

# TDM recording others **EVOflex** (Universal analog LD)



## Administration manual for system providers

1/22/2020

### Product line **neo**, version 6.x

The described functions can be used with the following ASC products:

EVOflex (country-specific)

Please note that you can always find the most up-to-date technical documentation and product updates in the partner area on our website at <http://www.asctechnologies.com>.

Copyright © 2019 ASC Technologies AG. All rights reserved.

Windows is a registered trademark of Microsoft Corporation. VMware® is a registered trademark of VMware, Inc. All other marks and names mentioned herein may be trademarks of their respective companies.



## Contents

<b>1</b>	<b>General information .....</b>	<b>4</b>
<b>2</b>	<b>Introduction .....</b>	<b>5</b>
<b>3</b>	<b>System requirements.....</b>	<b>6</b>
3.1	Supported hardware.....	6
<b>4</b>	<b>Installation requirements .....</b>	<b>7</b>
4.1	Licenses .....	7
4.2	Information .....	7
<b>5</b>	<b>Overview install and configure product.....</b>	<b>8</b>
<b>6</b>	<b>Configuration.....</b>	<b>9</b>
6.1	System Configuration.....	9
6.1.1	Start application .....	9
6.1.2	Configure recording solution .....	10
6.1.2.1	Configure recording solution All-in-one Basic .....	10
	<b>List of figures .....</b>	<b>69</b>
	<b>List of tables .....</b>	<b>71</b>
	<b>Glossary.....</b>	<b>72</b>

## 1 General information

In the context of this document ASC represents ASC Technologies AG, its subsidiaries, branch offices, and distributors. An up-to-date overview of the aforementioned entities can be found at <https://www.asctechnologies.com>

ASC assumes no guarantee for the actuality, correctness, integrity or quality of the information provided in the manuals.

ASC regularly checks the content of the released manuals for consistency with the described hardware and software. Nevertheless, deviations cannot be excluded. Necessary revisions are included in subsequent editions.

Some aspects of the ASC technology are described in general terms to protect the ownership and the confidential information or trade secrets of ASC.

The software programs and the manuals of ASC are protected by copyright law. All rights on the manuals are reserved including the rights of reproduction and multiplication of any kind, be it photo mechanical, typographical or on digital data media. This also applies to translations. Copying the manuals, completely or in parts, is only allowed with written authorization of ASC.

Representative, if not defined otherwise, is the technical status at the time of the delivery of the software, the devices and the manuals of ASC. Technical changes without specified announcements are reserved. Previous manuals lose their validity.

The general conditions of sales and delivery of ASC in their latest version apply.

This manual describes the installation and configuration of the recording solution in the application System Configuration.



Basic information about using the application System Configuration can be found in the user manual for administrators *System Configuration - General information*.

This recording solution allows recording analog extensions of different PBXs as well as analog radio.

Depending on the configuration level of the recording card, the following interface connections can be implemented:

2-wire interface connection (e. g. UP0)	8, 16 or 24-tap
---	-----------------

Tab. 1: Interfaces on the LD card

### Functional description for the recording solution Universal analog LD

#### Universal Analog LD

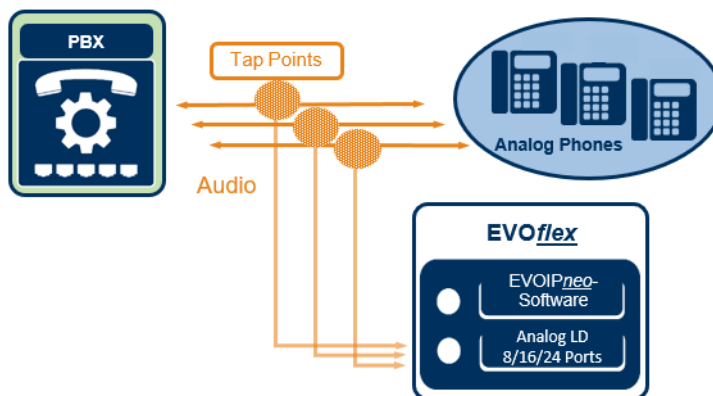


Fig. 1: Overview Universal Analog LD

The audio data is sniffed on the analog phone lines between the PBX and the phones. The audio data is read and digitalized by the recording card.

The recording can be controlled via the following functions if they are supported by the end device and the PBX:

- DTMF
- Audio level



If the recording is supposed to be controlled by **DTMF**, no audio signal may be pending while entering the **DTMF** code.

Further functions of Universal analog LD are:

- **DTMF** detection (optional)
- **AGC** (automatic gain control)
- Compression **G.711**, **G.726** and **G.729** (post-compression)

### 3 System requirements



For basic information about the necessary hardware and software components refer to the installation manual *Installation requirements*.



A list of the supported PBXs and end devices as well as their supported versions can be found at ASC XCHANGE (<https://www.asc.de/partner>) in the current *neo Integration Overview*.

#### 3.1 Supported hardware



For basic information about the necessary hardware components refer to the installation manual *Installation requirements*.

### 4 Installation requirements



For basic information about the used default ports refer to the installation manual *Installation requirements* in chapter *Communication matrix*.



If you have configured customer-specific ports, you have to open them in the firewall separately.

#### 4.1 Licenses

##### ASC

##### Universal analog LD

License name	Number
Recording Server Base License EVOflex	1 license per recording server
Recording Channel Licenses for Analog - passive	1 license per recording channel

Tab. 2: Licenses of ASC

##### Optional licenses

License name	Number
DTMF detection	1 license per recording channel
Algorithm license for G.729A data compression	1 license per recording channel

Tab. 3: Optional licenses

#### 4.2 Information

Before you start the installation, make sure that the following information is available:

- IP address of the recording server
- List of extensions to be recorded
- IP address and port of the TETRA Connectivity Server ([TCS](#))
- Login information to [TCS](#) ([SSIs](#), user name and password)



[DXT](#) and [TCS](#) must be configured according to the manual of Airbus document 624081: "Archive Recording Solution Guide".

## 5

## Overview install and configure product

The following steps have to be carried out:

1. Configure PBX
2. System Configuration
  - Create and activate recording architectures
    - The recording server, recording types, and the integration types are assigned in the Recording Architectures module.
  - Configure server
    - In the Servers module, the usage of the server is configured.  
A server can be used for archiving, import, export, replay, data storage or for audio analysis.
  - Create PBX
    - A PBX configuration can either be created via the PBX module or via the configuration in the Integrations module.
  - Configure phones
    - In the Phones module, the phones are assigned to a configured time slot.
  - Configure TDM Hardware Others
    - Configuration of the recording hardware, e. g. channels, DTMF detection, trigger.
  - Configure integration
    - Configure recording architecture  
Link the integration to the previously created recording architecture.
    - Activate channels  
Configuration of recording options
  - Configure miscellaneous settings  
Optional configuration of participant information in an additional data field

## 6 Configuration

### 6.1 System Configuration



Basic information about using the application System Configuration can be found in the user manual for administrators *System Configuration - General information*.

#### 6.1.1 Start application

During the installation routine, shortcuts for the *neo* programs are created on your desktop.

1. To start the application directly on the server, double-click on the shortcut System Configuration.

To access the application from a computer via the web, enter the following URL in the address bar:

*https://<System-IP>/SystemConfiguration.*

If you have configured customer-specific ports, you have to include the port in the URL:

*https://<System-IP>:<Port>/SystemConfiguration.*

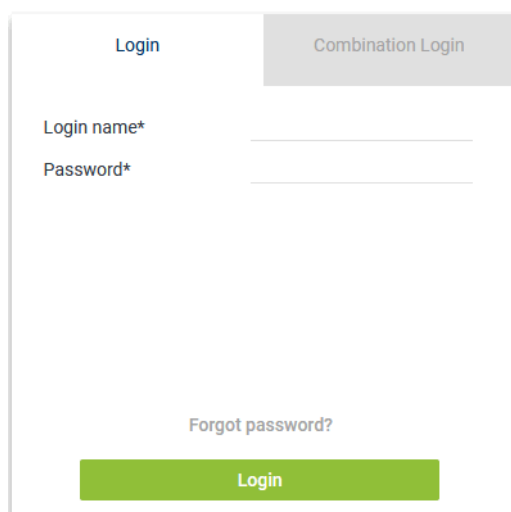


Fig. 2: System Configuration - web interface

To install and configure the recording solutions, you have to log in as system provider.

Login data for the administrator of the system provider:

User name:	<i>system-admin</i>
<i>neo</i> version < 6.3	
Default password:	<i>1</i>
	If the default password <i>1</i> has never been changed before a software update to a <i>neo</i> version $\geq 6.3$ , the password must be changed upon the next login or by entering it again. If the default password has already been changed before a software update to a <i>neo</i> version $\geq 6.3$ , the changed password remains.
<i>neo</i> version $\geq 6.3$	
Default password:	<i>A\$c123</i>

Tab. 4: Login data - system provider

2. Log in to the web interface.  
⇒ The main window System Configuration appears.

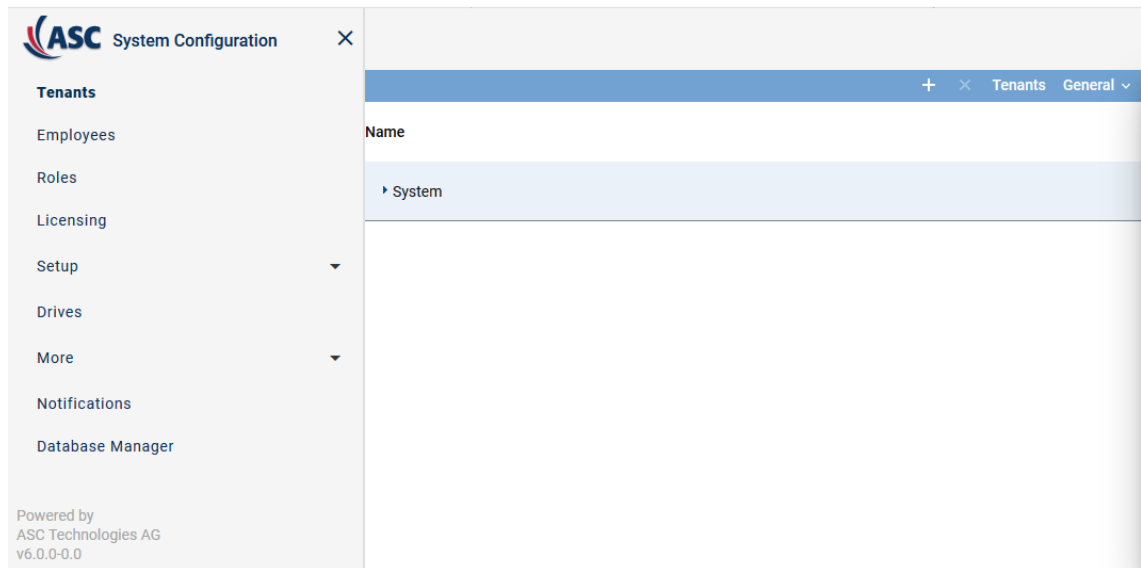


Fig. 3: System Configuration - main view:

## 6.1.2 Configure recording solution

### Supported recording architectures

In this recording solution, the following recording architecture types are supported:

- All-in-one Basic Recording
- All-in-one Parallel Recording
- Multi-Server Recording
- Multi-Server Parallel Recording

### 6.1.2.1 Configure recording solution All-in-one Basic

#### 6.1.2.1.1 Create recording architecture

Start the configuration in the Recording Architectures module because an activated recording architecture is required for further configuration.

The recording servers, recording types, and the integration types are assigned in the Recording Architectures module.

1. Select the menu item *Setup > Recording Architectures* in the navigation bar.

⇒ The following window appears:

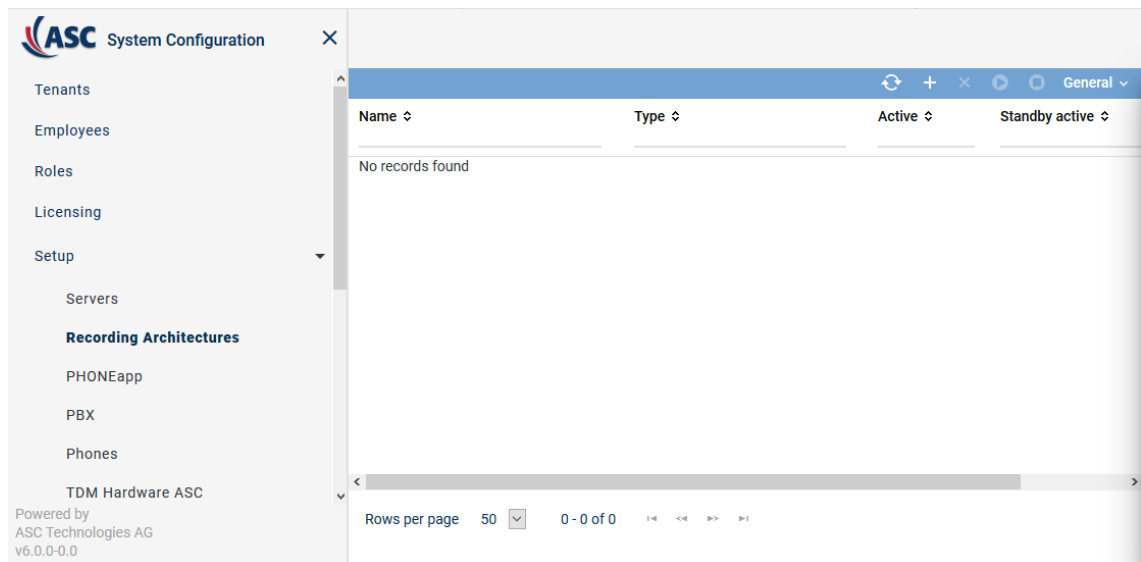




Fig. 4: Recording architectures - main view

<b>Name</b>	Name of the recording architecture
<b>Type</b>	Type of the recording architecture
<b>Active</b>	Shows whether the recording architecture has been activated and is ready to be used for the recording. <div> <span>✓</span> = Recording architecture is active and ready to be used for recording. It can be deactivated by clicking on the icon  (<i>Deactivate</i>) in the toolbar.  <span>✗</span> = Recording architecture is not active. It can be activated by clicking on the icon  (<i>Activate</i>) in the toolbar. </div>
<b>Standby Active</b>	Shows whether the standby server is active for one or several recording components in the recording architecture. <div> <span>✓</span> = At least 1 standby server is active.  <span>✗</span> = No standby server is active or no standby server has been defined. </div>
<b>Creation Date</b>	Date on which the recording architecture was installed.
<b>Updated</b>	Date on which the settings of the recording architecture were updated for the last time.

**NOTICE!** Hidden columns can be added by clicking on the menu item *General > Adjust Table*.

### Toolbar of the Recording Architectures module

The toolbar offers the following functions.

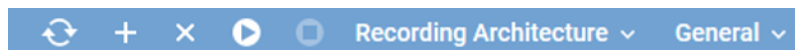







Fig. 5: Toolbar Recording Architectures module

	<b>Refresh</b>	Refreshes the main view.
	<b>Create</b>	Creates a new recording architecture.
	<b>Delete</b>	Deletes the selected recording architecture. The recording architecture is removed from the list of the main view.  <b>NOTICE!</b> You can only delete recording architectures which are inactive and have not been assigned to an integration or server for the import.

	<i>Activate</i>	Activates the selected recording architecture.
	<i>Deactivate</i>	Deactivates the selected recording architecture. <b>NOTICE!</b> You can only deactivate recording architectures which have neither been assigned to an active integration nor to an active import.
<i>Recording Architecture</i>	<i>Standby Management</i>	The menu item is only available for recording architectures with failover possibilities. By clicking on the menu item Standby Management, you can open a window in which you can manually define the active server in architectures with failover concepts.
<i>General</i>	<i>Print</i>	Prints the table of the main view.
	<i>Adjust Table</i>	Opens a window in which you can adjust the following settings for the main view: <ul style="list-style-type: none"> <li>• <i>Displayed information</i></li> <li>• <i>Order of the displayed columns</i></li> <li>• <i>Number of rows per page</i></li> </ul>
	<i>Save Table Configuration</i>	Saves the current table configuration of the main view as default view of the user.
	<i>Search</i>	Opens the window of the search function. The search function allows searching systematically for sets of data which meet certain criteria.
	<i>Reset Search</i>	Resets all manually entered search criteria.
	<i>General Help</i>	Opens the online help.
	<i>Module Help</i>	Opens the module-specific online help.




For detailed information on default functions such as *Print*, *Adjust table*, or *Help* refer to the user manual for administrators *System Configuration - General Information*.

### Create recording architecture All-in-one Basic

If the entire *neo* software has been installed on one server, you must create a recording architecture of the type *All-in-one Basic Recording*.



Depending on the selected recording architecture type, the following configuration steps vary. The following configuration steps are exemplary for the recording architecture *All-in-one Basic Recording*.

- To create a new recording architecture, click on the icon  (*Create*) in the toolbar of the main view.  
⇒ The window *New Recording Architecture* appears.

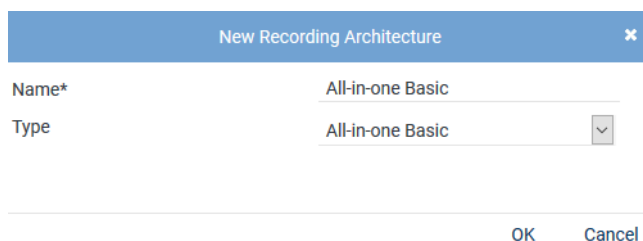
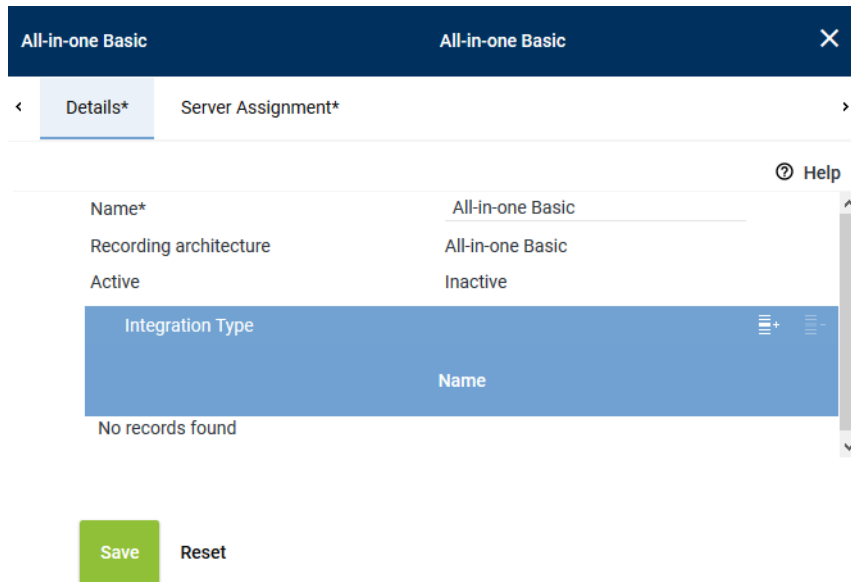


Fig. 6: Create recording architecture - All-in-one Basic Recording

2. In the entry field *Name*, enter a descriptive name for the recording architecture.
3. From the drop-down list *Type*, select the recording architecture type *All-in-one Basic Recording*.  
**NOTICE!** The drop-down list only displays the supported recording architecture types.
4. Click on the button *OK*.  
 ⇒ Your entries now appear in the detail view.




The screenshot shows a configuration window titled 'All-in-one Basic'. It has two tabs: 'Details\*' (selected) and 'Server Assignment\*'. The 'Details\*' tab contains the following fields:

- Name\***: All-in-one Basic
- Recording architecture**: All-in-one Basic
- Active**: Inactive

Below these fields is a table titled 'Integration Type' with a 'Name' column. The table is currently empty, showing 'No records found'. At the bottom of the window are two buttons: 'Save' (green) and 'Reset' (grey).

