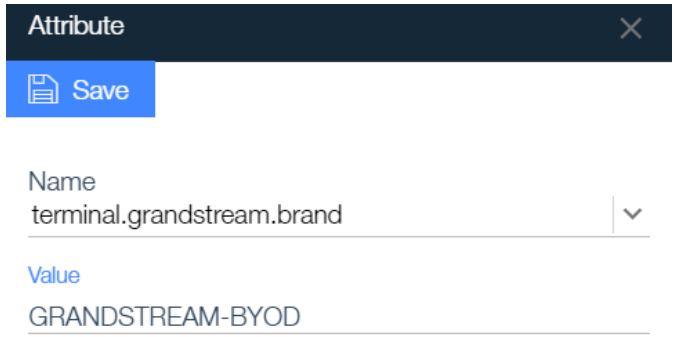
- The codecs of the anSwitch V7 are defined on system level in the OrgUnit "System":
  - Standard codec settings in attribute "common.codecs":

  - Codec settings for the mobile application "an IP-Phone" in attribute " anIpPhone.codecs":



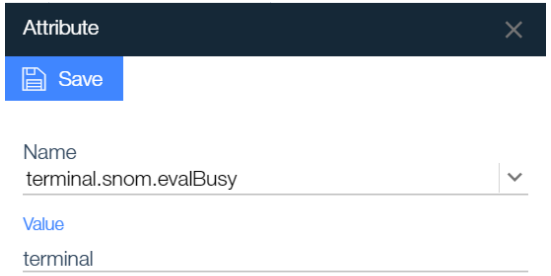
GRANDSTREAM: "BRING YOUR OWN DEVICE BYOD"

- The anSwitch V7 supports the feature "Bring Your Own Device BYOD" for Grandstream devices.
  - BODY enabled devices will be handled specifically by the redirection service GAPS of Grandstream.
  - This feature can only be used by Grandstream devices that support BYOD.
- BYOD for Grandstream is activated by a terminal attribute at the appropriate OrgUnit level, e.g. Tenant:
  - Activate Grandstream BYOD "terminal.grandstream.brand " with value "GRANDSTREAM-BYOD":



TERMINAL TYPE BASED "BUSY" SIGNALIZATION

- The feature "Phone Based "Busy" Signalization" enables the fine tuning of the user's busy interpretation.
- If a user upon an incoming call is signalling that this terminal is busy, the CallControl can be instructed to handle the ringing of other terminals assigned to the same number as follows:
  - All terminals of the number are busy.
    If other terminals are ringing, then their ringing will be cancelled.
  - Only this terminal is busy.
    The other terminals shall continue ringing.
- This feature is activated via a terminal attribute on OrgUnit level and can be assigned to specific phone types.
  For example, when the home office phone of the PBX Extension "Boss" is in a connection then all other phones of this extension shall ring upon an incoming call:



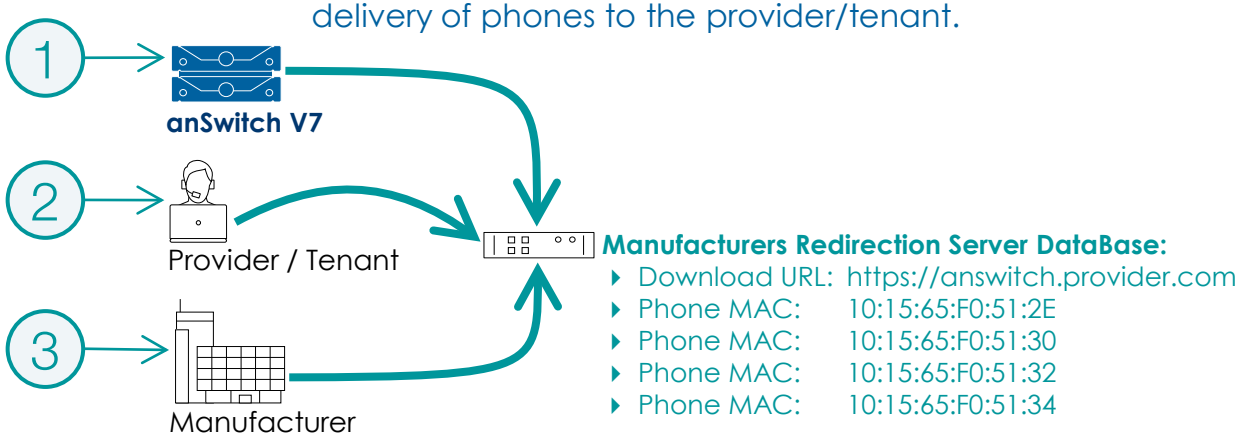
Terminal Attribute Name	Value	Example	Description
evalBusy	[terminal | address] Default values on system level: ▸ All an IP-Phone: terminal ▸ All other CPE types: address	terminal.snom.evalBusy	Defines the terminal "Busy" interpretation: ▸ terminal: Only this phone is busy ▸ address: All phones of the number are busy.

