

# Configuration servers and recording architectures



## Administration manual for system providers

9/8/2020

### Product line neo, version 6.x

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

EVOIPneo

EVOLUTIONneo / XXL / eco

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>6</b>
<b>2</b>	<b>Introduction .....</b>	<b>7</b>
<b>3</b>	<b>Organization of recording data .....</b>	<b>10</b>
<b>4</b>	<b>Recording architecture types .....</b>	<b>11</b>
4.1	Basic architecture types .....	11
4.1.1	All-in-one Basic .....	11
4.1.2	Multi-Server Recording .....	11
4.2	Architecture types for failover concepts .....	12
4.2.1	All-in-one Failover .....	13
4.2.2	Multi-Server Failover .....	14
4.2.3	Failover operation .....	15
4.2.4	Reset failover operation .....	15
4.3	Architecture types for parallel recording.....	16
4.3.1	All-in-one Parallel Recording.....	16
4.3.2	Multi-Server Parallel Recording .....	17
4.4	Architecture types for import .....	17
<b>5</b>	<b>Create recording architecture .....</b>	<b>18</b>
5.1	Toolbar of the Recording Architectures module .....	19
5.2	Create recording architecture All-in-one Basic.....	20
5.2.1	Add integration type .....	21
5.2.2	Assign server for All-in-one Basic .....	22
5.2.2.1	Activate recording architecture.....	23
5.3	Create recording architecture All-in-one Failover.....	23
5.3.1	Add integration type .....	25
5.3.2	Assign servers for All-in-one Failover Recording .....	26
5.3.2.1	Activate recording architecture.....	27
5.4	Create recording architecture All-in-one Parallel Recording .....	28
5.4.1	Add integration type .....	29
5.4.2	Assign server for All-in-one Parallel Recording.....	30
5.4.2.1	Activate recording architecture.....	32
5.5	Create recording architecture Multi-Server Recording.....	33
5.5.1	Add integration type .....	34
5.5.2	Assign servers for Multi-Server Recording.....	34
5.5.2.1	Activate recording architecture.....	37
5.6	Create recording architecture Multi-Server Failover .....	37
5.6.1	Add integration type .....	39
5.6.2	Assign servers for Multi-Server Failover .....	39
5.6.2.1	Activate recording architecture.....	42
5.7	Create recording architecture Multi-Server Parallel Recording.....	43

5.7.1	Add integration type .....	44
5.7.2	Assign servers for Multi-Server Parallel Recording.....	45
5.7.2.1	Tab Device Group 1 .....	45
5.7.2.2	Tab Device Group 2 .....	48
5.7.3	Activate recording architecture.....	48
5.8	Create recording architecture Import Only .....	48
5.8.1	Assign servers for Import Only .....	49
5.8.1.1	Activate recording architecture.....	50
<b>6</b>	<b>Standby management for failover architectures.....</b>	<b>52</b>
6.1	Standby management for All-in-one Failover .....	52
6.2	Standby management for Multi-Server Failover.....	54
<b>7</b>	<b>Configure servers .....</b>	<b>56</b>
7.1	Toolbar of the Servers module .....	56
7.2	Administrate server locations .....	57
7.2.1	Add server locations.....	57
7.2.2	Delete server location .....	58
7.3	Tab Details .....	59
7.4	Tab Usage.....	60
7.4.1	Group field API Server .....	60
7.4.1.1	Add storage expansion for replay .....	62
7.4.2	Group field Audio analysis .....	62
7.4.3	Group field Recording Control/Key Management .....	63
7.4.4	Group field Data Processing .....	64
7.4.4.1	Add target server to a list .....	65
7.4.5	Group field Replay .....	66
7.4.5.1	Search and replay functions.....	67
7.4.5.2	Add API server to a list.....	67
7.4.6	Group field Virtualization .....	68
7.5	Tab Media Streamer .....	69
7.6	Tab Replay Server Address Mapping .....	70
7.7	Tab Key Management.....	71
7.8	Tab Keystore/Virtualization .....	73
7.9	Administrate NTP server .....	74
7.9.1	Add NTP server.....	74
7.9.2	Edit IP address.....	74
7.9.3	Remove NTP server.....	75
<b>8</b>	<b>Synchronization options .....</b>	<b>76</b>
8.1	Synchronizing recording control.....	76
8.2	Synchronization of system storage .....	78
8.2.1	Create synchronization configuration.....	78
8.2.2	Delete synchronization configuration .....	79

<b>9</b>	<b>Duplicates in parallel recording architectures .....</b>	<b>80</b>
9.1	Configure duplicate detection.....	80
9.1.1	Map additional data .....	82
9.1.2	Delete additional data assignment .....	83
	<b>List of figures .....</b>	<b>84</b>
	<b>List of tables .....</b>	<b>87</b>
	<b>Glossary .....</b>	<b>88</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.

## 2 Introduction

The recording system creates recordings of conversations which can be conducted via different communication platforms such as [PBXs](#), chat servers or video call applications. The recording of the conversations and the transmission of the meta data from the communication platform to the recording system are carried out via an individual integration for each supported type of the different communication platforms.

Basically, the **recording system** consists of the following components:

- Web-based user interface with access to the different [neo](#) applications
- Enterprise Core with the application server ([app server](#))
- Recording architecture with recording components
- Database

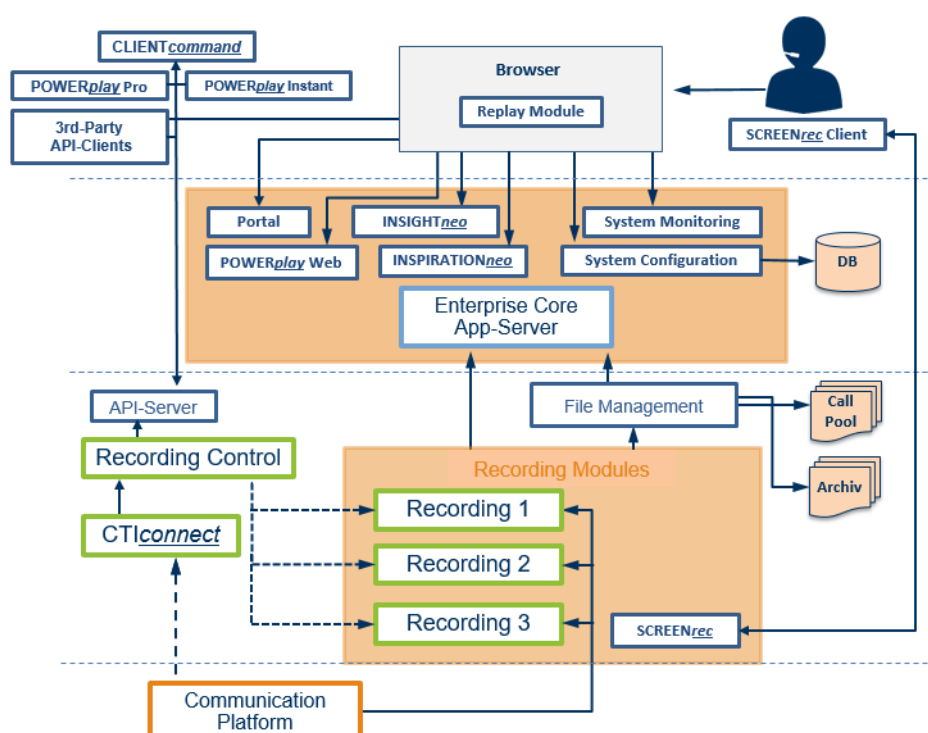


Fig. 1: Basic structure of the recording system

The individual components may be installed on different servers. This results in several possible **system architectures**.

Architecture	None Redundancy	Redundancy Recording	Redundancy Enterprise Core	Redundancy Enterprise Core Database
All-in-one Basic	Min. 1 server	–	Min. 3 servers	Min. 4 servers
All-in-one Failover	–	Min. 2 servers	Min. 3 servers	Min. 4 servers
All-in-one Parallel Recording	–	Min. 3 servers	Min. 3 servers	Min. 4 servers
Multi-Server Recording	Min. 2 servers	–	Min. 3 servers	Min. 4 servers
Multi-Server Failover	–	Min. 4 servers	Min. 4 servers	Min. 6 servers

Architecture	None Redundancy	Redundancy Recording	Redundancy Enterprise Core	Redundancy Enterprise Core Database
<b>Multi-Server Parallel Recording</b>	–	Min. 5 servers	Min. 5 servers	Min. 6 servers



Information about which system architectures are possible in general can be found in the installation manual for system providers *System architectures*.

The data stream of the recording process usually follows the pattern described below:

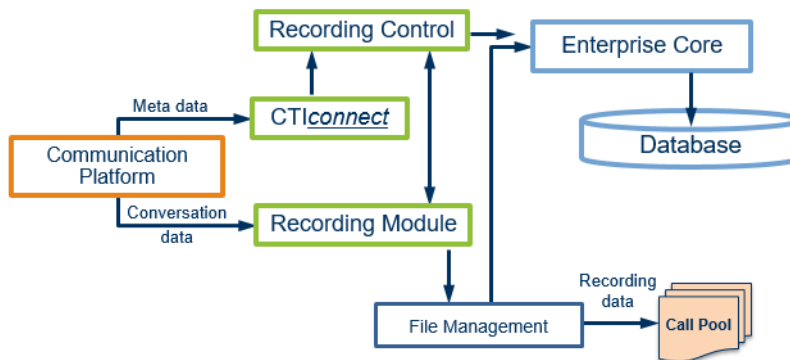


Fig. 2: Data stream in the recording process

The data stream of the recording depends on the integration type; therefore, a separate integration has to be created in the recording system for each integration type.



Information about the configuration of the different integration types can be found in the respective integration-specific administration manual.

Every integration uses a **recording architecture** for the recording. A recording architecture always includes the following recording components:

- Recording Control  
This service controls the recording according to the recording plan.
- CTIconnect (optional)  
This service receives additional data about the recordings from the communication platform.
- Recording Module  
This service creates the recording data. The server that this service has been installed on is called a recording server.