Fig. 7: Recording architecture - tab Details

#### Add integration type

1. Click on the icon  (*Add*) in the toolbar of the list *Integration Type*.  
 ⇒ The window *Integration Type* appears.

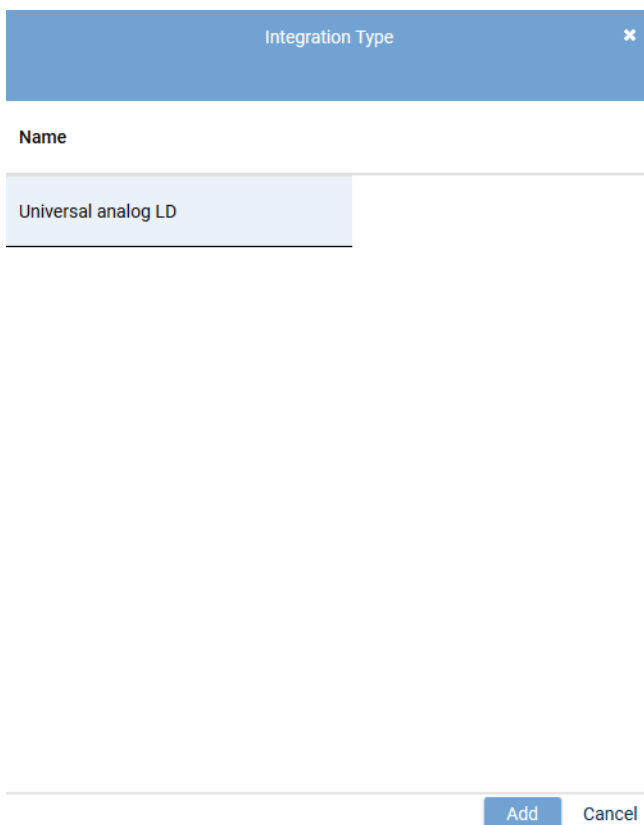


Fig. 8: Select integration type



Only those integration types are displayed which have a license in the system and which support the selected architecture type.



Any number of integration types can be assigned to a recording architecture.

2. Select *Universal analog LD* from the list of the available integration types.
3. Click on the button *Add*.
  - ⇒ The name of the integration type now appears in the list in the detail view.

### ***Assign server***

1. Click on the tab *Server Assignment* to assign a recording server to the recording architecture.

All-in-one Basic

All-in-one Basic

×

Details\*

Server Assignment\*

Server\*

REC-01

+

-

Used in activated architecture

No

Recording type

☐ VoIP/Video  
☐ TDM  
☐ Screen  
☐ Chat

Save

Reset

Fig. 9: Recording Architecture - tab Server Assignment

- Click on the button **+** behind the entry field *Server*.  
⇒ The window *Servers* appears.

Servers			×
			 
Name ↕	IP Address ↕	Path ↕	
REC-01	192.168.173.171	C:\	

Rows per page 20 ▾

1 - 8 of 8






Add

Cancel

Fig. 10: Recording Architecture - assign server

- Select the entry of the corresponding server.



A server can be configured in several recording architectures, but you cannot activate several recording architectures with the same server at the same time.  
If you would like to activate several recording architectures at the same time, you have to use different servers to do so.

- Click on the button *Add*.  
⇒ The name of the server now appears in the detail view.
- Activate the check box of the recording type *TDM recording*.

Recording type

☐ VoIP/Video

☒ TDM

☐ Screen

☐ Chat

Fig. 11: Recording Architecture - activate recording type






You can activate several recording types if the integration has been designed for this and if you have installed the respective licenses.



The *recording architecture* must have been activated to be able to perform the subsequent configuration.

Upon starting the recording architecture, it may take one or two minutes until the service *ASC TDM Module* is active and the interface cards are displayed.

### Activate recording architecture

1. Click on the button **Save**.
2. Select the recording architecture in the main view so that the icon  (*Activate*) in the toolbar becomes active.
3. To activate the recording architecture, click on the icon  (*Activate*).  
⇒ In the column *Active*, the icon  (*Active*) appears.





Recording Architecture			
Name ▾	Type ▾	Active	Standby active ▾
All-in-one Basic	All-in-one Basic		

Fig. 12: Recording architecture - activate recording architecture

4. To deactivate the recording architecture, if required, click on the icon  (*Deactivate*).  
⇒ In the column *Active*, the icon  (*Inactive*) appears.



The recording architecture must have been activated so that the integration can be configured.



For updates, the recording architecture is stopped and deactivated. Once the update has been completed, check that the recording architecture has been activated again.



If you install an extension for the integration subsequently, you must deactivate the recording architecture and activate it again after having installed the license.

#### 6.1.2.1.2 Configure servers

Every server in your network that the *neo* software has been installed on is automatically identified as a server of the recording system and displayed in the main view of the Servers module. In the Servers module, you can configure the usage of the servers in your recording system.

1. Select the menu item *Setup > Servers* in the navigation bar.  
⇒ The following window appears:

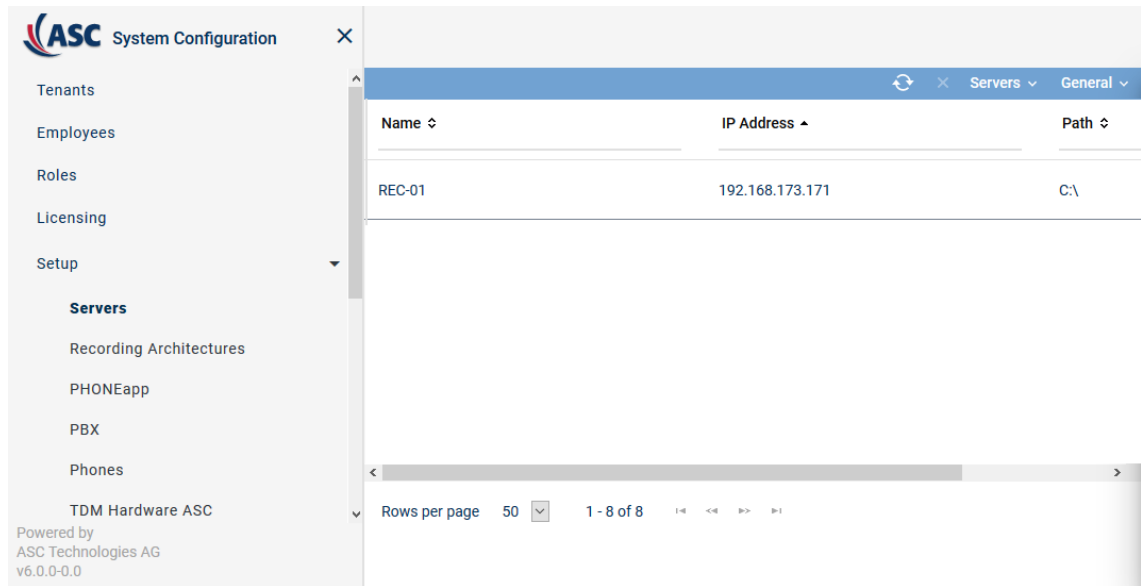


Fig. 13: Servers - main view

Depending on the configuration of the columns, the following information is displayed in the main view:

<i>Name</i>	Shows the name of the server.
<i>IP Address</i>	Shows the <a href="#">IP</a> address of the server.
<i>Path</i>	Shows the path of the server.
<i>Creation Date</i>	Date on which the server was installed.
<i>Updated</i>	Date on which the settings of the server were updated for the last time.

**NOTICE!** Hidden columns can be added by clicking on the menu item *General > Adjust Table*.

### Toolbar of the Servers module

The toolbar offers the following functions.

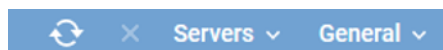




Fig. 14: Toolbar Servers module

	<i>Refresh</i>	Refreshes the main view.
	<i>Delete</i>	Deletes the selected server configuration.  This function is meant to delete the server configuration if the hardware of a server has been removed and there is no connection to the <i>neo</i> system.
<i>Servers</i>	<i>Administrate Server Locations</i>	Opens a window in which you can create and administrate locations of the servers, see <a href="#">chapter "Administrate server locations"</a> , p. 18.
	<i>Administrate NTP Server</i>	Opens a window in which you can administrate the servers for the time synchronization, see <a href="#">chapter "Administrate NTP server"</a> , p. 34.
	<i>Manage Synchronization Configurations</i>	Opens a window in which you can manage the synchronization configurations.
<i>General</i>	<i>Adjust Table</i>	Opens a window in which you can adjust the following settings for the main view:

	<ul style="list-style-type: none"> <li>• <i>Displayed information</i></li> <li>• <i>Order of the displayed columns</i></li> <li>• <i>Number of rows per page</i></li> </ul>
<i>Save Table Configuration</i>	Saves the current table configuration of the main view as default view of the user.
<i>Search</i>	Opens the window of the search function. The search function allows searching systematically for sets of data which meet certain criteria.
<i>Reset Search</i>	Resets all search filters so that all sets of data are displayed in the main view again.
<i>General Help</i>	Opens the online help.
<i>Module Help</i>	Opens the module-specific online help.



For detailed information on default functions such as *Print*, *Adjust table*, or *Help* refer to the user manual for administrators *System Configuration - General Information*.

### Administrate server locations

You can create and manage a list of server locations. In the tab *Details*, you can assign locations to the servers.

#### Add server locations

- Click on the menu item *Servers > Administrate Server Locations* in the toolbar of the main view.  
⇒ The window *Server Locations* appears.

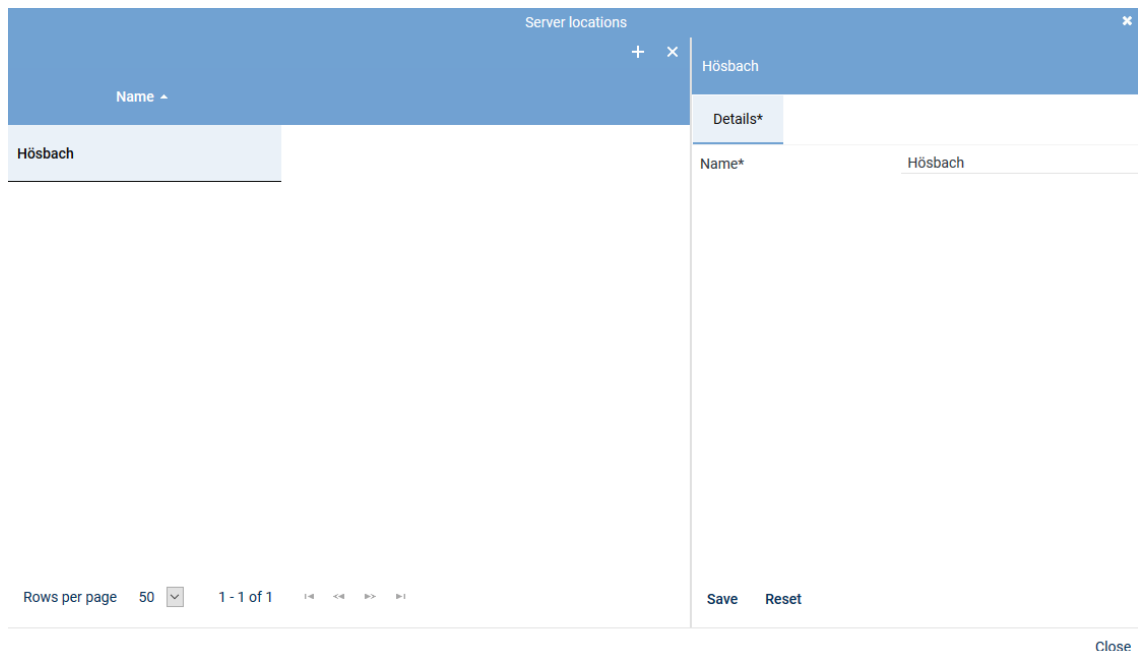



Fig. 15: Add server locations

- Click on the icon  (*Create*) in the toolbar of the window *Server Locations*.
- Enter the name of the location on the right side in the tab *Details*.
- To save the entry, click on the button *Save*.  
To discard the entry, click on the button *Reset*.
- To add further locations, repeat the last 3 steps.

6. To close the window, click on the button *Close*.

### Delete server location



A server location can only be deleted when it has not been assigned. To be able to delete a server location, you must first delete possible assignments.

1. Click on the menu item *Servers > Administrate Server Locations* in the toolbar of the main view.  
⇒ The window *Server Locations* appears.
2. Select the location you would like to delete.

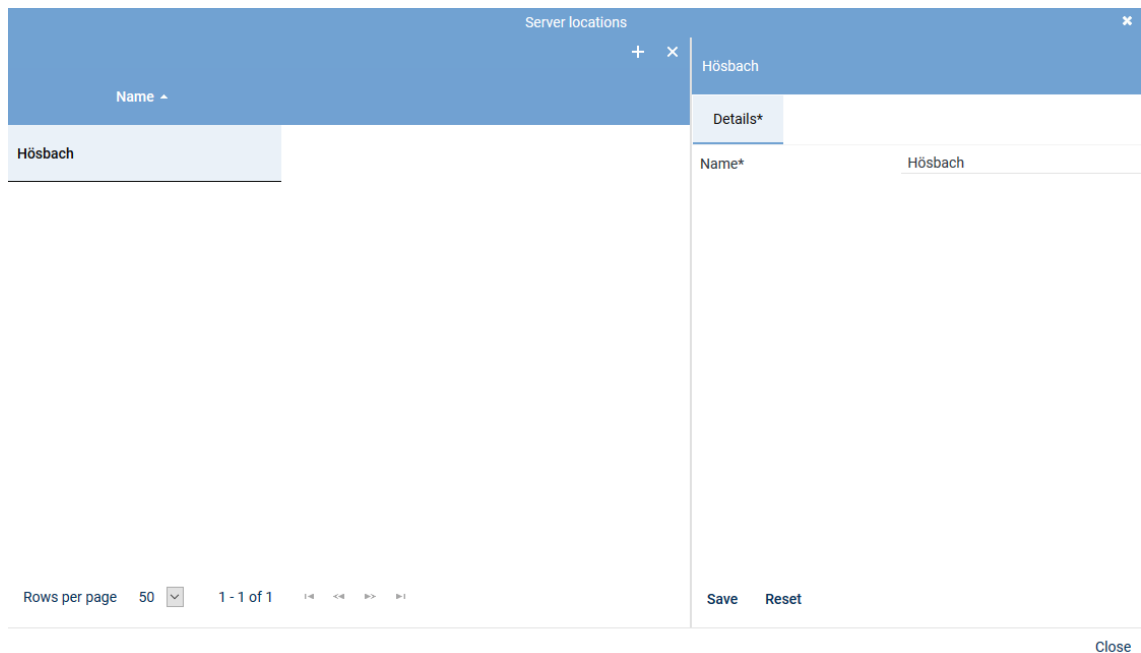



Fig. 16: Delete server location

3. Click on the icon  (*Delete*) in the toolbar of the window.
4. To delete further locations, repeat the last 2 steps.
5. To close the window, click on the button *Close*.

### Tab Details

1. To configure the server, select the entry of the corresponding server in the main view.  
⇒ In the detail view, the tab *Details* appears.  
The information *Name* and *Configured IP address* has already been entered during the installation and is displayed for your information only.

<
Details\*
Usage\*
Media Streamer
Replay Server Address Mapping
Key Ma >

? Help

Name	REC-01
Configured IP address	192.168.173.171
IP address*	192.168.173.171 <input type="button" value="v"/>
Server location	Hörsbach <input type="button" value="v"/>

Fig. 17: Servers - tab Details

- From the drop-down list, select the IP address which is supposed to be used as default address of the server in the system.
- Select the *Server location* in the drop-down list. The drop-down list displays all locations which have been created in the location management.
- Click on the button **Save** if the entries are correct.

### Tab Usage

- Click on the tab *Usage* to configure the purpose of usage.



Since a server can be used for several recording solutions, all purposes of use are listed. Note that some purposes of use do not apply for some recording solutions. As an example: You cannot use audio analysis or replay via phone in a chat recording.

<
Details\*
Usage\*
Media Streamer\*
Replay Server Address Mapping
Key M. >

API Server	▶
Audio Analysis	▶
Recording Control/Key Management	▶
Data Processing	▶
Replay	▶
Virtualization	▶

Fig. 18: Servers - tab Usage

### Group field API Server

**API Server** ▼

☒ API server

API server name\*

Storage expansions

Path ↕	Server ↕
<input type="text"/>	<input type="text"/>



No records found

☒ Replay via phone

Fig. 19: Group field API Server


The API server is a service in the *neo* software. It contains the interface for the client applications. Once the service has been started, the client applications can communicate with the *neo* system via this interface by means of defined commands.

The API server is responsible for replay via the web browser, too. The API server has to be started before the replay server can be activated and the API server assigned for replay via the web applications.


Parameter	Value/Description
<i>API server</i>	<p>Tick the check box to start the API server.</p> <p><input checked="" type="checkbox"/> = Function has been activated. You have to complete the entry field <i>API server</i>.</p> <p><input type="checkbox"/> = Function has not been activated.</p> <p>In order to be able to reach the API server from a public network and with configured port forwarding, too, you have to adjust the settings in the tab <i>Replay Server Address Mapping</i>, see <a href="#">chapter "Tab Replay Server Address Mapping"</a>, p. 30.</p>
<i>API server name</i>	<p>Enter the name which is supposed to denote the server in the system. The displayed name can be selected arbitrarily and is a kind of pseudonym.</p> <p>The displayed name is meant to make it easier for users to select a server as different API servers may be used across the system by different tenants. When selecting the API server, these pseudonyms are displayed on the client computers instead of the real server name or the IP address.</p>
<i>List Storage expansions</i>	<p>Here, you can add storage expansions for replay. If a recording which is supposed to be replayed cannot be found on the server, the search is continued on the storage expansions which have been entered here. That way, even recordings can be replayed which have not been transferred to the server.</p> <p>If the function <i>Replay</i> has been activated, you can adjust the following settings:</p> <ul style="list-style-type: none"> <li>By clicking on the icon  (<i>Add</i>), you can add the storage expansions, see <a href="#">chapter "Add storage expansion for replay"</a>, p. 22.</li> <li>By clicking on the icon  (<i>Remove</i>), you can remove the storage expansions from the list.</li> </ul> <p>If you use several recording servers in your system for which storage expansions have been configured, you can add any storage expansion of any recording server on every API server of the system.</p>

Parameter	Value/Description
<i>Replay via phone</i>	<p>Activate this function if you would like to use the functions <i>Replay via phone</i> or <i>Last Call Repeat</i>.</p> <p><input checked="" type="checkbox"/> = Function has been activated.  <input type="checkbox"/> = Function has not been activated.</p> <p><b>NOTICE!</b> The function <i>Replay via phone</i> has been implemented in the following <i>neo</i> components:</p> <ul style="list-style-type: none"> <li>• Application POWERplay Pro</li> <li>• Application POWERplay Instant</li> <li>• Replay module</li> </ul> <p>In order to enable a client to use the functionality <i>Replay via phone</i>, you have to assign this client an identifier either in the Employees module or in the Phones module which allows the system to clearly identify the phone.</p> <p><b>NOTICE!</b> In the tab <i>Media Streamer</i>, you have to assign this function to a PBX, see <a href="#">chapter "Tab Media Streamer", p. 29</a>. To be able to do so, at least 1 PBX must have been configured in the system.</p>

### Add storage expansion for replay

1. Click on the icon  (*Add*) in the toolbar of the list.
2. Select 1 or several storage expansions.  
If you would like to select several storage expansions or revoke a selection, click on the respective line while holding the [Ctrl] key down.

Storage Expansion for Replay				
Device Type ↕	Name ↕	Path ↕	Free Disk Space ↕	Server ↕
NAS	NAS 2	NAS 2	<div></div>	REC-02

Rows per page 20  1 - 1 of 1    << < > >>

Add Cancel

Fig. 20: Select storage expansion

3. To apply the selected storage expansions, click on the button *Add*.  
To discard the selection and close the window, click on the button *Cancel*.

### Group field Audio Analysis

**Audio Analysis** ▼

---

☒ Audio analysis (SAES mode)

Stream audio data from\*  + -

☐ Emotion detection

Stream audio data from\*  + -

Fig. 21: Group field Audio Analysis

Parameters	Value/Description
<i>Audio analysis</i>	<p>Activate this check box to use the server for audio analysis. The audio data is then streamed for audio analysis from the configured server to this server.</p> <ul style="list-style-type: none"> <li>Stream audio data from From the list of available servers, select the server from which the audio data is supposed to be streamed for audio analysis via the button <b>+</b>.</li> </ul>
<i>Emotion detection</i>	<p>Activate this check box to activate emotion detection for the audio analysis.</p> <p><input checked="" type="checkbox"/> = Function has been activated. Tenants can use the emotion detection function.</p> <p><input type="checkbox"/> = Function has not been activated.</p>

Tab. 5: Configure audio analysis

### Group field Recording Control/Key Management

**Recording Control/Key Management** ▼

---

☒ Recording control/Monitoring

Recording architecture  ▼

☒ neo key management

Fig. 22: Group field Recording Control/Key Management

Parameters	Value/Description
<i>Recording control/Monitoring</i>	<p>Activate the check box if you would like to use <u>CLIENT</u><i>command</i> or an API recording control or if you would like to use <i>Monitoring</i>. This feature is only available if a recording architecture has been configured and activated.</p> <ul style="list-style-type: none"> <li>Recording architecture From the drop-down list, select the respective recording architecture you would like to use for the control.</li> </ul>
- <i>neo key management</i>	<p>The function allows customer-specific encryption of the recordings. To be able to configure the key management, you have to activate the check box <i>Key management</i>.</p> <p>This function can only be activated if the license <code>ASC_KEY_MANAGEMENT</code> is available.</p>

Parameters	Value/Description
	For further information about the configuration of the key management refer to the administration manual <i>Configuration of servers and recording architectures</i> and to the installation manual <i>Installation Dongle Manager</i> .