11 MANAGING MANUFACTURER REDIRECTION SERVICE

CONFIGURATION OF THE MANUFACTURER REDIRECTION SERVICE

- In any case the provider/tenant must have an account for the manufacturer redirection service.
  - Information see next page.

- Prior to the phone deployment, the association "MAC address – provisioning URL" must be configured into the Manufacturers Redirection Server DataBase.
  - There are different variants:
    1. The anSwitch configures the database directly.
    2. The provider/tenant configures the database manually.
    3. The manufacturer configures the database upon delivery of phones to the provider/tenant.



OBTAINING MANUFACTURER REDIRECTION SERVICE ACCOUNT

- For obtaining a manufacturer redirection service account for the supported by anSwitch V7 start here:
  - SNOM Secure Redirection and Provisioning Service SRAPS:
    Login page: https://sraps.snom.com
  - Yealink Device Management DM Platform:
    Login page: https://dm.yealink.com/manager/login
  - Grandstream Automated Provisioning System GAPS:
    Login page: https://fm.grandstream.com/app
  - Polycom® Zero Touch Provisioning ZTP:
    Login page: https://support.polycom.com/content/support.html

Note

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SNOM: CONFIGURATION DETAILS & HINTS FOR THE REDIRECTION SERVICE

SNOM:

The anSwitch V7 configuration is done by an Aarenet system engineer!

The redirection service configuration is done by a customer or telephone provider engineer!

anSwitch V7 Configurations

system.yaml

```
terminalProfiles:
  snom:
    redirectServer:   "SERVER_URL"
    redirectUsername: "USERNAME"
    redirectPassword: "PASSWORD"
```

For example:

```
    redirectServer:   "https://ch-anx-training.aarenet.com:443/cfg/provisioning.cfg?mac={mac}"
    redirectUsername: "USERNAME"
    redirectPassword: "PASSWORD"
```

Must be identical!

The following information must be defined by the customer or telephone provider engineer:

- Domain name where the phones must download their configuration.
- Access credentials for the redirection service

→ This information must be delivered to the Aarenet system engineer!

OrgUnit Attribute on level:

- System
- Tenant
- PBX

Name:

```
terminal.common.provisioningBaseUrl
```

Value:

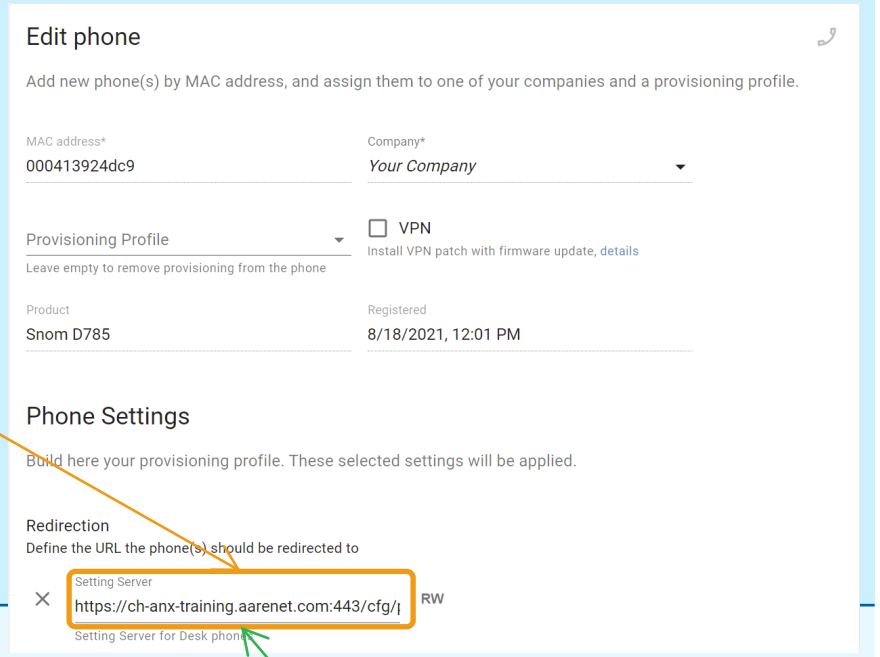
```
https://DOMAIN_NAME
```

For example:

```
https://ch-anx-training.aarenet.com
```

Redirection Service Configurations

Example SNOM SRAPS page "Phones":



URL of the download path, e.g.:
`https://ch-anx-training.aarenet.com:443/cfg/provisioning.cfg?mac={mac}`

YEALINK: CONFIGURATION DETAILS & HINTS FOR THE REDIRECTION SERVICE

Yealink:

The anSwitch V7 configuration is done by an Aarenet system engineer!

The redirection service configuration is done by a customer or telephone provider engineer!

anSwitch V7 Configurations

system.yaml

```
terminalProfiles:
  yealink:
    redirectServer:   "PROFILE_NAME"
    redirectUsername: "USERNAME"
    redirectPassword: "PASSWORD"
```

For example:

```
    redirectServer:   "an-training-anx-04"
    redirectUsername: "USERNAME"
    redirectPassword: "PASSWORD"
```

The following information must be defined by the customer or telephone provider engineer:

- Domain name where the phones must download their configuration.
- Access credentials for the redirection service

→ This information must be delivered to the Aarenet system engineer!

Must be identical!

OrgUnit Attribute on level:

- System
- Tenant
- PBX

Name:

```
terminal.common.provisioningBaseUrl
```

Value:

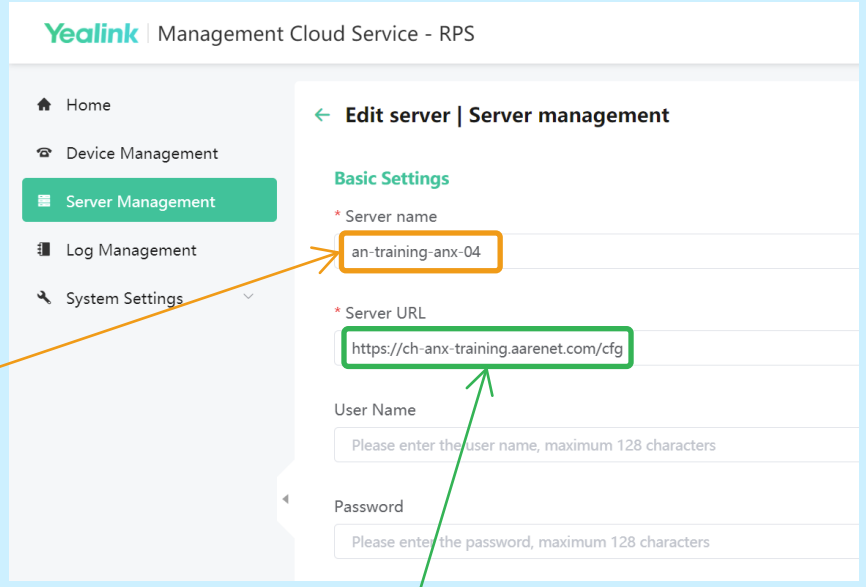
```
https://DOMAIN_NAME
```

For example:

```
https://ch-anx-training.aarenet.com
```

Redirection Service Configurations

Example Yealink DM page "Server Management":



URL of the download path, e.g.:
`https://ch-anx-training.aarenet.com/cfg`

GRANDSTREAM: CONFIGURATION DETAILS & HINTS FOR THE REDIRECTION SERVICE

Grandstream:

The anSwitch V7 configuration is done by an Aarenet system engineer!