The setup of a recording architecture defines the way in which the recording components interact. Some architecture types offer the possibility to install recording components redundantly.

The *neo* recording system supports several types of recording architectures. These architecture types have been stored in the system and serve as the basis for defining the individual recording architectures of the system providers. For information about the different architecture types see [chapter "Recording architecture types", p. 11](#).

In case of architecture types in which several recording servers are controlled by the same Recording Control service, the recording servers are combined in a pool of recording servers. During recording the Recording Control service distributes the load to all recording servers as evenly as possible. In addition, these architecture types offer the possibility to define a standby server for one active recording server. The standby recording server itself does not become part of the pool of recording servers before the primary recording server fails. In a system which allows treating all recording servers as equal, i. e. when each recording server could replace any



other recording server in the system due to its technical equipment, configuring specific standby servers is not reasonable. Instead, the pool of recording servers should be designed to ensure that one of the remaining recording servers can bear the additional load if one recording server fails. Standby servers must only be configured if for a specific technical reason a recording server can only stand in for a certain other recording server as its standby server.

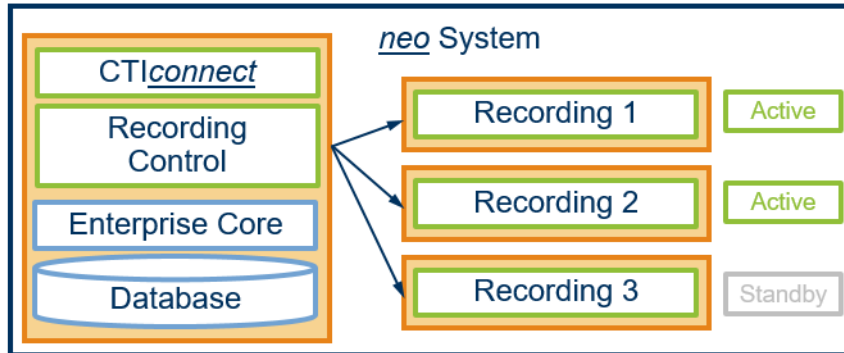


Fig. 3: Standby scenario (by the example of a multi-server recording architecture)

If the standby server which has taken over the active role fails, then the system does not switch to the primary server automatically even if it should be operative again.

If you would like to switch back to the original primary server again as soon as it is operative, you have to configure this option manually, see [chapter "Standby management for failover architectures"](#), p. 52.

If you do not want to switch back, you can run the active standby server as primary server. To ensure that the system switches back automatically from the standby server to the original primary server, the option *Activate standby failover* must be active in the recording architecture, see [chapter "Create recording architecture"](#), p. 18.

Not every integration type supports each of the implemented architecture types. Whether an integration type supports a certain architecture type, can be looked up in the administration manual of the respective integration type.

The recording architectures are configured in the Recording Architectures module of the application *System Configuration*.

- See [chapter "Create recording architecture"](#), p. 18

The individual servers are configured in the Servers module of the application *System Configuration*.

- See [chapter "Configure servers"](#), p. 56

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



To be able to store the recording data created by the recording system on a server, the property *Data storage* has to be enabled for this server. This property is the precondition for being able to use a server as recording server. For servers which are used as recording server by a recording architecture, the property *Data storage* is enabled automatically. For other servers this property can be activated manually in the Servers module, see [chapter "Tab Usage", p. 60](#).

The recording data is stored in the system storage drive of the server. Every server has exactly one system storage drive the path of which is indicated during the installation.



For further information about the configuration of the drives refer to the administration manual *Configuration of drives*.

Recording data can be transferred from the system storage drive of one recording server to the system storage drive of another recording server. This allows managing data which has been recorded by different recording servers centrally for instance.

#### Centralized data storage



Fig. 4: Data storage on one single server

The transmission of the recording data requires the destination server to have the property *Data storage* enabled, too.

Alternatively, the data can be transferred to a server which has the property *Replay* enabled. In this case, the recording data is not stored on the destination server but deposited in a cache temporarily in order to be replayed.

## 4 Recording architecture types

The following color code is used to illustrate the recording architectures:

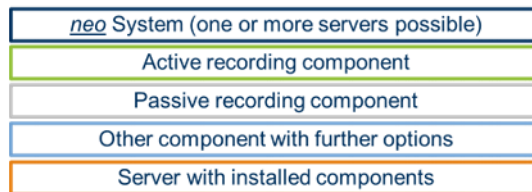


Fig. 5: Color code recording architectures:

The *neo* recording system supports the following recording architecture types:

### 4.1 Basic architecture types

#### 4.1.1 All-in-one Basic

With an architecture of this type, all recording components are located on one single server. Additional components such as the Enterprise Core or the database may be installed on this server as well. There are no redundant recording components.

A recording system may include several independent all-in-one architectures.

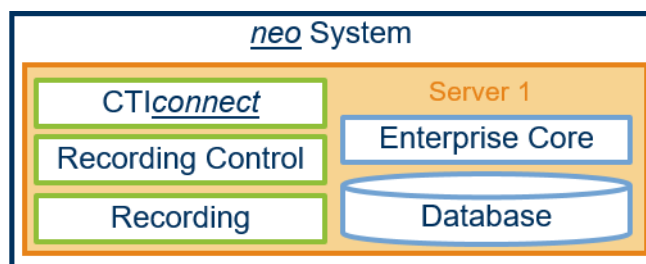


Fig. 6: Architecture type All-in-one Basic

#### All-in-one Basic Recording

In an All-in-one Basic recording architecture, all recording components have been installed on one server. To increase the recording capacity, the Enterprise Core and the database can be installed on a second server. A redundancy is not possible in this constellation; however, the full capacity of the first server can be used for the recording functionalities.

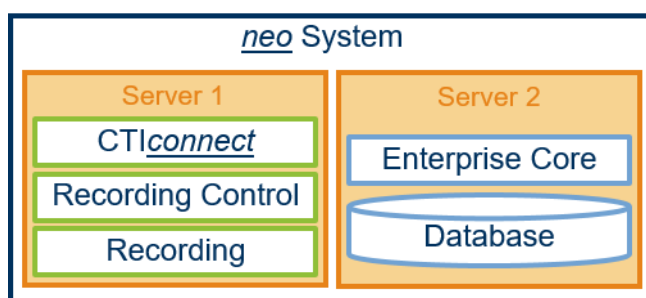


Fig. 7: Architecture type All-in-one Basic with 2 servers

#### 4.1.2 Multi-Server Recording

An architecture of this type allows distributing the load on several [recording servers](#). The pool of recording servers can contain any number of recording servers. The other recording components (Recording Control service and CTIconnect) must not be set up redundantly.

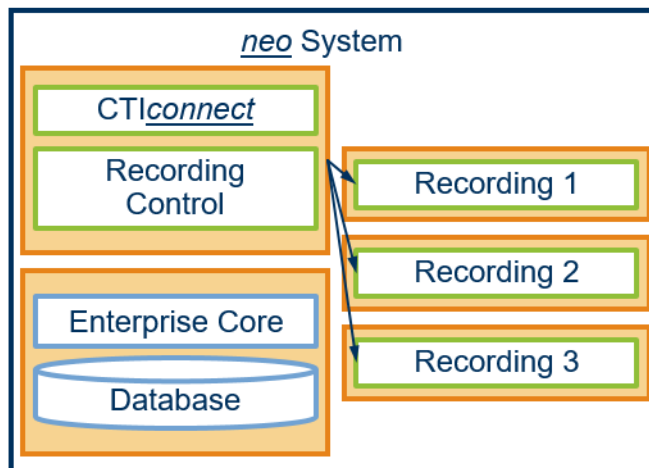


Fig. 8: Architecture type Multi-server recording with redundant recording servers

Besides the redundant recording servers, the recording control components **CTIconnect** and **Recording Control** may be set up redundantly in multi-server systems.

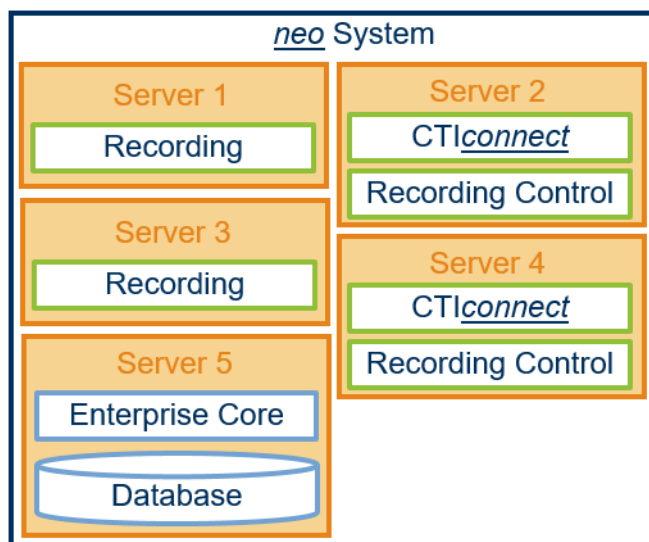


Fig. 9: Architecture type Multi-server recording with redundant recording control

## 4.2 Architecture types for failover concepts

A failover recording architecture serves the purpose of providing you with a functioning recording system as soon as possible after a recording component has failed to minimize the amount of lost recordings. To this end, two recording trunks are installed only one of which is active at the same time, though. One recording trunk is configured as primary recording trunk. If a recording component of the primary recording trunk fails, the standby recording trunk automatically takes over the recording. The **application server** controls the switch from the primary to the standby recording trunk.



### DANGER!

In failover architectures in which several integrations are active, all integrations of this recording architecture are switched to the other system in case of an error.

The import function works only on servers on which a Recording Control service is running.



An import does not take place when switching to a server without a Recording Control service in case of an error.

An import does not take place when switching to a server with a Recording Control service but without a configured import function in case of an error.

If the standby server which has taken over the active role fails, then the system does not switch to the primary server automatically even if it should be operative again.



If you would like to switch back to the original primary server again as soon as it is operative, you have to configure this option manually, see [chapter "Standby management for failover architectures", p. 52](#).