Tab. 6: Configure Recording Control/Key Management

### Group field Data Processing

**Data Processing** ▼

☒ Data storage

☒ Transfer data for replay

Target Server

Name	IP Address
No records found	

☒ Transfer data for data storage

Target Server

Name	IP Address
No records found	

Activate period of time ☒

from 11:59:36

to 11:59:36

Receives data from

Name	Only Replay
No records found	



☒ Archiving





☒ Export

☒ Import

Recording architecture Please choose... ▼


Fig. 23: Group field Data Processing

Parameter	Value/Description
<i>Data storage</i>	Activate the check box to allow the modification of the additional functions of data processing.
<i>Transfer data for replay</i>	<p>Activate the check box if you would like to transfer data only for replay to another server.</p> <p>If the function has been activated, you can select a server from the list <i>Target Server</i> to which the recorded data is supposed to be transferred for replay. The data is not stored on the target server but deposited in a cache temporarily in order to be replayed.</p> <ul style="list-style-type: none"> <li>By clicking on the icon  (Add), you can add the target server, see <a href="#">chapter "Add target server to a list", p. 26</a>.</li> <li>By clicking on the icon  (Remove), you can remove the target server from the list.</li> </ul> <p><b>NOTICE!</b> Only those servers are displayed on which an API server and a replay server have been configured.</p>

Parameter	Value/Description
<i>Transfer data for data storage</i>	<p>Activate the check box if you would like to transfer data for storage to another server.</p> <p>If the function has been activated, you can select a server from the list <i>Target Server</i> to which the recorded data is supposed to be transferred for data storage purposes. In the drop-down list, all servers are displayed on which the function <i>Data Storage</i> has been activated. The data is copied to the target server and stored there.</p> <ul style="list-style-type: none"> <li>By clicking on the icon  (<i>Add</i>), you can add the target server, see <a href="#">chapter "Add target server to a list", p. 26</a>.</li> <li>By clicking on the icon  (<i>Remove</i>), you can remove the target server from the list.</li> </ul> <p><b>NOTICE!</b> Only those servers are displayed on which the function <i>Data Storage</i> has been activated.</p> <p>If the function has been activated, you can activate the transfer for a certain period of time.</p> <ul style="list-style-type: none"> <li>Activate period of time <input checked="" type="checkbox"/> = Function has been activated. The fields for entering the time become active. Select the time via the rotating field for the period from – to.</li> <li>Active period of time <input type="checkbox"/> = Function has not been activated.</li> </ul> <p><b>NOTICE!</b> In distributed systems with slow network connections, the storage interval for the data transfer can be adjusted. The storage interval for the data transfer has to be configured by an ASC service technician or by an authorized partner company.</p>
<i>Receives data from</i>	<p>This table contains those servers which transfer data to this server.</p> <p>In the column <i>Name</i>, the name of the server appears from which data has been transferred.</p> <p>In the column <i>Only Replay</i>, the purpose of the transfer is displayed:</p> <p> = Data is transferred only for replay.</p> <p> = Data is transferred for data storage.</p>
<i>Archiving</i>	<p>Activate the check box <i>Archiving</i> if you would like to use the server for archiving purposes.</p>
<i>Export</i>	<p>Activate the check box <i>Export</i> to allow the export from this server.</p>
<i>Import</i>	<p>Activate the check box <i>Import</i> so that the imported data can be stored on this server.</p> <ul style="list-style-type: none"> <li>Recording architecture From the drop-down list, select the recording architecture that fulfills this function. In the drop-down list, all recording architectures are displayed which enable this function as well.</li> </ul> <p><b>NOTICE!</b> If you would like to use a server for the import function on which no recording is supposed to take place, you can configure an architecture exclusively for the import.</p>

Tab. 7: Configure data storage

### Add target server to a list

1. In the toolbar of the list *Target Server*, click on the icon  (*Add*).
2. Select the server from the list to which you would like to transfer the data.  
If you would like to select several servers or revoke a selection, click on the respective line while holding the [Ctrl] key down.



Name	IP Address
RC-02	192.168.173.176
REC-04	192.168.173.174
RC-01	192.168.173.175
REC-02	192.168.173.172
CTI-01	192.168.173.177
REC-03	192.168.173.173

Rows per page: 20 | 1 - 6 of 6 | < << >> >

Add Cancel

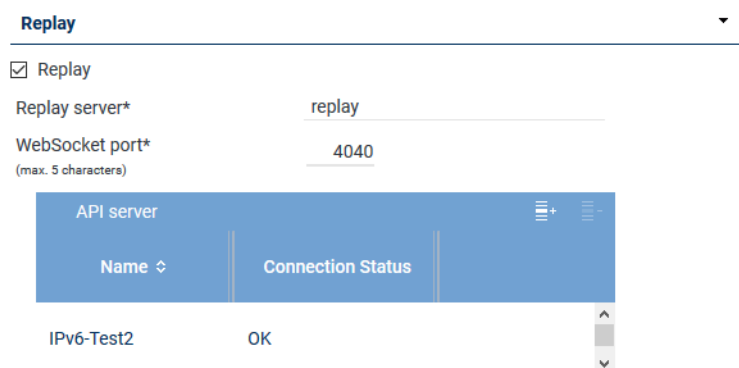
Fig. 24: Select server



Only those servers are available on which the function *Data storage* has been activated.

3. To apply the selected servers, click on the button *Add*.  
To discard the selection and close the window, click on the button *Cancel*.

### Group field Replay



Replay

☒ Replay



Replay server\* replay

WebSocket port\* 4040  
(max. 5 characters)

Name	Connection Status
IPv6-Test2	OK

Fig. 25: Group field Replay

Parameter	Value/Description
Replay	A replay server can replay recordings via the integrated <i>Replay Feature</i> . Only data which has either been recorded directly on this server or which has been transferred to this server for data storage or only for replay purposes can be replayed. The client computers of the system can connect to a replay server for replay purposes.

Parameter	Value/Description
	<p>Activate the check box <i>Replay</i> to be able to use the replay function of the players and the phones.</p> <p><input checked="" type="checkbox"/> = Function has been activated. You have to complete the entry field <i>Replay server</i>.</p> <p><input type="checkbox"/> = Function has not been activated.</p>
<i>Replay server</i>	<p>If the function has been activated, you can enter a displayed name which is supposed to denote the server as the replay server in the system in the entry field <i>Replay server</i>. The displayed name can be selected arbitrarily and is a kind of pseudonym. As the replay server and the <a href="#">API server</a> must not be identical, you can select different pseudonyms.</p> <p>The displayed name is meant to make it easier for users to select a server as different replay servers may be used across the system by different tenants. When selecting the replay server, these pseudonyms are displayed on the client computers instead of the real server name or the IP address.</p> <p>In order to be able to reach the server activated for replay from a public network and with configured port forwarding, you have to set the configuration in the tab <i>Replay Server Address Mapping</i>. For further details about the configuration refer to the administration manual <i>Configuration of servers and recording architectures</i>.</p>
<i>WebSocket port</i> (maximum of 5 characters)	Enter the port via which the data to be replayed in POWERplay Web are supposed to be transmitted.
<i>List</i> <i>API server</i>	<p>Here, you can add <a href="#">API servers</a> that the replay server may use. If a recording which is supposed to be replayed cannot be found on a server, the search is continued on the <a href="#">API servers</a> which have been entered here.</p> <p>If the function <i>Replay</i> has been activated, you can adjust the following settings:</p> <ul style="list-style-type: none"> <li>• By clicking on the icon  (<i>Add</i>), you can add the <a href="#">API server</a>, see <a href="#">chapter "Add API server to a list"</a>, p. 27.</li> <li>• By clicking on the icon  (<i>Remove</i>), you can remove selected <a href="#">API servers</a> from the list.</li> </ul>

Tab. 8: Configure replay

### Search and replay functions



To be able to use the search and replay functions via [LCR](#) as well as to use replay via phone, you have to create the users with the respective access rights in the application System Configuration in the Employees module. For information about the configuration refer to the administration manual *User management* for tenants.

### Add API server to a list

The replay server required the services of an [API server](#). The configuration must be as follows:

- If the replay server runs on a server with a local [API server](#), it must not necessarily be assigned as the replay server always addresses the local [API server](#) first.
- If the replay server runs on a separate server, you must assign at least one [API server](#) that the replay server can address.


- If several **API** servers are available in the network, you can assign further **API** servers in addition to the local **API** server. The assigned **API** servers are addressed in order. For this reason, the local **API** server should always be first in the list.
1. To assign an **API** server, click on the icon  (*Add*) in the toolbar of the list *API Server*.
  2. Select the server from the list on which the **API** service is running.



Fig. 26: Select server



Only those servers are available on which the **API** service has been installed and activated. See [chapter "Group field API Server", p. 21](#).

3. To apply the selected servers, click on the button *Add*.  
To discard the selection and close the window, click on the button *Cancel*.

### Group field Virtualization

**Virtualization** 

☐ VM support

Fig. 27: Group field Virtualization

Parameter	Value/Description
<i>VM support</i>	<p>Activate the check box <i>VM support</i> to be able to use the licensing for several VM installations.</p> <p>This function can only be activated if the system has been installed in a VMware and no <i>TRUSTED_VIRTUALIZATION</i> license has been imported to the system.</p> <p>When activating the function <i>VM support</i>, you have to configure the respective settings in the tab <i>Keystore/VM Licensing</i>. For further details about the configuration of this function refer to the administration manual <i>Configuration of servers and recording architectures</i>.</p>

Tab. 9: Configure virtualization



For the *virtualization* without Internet connection, a dongle is required which contains the system information. The application *Dongle Manager*, required to read the dongle, has to be installed on the server that the dongle has been connected to.

1. To save the entries, click on the button *Save* in the detail view.  
To reset the entries, click on the button *Reset* in the detail view.

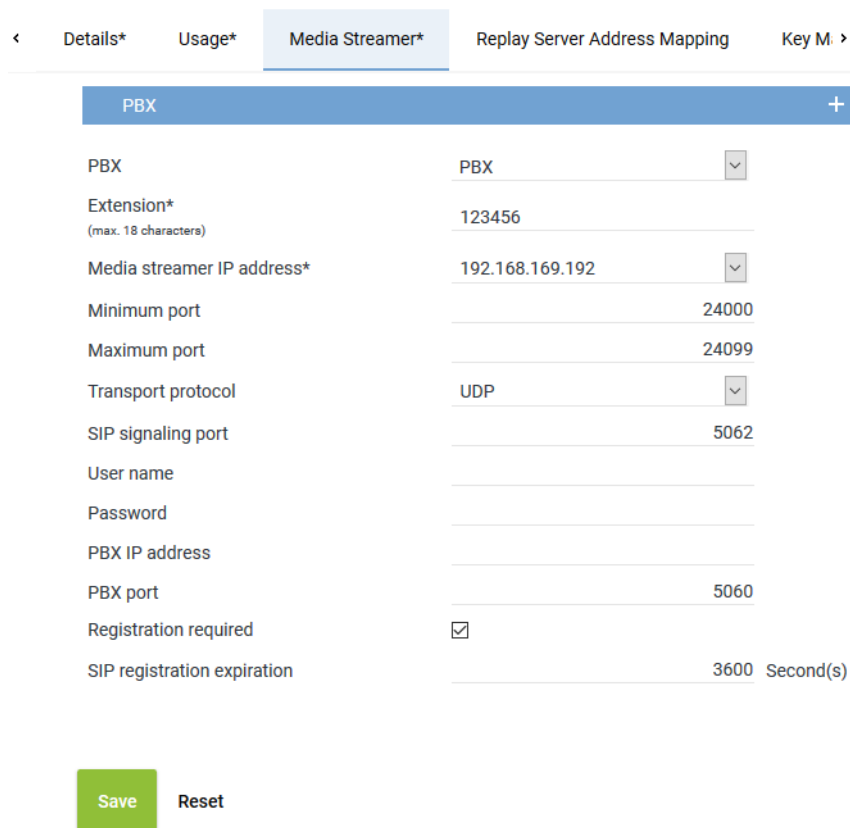
### Tab Media Streamer

1. Click on the tab *Media Streamer* in the detail view.

In this tab, you can configure the Media Streamer for the functionalities *Replay via phone* and *Last Call Repeat Facility*.



The tab *Media Streamer* is only active if the function *Replay via phone* has been activated in the tab *Usage*.



Navigation: < Details\* Usage\* **Media Streamer\*** Replay Server Address Mapping Key M. >

**PBX** +

PBX	PBX	
Extension* (max. 18 characters)	123456	
Media streamer IP address*	192.168.169.192	
Minimum port	24000	
Maximum port	24099	
Transport protocol	UDP	
SIP signaling port	5062	
User name		
Password		
PBX IP address		
PBX port	5060	
Registration required	<input checked="" type="checkbox"/>	
SIP registration expiration	3600	Second(s)

**Save** **Reset**

Fig. 28: Servers module - tab Media Streamer

2. Enter the following parameters:

<b>PBX</b>	<p><b>PBX</b> that the Media Streamer is supposed to be mapped to.</p> <p>Select a <b>PBX</b> from the drop-down list. The drop-down list displays all <b>PBXs</b> which have been created in the system.</p> <p>If no <b>PBX</b> has been created in the system yet, you can create a <b>PBX</b> via the blue bar <b>PBX</b>, see <a href="#">chapter "Create PBX"</a>, p. 35.</p>
<b>Extension</b>	<p>Extension which is supposed to be mapped to the Media Streamer. This is a mandatory field; the configuration cannot be saved if this information is missing.</p> <p>If an external analog gateway has been integrated, enter the value <b>8000</b>.</p>

<i>Media streamer IP address</i>	<p>IP address which is supposed to be used for the exchange of the audio data and for the <b>SIP</b> communication.</p> <p>Select an IP address from the drop-down list. In the drop-down list, all IP addresses of the server are displayed.</p> <p>If an external analog gateway has been integrated, select the IP address <b>169.254.254.100</b> in the drop-down list.</p>
<i>Minimum port</i>	Enter the minimum port which is supposed to be used for the audio data exchange.
<i>Maximum port</i>	<p>Enter the maximum port which is supposed to be used for the audio data exchange.</p> <p>A port range of 100 (e. g. 24000-24099) is sufficient for 50 licenses. The port range should be twice as wide as the number of available licenses.</p>
<i>Transport protocol</i>	<p>Select the transport protocol type you would like to use for the <b>SIP</b> communication from the drop-down list.</p> <p><b>TCP</b> = unencrypted</p> <p><b>UDP</b> = unencrypted</p> <p><b>TLS</b> = encrypted</p> <p>If an external analog gateway has been integrated, select <b>UDP</b> in the drop-down list.</p>
<i>SIP signaling port</i>	<p>Enter the port for the <b>SIP</b> communication.</p> <p>Port for data exchange: <b>5062</b></p>
<i>User name</i>	Enter the user name for the authentication on the <b>SIP</b> server.
<i>Password</i>	Enter the password for the authentication on the <b>SIP</b> server.
<i>PBX IP address</i>	<p>Enter the IP address of the <b>SIP</b> registrar of the <b>PBX</b>.</p> <p>If an external analog gateway has been integrated, enter the IP address <b>169.254.254.101</b>.</p>
<i>PBX port</i>	<p>Enter the port of the <b>SIP</b> registrar of the <b>PBX</b>.</p> <p>If an external analog gateway has been integrated, enter the value <b>5060</b>.</p>
<i>Registration required</i>	<p>Select whether the <b>SIP</b> extension has to be registered with the <b>SIP</b> registrar of the <b>PBX</b>.</p> <p><input checked="" type="checkbox"/> = <b>SIP</b> extension has to be registered.</p> <p><input type="checkbox"/> = <b>SIP</b> extension does not have to be registered.</p> <p>If an external analog gateway has been integrated, deactivate the check box <b>Registration required</b>.</p>
<i>SIP registration expiration</i>	Enter the time interval after which the registration has to be repeated.

### Tab Replay Server Address Mapping

1. Click on the tab *Replay Server Address Mapping* in the detail view.

In this tab, you can configure the replay server address mapping. Servers which have been activated for replay require this address mapping so that they can be reached from a public network and with configured port forwarding.



The tab *Replay Server Address Mapping* is only active if the function *Replay* has been enabled in the tab *Usage*.

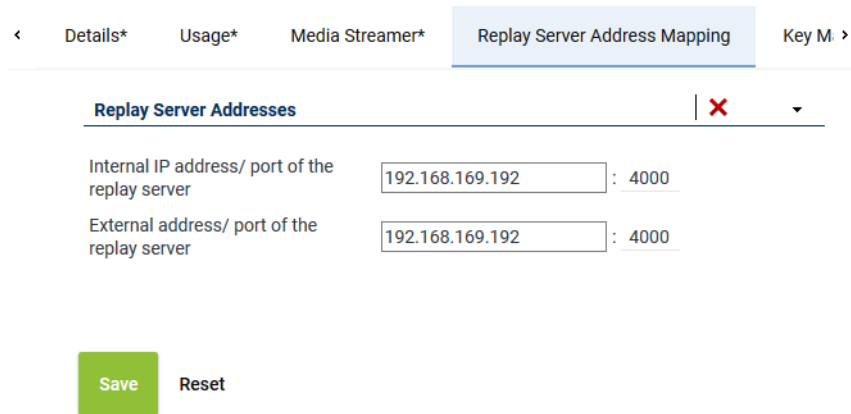


Fig. 29: Servers Module - tab Replay Server Address Mapping

### Group field Replay Server Addresses

1. Enter the following parameters:

<i>Internal IP address/ port of the replay server</i>	Enter the destination <b>IP</b> address and the port of the replay server at which the Replay module can be reached internally.
<i>External address / Port of the replay server</i>	Enter the <b>URL</b> or the <b>IP</b> address and the port at which the Replay module can be reached via the browser from outside. When entering the external address consider whether the SSL certificate has been created for an IP address or for a DNS address. In the latter case, it is imperative to enter the DNS name! Otherwise the certificate check in the replay applications will fail.

If you would like to remove the addresses, click on the icon  in the title bar of the group field.



If address mapping has been configured, the Replay module receives the configured address and the configured port.

If address mapping has not been configured, the Replay module receives the IP address and the default port **4040** as entered in the tab *Details*.



To allow the users of the respective tenant to access the replay server via the browser, an internal address and/or an external IP address or a DNS name must be configured in the *Tenants* module.



For information about the configuration refer to the administration manual for tenants *User management tenant*.

### Tab Key Management

1. Click on the tab *Key Management* in the detail view.

In this tab, you can configure the settings for the *neo* key management. This tab is only active if you have installed the corresponding license and enabled the function *neo Key Management* in the tab *Usage*.

< Usage\* Media Streamer\* Replay Server Address Mapping **Key Management** >

Key creation interval

☒ All  
365 Day(s)

☐ Create key manually

Delay usage

until 0 Day(s) 0 Hour(s)

☐ Key expiration date

after 0 Day(s)

☒ In case of an error switch to simple key management automatically

Save Reset

Fig. 30: Servers module - tab Key Management

<b>Key creation interval</b>	<p>Select whether a key is supposed to be generated automatically or manually. Select one of the following options:</p> <ul style="list-style-type: none"> <li>• <i>All</i> Select the intervals in which a new key is supposed to be generated automatically. Possible time interval: 1 to 365 days Default value: 365 days</li> <li>• <i>Create key manually</i> Select that a key is supposed to be generated manually.</li> </ul> <p>Old keys which are no longer used for encryption become inactive for the time being. They remain in the database, though, since they are still required for the decryption of old recordings.</p>
<b>Delay usage</b>	<p>If required, enter a time interval during which the new key is not supposed to be used yet after having been created. Not until after this time interval has passed can the key be actually used for encryption.</p> <p>Possible time interval: 0 to 14 days Default value: 0 days (new keys are immediately used for encryption)</p> <p>A delay guarantees that the key has been captured by a database backup before it will actually be used.</p>
<b>Key expiration date</b>	<p>Select whether an inactive key is supposed to become invalid after the expiration of the time interval defined here.</p> <p><input type="checkbox"/> = Key never becomes invalid.</p> <p><input checked="" type="checkbox"/> = Key becomes invalid. In the entry field, enter the time interval after which the key loses its validity. Once this time interval has passed, the key cannot be used anymore. If recording data must be deleted after a certain period of time, this option offers additional security on top of the configured date of deletion. This especially applies to the case when recording data has been transferred manually to a storage location where the deletion mechanism of the system cannot find it.</p>

**CAUTION!** All recordings which have been encrypted with a key which has meanwhile become invalid are useless and cannot be replayed anymore.