The redirection service configuration is done by a customer or telephone provider engineer!

anSwitch V7 Configurations

system.yaml

```
terminalProfiles:
  grandstream:
    redirectServer:   "PROFILE_NAME"
    redirectUsername: "USERNAME"
    redirectPassword: "PASSWORD"
```

For example:

```
    redirectServer:   "ch-anx-training.aarenet"
    redirectUsername: "USERNAME"
    redirectPassword: "PASSWORD"
```

Must be identical!

The following information must be defined by the customer or telephone provider engineer:

- Domain name where the phones must download their configuration.
- Access credentials for the redirection service

→ This information must be delivered to the Aarenet system engineer!

OrgUnit Attribute on level:

- System
- Tenant
- PBX

Name:

```
terminal.common.provisioningBaseUrl
```

Value:

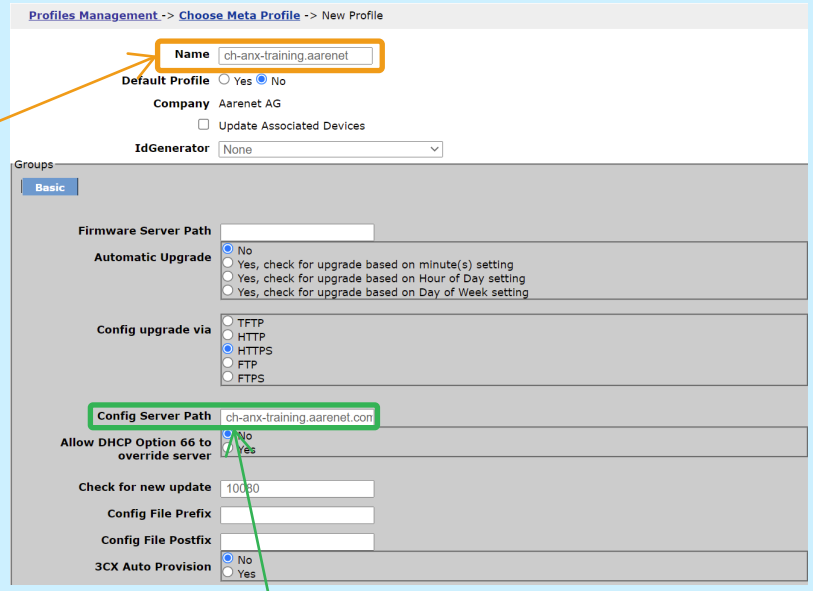
```
https://DOMAIN_NAME
```

For example:

```
https://ch-anx-training.aarenet.com
```

Redirection Service Configurations

Example Grandstream GAPS page "Profile Management":



The download path, e.g.:
`ch-anx-training.aarenet.com/cfg`

POLYCOM: CONFIGURATION DETAILS & HINTS FOR THE REDIRECTION SERVICE

Polycom:

The anSwitch V7 configuration is done by an Aarenet system engineer!

The redirection service configuration is done by a customer or telephone provider engineer!

anSwitch V7 Configurations

system.yaml

```
terminalProfiles:
  polycom:
    redirectServer:    "PROFILE_NAME"
    redirectAccountId:"USER_REFERENCE_ID"
    redirectUsername: "USERNAME"
    redirectPassword: "PASSWORD"
```

For example:

```
    redirectServer:    "ch-anx-training"
    redirectAccountId:"ABCxyz123"
    redirectUsername: "USERNAME"
    redirectPassword: "PASSWORD"
```

The following information must be defined by the customer or telephone provider engineer:

- Domain name where the phones must download their configuration.
- Access credentials for the redirection service

→ This information must be delivered to the Aarenet system engineer!

OrgUnit Attribute on level:

- System
- Tenant
- PBX

Name:

```
terminal.common.provisioningBaseUrl
```

Value:

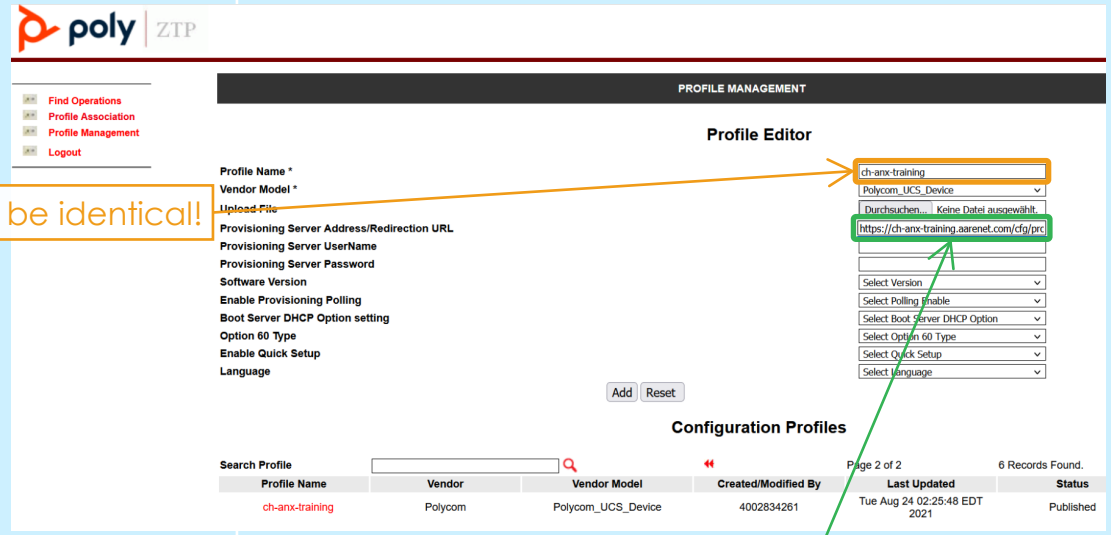
```
https://DOMAIN_NAME
```

For example:

```
https://ch-anx-training.aarenet.com
```

Redirection Service Configurations

Example Polycom ZTP page "Profile Management":



Must be identical!

URL of the download path, e.g.:
`https://ch-anx-training.aarenet.com/cfg/config.xml`

TROUBLE SHOOTING THE REDIRECTION SERVICE CONFIGURATION

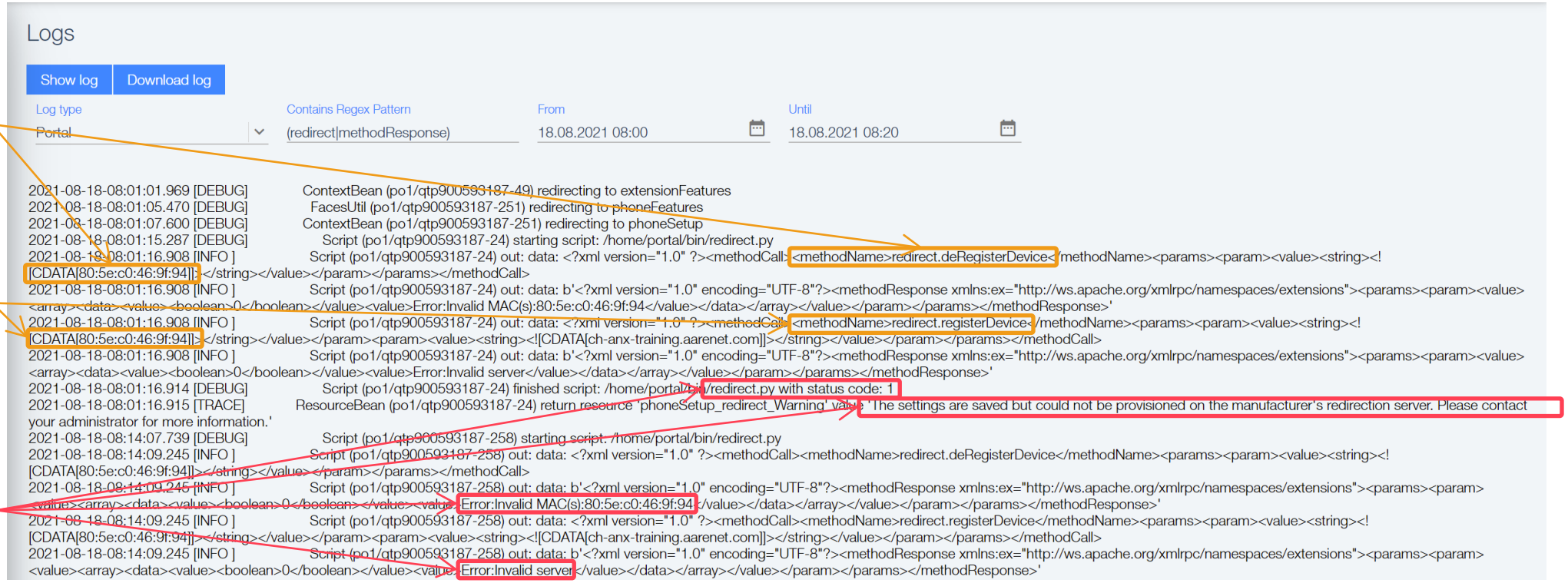
Check as Administrator the Portal Log:

> Menu: Operator
> > Sub-Menu: Logs
> > > Select Log Type: Portal
> > > > Search for Regex Pattern: `(redirect|methodResponse)`

1. The device with MAC will always be deleted first on the redirection server.

2. The device with MAC will be configured

c. Errors will be indicated:
   a. Script error: 1
   b. UI error message
   c. Error description



TROUBLE SHOOTING THE REDIRECTION SERVICE CONFIGURATION

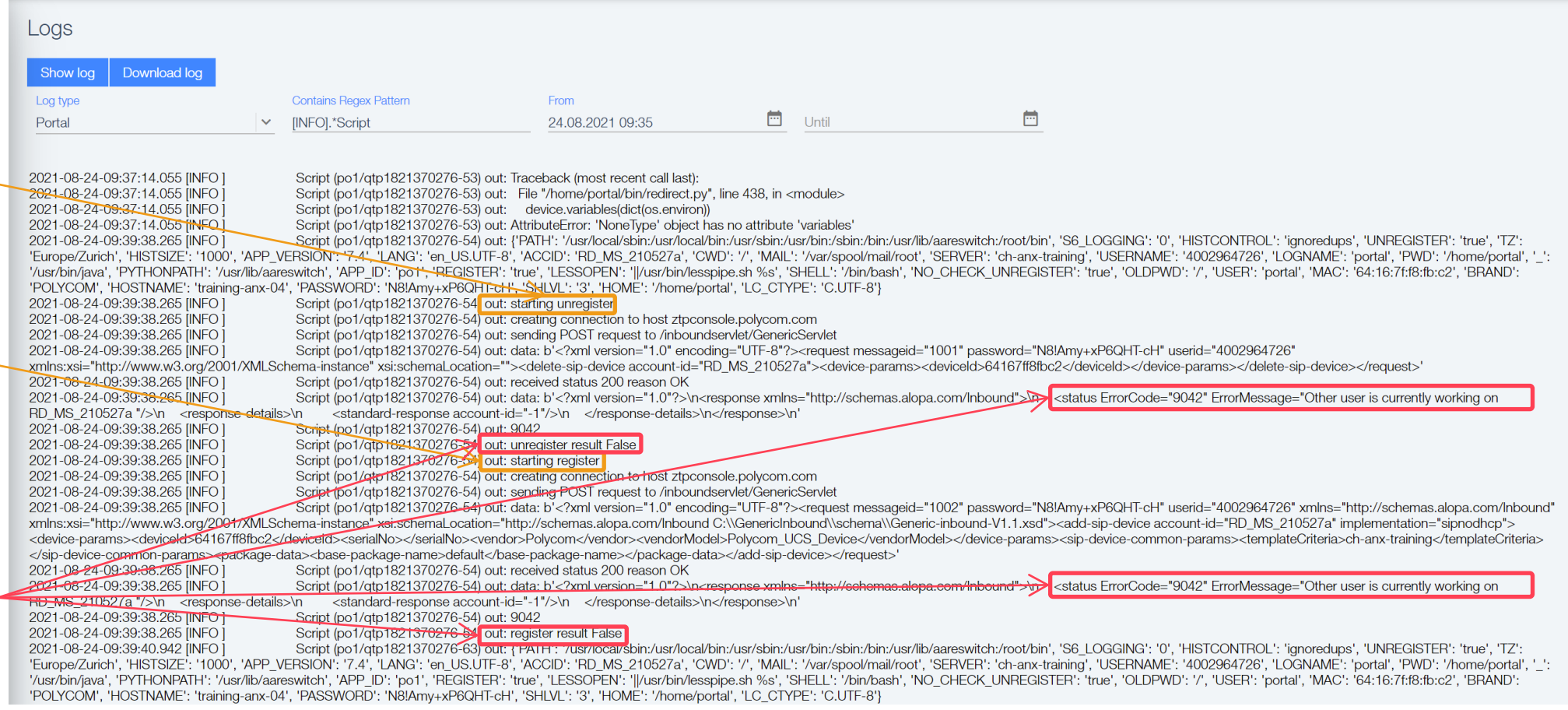
Check as Administrator the Portal Log: Variant with checking the redirection script logs