If you do not want to switch back, you can run the active standby server as primary server. To ensure that the system switches back automatically from the standby server to the original primary server, the option *Activate standby failover* must be active in the recording architecture, see [chapter "Create recording architecture", p. 18](#).



### DANGER!

If errors occur during failover operation on the activated standby recording components, recordings are inevitably lost.

#### 4.2.1

##### All-in-one Failover

An All-in-one Failover architecture consists of two servers.

On Server 1, the Enterprise Core and the database as well as the recording components are installed.

On Server 2, only the recording components are installed and activated as primary components.

If one of the primary recording components on Server 2 fails, the Enterprise Core activates the standby recording components on Server 1 so that recording can continue.

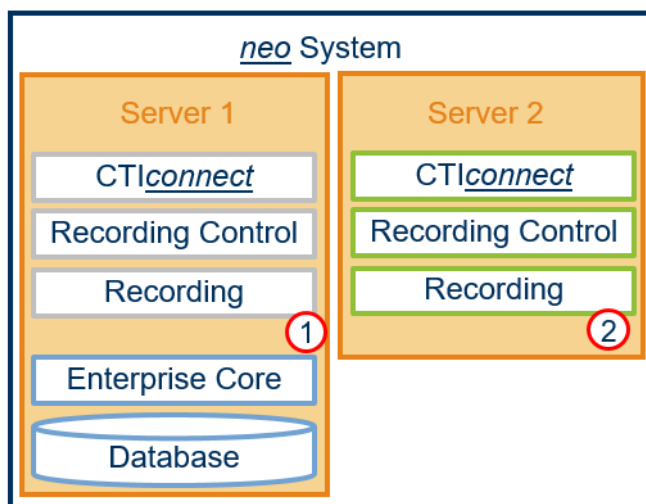


Fig. 10: Architecture type All-in-one Failover

To be able to initiate the failover mechanism, a signal must be sent from the Enterprise Core to the modules which are supposed to be started. The signal can only be sent if there is a connection between the servers or if the services are running locally on the server of the Enterprise Core. Therefore, the primary recording modules have to run on the separate Server 2. The recording modules on the Enterprise Core Server 1 have to be configured as standby so that the services on Server 1 can be started in case the primary recording modules on Server 2 fail.

Configure alarm messages so that you are notified about failover operations and will be able to take respective measures.



After a failover case, you must switch back to server 2 manually.



For basic information about the Notifications module refer to the administration manual for tenants *Notifications module*.

#### 4.2.2 Multi-Server Failover

In a failover architecture of this type, the recording components of the two recording trunks are distributed on several servers.

The recording components Recording Control and CTIconnect have been installed twice and thus offer a simple redundancy.

To distribute the load, a pool of recording servers can be created which can contain any number of [recording servers](#). The pool of recording servers can be set up once or twice or with redundant components.

When using the architecture type *Multi-Server Failover*, the following architecture scenarios can be implemented among others:

##### Multi-server failover with redundant recording control and one recording server pool

There is 1 pool of recording servers. This pool of recording servers can be controlled by both Recording Control services.

If the primary Recording Control service fails, the Recording Control service of the standby recording trunk becomes active. It takes over the control of the pool of recording servers.

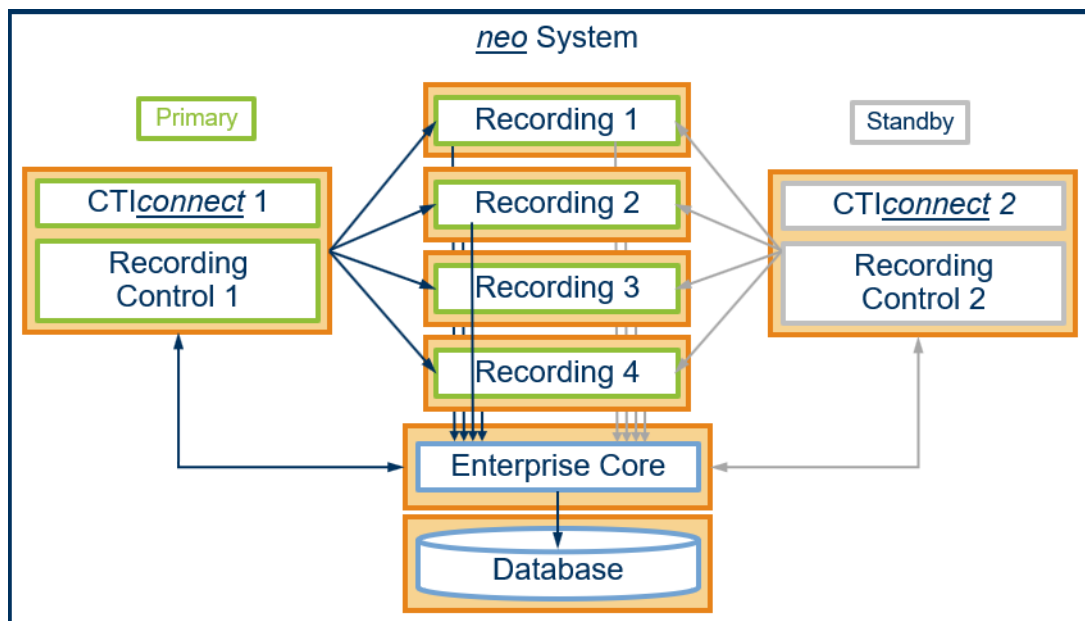


Fig. 11: Architecture type Multi-Server Failover with single pool of recording servers

##### Multi-server failover with all redundancy options

There are 2 pools of recording servers. Each recording server has an assigned standby recording server which takes over the function of the primary recording server if the latter fails. In the following exemplary figure, the recording server with *Recording Module 1b* is the standby server for the recording server with *Recording Module 1a* while the recording server with *Recording Module 2b* is the standby server for the recording server with *Recording Module 2a*.

If the primary Recording Control service fails, the Recording Control service of the standby recording trunk becomes active. It takes over the control of the pool of recording servers. If a recording server within the pool of recording servers fails, the unambiguously defined standby recording server takes over its function regardless of the Recording Control service which is currently active.

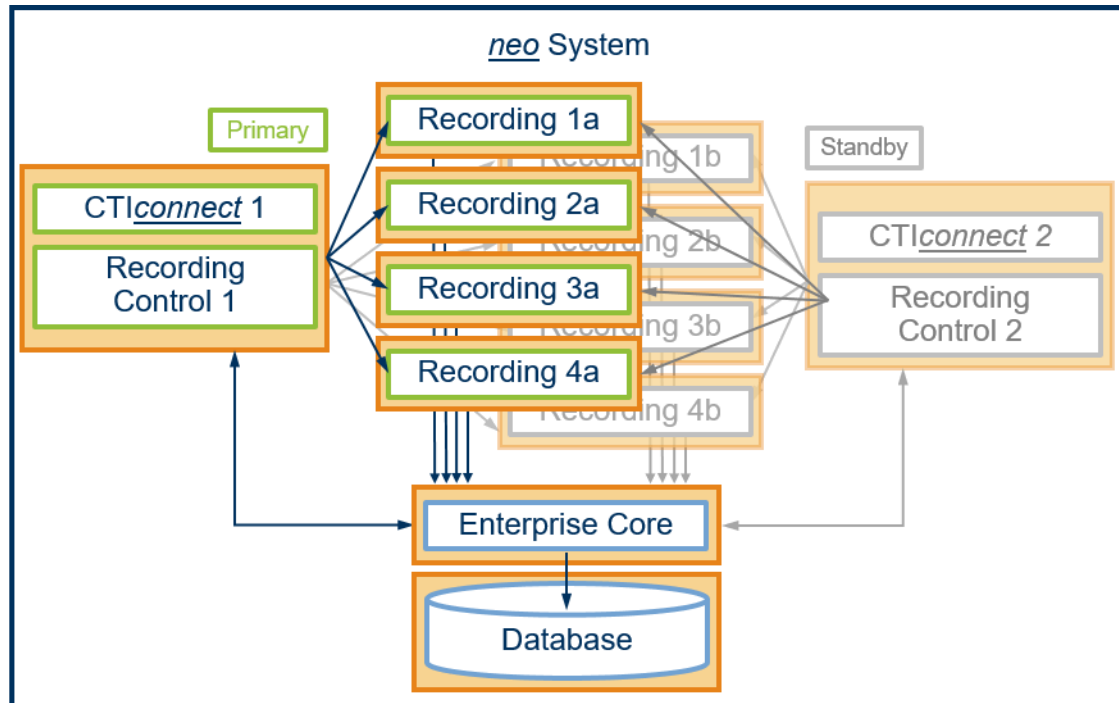


Fig. 12: Architecture type multi-server failover with all redundancy options

#### 4.2.3 Failover operation

Failover operation is triggered automatically if one of the recording-relevant modules in the active architecture fails. As a consequence, the recording modules of the primary architecture are stopped and the CTI connections and the licenses of the PBX are shared.

The standby recording modules on Server 1 are started and the connection to the PBX or the CTI application is established. The configuration of the connections of Server 1 must not necessarily be the same as the configuration of Server 2. You can configure several CTI connections to different applications.

Modules relevant for recording:

- Recording module (RM)
- Recording control (RC)
- TDM module
- CTI module



Error messages from the database or the Enterprise Core do not trigger failover operation.

#### 4.2.4 Reset failover operation

If you have activated the option *Standby failover active* in the recording architecture, the system switches back automatically to the primary server in case of an error of the active standby server without checking whether the server is operative.



### DANGER!

If errors occur during failover operation on the activated standby recording components, recordings are inevitably lost.

Once the primary recording components are available again, you can reset failover operation. Failover operation must be reset manually.

1. Open the application *System Configuration*.
2. Select the menu item *Setup > Recording Architectures* in the navigation bar and set the primary server back to active, see [chapter "Standby management for failover architectures"](#), p. 52.

## 4.3 Architecture types for parallel recording

The purpose of a parallel recording is to avoid a loss of recordings in case a recording component fails. To this end, two recording trunks are configured which are active simultaneously so that each recording is captured twice. If one recording trunk fails, the recording is captured at least by the other recording trunk.