*In case of an error ... automatically*

Select whether simple key management is supposed to be used if the neo key management does not work (e. g. if the service *DongleMan* fails). If you have not activated the option, no recording takes place as long as the neo key management has been activated but does not work.

☒ = In case of an error, simple key management is used as replacement.

☐ = In case of an error, no recording takes place as long as the neo key management has been activated. In this case, disable key management in the tab *Usage*.



On top of the settings in this tab, each tenant who would like to use the neo key management has to define individual settings in his own user management (Tenants module).



For information about the configuration refer to the administration manual for tenants *User management tenant*.

### Tab Keystore/Virtualization

1. Click on the tab *Keystore/Virtualization* in the detail view.

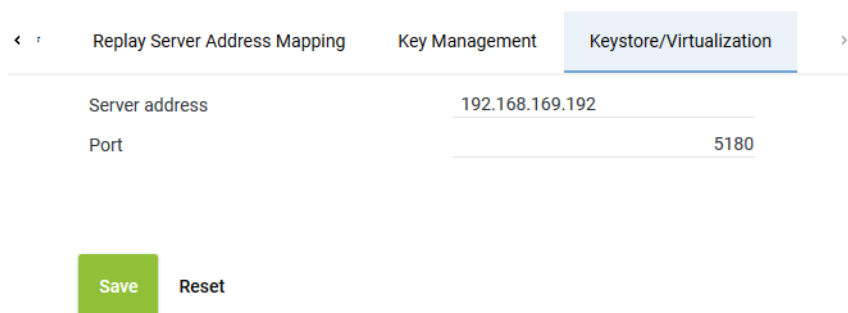
In this tab, you can configure the connection data for the service *DongleMan* for the neo key management and for the authentication of the VM.



If your system has been installed in a virtual environment, the application Dongle Manager must have been installed and started locally outside the VM so that the access to the dongle works. The dongle must have been connected to the server on which the VM has been installed.



For detailed information about neo key management refer to the administration manual *Encryption of recordings*.



The screenshot shows a configuration interface with three tabs: 'Replay Server Address Mapping', 'Key Management', and 'Keystore/Virtualization'. The 'Keystore/Virtualization' tab is active. It contains two input fields: 'Server address' with the value '192.168.169.192' and 'Port' with the value '5180'. Below these fields are two buttons: 'Save' (green) and 'Reset' (grey).

Fig. 31: Servers module - tab Keystore/Virtualization

#### Server address

Enter the address of the server for this connection.

- If you use the neo key management as well as the virtualization:  
IP address of the server that the service *DongleMan* has been installed on.
- If you use only virtualization, you can authenticate the VM via the ASC License Management System, too. In this case, enter the following address:  
*licensing.asc.de*

	<ul style="list-style-type: none"> <li>If you use only the ASC key management: IP address of the server with the master password database</li> </ul>
Port	Enter the port for the connection. Default value: 5180

- To save the settings, click on the button *Save*.  
To discard the settings, click on the button *Reset*.

### Administrate NTP server

The recording system works with an **NTP**-based time synchronization. The function *Administrate NTP server* allows defining several **NTP** servers. Every server in the system identifies all **NTP** servers configured within the system and can use any **NTP** server for time synchronization. That way, every server can connect immediately to another **NTP** server if its current **NTP** server connection breaks down.

### Add NTP server

- Select the menu item *Servers > Administrate NTP Server* in the toolbar of the main view.  
⇒ The window *NTP Server* appears.

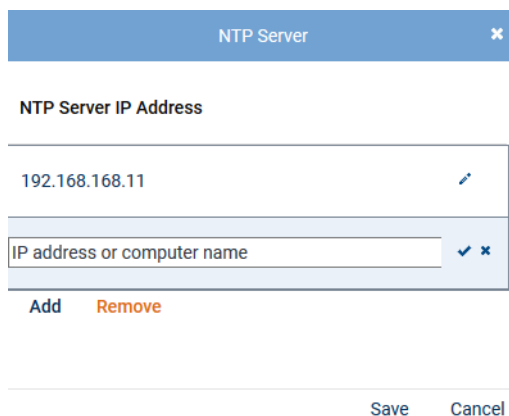





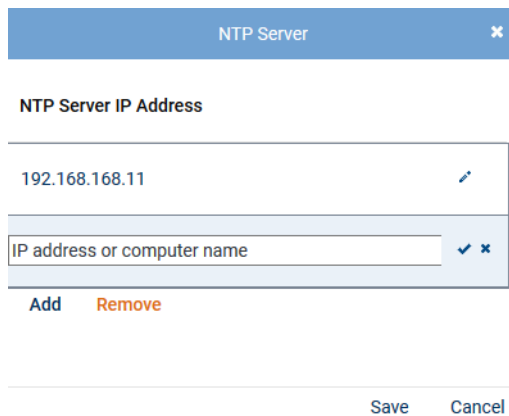
Fig. 32: Add NTP server

The list displays all NTP servers that have been configured during the installation.

- To add a server, click on the button *Add*.
- In the newly added row, click on the icon  (*Edit*).
- Enter the **IP** address or the name of the **NTP** server in the entry field.
- To save the entry in the row, click on the icon  (*Save*).  
To discard the entry in the row, click on the icon  (*Discard*).
- To save all changes in the list, click on the button *Save*.  
To discard the changes and close the window, click on the button *Cancel*.




### Edit IP address

- Select the menu item *Servers > Administrate NTP Server* in the toolbar of the main view.  
⇒ The window *NTP Server* appears.



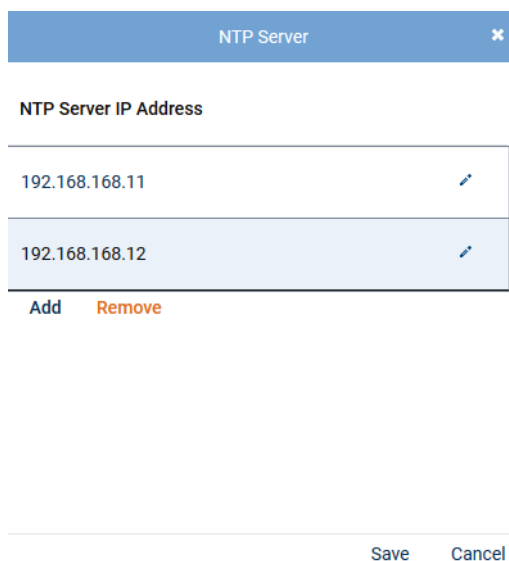
The screenshot shows the 'NTP Server' configuration window. At the top, there's a title bar 'NTP Server' with a close button. Below it, the section 'NTP Server IP Address' contains a table with one row showing the IP address '192.168.168.11'. To the right of the IP address is an edit icon (pencil). Below the table is a text input field with the placeholder 'IP address or computer name' and buttons for 'Add' and 'Remove'. At the bottom of the window are 'Save' and 'Cancel' buttons.

Fig. 33: Edit IP address

2. Click on the icon  (*Edit*) in the row with the **IP** address that you would like to edit.
3. Change the entry in the entry field.
4. To save the change, click on the icon  (*Save*).  
To discard the change, click on the icon  (*Discard*).
5. To save the changes, click on the button *Save*.  
To discard the changes and close the window, click on the button *Cancel*.

#### Remove NTP server

1. Select the menu item *Servers > Administrate NTP Server* in the toolbar of the main view.  
⇒ The window *NTP Server* appears.



The screenshot shows the 'NTP Server' configuration window with two rows in the 'NTP Server IP Address' table. The first row has the IP address '192.168.168.11' and an edit icon. The second row has the IP address '192.168.168.12' and an edit icon. Below the table are 'Add' and 'Remove' buttons. At the bottom of the window are 'Save' and 'Cancel' buttons.

Fig. 34: Remove NTP server

2. In the list, select the **NTP** server that you would like to remove.
3. Click on the button *Remove*.  
⇒ The NTP server is removed from the list.
4. To save the change, click on the button *Save*.  
To discard the change and close the window, click on the button *Cancel*.

#### 6.1.2.1.3 Create PBX

The PBX can either be configured via the PBX module or via the Integrations module.

In this configuration step, the parameters for the PBX are configured, e. g. the name, the area code and the net code.

1. Select the menu item *Setup > PBX* in the navigation bar.

⇒ The following window appears:

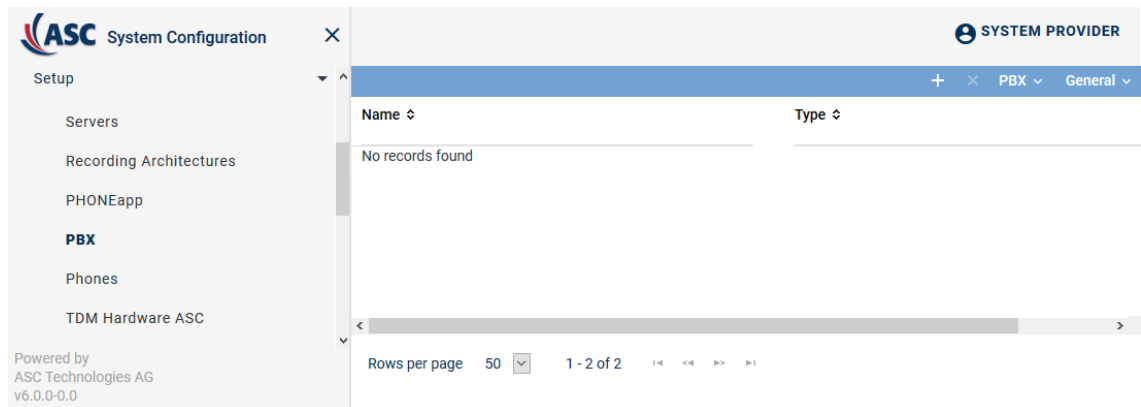




Fig. 35: Create new PBX

### Toolbar of the PBX module

The toolbar offers the following functions.



Fig. 36: Toolbar PBX module

	<i>Create</i>	In the detail view, you can enter the parameters of the new PBX.
	<i>Delete</i>	Deletes the selected PBX configuration. A PBX can only be deleted if it is not used in any configuration.
<i>PBX</i>	<i>Phone Configuration</i>	Opens a window in which you can create and configure phones.
	<i>Administrate Unused Extensions</i>	Opens a window in which you can delete extensions that are not used in any configuration.
<i>General</i>	<i>Print</i>	Prints the table of the main view.
	<i>Adjust Table</i>	Opens a window in which you can adjust the following settings for the main view: <ul style="list-style-type: none"> <li>• <i>Displayed information</i></li> <li>• <i>Order of the displayed columns</i></li> <li>• <i>Number of rows per page</i></li> </ul>
	<i>Save Table Configuration</i>	Saves the current table configuration of the main view as default view of the user.
	<i>General Help</i>	Opens the online help.
	<i>Module Help</i>	Opens the module-specific online help.

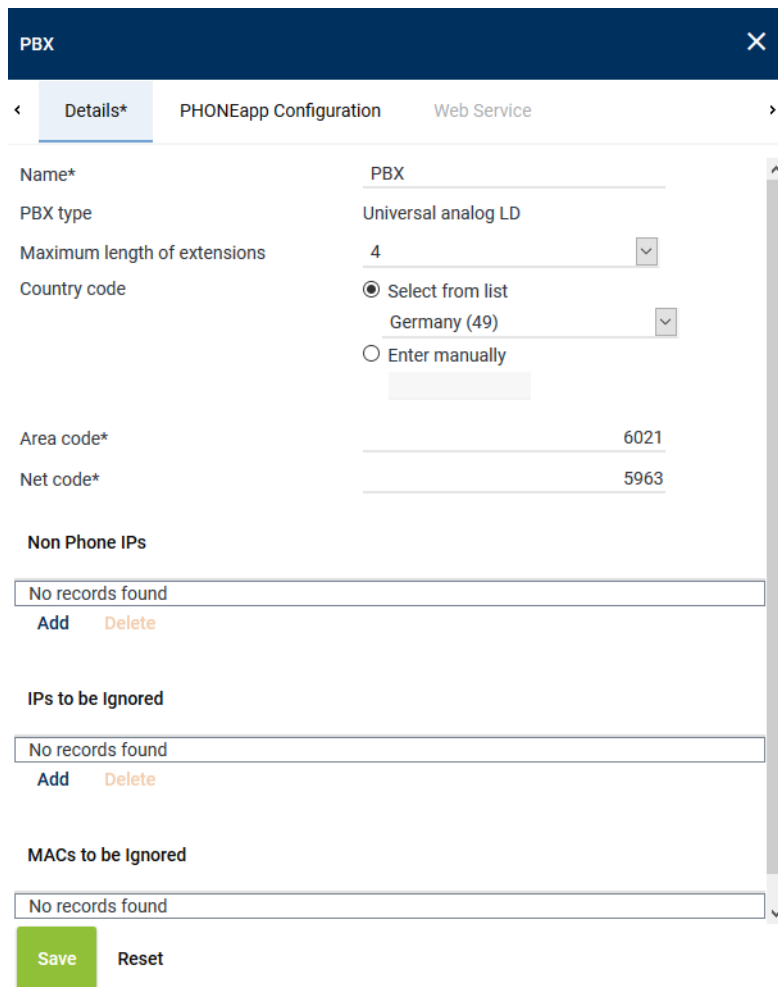


For detailed information on default functions such as *Print*, *Adjust table*, or *Help* refer to the user manual for administrators *System Configuration - General Information*.

### Create new PBX

1. Click on the icon  (*Create*) in the toolbar of the main view of the PBX module.

⇒ In the detail view, the tab *Details* appears.



**PBX**

< Details\* PHONEapp Configuration Web Service >

Name\* PBX

PBX type Universal analog LD

Maximum length of extensions 4

Country code

☒ Select from list

Germany (49)

☐ Enter manually

Area code\* 6021

Net code\* 5963

**Non Phone IPs**

No records found

Add Delete

**IPs to be Ignored**

No records found

Add Delete

**MACs to be Ignored**

No records found

Save Reset

Fig. 37: Create new PBX - tab Details

- Set the following parameters in the detail view:

Parameter	Value/Description
Name	This <i>name</i> serves as the identifier of this PBX.
PBX type	Select the type of the <b>PBX</b> from the drop-down list.
Maximum length of the extensions	Enter the number of digits of the extensions, e. g. 4.
Country code	Select the option for the country code: <ul style="list-style-type: none"> <li><i>Select from list</i> Select the country code from the drop-down list.</li> <li><i>Enter manually</i> If the corresponding country code is not available in the drop-down list, you can enter the 3-digit code manually. e. g. for Sri Lanka 094.</li> </ul>
Area code	Enter the area code without the preceding 0, e. g. 6021.
Net code	Enter the net code, e. g. 5963. Do not enter an extension here.

Tab. 10: Create PBX

- To save the settings, click on the button **Save**.  
To discard the settings, click on the button **Reset**.

### Phone configuration

Phones can be configured in three different ways in the following modules:

- PBX module as described here
- or in the Phones module
- or in the corresponding TDM Hardware module
- or in the Integrations module



As an alternative to creating the phones manually, you can also import the phone configurations. For further information about the configuration import refer to the administration manual for system providers *Import of phone configurations*.

1. In the main view, select the PBX for which you would like to create the phones.
  2. To create or configure phones in the PBX module, click on the menu item (*Phone Configuration*) in the toolbar of the main view of the .
- ⇒ The following window appears:

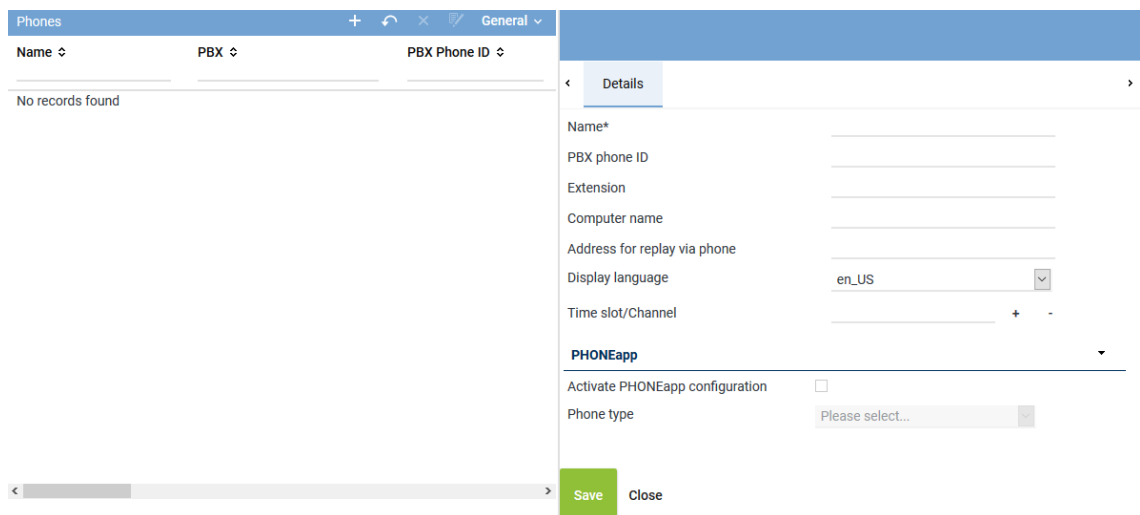


Fig. 38: Phone configuration

Depending on the table configuration, the following information is displayed in the table in the main view:





<i>Name</i>	Shows the name of the phone.
<i>PBX</i>	Shows the name of the PBX.
<i>PBX Phone ID</i>	Shows the identifier which has been configured for the phone in the PBX.
<i>Extension</i>	Shows the assigned extension of the phone.
<i>Computer Name</i>	Shows the computer name if it has been defined in the details.
<i>Phone Type</i>	Shows the selected phone type if the PHONEapp configuration has been activated.
<i>Display Language</i>	Shows the selected display language for the PHONEapp.
<i>Time Slot/Channel</i>	Shows the assigned time slot or channel.

### Toolbar of the Phone Configurations window

The toolbar offers the following functions.



Fig. 39: Toolbar PBX module - Phone configuration

	<i>Create</i>	In the detail view, you can enter the parameters of the new phone.
	<i>Import</i>	Opens a window in which you can select the source of the CSV file and of the <a href="#">XSLT</a> file that contain the corresponding phone configurations. In addition, this dialog allows you to define criteria according to which phones are supposed to be created or deleted. Additionally, you can configure stop criteria.
	<i>Delete</i>	Deletes the selected phone.
	<i>Edit</i>	By selecting several phones from the list, you can configure the display language and the phone type for the selected phones.
<i>General</i>	<i>Adjust Table</i>	Opens a window in which you can adjust the following settings for the main view: <ul style="list-style-type: none"> <li>• <i>Displayed information</i></li> <li>• <i>Order of the displayed columns</i></li> <li>• <i>Number of rows per page</i></li> </ul>
	<i>Save Table Configuration</i>	Saves the current table configuration of the main view as default view of the user.

### Create new phone

1. Click on the icon  (*Create*) in the toolbar of the window Phones to create new phones.

In recording solutions using TDM phones as well as IP phones, a context menu appears in which you can select which phone type you would like to create. The selection depends on the PBX and the installed licenses.