> Menu: Operator
> > Sub-Menu: Logs
> > > Select Log Type: Portal
> > > > Search for Regex Pattern: `[INFO].*Script`

1. The device with MAC will always be deleted first on the redirection server.

2. The device with MAC will be configured

c. Error information from the manufacturer redirection service.



12 MANAGING DISPLAYED PHONE TYPES

MANAGING DISPLAYED PHONE TYPES IN THE PORTAL UI

- The list of selectable native phone types in the Portal UI is manageable on system level.
  - Exclude native phone types
  - Exclude or change the postfix name of phone types derived from phone templates
- This concept can be extended for tenants or other roles
  - See documentation "Portal User Interface UI & User Account"

Note This feature requires specific configurations on the system and may incur a project or license fee. Please ask your Aarenet account manager for details

MANAGING DISPLAYED PHONE TYPES IN THE PORTAL UI

- Prepare the customized phone type selection configuration file.
  1. Get from R&D the "System Phone Types" XLSX-formatted file that matches the installed anSwitch V7 version.

  2. Rename the XLSX-file to your needs, e.g.:
     - SYS_exclude_native_phone_type_system.xlsx
     - SYS_exclude_native_phone_type_provider-a.xlsx

  3. Configure the display of phone types for each role:

     rw : Display the phone type for the role
     \- : Don't the phone type for the role

     - Configure if the postfix "Custom" of a phone configured via a phone template shall be displayed.
       For example: "Sales Agent Custom" → "Sales Agent"
     - List all phone types that shall be excluded and configure the roles with: -
     - If by a preceding exclusion file a certain phone type was disabled, then it can be reactivated if needed: rw