For parallel recording systems, there are different configuration possibilities:

- When the parallel recording servers have been installed and configured independently of each other, the recording servers record separately. In the event of an error, none of the servers can take over the tasks of another server.
- If the parallel recording servers have been integrated in a system architecture, the recording servers can take over the tasks of another server and the two servers can replace each other. See [chapter "Synchronizing recording control"](#), p. 76

### 4.3.1 All-in-one Parallel Recording

This recording architecture is also known as Active-Active Recording.

The smallest setup of this architecture consists of a minimum of two servers which each contain all recording components. Recording takes place on both servers in parallel. In case of a failure, there is no need to switch to another architecture and recording can be guaranteed without interruption. Enterprise Core and database may be installed on one of these servers as well.

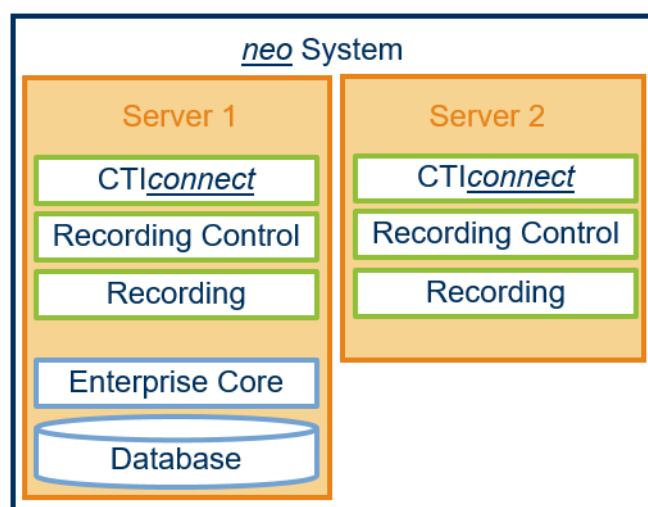


Fig. 13: Architecture type All-in-one Parallel Recording



However, ASC recommends to install the Enterprise Core along with the database on a third server. Neither of them is redundant but can be expanded accordingly.



#### All-in-one Parallel Recording with 3 servers

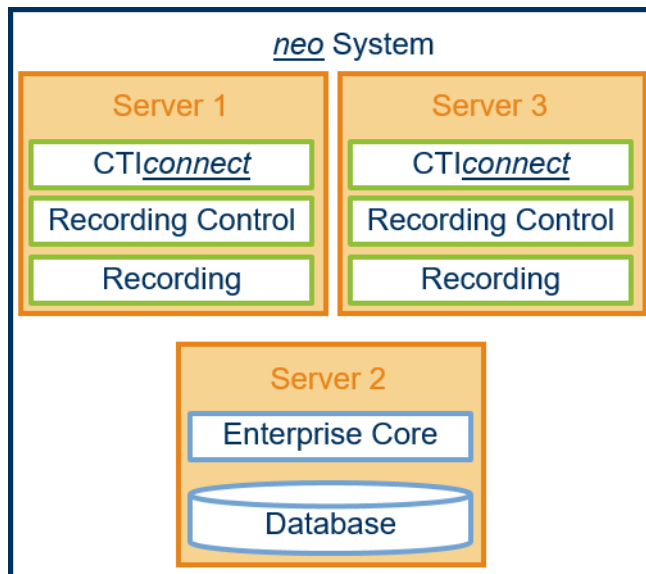


Fig. 14: Architecture type All-in-one Parallel Recording with 3 servers

#### 4.3.2 Multi-Server Parallel Recording

In an architecture of this type, the recording components of the two recording trunks are distributed on several servers. Every recording trunk has its own pool of recording servers.

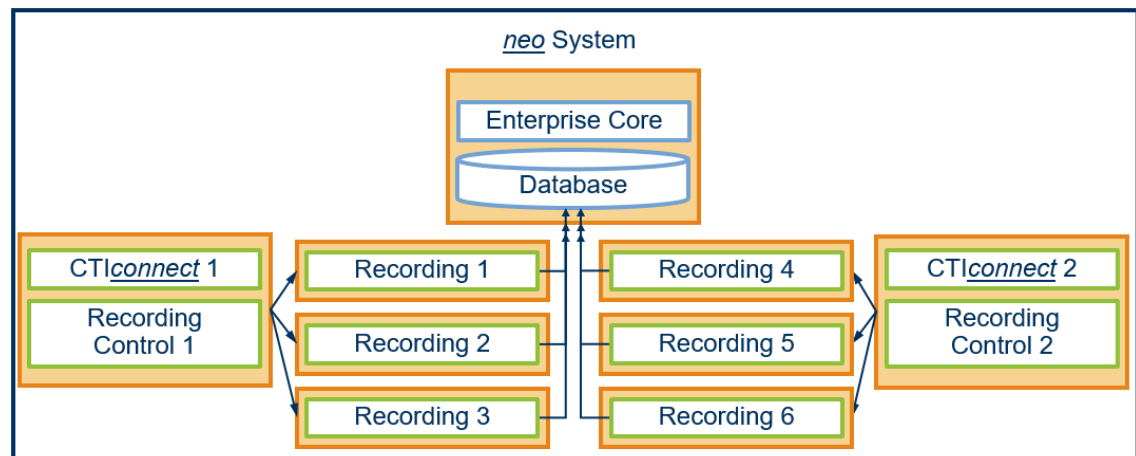


Fig. 15: Architecture type Multi-Server Parallel Recording

#### 4.4 Architecture types for import

The architecture type *Import only* offers the possibility to configure a simple architecture specifically for the import. The usage of the architecture type is useful if the system is not used for recording and the recording data will exclusively be imported.

This architecture type cannot be used for recording as it neither contains a [recording server](#) nor [Recording Module](#). This architecture type exclusively consists of 1 recording component *RecordingControl*.



Theoretically, an import works with any other architecture type, too. Therefore, you can use an architecture for the import that you are already using for an integration.

## 5

## Create recording architecture

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

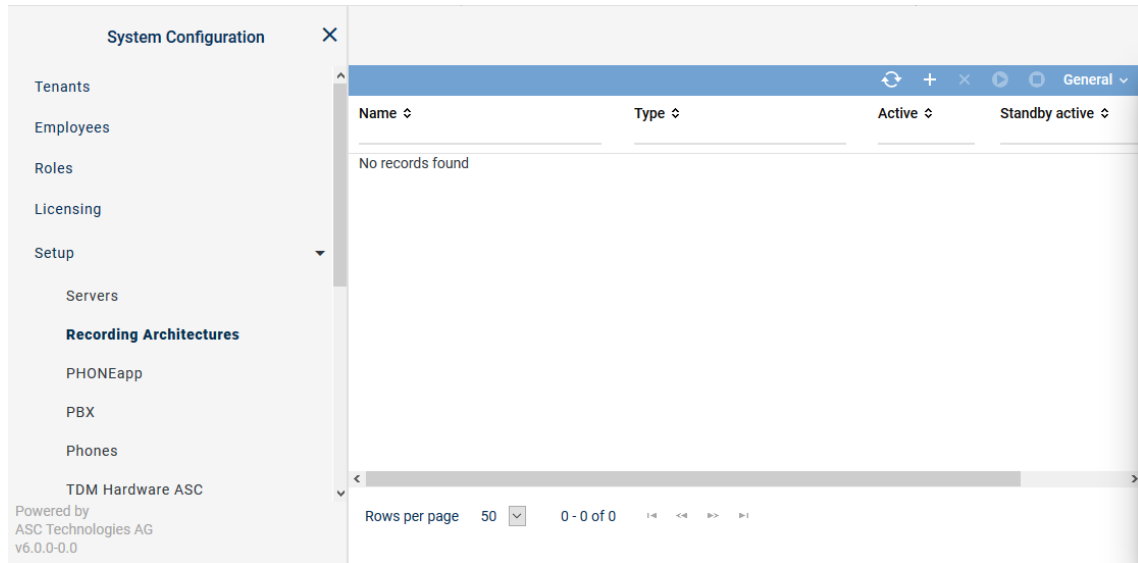


Fig. 16: Recording Architectures module - main view

<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 <span>⏏</span> (<i>Deactivate</i>) in the toolbar.  <span>✗</span> = Recording architecture is not active. It can be activated by clicking on the icon <span>▶</span> (<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*.

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

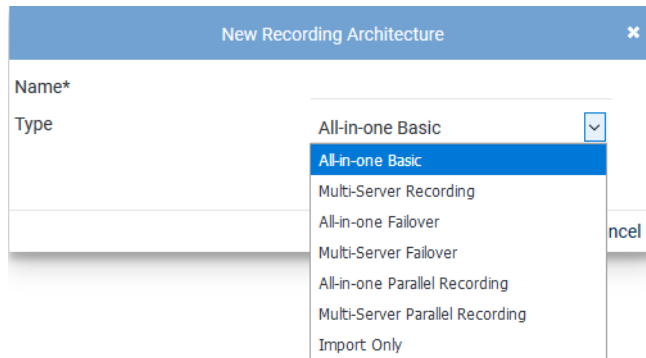


Fig. 17: Selecting recording architecture types

Depending on the system architecture, the following recording architectures types are available:

- *All-in-one Basic*,  
see [chapter "Create recording architecture All-in-one Basic"](#), p. 20.
- *Multi-Server Recording*,  
see [chapter "Create recording architecture Multi-Server Recording"](#), p. 33.
- *All-in-one Failover*,  
see [chapter "Create recording architecture All-in-one Failover"](#), p. 23.
- *Multi-Server Failover*,  
see [chapter "Create recording architecture Multi-Server Failover"](#), p. 37.
- *All-in-one Parallel Recording*,  
see [chapter "Create recording architecture All-in-one Parallel Recording"](#), p. 28.
- *Multi-Server Parallel Recording*,  
see [chapter "Create recording architecture Multi-Server Parallel Recording"](#), p. 43.
- *Import Only*,  
see [chapter "Create recording architecture Import Only"](#), p. 48.

For architectures which are designed for failover operation you can switch servers by means of a standby management.