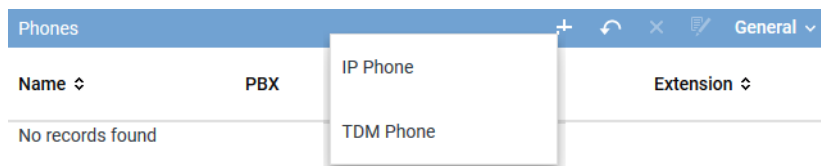
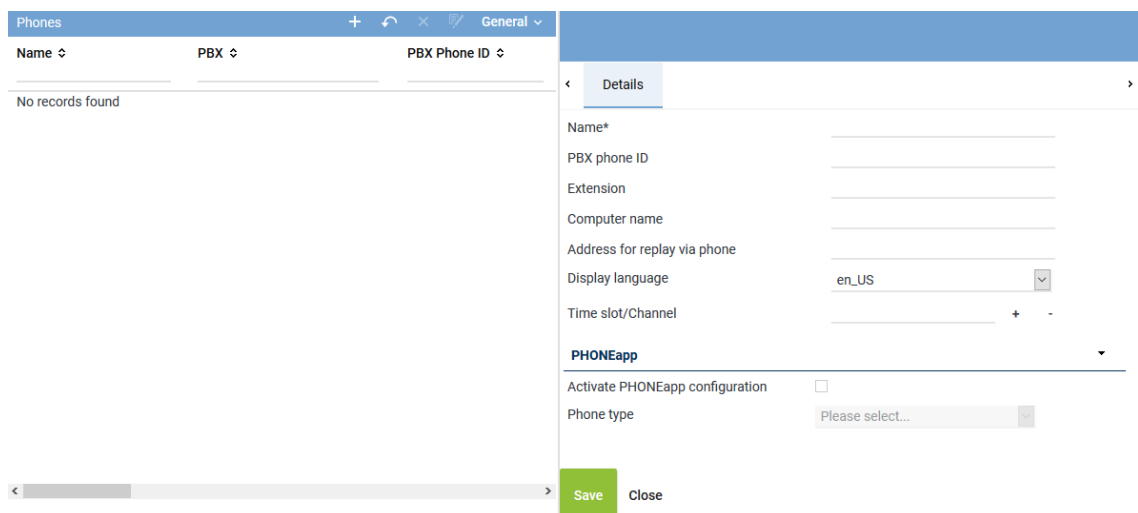


Fig. 40: Create phones Select phone type

The parameters to be configured appear in the tab *Details*.



The screenshot shows the 'Details' tab for creating a new phone. The form includes fields for Name\*, PBX phone ID, Extension, Computer name, Address for replay via phone, Display language (set to en\_US), and Time slot/Channel. Below these fields is a section for PHONEapp configuration, which includes a checkbox for 'Activate PHONEapp configuration' and a dropdown for 'Phone type' (set to 'Please select...'). At the bottom, there are 'Save' and 'Close' buttons.

Fig. 41: Create phone

2. Enter the following parameters:

Parameter	Value/Description
<i>Name</i>	This name is used as the identifier of the phone.
<i>PBX phone ID</i>	The PBX phone ID is not used in this recording solution.
<i>Extension</i>	Enter the extension of the phone.
<i>Computer name</i>	Optional mapping of the computer for SCREEN <del>rec</del> or CLIENT- <u>command</u> . This option cannot be used in this recording solution.
<i>Address for replay via phone</i>	Enter the address of the phone which is supposed to replay the calls. Depending on which agent logs in on this phone, the audio data that the participant is allowed to replay is provided.  <b>NOTICE!</b> In case of TDM recordings, use either the extension or the complete phone number as address type.  For further information about this function refer to the administration manual <i>Configuration Replay via phone</i> .
<i>Display language</i>	The parameter is only relevant for the PHONE <u>app</u> .
<i>Phone type</i>	The parameter is only relevant for the PHONE <u>app</u> .
<i>Time Slot/Channel</i>	Map the phone to a configured channel. If the respective channel has not been configured yet, the mapping can be carried out via the module TDM Hardware Others, too. For analog or <u>PCM30</u> interfaces the mapping of the phone to a channel should be configured. In <u>PRI</u> recording, the channels are mapped dynamically; that is why mapping is not necessary.

Tab. 11: Create phone

#### Group field PHONEapp

Parameter	Description
Activate PHONE <u>app</u> configuration	Activate the check box to use the functions of the PHONE <u>app</u> .  This function is only available if it has been activated previously in the modules: <ul style="list-style-type: none"> <li>• in the PBX module in the tab PHONE<u>app</u></li> <li>• and in the PHONEapp module</li> </ul>
<i>Phone type</i>	If the functions of the PHONE <u>app</u> have been activated, you can select the respective phone type from the drop-down list. The phone types are only displayed if the appropriate license for the PHONE <u>app</u> has been installed and if the PHONE <u>app</u> has been activated in the PHONEapp module.

1. Click on the button *Save* to apply the entries.
2. Repeat the steps for every end device.

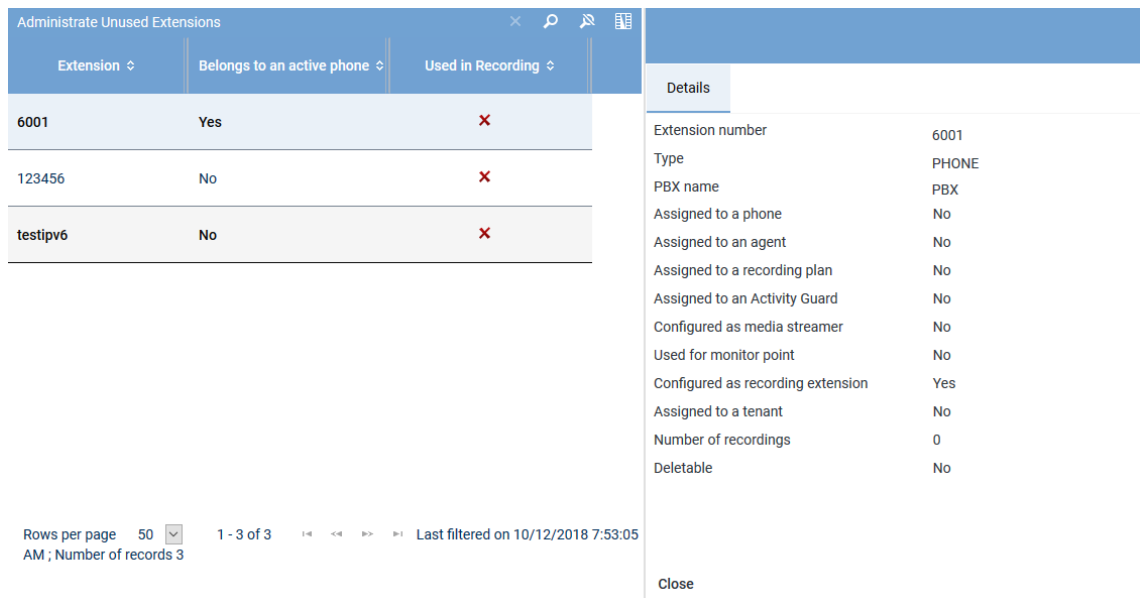
Selecting a PBX in this configuration step is not necessary as the respective PBX has already been selected. Upon saving a new phone, the name of the assigned PBX appears in the second line in the detail view.

3. Click on the button *Save*.
4. Click on the button *Close* to finish this configuration step.

### Administrate unused extensions

This function allows you to delete extensions which are currently not used. Even extensions via which recording have been made can be deleted. To do so, the extensions just must not be used in any current configuration.

1. To delete unused extensions, you must go to the main view of the PBX module and select the PBX that the extension belongs to.
2. Click on the menu item *PBX > Administrate Unused Extensions* in the toolbar.  
⇒ A window containing a list of the extensions of the selected PBX opens.



Extension	Belongs to an active phone	Used in Recording
6001	Yes	No
123456	No	No
testipv6	No	No

Details	
Extension number	6001
Type	PHONE
PBX name	PBX
Assigned to a phone	No
Assigned to an agent	No
Assigned to a recording plan	No
Assigned to an Activity Guard	No
Configured as media streamer	No
Used for monitor point	No
Configured as recording extension	Yes
Assigned to a tenant	No
Number of recordings	0
Deletable	No

Rows per page: 50 | 1 - 3 of 3 | Last filtered on 10/12/2018 7:53:05 AM ; Number of records 3

Close

Fig. 42: Administrate unused extensions


In the detail view, you see in which context the selected extensions are used.

<i>Extension number</i>	Shows the number of the extension.
<i>Type</i>	Shows the type of the extension.
<i>PBX name</i>	Show the PBX that the extension belongs to.
<i>Assigned to a phone</i>	Shows whether the extension has been assigned to a phone.
<i>Assigned to an agent</i>	Shows whether the extension has been assigned to an agent.
<i>Assigned to a recording plan</i>	Shows whether the extension has been assigned to a recording plan.
<i>Assigned to an Activity Guard</i>	Shows whether the extension has been assigned to an Activity Guard.
<i>Configured as media streamer</i>	Shows whether the extension has been configured as media streamer.
<i>Used as monitor point</i>	Shows whether the extension is used as monitor point.
<i>Configured as recording extension</i>	Shows whether the extension has been assigned to a recording server.
<i>Assigned to a tenant</i>	Shows whether the extension has been assigned to a tenant.
<i>Number of conversations</i>	Shows the number of recordings for this extension.
<i>Deletable</i>	Shows whether the extension can be deleted.

The last property *Deletable* indicates whether this extension can be deleted. It is possible to delete extensions for which recordings exist, but the extension must not be used in any current configuration.

Configurations that the user has made are not deleted automatically. If the user has created a configuration to use an extension as media streamer, then this extension cannot be deleted. If an assigned configuration continues to exist, you have to revoke this assignment first. The information in the detail view indicates which assignments continue to exist.

The deletion procedure removes the reference of the call participants to the extensions to be deleted as well as the entries to display the extensions in the Portal. The number of the extension remains in the system. Recordings which have been made with these extensions continue to be displayed in the players as only the number of the extensions and not the reference is required to do so. The deletion procedure does not remove any recordings.

3. If the extension can be deleted, click on the icon  (*Delete*) in the toolbar.
4. To really delete the selected extension, confirm the security prompt by clicking *OK*.

#### 6.1.2.1.4 Assign recording resources

In multi-tenant systems, you have to assign each tenant its own recording resources.

Depending on the recording type, agents can be assigned to the recording resource via the extension, via the PBX Agent ID or via the chat ID. Within one tenant, you can configure all three possibilities.

#### Assign extensions to tenants

If you would like to make an assignment based on extensions, you can assign the respective tenant the extension designated for recording in the Tenants module.



In 1-tenant systems, all extensions are automatically assigned to the tenant who has been created by the system (1st tenant). Extensions are assigned to the user in the Employees module.

When installing a 1-tenant system, you can skip this chapter.



In multi-tenant systems, you have to assign the extensions manually to each tenant who is supposed to be able to use them. There are multi-tenant systems, too, in which only 1 tenant has been set up.

The manual assignment of extensions is not possible until a PBX has been created since extensions are assigned in relation to the PBX.

1. Select the menu item *Tenants* in the navigation bar.

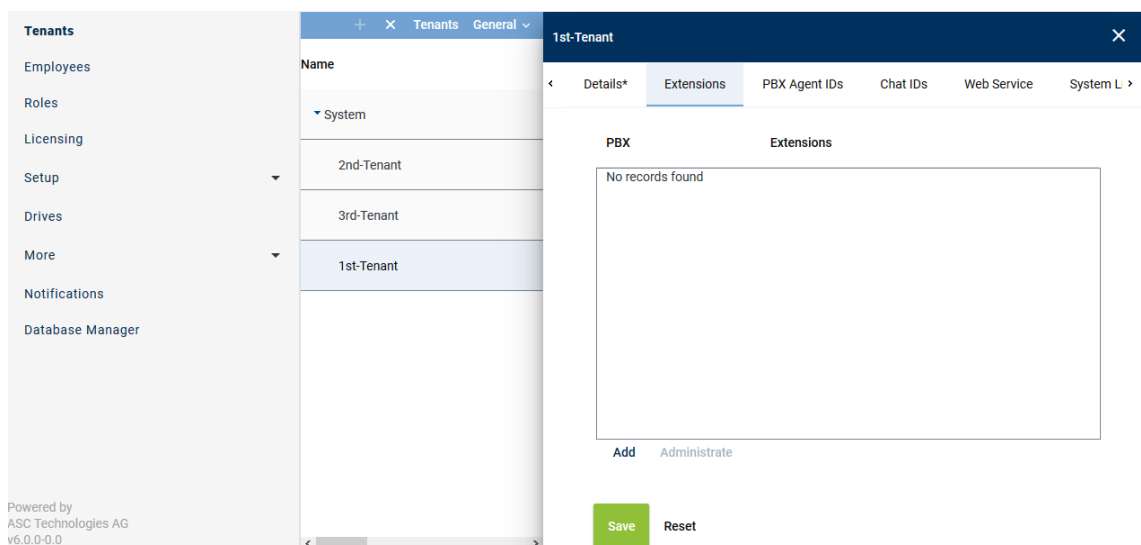


Fig. 43: Tenants - main view - tab Extensions

### Add extensions

1. In the main view, select the tenant to whom you would like to assign extensions.
2. Click on the tab *Extensions*.
3. Click on the button *Add*.  
⇒ The following window appears:

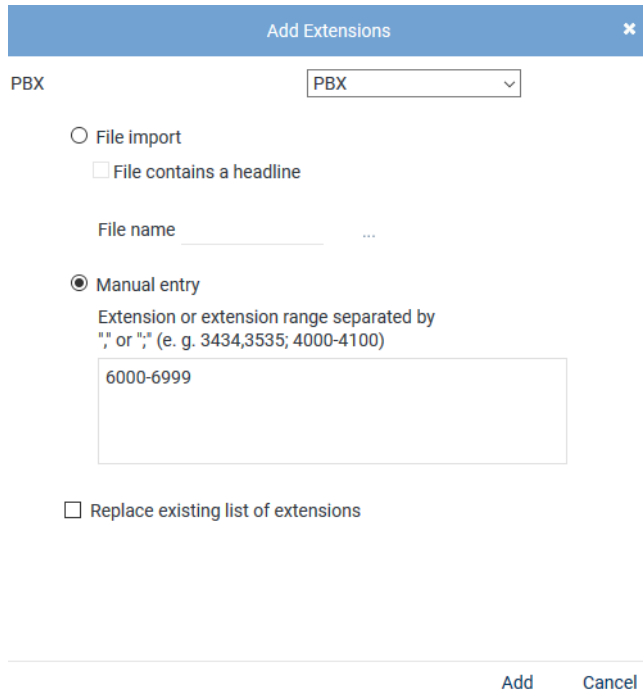




Fig. 44: Assign extensions to tenants

4. From the drop-down list, select the PBX in which the extensions for this tenant have been configured.

<b>File import</b>	Select this option to import extensions from an existing <b>CSV</b> file and add them to the table of extensions.
<b>File contains a headline</b>	Activate this option so that this structured is recognized correctly when importing the file. The <b>CSV</b> file may not contain more than 1 column. If commas or other column delimiters are found in the <b>CSV</b> file, then the file is not valid and an error message appears. Only ZIP files are supported as file format. To be able to import a <b>CSV</b> file, you have to pack it in a ZIP file.
<b>File name</b>	To import the file, proceed as follows: <ul style="list-style-type: none"> <li>• Click on the button  behind the field <i>File name</i>.</li> <li>• Click on the button <i>Choose File</i>.</li> <li>• Select the respective ZIP file via the Explorer and click on the button <i>Open</i>.</li> <li>• Click on the button  <i>Upload File</i>.</li> </ul>
<b>Manual entry</b>	Select this option to enter extensions or extension ranges manually.

Enter the extension range that is reserved for this tenant using a hyphen, e. g. from 6000 to 6999. Alphanumerical entries with a hyphen are not detected as a range, they must be entered individually. You can separate the different extensions and extension ranges by the delimiters indicated in the screenshot.

**NOTICE! Wildcards cannot be used!**

*Replace existing list of extensions*

Activate the check box to replace the list of extensions.

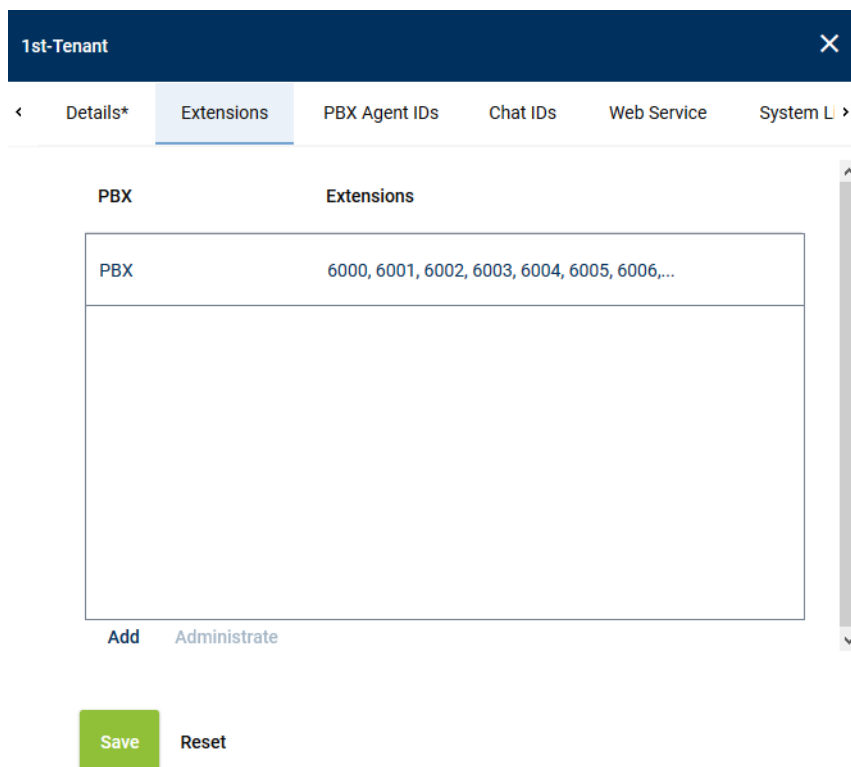
☒ = Function has been activated; the entry replaces the extensions of the selected PBX.

☐ = Function has not been activated; the configured extensions of all PBXs are kept and the new extensions are added to the selected PBX.

5. Click on the button *Add*.  
⇒ The extensions are added in the table of extensions.
6. If errors have been detected, the window *Result* appears.  
Click on the button *Display Error Report* to open the window *Error Report*.  
To close the window *Error Report*, click on the button *Close*.  
To close the window *Result*, click on the button *Close*.
7. The configured extensions now appear in the detail view.
8. Click on the button *Save* in the detail view to save the entries.

**Remove extensions**

1. In the list, select the **PBX** for which you would like to remove the assigned extensions.



The screenshot shows a configuration window for '1st-Tenant'. The 'Extensions' tab is active, displaying a table with two columns: 'PBX' and 'Extensions'. The first row shows 'PBX' and '6000, 6001, 6002, 6003, 6004, 6005, 6006,...'. Below the table are buttons for 'Add' and 'Administrate'. At the bottom of the window are buttons for 'Save' and 'Reset'.

Fig. 45: Remove extensions

2. Click the button *Administrate*.
3. Select one or several extensions you would like to remove from the assignment.  
To select several extensions or to revoke the selection, click on the respective line while holding the [Ctrl] key down.



Fig. 46: Select extensions

4. To remove the selected extensions, click on the button *Remove*.  
To cancel the process and close the window, click on the button *Cancel*.

### Assign PBX Agent IDs to tenants

If the information about PBX Agent IDs is delivered by the PBX, you can make an assignment by means of the PBX Agent IDs. In this case, you can assign the respective tenant the PBX Agent IDs designated for recording in the Tenants module.



In 1-tenant systems, the PBX Agent IDs are automatically assigned to the tenant who has been created by the system (1st tenant). PBX Agent IDs are assigned to the user in the Employees module.

When installing a 1-tenant system, you can skip this chapter.



In multi-tenant systems, you have to assign the PBX Agent IDs manually to each tenant who is supposed to be able to use them. There are multi-tenant systems, too, in which only 1 tenant has been set up.

The manual assignment of PBX Agent IDs is not possible until a PBX has been created since the assignment is PBX-related.