	key	lang.en	role.admin	role.operator	role.pbx	role.department	role.extension	role.subscriber	role.guest
3	Phone Types								
4	phoneSetup_dev_type_custom_postfix	Custom	-	-	-	-	-	-	-
6	parentPhoneSetup_dev_type_yealinkW60B	Yealink W60B	-	-	-	-	-	-	-
7	parentPhoneSetup_dev_type_yealinkW70B	Yealink W70B	-	-	-	-	-	-	-
8	parentPhoneSetup_dev_type_yealinkW80	Yealink W80B	-	-	-	-	-	-	-
10	phoneSetup_dev_type_yealinkT21PE2	Yealink T21P E2	-	-	-	-	-	-	-
11	phoneSetup_dev_type_yealinkT40G	Yealink T40G	-	-	-	-	-	-	-
12	phoneSetup_dev_type_yealinkT53W	Yealink T53W	-	-	-	-	-	-	-
13	phoneSetup_dev_type_yealinkT54W	Yealink T54W	-	-	-	-	-	-	-
14	phoneSetup_dev_type_yealinkT57W	Yealink T57W	-	-	-	-	-	-	-
15	phoneSetup_dev_type_yealinkT58A	Yealink T58A	-	-	-	-	-	-	-
16	phoneSetup_dev_type_yealinkW60B	Yealink W60B	-	-	-	-	-	-	-
17	phoneSetup_dev_type_yealinkW70B	Yealink W70B	-	-	-	-	-	-	-
18	phoneSetup_dev_type_yealinkW53H	Yealink W53H	-	-	-	-	-	-	-
19	phoneSetup_dev_type_yealinkW56H	Yealink W56H	-	-	-	-	-	-	-
21	phoneSetup_dev_type_snomD315	snom D315	-	-	-	-	-	-	-
22	phoneSetup_dev_type_snomD335	snom D335	-	-	-	-	-	-	-
23	phoneSetup_dev_type_snomD385	snom D385	-	-	-	-	-	-	-
24	phoneSetup_dev_type_snomD715	snom D715	-	-	-	-	-	-	-
25	phoneSetup_dev_type_snomD717	snom D717	-	-	-	-	-	-	-
26	phoneSetup_dev_type_snomD735	snom D735	-	-	-	-	-	-	-
27	phoneSetup_dev_type_snomD745	snom D745	-	-	-	-	-	-	-
28	phoneSetup_dev_type_snomD785	snom D785	-	-	-	-	-	-	-
29	phoneSetup_dev_type_snomM25	snom M25	-	-	-	-	-	-	-
30	phoneSetup_dev_type_snomM65	snom M65	-	-	-	-	-	-	-
31	phoneSetup_dev_type_snomM70	snom M70	-	-	-	-	-	-	-
32	phoneSetup_dev_type_snomM80	snom M80	-	-	-	-	-	-	-
33	phoneSetup_dev_type_snomM85	snom M85	-	-	-	-	-	-	-
34	phoneSetup_dev_type_snomM90	snom M90	-	-	-	-	-	-	-
35	phoneSetup_dev_type_snomA190	snom A190	-	-	-	-	-	-	-
37	phoneSetup_dev_type_grandstreamGRP2612	GRANDSTREAM GRP2612	rw	rw	rw	rw	rw	-	-
38	phoneSetup_dev_type_grandstreamGRP2613	GRANDSTREAM GRP2613	rw	rw	rw	rw	rw	-	-
39	phoneSetup_dev_type_grandstreamGRP2614	GRANDSTREAM GRP2614	-	-	-	-	-	-	-
40	phoneSetup_dev_type_grandstreamGRP2615	GRANDSTREAM GRP2615	-	-	-	-	-	-	-
41	phoneSetup_dev_type_grandstreamGXP1615	GRANDSTREAM GXP1615	-	-	-	-	-	-	-
42	phoneSetup_dev_type_grandstreamGXP1625	GRANDSTREAM GXP1625	-	-	-	-	-	-	-
43	phoneSetup_dev_type_grandstreamGXP1628	GRANDSTREAM GXP1628	-	-	-	-	-	-	-
44	phoneSetup_dev_type_grandstreamGXP2130	GRANDSTREAM GXP2130	-	-	-	-	-	-	-
45	phoneSetup_dev_type_grandstreamGXP2135	GRANDSTREAM GXP2135	-	-	-	-	-	-	-
46	phoneSetup_dev_type_grandstreamGXP2140	GRANDSTREAM GXP2140	-	-	-	-	-	-	-
47	phoneSetup_dev_type_grandstreamGXP2160	GRANDSTREAM GXP2160	-	-	-	-	-	-	-
48	phoneSetup_dev_type_grandstreamGXP2170	GRANDSTREAM GXP2170	-	-	-	-	-	-	-

MANAGING DISPLAYED PHONE TYPES IN THE PORTAL UI

- Activating the customized phone type selection.
  1. Upload the prepared phone type exclusion file to the servers/hosts with active Portal components into the directory /portal

```
[root]# cd /etc/aareswitch/portal
```

  2. Make sure that the directory /portal and its contents belong to the portal user

```
[root]# chmod -R portal:portal /etc/aareswitch/portal
```

  3. Restart all Portal components

TIME TO EXERCISE

BASIC EXERCISE: ASSIGN A PHONE TO A PBX EXTENSION

- Connect phones with different provisioning procedures to the Personal Extension/s of the PBX.
- Goal:
  - Provision a phone via the manufacturer redirection server.
  - Provision a phone via configuring the URL of the phone.
  - Provision an 'an IP-Phone'
  - Make phone calls
  - Configuring features on the phone keys
  - Optional for the ones on the fast lane:
    - Explore the user features with the *-codes
      - For example: Call Flip: *78 , Call Pickup: *76<NUMBER>
- Duration: 45min

LAST PAGE

Date	Doc-ID	Description	Changes
7.4.2023	training_as7_701_phone_configuration_e12	V7.11	
22.6.2023	training_as7_701_phone_configuration_e13	V7.12: Terminal Type Based "Busy" Interpretation	Page: 55