See [chapter "Standby management for failover architectures"](#), p. 52.







## 5.1



### Toolbar of the Recording Architectures module

The toolbar offers the following functions.



Fig. 18: Toolbar Recording Architectures module

	<i>Refresh</i>	Refreshes the main view.
	<i>Search</i>	Opens the window of the search function. The search function allows searching systematically for sets of data which meet certain criteria.  The icon  is displayed whenever the search has been adjusted by means of a filter.
	<i>Reset search</i>	Resets all search filters so that the main view displays all data sets again.
	<i>Create</i>	Creates a new recording architecture.
	<i>Delete</i>	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 Architectures</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>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*.


## 5.2

### 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.

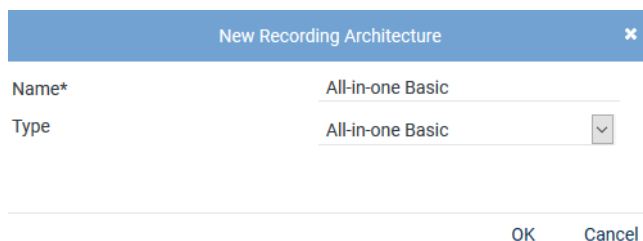


Fig. 19: Create recording architecture - All-in-one Basic Recording

- In the entry field *Name*, enter a descriptive name for the recording architecture.

- 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.
- Click on the button *OK*.  
⇒ Your entries now appear in the detail view.

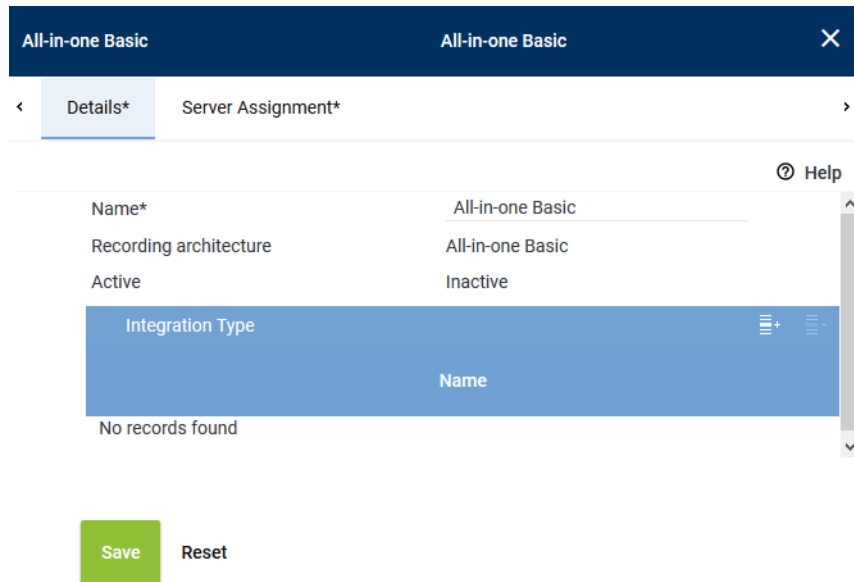



Fig. 20: Recording architecture - tab Details

### 5.2.1

#### Add integration type

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

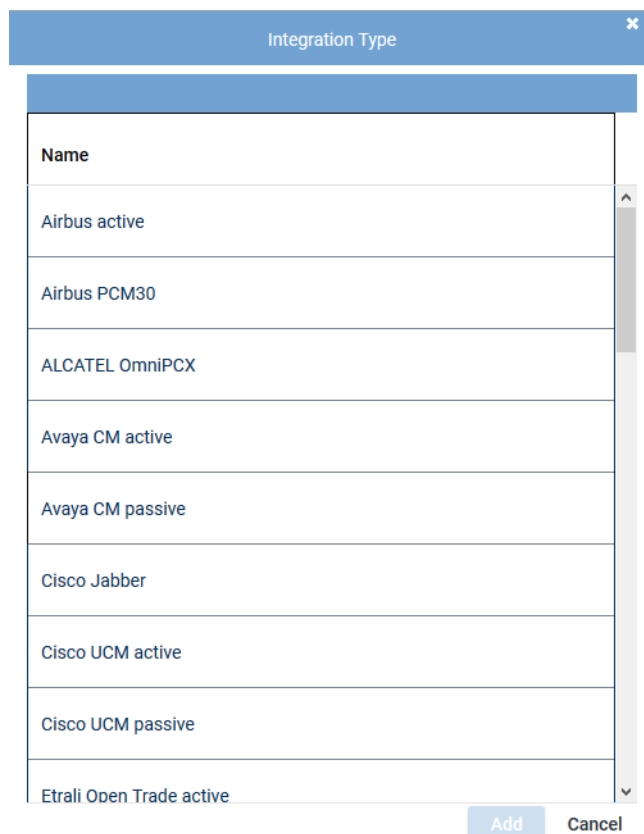


Fig. 21: Select integration type



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



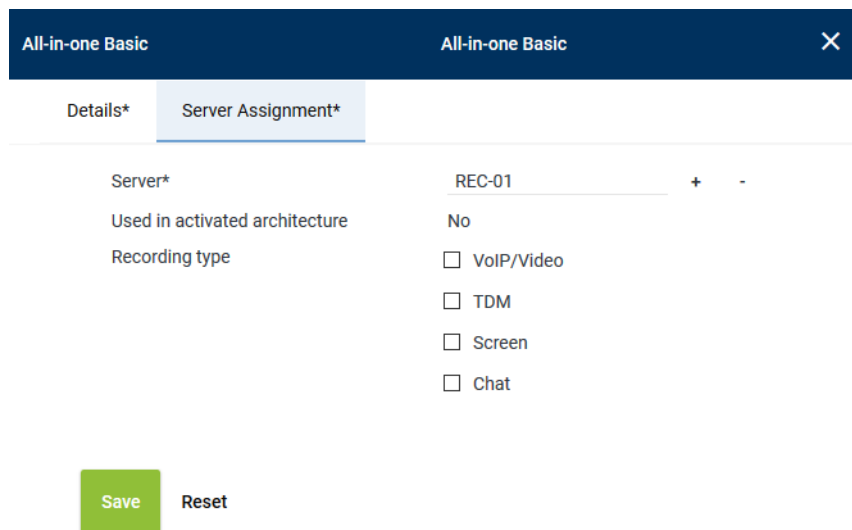
Any number of integration types can be assigned to a recording architecture.

2. From the list of available integration types, select the respective integration type and click on the button *Add*.  
⇒ The name of the integration type now appears in the list in the detail view.

### 5.2.2

#### Assign server for All-in-one Basic

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

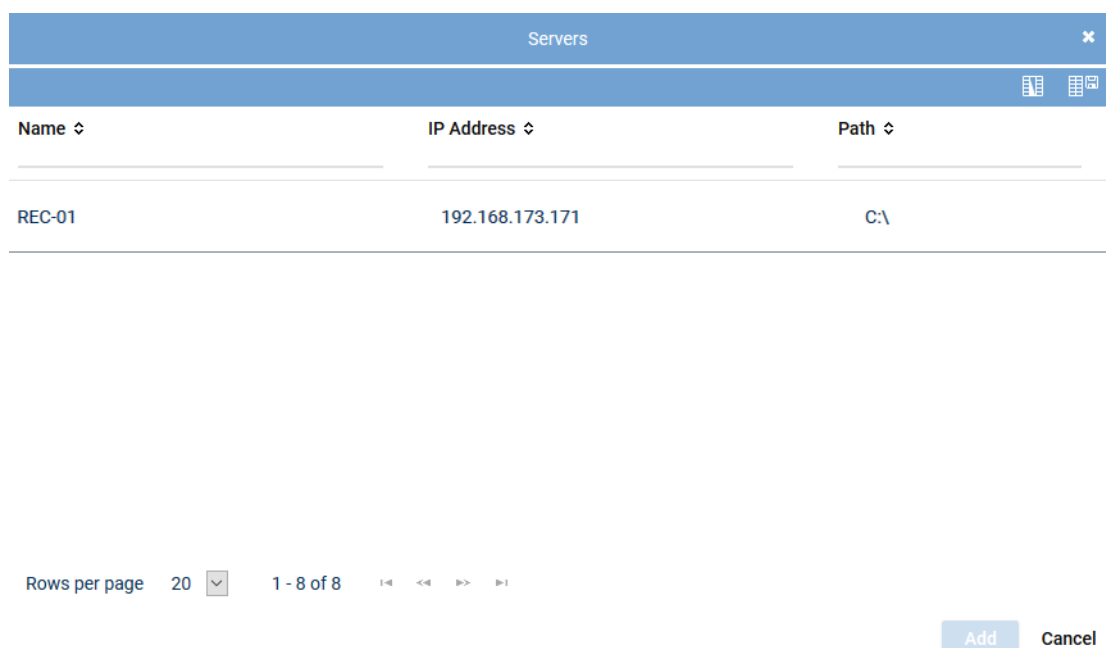
☐ Screen

☐ Chat

Save Reset

Fig. 22: Recording Architecture - tab Server Assignment

2. 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. 23: Recording Architecture - assign server

3. 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.

4. Click on the button *Add*.  
⇒ The name of the server now appears in the detail view.
5. Activate the check box in front of the recording types for which you would like to use this server.

Recording type	<input checked="" type="checkbox"/> VoIP/Video
	<input type="checkbox"/> TDM
	<input type="checkbox"/> Screen
	<input type="checkbox"/> Chat

Save
Reset




Fig. 24: 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.

### 5.2.2.1

#### 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 tool-bar 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. 25: 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.




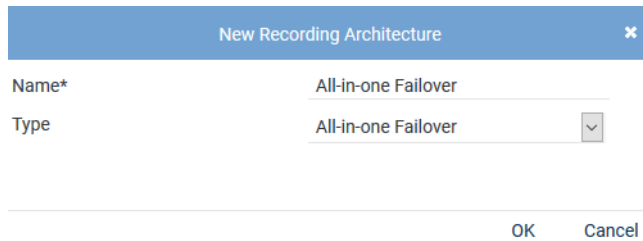
If you install an extension for the integration subsequently, you must deactivate the recording architecture and activate it again after having installed the license.