1. Select the menu item *Tenants* in the navigation bar.

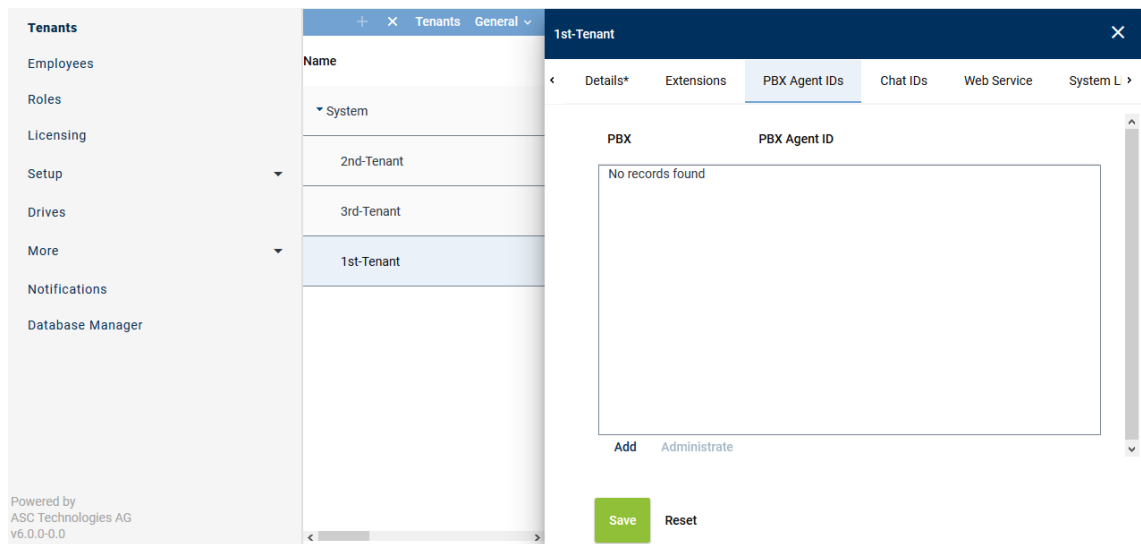


Fig. 47: Tenants - main view - tab PBX Agent ID

### Add PBX Agent ID

1. In the main view, select the tenant to whom you would like to assign the PBX Agent IDs.
2. Click on the tab *PBX Agent IDs*.
3. Click on the button *Add*.  
⇒ The following window appears:

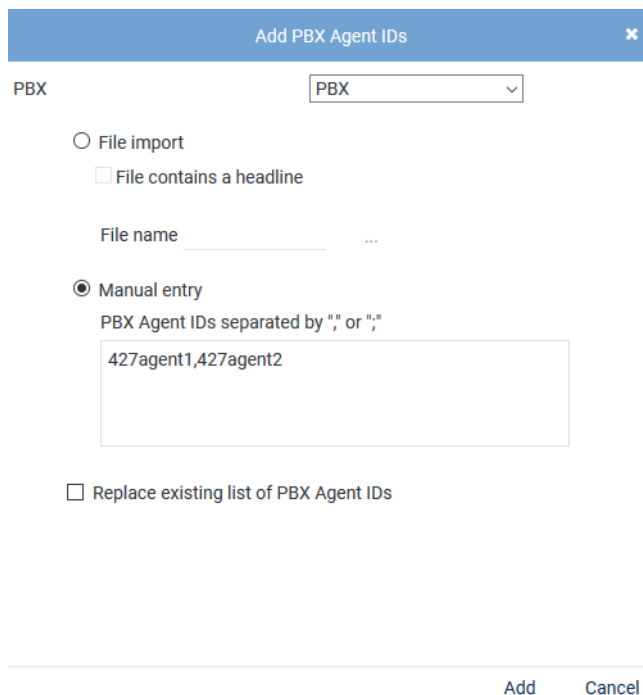




Fig. 48: Assign PBX Agent IDs to tenants

4. From the drop-down list, select the PBX in which the PBX Agent IDs for this tenant have been configured.

<i>File import</i>	Select this option to import the PBX Agent IDs from an existing <a href="#">CSV</a> file and add them to the table of PBX Agent IDs.
<i>File contains a headline</i>	

	<p>Activate this option so that this structured is recognized correctly when importing the file.</p> <p>The <b>CSV</b> file may not contain more than 1 column. If commas or other column delimiters are found in the <b>CSV</b> file, then the file is not valid and an error message appears.</p> <p>Only ZIP files are supported as file format. To be able to import a <b>CSV</b> file, you have to pack it in a ZIP file.</p>
	<p><i>File name</i></p> <p>To import the file, proceed as follows:</p> <ul style="list-style-type: none"> <li>• Click on the button  behind the field <i>File name</i>.</li> <li>• Click on the button <i>Choose File</i>.</li> <li>• Select the respective ZIP file via the Explorer and click on the button <i>Open</i>.</li> <li>• Click on the button  <i>Upload File</i>.</li> </ul>
<i>Manual entry</i>	<p>Select this option to enter PBX Agent IDs manually.</p> <p>You can separate the individual PBX Agent IDs by the delimiters indicated in the screenshot.</p> <p><b>NOTICE! Wildcards cannot be used!</b></p>
<i>Replace existing list of PBX Agent IDs</i>	<p>Activate the check box to replace the list of PBX Agent IDs.</p> <p><input checked="" type="checkbox"/> = Function has been activated; the entry replaces the PBX Agent IDs of the selected PBX.</p> <p><input type="checkbox"/> = Function has not been activated; the configured PBX Agent IDs of all PBXs are kept and the new PBX Agent IDs are added to the selected PBX.</p>

- Click on the button *Add*.  
⇒ The PBX Agent IDs are added to the table of PBX Agent IDs.
- If errors have been detected, the window *Result* appears.  
Click on the button *Display Error Report* to open the window *Error Report*.  
To close the window *Error Report*, click on the button *Close*.  
To close the window *Result*, click on the button *Close*.
- The configured PBX Agent IDs now appear in the detail view.
- Click on the button *Save* in the detail view to save the entries.

### **Remove PBX Agent ID**

- In the list, select the **PBX** for which you would like to remove the assigned PBX Agent IDs.
- Click the button *Administrate*.
- Select one or several PBX Agent IDs you would like to remove from the assignment.  
To select several PBX Agent IDs or to revoke the selection, click on the respective line while holding the [Ctrl] key down.

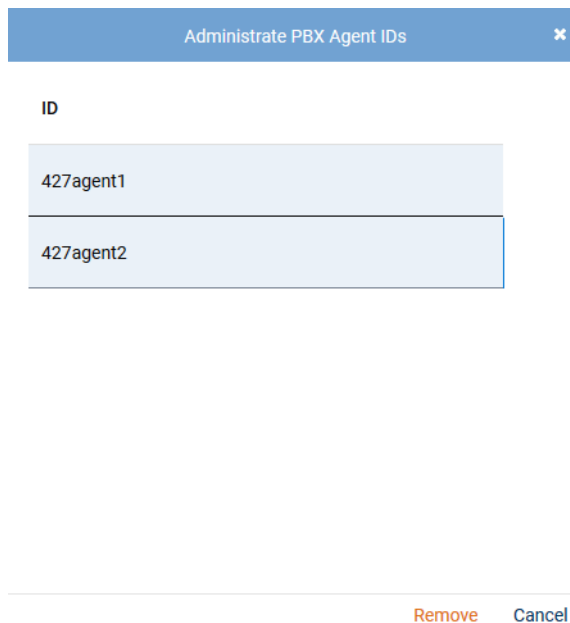


Fig. 49: Select PBX Agent IDs

4. To remove the selected PBX Agent IDs, click on the button *Remove*.  
To cancel the process and close the window, click on the button *Cancel*.

#### 6.1.2.1.5 Configure Phones module

To be able to map the additional data to the calls, the used phones have to be created in the recording server. Each phone is assigned a corresponding time slot from which the call is supposed to be recorded.

Phones can be configured in the following modules:

- *PBX module*

If you have created and configured the phones in the PBX module, you can skip this chapter.

- *Phones module*

If you have not created the phones yet, you can create them here in the Phones module.

- *TDM Hardware module*

Alternatively, you can create phones automatically via the TDM Hardware module, see Create phones automatically.

- *Integrations module*

If you have not created phone during the creation of the integration, you can carry out the configuration in the Integrations module, too.



As an alternative to creating the phones manually, you can also import the phone configurations. For further information about the configuration import refer to the administration manual for system providers *Import of phone configurations*.

1. Select the menu item *Setup > Phones* in the navigation bar.  
⇒ The following window appears:

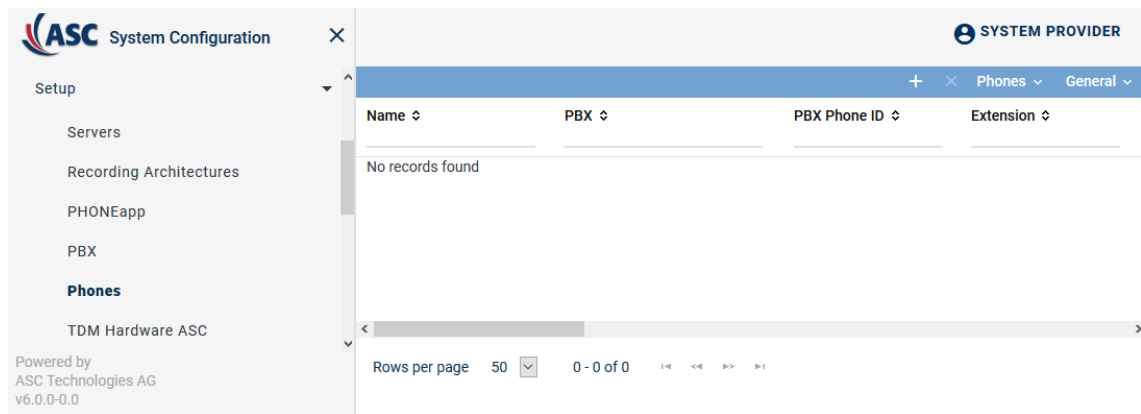



Fig. 50: Phones - main view

Depending on the table configuration, the following information is displayed in the table in the main view:

<i>Name</i>	Shows the name of the phone.
<i>PBX</i>	Shows the name of the PBX.
<i>PBX Phone ID</i>	Shows the identifier which has been configured for the phone in the PBX.
<i>Extension</i>	Shows the assigned extension of the phone.
<i>Computer Name</i>	Shows the computer name if it has been defined in the details.
<i>Phone Type</i>	Shows the selected phone type if the <i>PHONEapp</i> configuration has been activated.
<i>Display Language</i>	Shows the selected display language.

### Create new phone

1. To create and configure new phones manually, click on the icon  (*Create*) in the toolbar of the main view.

In recording solutions using TDM phones as well as IP phones, a context menu appears in which you can select which phone type you would like to create. The selection depends on the PBX and the installed licenses.

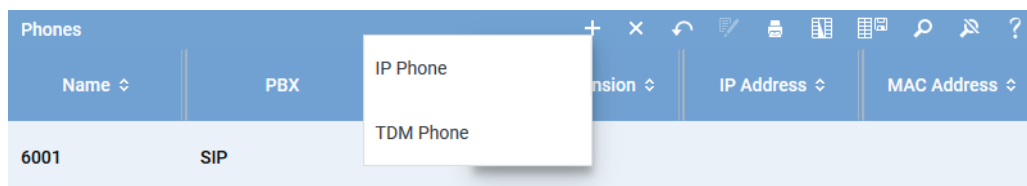


Fig. 51: Create phone

2. Select the menu item *TDM Phone*.  
⇒ In the detail view, the tab *Details* appears.

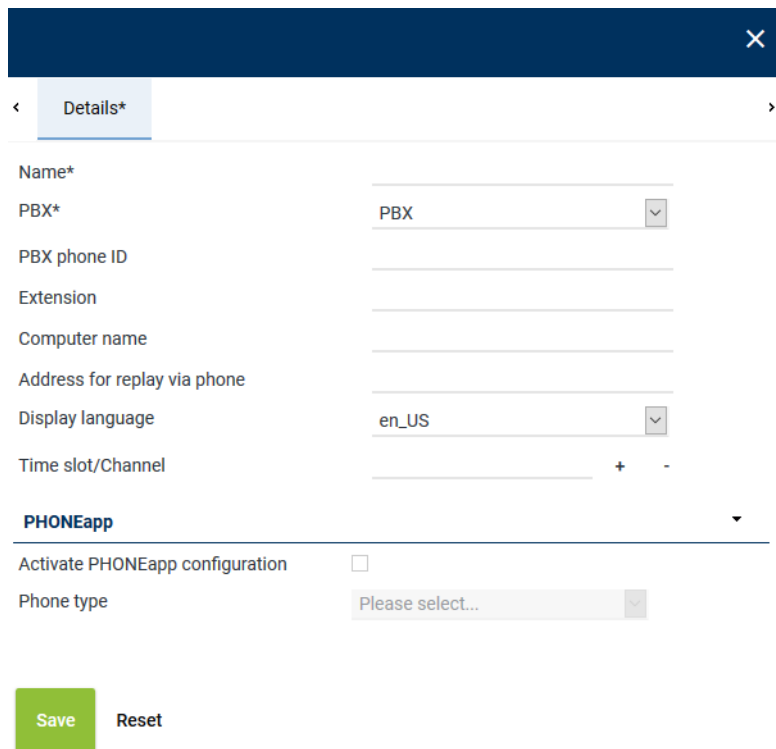


Fig. 52: Create phone


3. Enter the following parameters:

Parameter	Value/Description
<i>Name</i>	This name is used as the identifier of the phone.
<i>PBX</i>	From the drop-down list, select the previously created PBX that the phone is supposed to be assigned to.
<i>PBX phone ID</i>	The PBX phone ID is not used in this recording solution.
<i>Extension</i>	Enter the extension of the phone.
<i>Computer name</i>	Optional mapping of the computer for SCREEN <sup>rec</sup> or CLIENT- <sup>command</sup> . This option cannot be used in this recording solution.
<i>Address for replay via phone</i>	Enter the address of the phone which is supposed to replay the calls. Depending on which agent logs in on this phone, the audio data that the participant is allowed to replay is provided. <b>NOTICE!</b> In case of TDM recordings, use either the extension or the complete phone number as address type. For further information about this function refer to the administration manual <i>Configuration Replay via phone</i> .
<i>Display language</i>	This parameter is only relevant for the PHONE <sup>app</sup> .
<i>Phone type</i>	This parameter is only relevant for the PHONE <sup>app</sup> .
<i>Time Slot/Channel</i>	Map the phone to a configured time slot. If the respective time slot has not been configured yet, the mapping can be carried out via the module TDM Hardware ASC, too. For analog or PCM30 interfaces the mapping of the phone to a time slot should be configured. In PRI recording, the time slots are mapped dynamically; that is why mapping is not necessary.

Tab. 12: Create phone

4. To save the settings, click on the button *Save*.  
To discard the settings, click on the button *Reset*.

#### Delete phones

1. In the main view, select the phone you would like to delete.
2. Click on the icon  (*Delete*).  
⇒ The security prompt to delete an element appears.
3. To really delete the selected phone, confirm the security prompt.

#### 6.1.2.1.6 Configure TDM Hardware Others

In the module TDM Hardware Others, you can configure the recording cards and the channels.

1. Select the menu item *Setup > TDM Hardware Others* in the navigation bar.  
⇒ The following window appears:

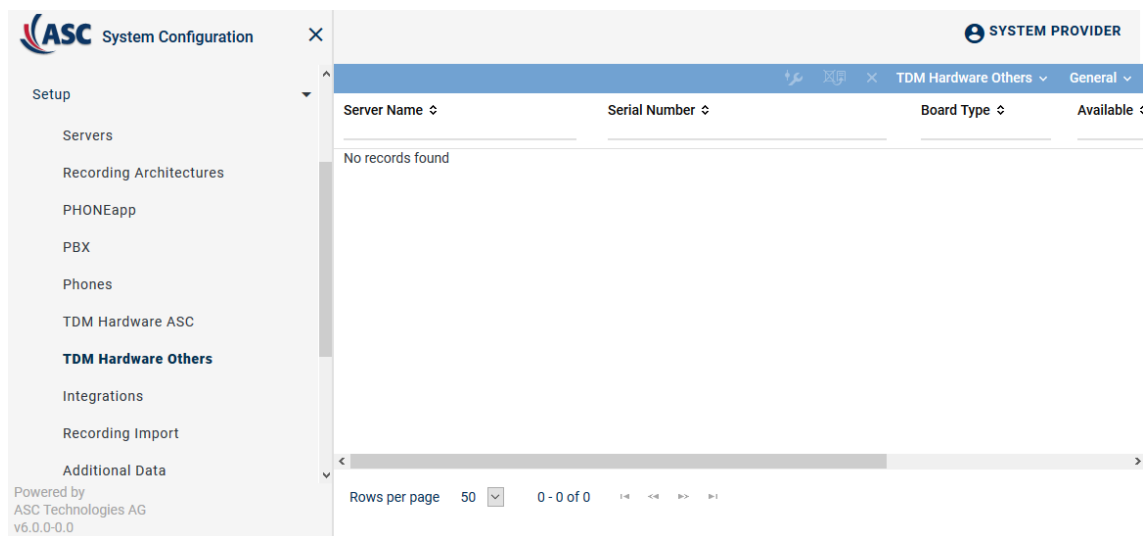







Fig. 53: TDM Hardware Others - main view

Depending on the configuration of the columns, the following information is displayed in the main view:

<b>Server Name</b>	Shows the name of the server in which the recording card has been inserted.
<b>Serial Number</b>	Shows the serial numbers of the PCM30 DT, the analog LD, and the MVT cards as well as of the DP cards.
<b>Board Type</b>	NGX: Card for Universal MVT DP: Card for Universal PRI passive LD: Card for Universal analog LD DT: Card for Universal PCM30 DT
<b>Available</b>	Shows whether the recording card is available.  = Recording card is available.  = Recording card is not available.
<b>Status</b>	Shows the state of readiness of the recording card.  (OK) = Recording card can be used.  (Error) = Recording card cannot be used.

	 (Warning) = Recording card is only partially functional. This can happen if a trunk has failed for instance.
Comment	Here, you can describe the purpose of the interface, e. g. <i>PBX 1, phones 1-96</i> .

You can add hidden columns to the table in the main view via the icon  in the toolbar.

### Toolbar TDM Hardware Others

The toolbar offers the following functions.

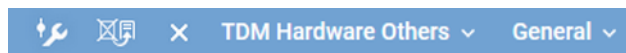





Fig. 54: Toolbar of the module TDM Hardware Others

	<i>Administrate Channels</i>	Opens a window which allows configuring channels
	<i>Replace</i>	If you have to exchange a recording card, you can transfer the configuration of the current recording card to the new one by clicking on this icon. For further information refer to the respective service manual of <i>EVOLUTION<sub>neo</sub></i> , <i>EVOLUTION<sub>neo</sub> eco</i> or <i>EVOLUTION<sub>neo</sub> XXL</i> .
	<i>Delete</i>	Deletes the selected configuration. The configuration can only be deleted if the hardware has been removed.
TDM Hardware Others	<i>Import Grammar</i>	Opens a window in which you can import grammars which have been adjusted to the customer's requirements.
	<i>Manage Unused Grammars</i>	Opens a window with a list of all grammars which are not used in a configuration. Unused grammars can be deleted.
General	<i>Print</i>	Prints the table of the main view.
	<i>Adjust Table</i>	Opens a window in which you can adjust the following settings for the main view: <ul style="list-style-type: none"> <li>• <i>Displayed information</i></li> <li>• <i>Order of the displayed columns</i></li> <li>• <i>Number of rows per page</i></li> </ul>
	<i>Save Table Configuration</i>	Saves the current table configuration of the main view as default view of the user.
	<i>Search</i>	Opens the window of the search function. The search function allows searching systematically for sets of data which meet certain criteria.
	<i>Reset Search</i>	Resets all search filters so that all sets of data are displayed in the main view again.
	<i>General Help</i>	Opens the online help.
	<i>Module Help</i>	Opens the module-specific online help.



For detailed information on default functions such as *Print*, *Adjust table*, or *Help* refer to the user manual for administrators *System Configuration - General Information*.

## Detail view

SmartTAP LD1609
×

< Details >

Server name	REC-01
Serial number	4c45
Firmware version	3.11.1024
Board type	LD
Board information	SmartTAP LD1609
DSP type	DSP_5409
Creation interval for packages	<div style="display: flex; align-items: center;"> <input style="width: 50px; text-align: center;" type="text" value="0"/> <div style="margin-left: 5px;">Hour(s)</div> </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <input style="width: 50px; text-align: center;" type="text" value="10"/> <div style="margin-left: 5px;">Minute(s)</div> </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <input style="width: 50px; text-align: center;" type="text" value="0"/> <div style="margin-left: 5px;">Second(s)</div> </div>
Comment	<div style="border: 1px solid #ccc; height: 60px; width: 100%; margin-top: 5px;"></div>

Save

Reset

Fig. 55: TDM Hardware Others - configure settings

<i>Server name</i>	Shows the name of the server in which the recording card has been inserted.
<i>Serial number</i>	Shows the serial number of the Basic Board of the LD card.
<i>Firmware version</i>	Shows the version of the firmware.
<i>Board type</i>	Shows the type of the recording card.
<i>Board information</i>	Shows information about the recording card.
<i>DSP type</i>	Shows the type of the installed DSP module.


- For the connection interface, you can set the following parameters:

Parameter	Value/Description
<i>Creation interval for packages</i>	Enter the interval after which the running recording is to be written into the database. The interval defines the moment when the recording can be replayed at the earliest. The parameter impacts the system load. The shorter the interval, the higher the CPU load.
<i>Comment</i>	Here, you can describe the purpose of the interface, e. g. <i>PBX 1, phones 1-24</i> .

Tab. 13: Configure connection interface parameters

- To save the settings, click on the button *Save*.  
To discard the settings, click on the button *Reset*.

## Administrate channels

- Click on the icon  (*Administrate channels*) in the toolbar of the main view.  
⇒ The window *Channels* appears.