## 5.3

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

If a standby recording server is supposed to take over recording in case of an error, you have to create a recording architecture of the type *All-in-one Failover*.

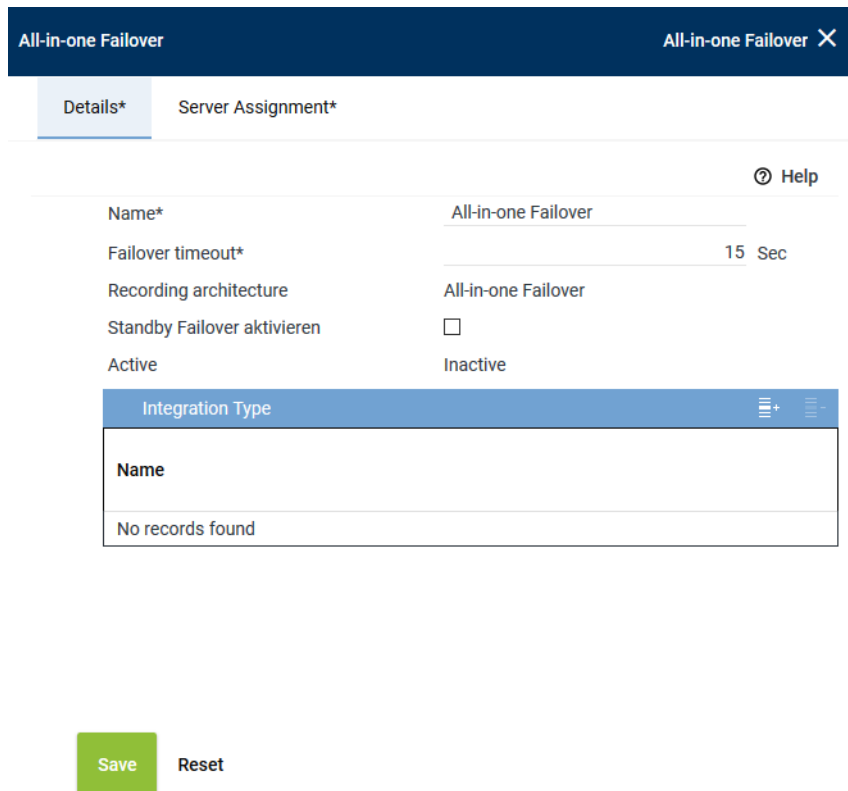
- To create a new recording architecture, click on the icon  (*Create*) in the toolbar of the main view.  
⇒ The window *New Recording Architecture* appears.



The dialog box titled "New Recording Architecture" has a close button (X) in the top right corner. It contains two input fields: "Name\*" with the text "All-in-one Failover" and "Type" with a dropdown menu showing "All-in-one Failover". At the bottom right are "OK" and "Cancel" buttons.

Fig. 26: Create recording architecture - All-in-one Failover

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



The "All-in-one Failover" detail view has a dark blue header with the title "All-in-one Failover" and a close button (X). Below the header are two tabs: "Details\*" (selected) and "Server Assignment\*". The "Details\*" tab shows a form with the following fields:

- Name\***: All-in-one Failover
- Failover timeout\***: 15 Sec
- Recording architecture**: All-in-one Failover
- Standby Failover aktivieren**: ☐
- Active**: Inactive

At the bottom right of the form is a "Help" icon. Below the form is a table titled "Integration Type" with a "+" icon in the top right corner. The table has one column labeled "Name" and shows "No records found". At the bottom of the form are two buttons: "Save" (green) and "Reset" (grey).

Fig. 27: Recording architecture - tab Details - All-in-one Failover


As standby components may have been configured for the active recording server, a failover timeout may be configured in this recording architecture. For further information about failover architectures, see [chapter "Standby management for failover architectures"](#), p. 52.

<b>Failover timeout</b>	Enter a timeout of a minimum of 15 seconds after which the failover process is supposed to start. Depending on the system architecture it may make sense to configure a longer timeout period. The timeout defines the elapse time until the failover process starts. If the status returns to <i>OK</i> within this time, then the failover process is not triggered.
-------------------------	--



	<b>NOTICE!</b> Check these parameters after an update and set the timeout to 15 seconds, if required.
<i>Activate standby failover</i>	Activate this option if you would like to ensure that the system switches back to the primary server in case of an error of the standby server.  <b>NOTICE!</b> There is no check whether the primary database is working properly before switching back. As a result it is possible that both databases are in an undefined state.  <b>NOTICE!</b> After switching back to the original primary server from the standby server, this option is deactivated. If the switching process is supposed to be carried out automatically in the event of a new error, you must activate this option again.
<i>Active</i>	Shows the status of the recording architecture.

### 5.3.1 Add integration type

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

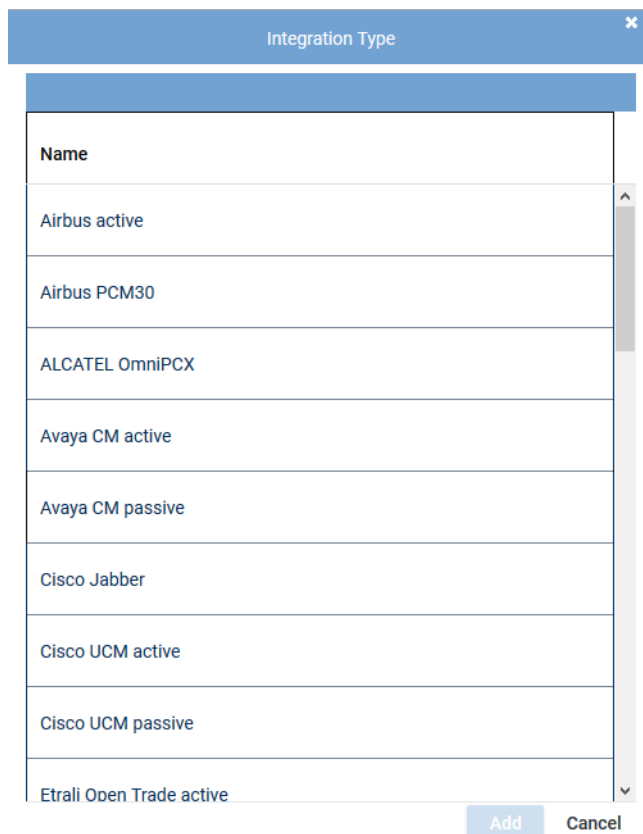


Fig. 28: Select integration type



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

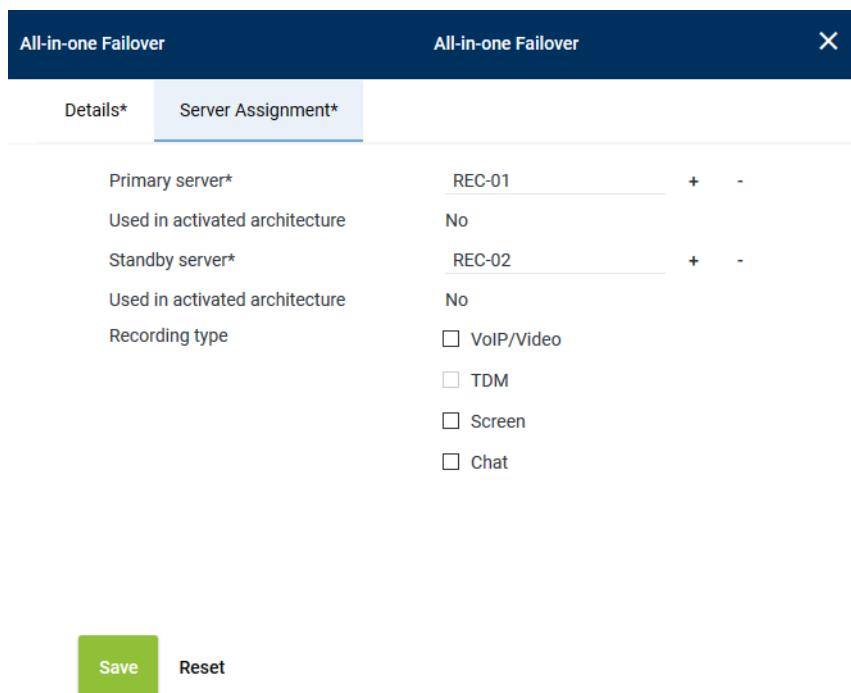


Any number of integration types can be assigned to a recording architecture.

- Select *Airbus active* from the list of the available integration types and click on the button *Add*.  
⇒ The name of the integration type now appears in the list in the detail view.

### 5.3.2 Assign servers for All-in-one Failover Recording

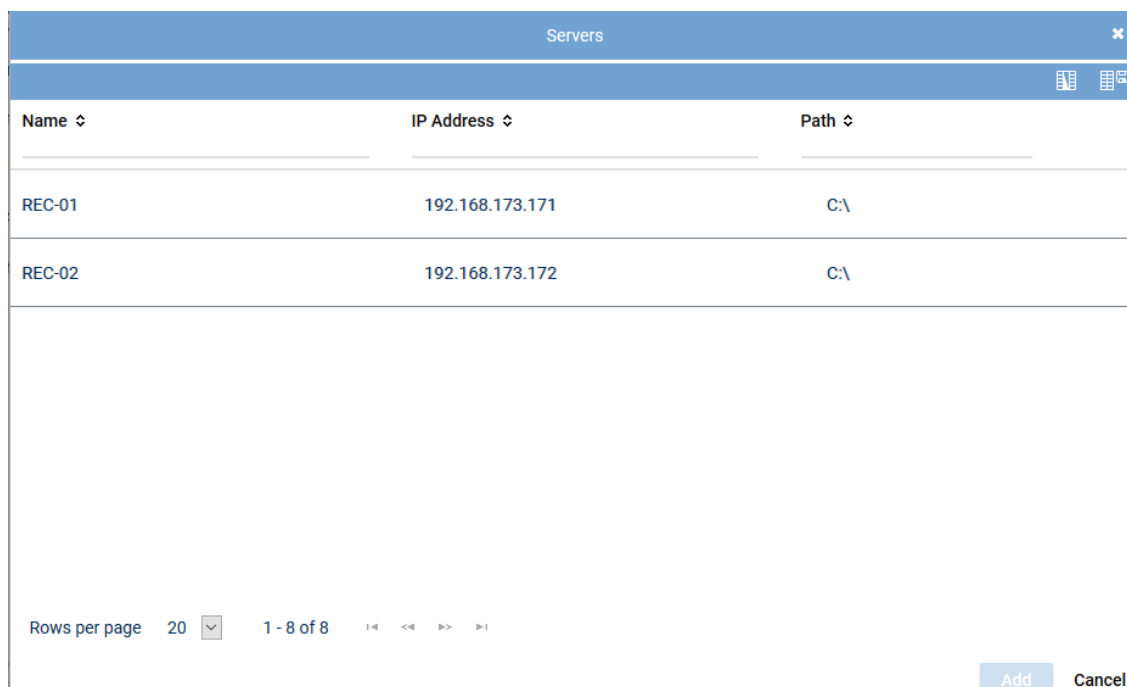
1. Click on the tab *Server Assignment* to assign the recording servers to the recording architecture *All-in-one Failover Recording*.



All-in-one Failover		All-in-one Failover		X	
<div>Details*    <b>Server Assignment*</b></div>					
Primary server*	REC-01	+	-		
Used in activated architecture	No				
Standby server*	REC-02	+	-		
Used in activated architecture	No				
Recording type	<input type="checkbox"/> VoIP/Video <input type="checkbox"/> TDM <input type="checkbox"/> Screen <input type="checkbox"/> Chat				
<div>Save    Reset</div>					

Fig. 29: Recording Architecture - tab Server Assignment

2. Click on the button **+** behind the entry field *Primary server*.  
⇒ The window *Servers* appears.



Servers			X
Name ↕	IP Address ↕	Path ↕	
REC-01	192.168.173.171	C:\	
REC-02	192.168.173.172	C:\	

Rows per page 20 1 - 8 of 8


Add Cancel

Fig. 30: Recording Architecture - assign server - example

3. Select the *primary 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.

4. Click on the button *Add*.  
⇒ The name of the server now appears in the detail view.
5. To delete an assignment, click on the button .
6. Repeat the steps and select the server which is supposed to be use in case of an error failover operation in the entry field *Standby server*.
7. Select the recording type you would like to use for these servers by activating the check box.

Recording type

☒ VoIP/Video

☒ TDM

☒ Screen

☒ Chat



 




Fig. 31: 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.

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

### 5.3.2.1 Activate recording architecture

1. Once all servers have been assigned, click on the button *Save*.
2. Select the recording architecture in the main view so that the icon  (*Activate*) in the tool-bar becomes active.
3. To activate the recording architecture, click on the icon  (*Activate*).  
⇒ In the column *Active*, the icon  (*Active*) appears.










     Recording Architecture ▾ General ▾			
Name ⇅	Type ⇅	Active ⇅	Standby active ⇅
All-in-one Failover	All-in-one Failover		

Fig. 32: 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.



For all recording architectures with failover components, you can manage to the standby components via standby management. This holds true for Multi-Server Recording and Multi-Server Parallel Recording systems if redundancy options are available for these systems. See [chapter "Standby management for failover architectures"](#), p. 52.



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

#### 5.4

#### Create recording architecture All-in-one Parallel Recording

If there are two recording servers which are supposed to record the same tracks in parallel, you have to create a recording architecture of the type *All-in-one Parallel Recording*.


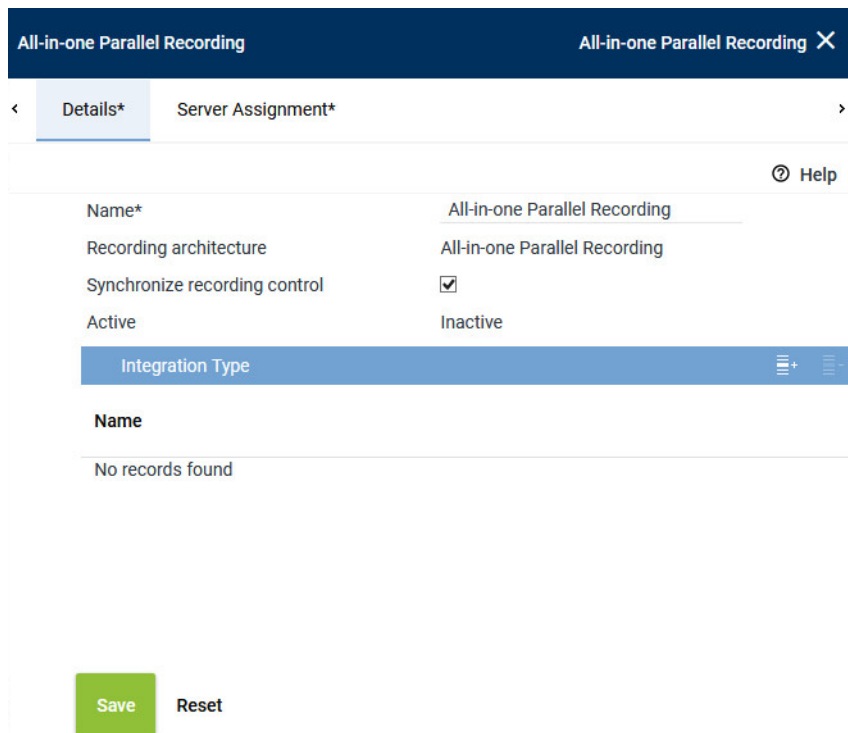
1. To create a new recording architecture, click on the icon  (*Create*) in the toolbar of the main view.  
⇒ The window *New Recording Architecture* appears.



Fig. 33: Create recording architecture - All-in-one Parallel 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 Parallel 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.



**All-in-one Parallel Recording** All-in-one Parallel Recording ✕

< **Details\*** Server Assignment\* >

🔗 Help

Name*	All-in-one Parallel Recording
Recording architecture	All-in-one Parallel Recording
Synchronize recording control	<input checked="" type="checkbox"/>
Active	Inactive

**Integration Type** ⋮ + ⋮ -

**Name**

No records found

Save Reset


Fig. 34: Recording architecture - tab Details - All-in-one Parallel Recording

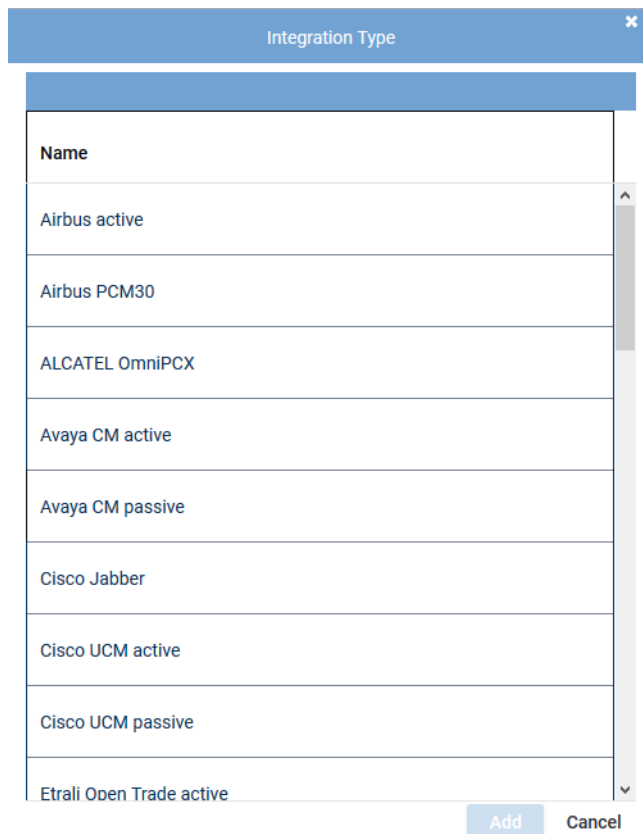
5. Activate the check box *Synchronize recording control* so that the Recording Control services can be synchronized and only one service controls recording for the two recording servers, see [chapter "Synchronizing recording control", p. 76](#).

**NOTICE!** If you have activated the option *Synchronize recording control*, only one set of data is generated in the database but audio data is recorded on both recording servers. This method makes duplicate detection impossible. Ensure that there is enough storage capacity for twice the amount of data.

If you do not want to synchronize recording control, you can configure duplicate detection, see [chapter "Duplicates in parallel recording architectures", p. 80](#).

#### 5.4.1 Add integration type

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



The dialog box titled "Integration Type" contains a list of integration types. The list is as follows:

Name
Airbus active
Airbus PCM30
ALCATEL OmniPCX
Avaya CM active
Avaya CM passive
Cisco Jabber
Cisco UCM active
Cisco UCM passive
Etrali Open Trade active

At the bottom right of the dialog are two buttons: "Add" and "Cancel".