Channels				
Configuration				
Trunk Number ↕	Channel Number ↕	Status ↕	PBX ↕	Phone ↕
1	1	✗		
1	2	✗		
1	3	✗		
1	4	✗		
1	5	✗		
1	6	✗		
1	7	✗		

Please select an entry from the table.

This section allows you to edit the selected object.

Save Close

Fig. 56: TDM Hardware Others - administrate channels

The following information is displayed:



<i>Trunk number</i>	The trunk number is not used for the LD card.
<i>Channel number</i>	Shows the number of the channel on the Basic Board or the DSP module.
<i>Status</i>	Shows whether the channel has been configured and can be recorded. ✓ = Channel has been configured. ✗ = Channel has not been configured.
<i>PBX</i>	Shows the PBX on which this time slot is supposed to be recorded. Assignment depends on the cabling.
<i>Phone</i>	Shows the phone which has been assigned to the time slot which is to be recorded. Assignment depends on the cabling.
<i>PBX time slot</i>	Shows the time slot that the PBX is connected to. Adjustment is required for some CTI <u>connect</u> applications.

### Toolbar Channel configuration

The toolbar offers the following functions.



Fig. 57: Toolbar for channel configuration

	<i>Edit</i>	If you have selected several entries in the list, you can edit all selected entries at once.
	<i>Create phones</i>	Creates new phones on basis of the selected channels.

## Configure channels

### Tab channel

- Click on the entry of the channel you would like to configure.  
⇒ In the detail view, the tab *Channel* appears.

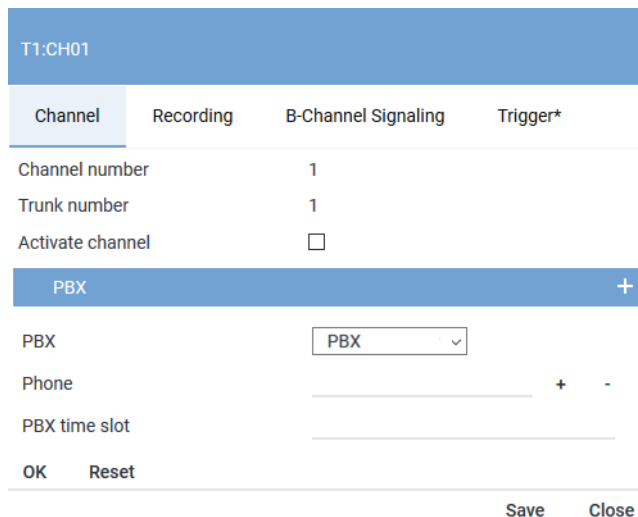


Fig. 58: TDM Hardware Others - configure channel

The following information is displayed:


<i>Channel number</i>	Shows the number of the channel on the Basic Board or the DSP module. The channel number is counted up automatically.
<i>Trunk number</i>	Shows the number of the trunk line connected to this recording card. The trunk number is assigned automatically.

2. Enter the following parameter:


Parameter	Value/Description
<i>Activate channel</i>	Activate the check box to use this channel. <input checked="" type="checkbox"/> = Channel has been activated.

Tab. 14: Activate channel

### Group field **PBX**

Click on the icon  (Create) in the group field headline to create a PBX. For further information about creating a PBX see Create PBX.

1. If the PBX has already been created, set the following parameters:

Parameter	Value/Description
<i>PBX</i>	Select the created PBX from the drop-down list.
<i>Phone</i>	For analog recording, you can assign a previously defined phone to the time slot. The telephones can be created in the Phones module or in the channel configuration. Click on the button  behind the entry field to select a phone.
<i>PBX time slot</i>	Enter the time slot that the PBX is connected to. This assignment is only necessary for CTI <u>connect</u> applications.

Tab. 15: Select PBX

2. Click on the button OK.

### Tab **Recording**

1. Select the tab *Recording*.  
⇒ The following details appear in the detail view:

T1:CH01

Channel

Recording

B-Channel Signaling

Trigger\*

Compression type

G.726 16 kbit/s

▼

Activate AGC

☒

OK    Reset

Save    Close

Fig. 59: TDM Hardware Others - recording settings

2. Enter the following parameters:

Parameter	Value/Description
<i>Compression type</i>	Select the compression type from the drop-down list. The following compressions are available: <ul style="list-style-type: none"> <li>• <a href="#">G.711 A-law</a> - European telephony standard (uncompressed 64 kbit/s)</li> <li>• <a href="#">G.711 μ-law</a> - US-American telephony standard (uncompressed 64 kbit/s)</li> <li>• <a href="#">G.726 ADPCM</a> compressing for 16/24/32/40 kbit/s</li> </ul>
<i>Activate AGC</i>	Activates automatic gain control ( <a href="#">AGC</a> ) to improve recording quality.

Tab. 16: Configure recording settings

3. Click on the button **OK**.

### Tab B-Channel Signaling

1. Select the tab *B-Channel Signaling*.

⇒ The following setting options appear in the detail view:

T1:CH01

Channel

Recording

B-Channel Signaling

Trigger\*

☒ Enable DTMF detection

OK    Reset

Save    Close

Fig. 60: TDM Hardware Others - configure B-channel signaling

2. Enter the following parameter:

Parameter	Value/Description
<i>Enable DTMF detection</i>	Activate the check box if you would like to tag the numbers sent via <a href="#">DTMF</a> to the call.

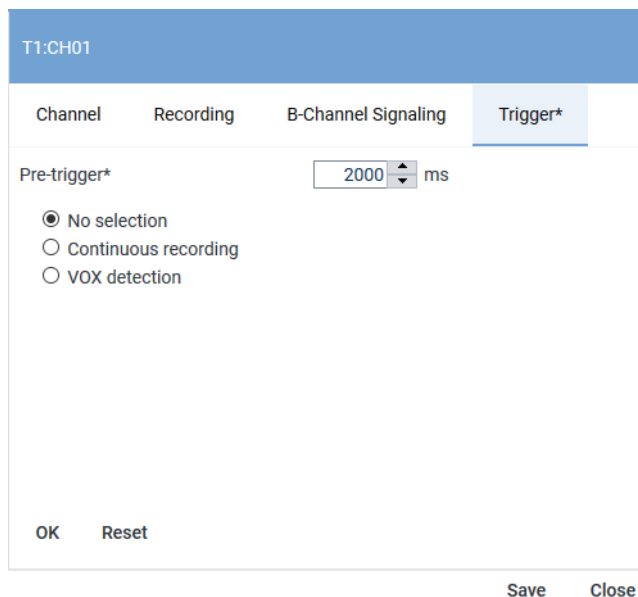
Parameter	Value/Description
	<p>This option is license-dependent.</p> <p>Fields <b>DTMF</b> sequence</p> <p>Each receives <b>DTMF</b> character (including the recognized phone number) is added to the field <b>DTMF</b> sequence. As soon as a control code e. g. for start/stop, keep/delete, mute/unmute is recognized, it is removed.</p> <p>Tagging for phone number:</p> <p>The first <b>DTMF</b> characters of a recording are recognized as phone number. Phone number assignment is completed when there are more than 10 seconds between receiving two <b>DTMF</b> characters. The predefined timeout of 10 seconds can be adjusted in the file <i>C:\Program Files (x86)\ASC\ASC Product Suite\data\RecordingControl\ASC.RecordingControl.ini</i> in the section <i>[RC]</i> via the parameter <i>dtmfTimeout=10000</i> (the time period 10000 is indicated in milliseconds).</p>

Tab. 17: Configure B-channel signaling

- Click on the button **OK**.

### Tab Trigger

- Select the tab *Trigger*.  
⇒ The following options appear in the detail view:



T1:CH01

Channel    Recording    B-Channel Signaling    **Trigger\***

Pre-trigger\*    2000 ms

☒ No selection  
☐ Continuous recording  
☐ VOX detection

OK    Reset

Save    Close

Fig. 61: TDM Hardware Others - configure trigger

- Enter the following parameters:

Parameter	Value/Description
<i>Pre-trigger</i>	<p>Select the pre-trigger which is to be added to the recording before a trigger start.</p> <p>This implies that no audio from a previous call is recorded in the following call even if the calls are coming in immediately after each other.</p>
<i>No selection</i>	<p>If you do not select a trigger, the recordings can only be started or stopped via CTI<u>connect</u>.</p>

Parameter	Value/Description
<i>Continuous recording</i>	When selecting this trigger, the recording server records continuously. The recordings do not have to be started or stopped explicitly. To limit the amount of data per recording, the recordings are stopped at 00:00 every 24 hours and started again without time loss by default.
<i>VOX detection</i>	When selecting this trigger, the recording is started and stopped on basis of the calculated level in the audio channel. For further information about the configuration, see <a href="#">chapter "VOX detection", p. 58</a> .

Tab. 18: Configure trigger

3. Select the option for the respective trigger:
4. For the triggers *No selection* and *Continuous recording* no configuration is required.
5. For the trigger *VOX detection*, see [chapter "VOX detection", p. 58](#).
6. Click on the button OK.

### VOX detection

When selecting the trigger **VOX** detection, the following parameters appear:

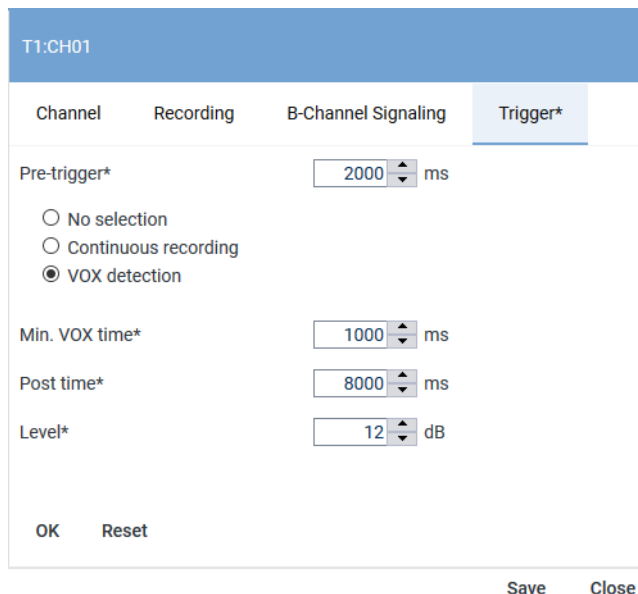


Fig. 62: Configure VOX detection

1. Enter the following parameters:

Parameter	Value/Description
<i>Pre-trigger</i>	Enter the pre-trigger. The pre-trigger for VOX detection should always be one second longer than the minimum call duration, since it is possible that the trigger starts later and the beginning of the call would not be recorded then.
<i>Min. VOX time</i>	Enter the period of time a level has to be maintained at least for a start trigger to be initiated for a recording.
<i>Post time</i>	Enter the period of time no level has to be detected for a recording to be finished.
<i>Level</i>	Enter the level in dB which has to be exceeded for a call to be detected.

Tab. 19: Configure VOX detection

2. Click on the button *OK*.

#### **Configure several channels at once**

1. To configure several connected channels at the same time, mark the first and the last of the respective channels in the list while holding the [Shift] key down.
2. To configure several individual entries in the list at the same time, mark the respective channels while holding the [Ctrl] key down.
  - ⇒ In the detail view, the number of the selected channels appears.

Channels					
Configuration					
Trunk Number ↕	Channel Number ↕	Status ↕	PBX ↕	Phone ↕	PBX Time Slot ↕
1	1	✗			
1	2	✗			
1	3	✗			
1	4	✗			

Fig. 63: Multiple editing of channels



The settings you adjust in the multiple editing are applied for the selected channels regardless of the previous configuration of the channel's parameter. If you have configured the channels one by one, the configuration is overwritten for the selected parameter only. If you do not activate the check box, the original setting remains for this parameter. That way you can configure only one certain parameter for several channels, for instance, without overwriting the other parameters.

3. Click on the icon  (*Start editing*) in the toolbar.
  - ⇒ The following window appears:

Multiple Editing
✕

Details

☒ Configure activation
 

Activate channel ☒

PBX Please select...

☒ Configure compression type
 

Compression type G.726 16 kbit/s

☒ Configure AGC
 

Activate AGC ☒

☒ Configure B-channel signaling
 

☐ Enable DTMF detection

☒ Configure trigger
 

☐ Configure pre-trigger

Pre-trigger 2000 ms

☒ Configure detection type
 

☐ No selection  
☐ Continuous recording  
☒ VOX detection

☒ Configure minimum call duration
 

Min. VOX time\* 1000 ms

☒ Configure VOX post time
 

Post time\* 8000 ms

☒ Configure level
 

Level\* 12 dB



OK Cancel

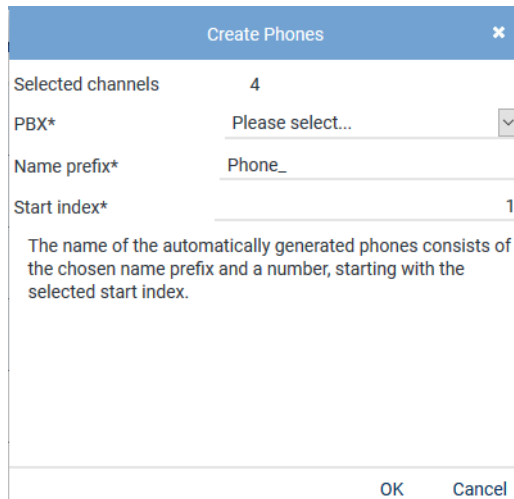
Fig. 64: Multiple editing of the recording settings

4. Set the respective parameters according to the channel configuration, see [chapter "Configure channels", p. 54](#).
5. Click on the button **OK** to apply the configuration and close the window.

### Create phones automatically

In the module TDM Hardware Others, you can automatically create phones via the channel configuration. During this process, the phones are assigned to the channels consecutively.

1. Select the menu item TDM Hardware Others in the navigation bar.
2. In the main view, select the board to which you would like to assign the channels.
3. Click on the icon  (*Administrate channels*).
  - ⇒ The window *Channels* appears.
4. Mark the 1st and the last of the respective channels while holding the [Ctrl] key down.
5. Click on the icon  (*Create phones*) in the toolbar.
  - ⇒ The window *Create Phones* appears.



The dialog box 'Create Phones' contains the following fields:

- Selected channels:** 4
- PBX\*:** Please select... (dropdown menu)
- Name prefix\*:** Phone\_ (text input)
- Start index\*:** 1 (text input)

Below the fields, a note states: 'The name of the automatically generated phones consists of the chosen name prefix and a number, starting with the selected start index.'

At the bottom right are 'OK' and 'Cancel' buttons.

Fig. 65: Create phones

6. Enter the following parameters:

Parameter	Value/Description
<i>Selected channels</i>	Shows the number of the selected channels.
<i>PBX</i>	From the drop-down list, select the previously created PBX that the phone is supposed to be assigned to.
<i>Name prefix</i>	Enter a part of a name for all phones, e.g. <i>Phone_</i> .
<i>Start index</i>	Enter the start value the numbering of the phones is supposed to start with.

Tab. 20: Create phone



The name of the created phones consists of the selected name prefix and a number starting with the selected start index.

7. Click on the button *OK* to apply the configuration and close the window.

### Save configuration



Please consider that the saving function interrupts a running recording so that the changes can be applied.

1. Click on the button *Save* to apply the configuration.
2. Click on the button *Close* to finish this configuration step and close the window.

#### 6.1.2.1.7 Create integration for All-in-one Basic

In the Integrations module, the PBX-related recording settings are configured.

You first have to create and activate a recording architecture to be able to create a integration and to assign it here.

Depending on the recording solution, you additionally have to configure IP addresses, ports, protocols, sniffer cards, CTI connection data, phones, monitor points, and, where required, add-ons.

1. In the navigation bar, select the menu item *Setup > Integrations*.  
⇒ The following window appears:

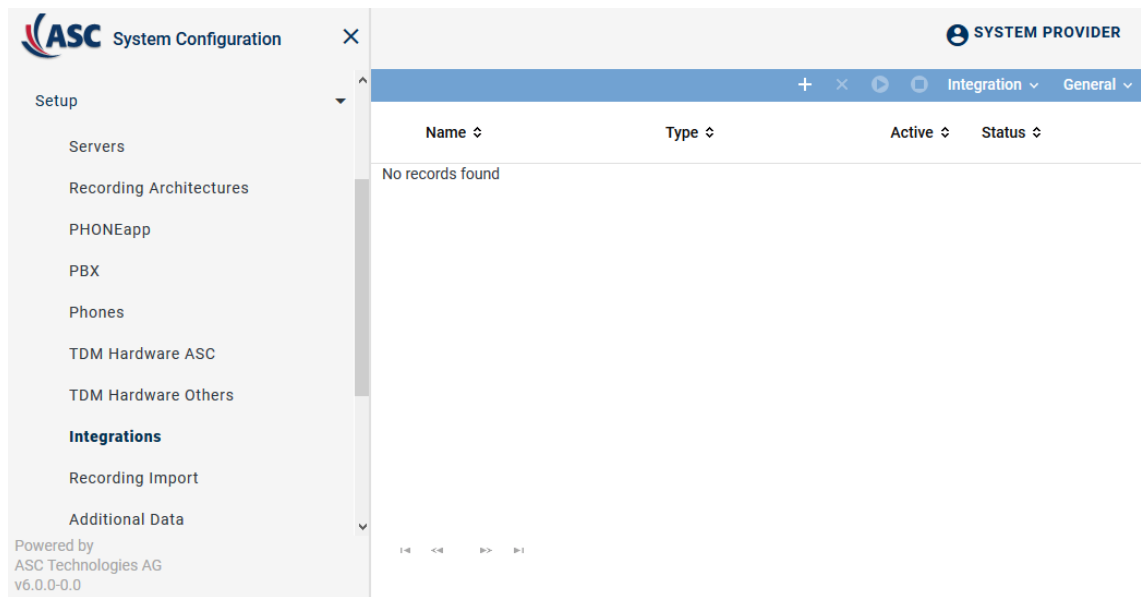




Fig. 66: Integrations - main view

In the table in the main view, the following information is displayed:





<b>Name</b>	Name of the integration
<b>Type</b>	Type of the integration
<b>Active</b>	Shows whether the integration has been activated and is used for the recording. <div> <span>✓</span> = Integration is active, can be deactivated in the toolbar via the icon .         <span>✗</span> = Integration is not active, can be activated in the toolbar via the icon .       </div>
<b>Status</b>	Shows whether the configuration has been carried out completely. <div> <span>✓</span> = Configuration is complete.         <span>✗</span> = Configuration is incomplete.       </div>

### Toolbar of the Integrations module

The toolbar offers the following functions.



Fig. 67: Toolbar Integrations module

	<b>Create</b>	Opens the detail view so that you can create a new integration.
	<b>Delete</b>	Deletes the selected integration. The integration can only be deleted if it has been deactivated.
	<b>Activate</b>	Activates the selected integration. The integration can only be activated if it has been configured completely.
	<b>Deactivate</b>	Deactivates the selected integration. This stops running recordings.
<b>Integration</b>	<b>Import Grammar</b>	By clicking on this menu item, you can import a customized grammar which you can then configure in the configuration step for the CTI connection data.
<b>General</b>	<b>General Help</b>	Opens the online help.
	<b>Module Help</b>	Opens the module-specific online help.


### Administrate grammars

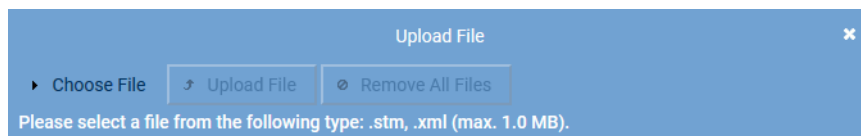
Depending on the deployed PBX, the conversation events are signaled differently.

A grammar recognizes and processes the events occurring during a call such as ringing, answering, consultation, hanging up.

In the Integrations module, you can import a customized grammar which you can then configure in the configuration step for the CTI connection data.

### Import grammar

1. To import a new grammar, click on the icon  (*Import grammar*) in the toolbar of the main view.  
⇒ The window *Upload File* appears.
2. To import a new grammar, click on the menu item *TDM Hardware Others > Import Grammar* in the toolbar of the main view.  
⇒ The window *Upload File* appears.



Close

Fig. 68: Choose file

3. Click on the button *Choose File*.
4. Select the respective grammar of the file type *.stm* or *.xml* via the Explorer.
5. Click on the button *Open*.  
⇒ The selected file appears in the window *Upload File*.

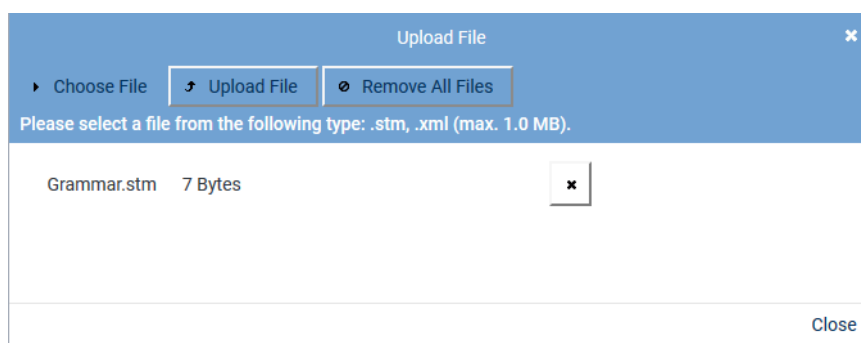




Fig. 69: Upload grammar

6. To remove a selected file from the list, click on the button  (*Remove file*) next to the respective file.  
To upload the file, click on the button *Upload File*.  
⇒ The window closes and a notification appears in the main view that the file has been uploaded successfully.

### Delete grammars

1. To delete grammars which are not used, click on the icon  (*Manage unused grammars*) in the toolbar of the main view.

⇒ The window *Manage Unused Grammars* appears.

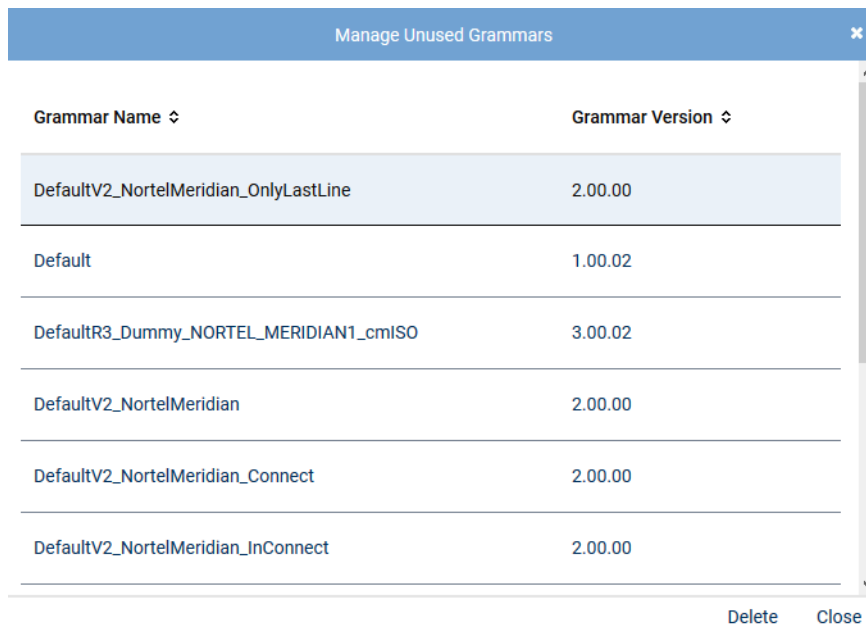



Fig. 70: Delete grammars

2. Select the grammar you would like to delete. To select several grammars at the once, click on the respective entries while holding the [Ctrl] key down.
3. Click on the button *Delete*.
 

⇒ The security prompt to delete an element appears.
4. To really delete the selected grammars, confirm the security prompt.

### Assign integration type

1. Click on the icon  (*Create*) in the toolbar of the main view to create a new integration.
 

⇒ In the detail view, the tab *Integration Type* appears.

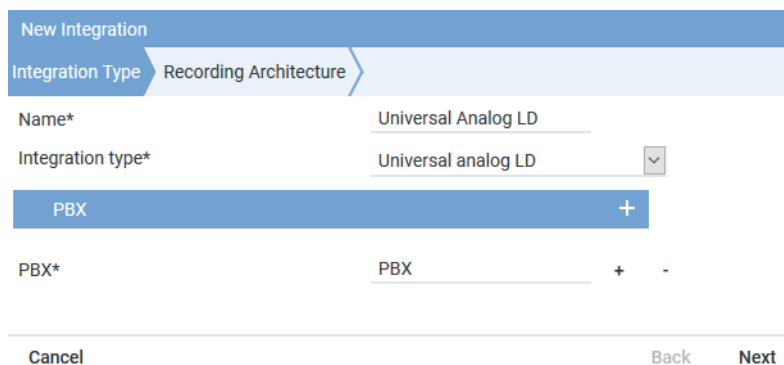


Fig. 71: Create integration type

2. Enter the following parameters:

Parameter	Value
<b>Name</b>	In the entry field, enter a descriptive name for the integration. This name is used as the identifier of this integration in the system.
<b>Integration type</b>	Select the entry <i>Universal analog LD</i> from the drop-down list <i>Integration type</i> .

Tab. 21: Create integration type

- To assign the PBX, click on the button **+** behind the field *PBX*.  
⇒ The window *PBX* appears.

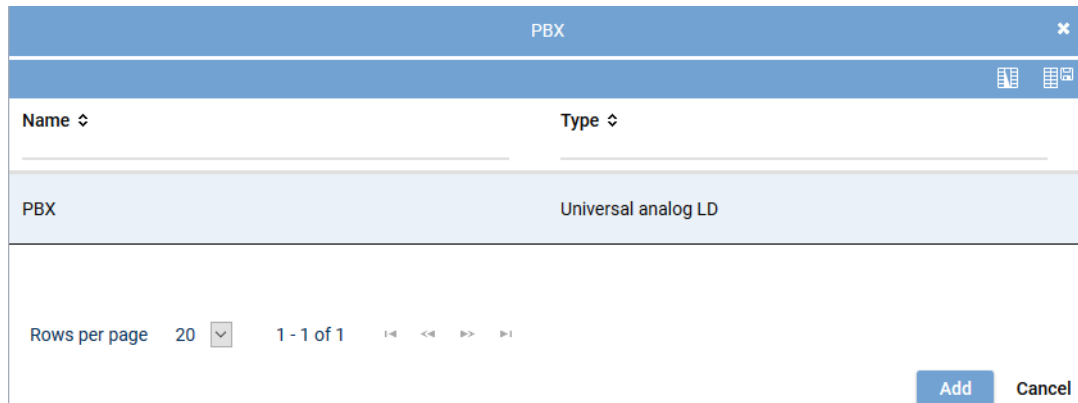


Fig. 72: Integrations - select PBX

- Select the respective *PBX* from the list of available PBXs.
- Click on the button *Add*.

### Assign recording architecture for All-in-one Basic

- In the detail view on the bottom right, click on the button *Next*.  
⇒ The tab *Recording Architecture* appears.



Fig. 73: Assign recording architecture - All-in-one Basic


- Select the respective recording architecture from the drop-down list *Recording architecture*.



Only activated recording architectures in which the appropriate integration type has been configured appear in the drop-down list.

- Click on the button *Save*.  
⇒ The integration now appears in the main view.

### Configuration steps

- To complete the configuration of the integration, click on the icon  in front of the name of the new integration.  
⇒ The following configuration steps appear:




Universal Analog LD		Universal analog LD	X	⚙️
Step	Configuration			
Configure recording architecture	✓ 			
Activate channels	✗ 			
Configure miscellaneous settings	✓ 			

Fig. 74: Configuration steps of the integration

### Configure recording architecture

The section *Configure recording architecture* has already been configured in previous steps.

- Click on the button  (*Edit configuration step*) in the line *Configure recording architecture* in the main view to show the configuration.
  - ⇒ In the detail view, the configuration step appears with the information of the assigned recording architecture.

Step: Configure Recording Architecture
✕

Details \*

Recording architecture\*
All-in-one Basic

⌵


Save Cancel

Fig. 75: Configuration step - Configure Recording Architecture

- Click on the button *Save* to save changes and to finish the configuration step.
- Click on the button *Cancel* to cancel the configuration step without applying changes.

### Activate channels

The section *Configure channels* has already been configured in previous steps. Only those channels are displayed here, which have already been configured in the module TDM Hardware module. If required, you can activate or deactivate the channels here again which have already been configured.

- In the main view in the line *Configure channels*, click on the button  (*Edit configuration step*).
  - ⇒ The window *Step: Configure Channels* appears with the list of configured channels.

Step: Activate Channels

TDM Hardware Others

Server Name	Serial Number
REC-01	4c45

4c45

Details

Time Slot/Channel Number	Status	PBX Time Slot
T1:CH01	✓	
T1:CH02	✓	
T1:CH03	✓	
T1:CH04	✓	

Activate

Deactivate

Save

Rows per page 50

1 - 1 of 1

<<


>>

Close

Fig. 76: Configuration step - Configure time slots

- Select the respective channels and click on the button *Activate* or *Deactivate*.
- Click on the button *Save*.
- Click on the button *Close* to finish this configuration step.

### Configure miscellaneous settings

- Click on the button  (*Edit configuration step*) in the line *Configure recording servers* in the main view.  
⇒ The window *Step: Miscellaneous Settings* appears.

Step: Miscellaneous Settings

Details

Dispatcher

Please select...

Save

Cancel

Fig. 77: Configure miscellaneous settings

- Enter the following parameter:


Parameters	Description
<i>Dispatcher</i>	From the drop-down list, select the previously created additional data field that the participant information is supposed to be connected with.



Only those entries appear in the drop-down list which have been configured in the application System Configuration in the Additional Data module. For further information refer to the administration manual *Additional Data module*.

### Activate integration

The integration can only be activated after the configuration is complete.

If not all configuration steps have been carried out completely, the icon  (*Incomplete*) will appear in the main view, in the line of the created integration, in the column *Status*.

If the configuration has been carried out completely, the icon ✓ (*Complete*) will appear in the line of the respective step, in the column *Configuration*.

If all settings are complete, the icon ✓ (OK) will appear in the main view, in the line of the created integration, in the column *Status*.





Universal Analog LD	Universal analog LD	✗	✓
Step		Configuration	
Configure recording architecture		✓	
Activate channels		✓	
Configure miscellaneous settings		✓	

Fig. 78: Integration configured

1. Mark the integration in the main view, so that the icon  (*Activate*) becomes active in the toolbar.
2. To activate the integration, click on the icon  (*Activate*).  
⇒ In the column *Active*, the icon ✓ (*Active*) appears.




+ ✗   Integration ▾ General ▾			
Name ⇅	Type ⇅	Active ⇅	Status ⇅
 Universal Analog LD	Universal analog LD	✓	✓



Fig. 79: Integration activated



If you take advantage of the grace period and there is no valid license file in the system after its expiration, all integrations are deactivated. After uploading a valid license file, you have to activate the integrations again.

### Deactivate/Delete integration

To be able to delete an integration, it has to be deactivated.

1. To deactivate the integration, click on the icon  (*Deactivate*) in the toolbar.  
⇒ In the column *Active*, the icon ✗ (*Inactive*) appears.  
⇒ The icon  (*Delete*) becomes active in the toolbar.





+ ✗   Integration ▾ General ▾			
Name ⇅	Type ⇅	Active ⇅	Status ⇅
 Universal Analog LD	Universal analog LD	✗	✓

Fig. 80: Integration deactivated

2. Click on the icon  (*Delete*) and confirm the security prompt to delete the integration.

## List of figures

Fig. 1	Overview Universal Analog LD .....	5
Fig. 2	System Configuration - web interface .....	9
Fig. 3	System Configuration - main view:.....	10
Fig. 4	Recording architectures - main view .....	11
Fig. 5	Toolbar Recording Architectures module.....	11
Fig. 6	Create recording architecture - All-in-one Basic Recording .....	12
Fig. 7	Recording architecture - tab Details.....	13
Fig. 8	Select integration type.....	14
Fig. 9	Recording Architecture - tab Server Assignment .....	15
Fig. 10	Recording Architecture - assign server .....	15
Fig. 11	Recording Architecture - activate recording type .....	16
Fig. 12	Recording architecture - activate recording architecture.....	16
Fig. 13	Servers - main view.....	17
Fig. 14	Toolbar Servers module.....	17
Fig. 15	Add server locations.....	18
Fig. 16	Delete server location .....	19
Fig. 17	Servers - tab Details.....	20
Fig. 18	Servers - tab Usage .....	20
Fig. 19	Group field API Server .....	21
Fig. 20	Select storage expansion.....	22
Fig. 21	Group field Audio Analysis.....	23
Fig. 22	Group field Recording Control/Key Management .....	23
Fig. 23	Group field Data Processing .....	24
Fig. 24	Select server .....	26
Fig. 25	Group field Replay .....	26
Fig. 26	Select server .....	28
Fig. 27	Group field Virtualization .....	28
Fig. 28	Servers module - tab Media Streamer .....	29
Fig. 29	Servers Module - tab Replay Server Address Mapping.....	31
Fig. 30	Servers module - tab Key Management.....	32
Fig. 31	Servers module - tab Keystore/Virtualization .....	33
Fig. 32	Add NTP server.....	34
Fig. 33	Edit IP address.....	35
Fig. 34	Remove NTP server.....	35
Fig. 35	Create new PBX.....	36
Fig. 36	Toolbar PBX module .....	36
Fig. 37	Create new PBX - tab Details .....	37
Fig. 38	Phone configuration .....	38
Fig. 39	Toolbar PBX module - Phone configuration.....	38
Fig. 40	Create phones Select phone type.....	39
Fig. 41	Create phone .....	39

Fig. 42	Administrate unused extensions .....	41
Fig. 43	Tenants - main view - tab Extensions .....	42
Fig. 44	Assign extensions to tenants .....	43
Fig. 45	Remove extensions.....	44
Fig. 46	Select extensions .....	45
Fig. 47	Tenants - main view - tab PBX Agent ID.....	46
Fig. 48	Assign PBX Agent IDs to tenants.....	46
Fig. 49	Select PBX Agent IDs .....	48
Fig. 50	Phones - main view .....	49
Fig. 51	Create phone .....	49
Fig. 52	Create phone .....	50
Fig. 53	TDM Hardware Others - main view.....	51
Fig. 54	Toolbar of the module TDM Hardware Others .....	52
Fig. 55	TDM Hardware Others - configure settings.....	53
Fig. 56	TDM Hardware Others - administrate channels.....	54
Fig. 57	Toolbar for channel configuration.....	54
Fig. 58	TDM Hardware Others - configure channel .....	55
Fig. 59	TDM Hardware Others - recording settings .....	56
Fig. 60	TDM Hardware Others - configure B-channel signaling.....	56
Fig. 61	TDM Hardware Others - configure trigger .....	57
Fig. 62	Configure VOX detection .....	58
Fig. 63	Multiple editing of channels.....	59
Fig. 64	Multiple editing of the recording settings.....	60
Fig. 65	Create phones.....	61
Fig. 66	Integrations - main view .....	62
Fig. 67	Toolbar Integrations module .....	62
Fig. 68	Choose file .....	63
Fig. 69	Upload grammar .....	63
Fig. 70	Delete grammars.....	64
Fig. 71	Create integration type.....	64
Fig. 72	Integrations - select PBX.....	65
Fig. 73	Assign recording architecture - All-in-one Basic .....	65
Fig. 74	Configuration steps of the integration .....	66
Fig. 75	Configuration step - Configure Recording Architecture.....	66
Fig. 76	Configuration step - Configure time slots .....	67
Fig. 77	Configure miscellaneous settings .....	67
Fig. 78	Integration configured .....	68
Fig. 79	Integration activated.....	68
Fig. 80	Integration deactivated.....	68

## List of tables

Tab. 1	Interfaces on the LD card .....	5
Tab. 2	Licenses of ASC.....	7
Tab. 3	Optional licenses.....	7
Tab. 4	Login data - system provider.....	9
Tab. 5	Configure audio analysis.....	23
Tab. 6	Configure Recording Control/Key Management .....	23
Tab. 7	Configure data storage.....	24
Tab. 8	Configure replay.....	26
Tab. 9	Configure virtualization.....	28
Tab. 10	Create PBX .....	37
Tab. 11	Create phone .....	40
Tab. 12	Create phone .....	50
Tab. 13	Configure connection interface parameters .....	53
Tab. 14	Activate channel.....	55
Tab. 15	Select PBX.....	55
Tab. 16	Configure recording settings .....	56
Tab. 17	Configure B-channel signaling .....	56
Tab. 18	Configure trigger .....	57
Tab. 19	Configure VOX detection .....	58
Tab. 20	Create phone .....	61
Tab. 21	Create integration type.....	64

## Glossary

### **μ-law**

PCM digitization method for analog audio signals according to ITU G.711. In the process, analog voice signals are converted into digital signals by means of a logarithmic quantization characteristic. The μ-law algorithm is used in the US while the A-law algorithm is the standard in Europe.

### **ADPCM**

Digital audio compressing according to ITU G.726 for 16/24/32/40 kbit/s

### **AGC**

Automatic Gain Control, incoming signal are elevated to a certain level to facilitate processing the signal chain.

### **A-law**

PCM digitization method for analog audio signals according to ITU G.711. In the process, analog voice signals are converted into digital signals by means of a logarithmic quantization characteristic. The A-law algorithm is used in Europe while the μ-law algorithm is the standard in the US.

### **API**

Application Programming Interface

### **API server**

Server on which the API service runs. (API=Application Programming Interface)

### **CSV**

Comma-separated values is a file format which stores tabular data in plain text form.

### **DTMF**

Dialed Dual Tone Multi Frequency keys represent dialing signals on the analog connecting cable of the telephone. This is a method to transmit the phone number to the telephone network or to a PBX.

### **DXT**

Digital Exchange for TETRA (TETRA = Terrestrial Trunked Radio)

### **G.711**

Standardized method of the ITU (International Telecommunication Union) to digitize analog audio signals via pulse code modulation (PCM). G.711 defines 2 different algorithms μ-law and A-law.

### **G.726**

The method is based on adaptive differential pulse code modulation (ADPCM). The codec supports bit rates of 16, 24, 32, and 40 kbit/s. G.726 reaches a mean opinion score (MOS) of about 4.2 for the 40 kbit/s version and about 3.85 for the 32 kbit/s version.

---

**G.729 Annex A**

Codec for the compressing of language into digital signals with low complexity, fixed point arithmetic and a data rate of 8 kbit/s.

---

**IP**

Internet Protocol, basic protocol for Internet communication

---

**LCR**

Last Conversation Repeat

---

**NTP**

Network Time Protocol NTP is a standard for the synchronization of clocks in computer systems via packet-based communication networks. NTP uses the connectionless transport protocol UDP. It has been developed with the objective to guarantee reliable time verification across networks with variable packet runtime. (Source: Wikipedia 12th June 2018)

---

**PBX**

Private Branch Exchange

---

**PCM30**

Pulse code modulation, modulation type for digital transmission of phone calls standardized according to ITU G.703. The interface defines a trunk of 32 time slots which allow transmitting 30 digital audio channels encoded according to ITU G.711 in one direction. Time slot 0 and time slot 16 are used for synchronization and signaling purposes. (Source: Wikipedia 12th June 2018)

---

**PRI**

Primary Rate Interface An interface which allows to transmit 30 telephone conversations bidirectionally in 2 PCM30 channels. PRI interfaces are controlled via a D-channel protocol which is transmitted in time slot 16. Examples for this are EDSS1, DASS2, DPNSS, QSIG.

---

**SIP**

Session Initiation Protocol

---

**SSI**

Short Subscriber Identity

---

**TCP**

Transmission Control Protocol, controlled connection establishment, secure data transmission, controlled connection termination

---

**TCS**

TETRA Connectivity Server

---

**TLS**

Transport Layer Security; previously known as Secure Sockets Layer (SSL), is a hybrid encryption protocol for safe data transmission in the Internet. Since version 3.0, the SSL protocol is developed under the new name TLS.

---

## UDP

User Datagram Protocol UDP is a minimal, connectionless network protocol which belongs to the core members of the Internet protocol suite. Its purpose is to make sure that data transmitted via the Internet reach the designated application. There is no destination check.

---

## URL

Uniform resource locator. Identifies and locates a resource (e. g. a website) about the used access method (e. g. the used network protocol as HTTP or FTP) and the location of the resource in the computer network. (Source: Wikipedia 20th November 2013)

---

## VM

Virtual machine

---

## VOX

Voice Operated Transmission is a method which defines the activity of a conversation based on the level in the transmission channel. A call is detected as soon as a minimum signal level (VOX level) is exceeded. When the signal falls below this level for a configured period of time, the call is finished.

---

## XSLT

XSL Transformation, short XSLT, is a programming language to transform XML documents. XSLT is based on the logical tree structure of an XML document and serves to define transformation rules. XSLT programs, so-called XSLT style sheets, are designed according to the XML standard rules. (Source: Wikipedia 22nd March 2017) The style sheets are read in by dedicated software, the XSLT processors, which transform one or several XML documents into the respective output format based on these instructions.