Fig. 35: Select integration type



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

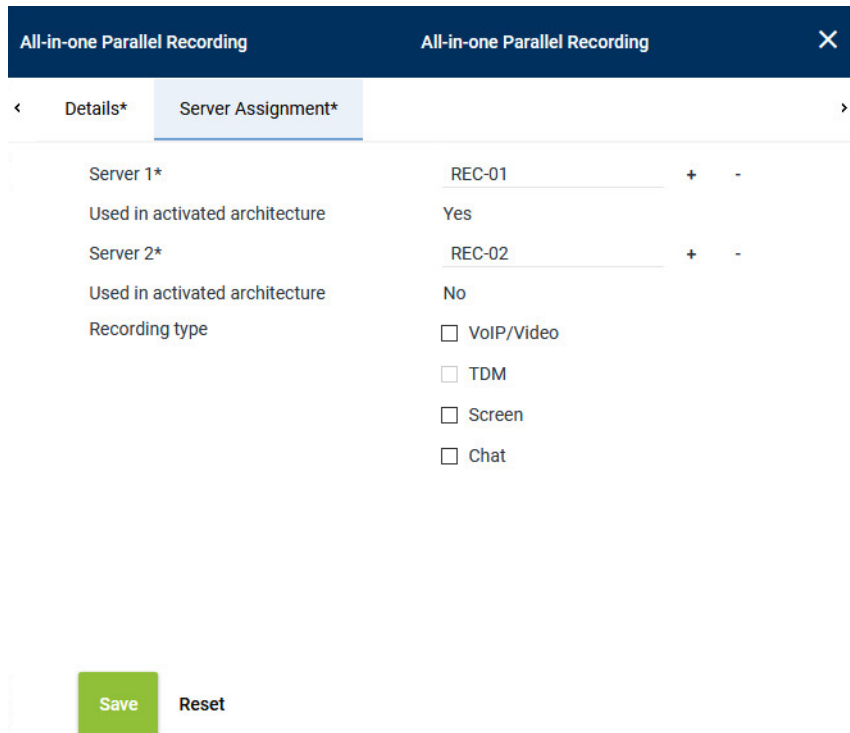


Any number of integration types can be assigned to a recording architecture.

- From the list of available integration types, select the respective integration type and click on the button *Add*.  
⇒ The name of the integration type now appears in the list in the detail view.

#### 5.4.2 Assign server for All-in-one Parallel Recording

- Click on the tab *Server Assignment* to assign the recording servers to the recording architecture *All-in-one Parallel Recording*.



All-in-one Parallel Recording		All-in-one Parallel Recording		X	
<div> <div>Details*</div> <div>Server Assignment*</div> </div>					
Server 1*	REC-01	+	-		
Used in activated architecture	Yes				
Server 2*	REC-02	+	-		
Used in activated architecture	No				
Recording type	<input type="checkbox"/> VoIP/Video <input type="checkbox"/> TDM <input type="checkbox"/> Screen <input type="checkbox"/> Chat				
<div> <div>Save</div> <div>Reset</div> </div>					

Fig. 36: Recording Architecture - tab Server Assignment

- Click on the button **+** behind the entry field *Server 1*.  
⇒ The window *Servers* appears.



Servers		
Name ↕	IP Address ↕	Path ↕
REC-01	192.168.173.171	C:\
REC-02	192.168.173.172	C:\

Rows per page 20 1 - 8 of 8

Add Cancel

Fig. 37: Recording Architecture - assign server - example


- Select *Server 1*.



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.

5. To delete an assignment, click on the button .
6. Repeat the steps and select Server 2 for the entry field *Server 2*.
7. Select the recording type you would like to use for these servers by activating the check box.

Recording type

☒ VoIP/Video

☒ TDM

☒ Screen

☒ Chat




Fig. 38: Recording Architecture - activate recording type

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



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

#### 5.4.2.1 Activate recording architecture

1. Once all servers have been assigned, click on the button *Save*.
2. Select the recording architecture in the main view so that the icon  (*Activate*) in the tool-bar becomes active.
3. To activate the recording architecture, click on the icon  (*Activate*).  
⇒ In the column *Active*, the icon  (*Active*) appears.










     General ▾			
Name ▾	Type ▾	Active	Standby active ▾
All-in-one Parallel Recording	All-in-one Parallel Recording		

Fig. 39: 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.



Parallel recording results in redundant recording data in the system. To make sure that this data does not remain in the system permanently, you can configure duplicate detection so that duplicate sets of data are deleted, see [chapter "Configure duplicate detection", p. 80](#).




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

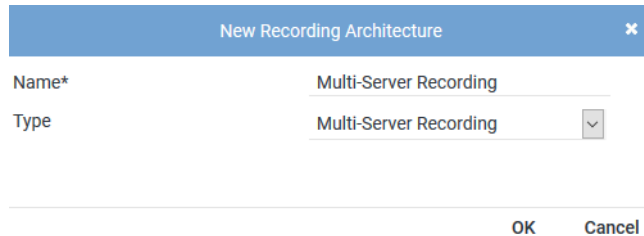


### 5.5 Create recording architecture Multi-Server Recording

If there are several recording servers which are supposed to record different tracks, you have to create a recording architecture of the type *Multi-Server Recording*.

1. To create a new recording architecture, click on the icon  (*Create*) in the toolbar of the main view.

⇒ The window *New Recording Architecture* appears.



The dialog box titled "New Recording Architecture" has a close button (X) in the top right corner. It contains two input fields: "Name\*" with the value "Multi-Server Recording" and "Type" with a dropdown menu showing "Multi-Server Recording". At the bottom, there are "OK" and "Cancel" buttons.

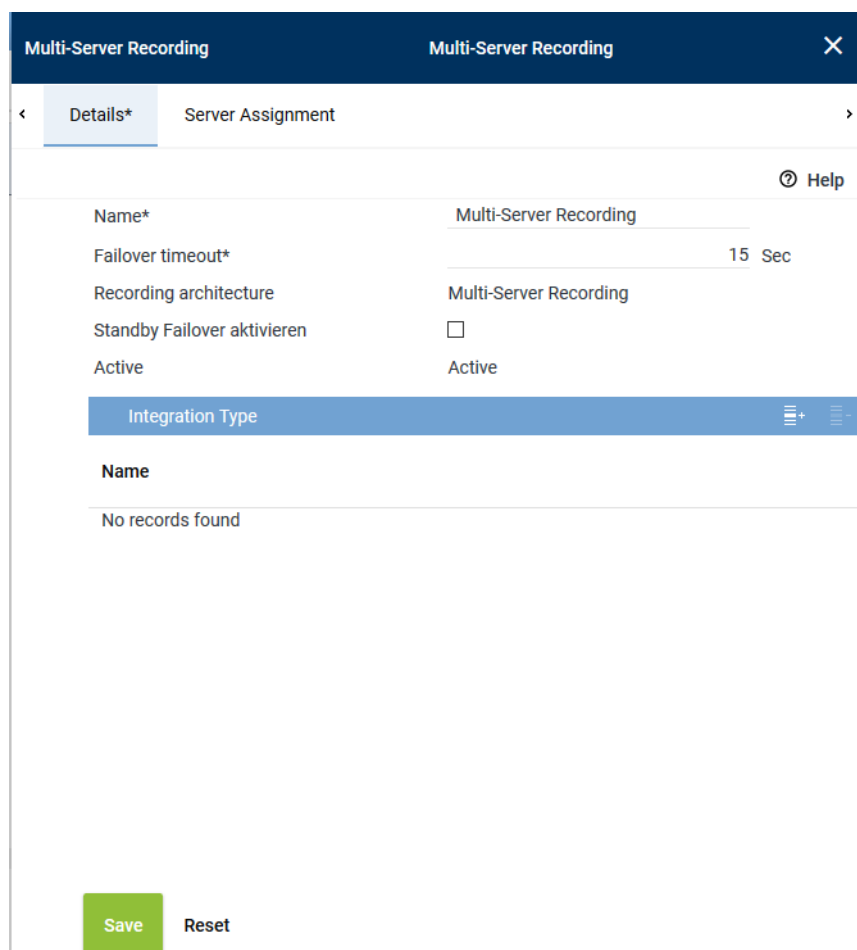
Fig. 40: Create recording architecture - Multi-Server Recording

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 *Multi-Server 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 dialog box titled "Multi-Server Recording" has a close button (X) in the top right corner. It features a tabbed interface with "Details\*" and "Server Assignment" tabs. The "Details\*" tab is active, showing a form with the following fields: "Name\*" (Multi-Server Recording), "Failover timeout\*" (15 Sec), "Recording architecture" (Multi-Server Recording), "Standby Failover aktivieren" (checkbox), and "Active" (Active). There is a "Help" icon in the top right of the form area. Below the form is a section titled "Integration Type" with a list icon. At the bottom, there is a "Name" field showing "No records found". At the very bottom, there are "Save" and "Reset" buttons.

Fig. 41: Recording architecture - tab Details - Multi-Server Recording

As standby components may have been configured for the different active recording servers, a failover timeout may be configured in this recording architecture.

- Enter a failover timeout of a minimum of 15 seconds after which the failover process is supposed to start. Depending on the system architecture it may make sense to configure a longer timeout period. The timeout defines the elapse time until the failover process starts. If the status returns to *OK* within this time, then the failover process is not triggered.

### 5.5.1 Add integration type

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

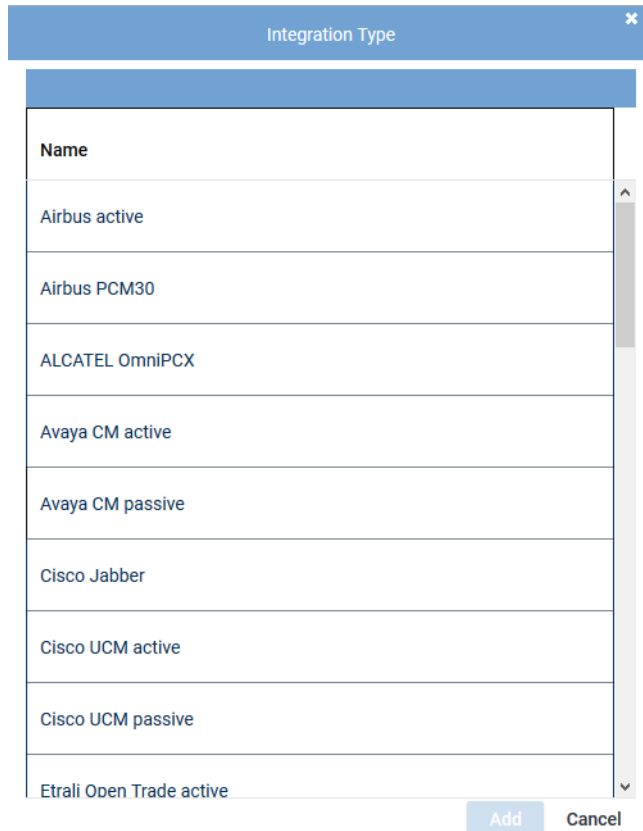


Fig. 42: Select integration type



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.

- From the list of available integration types, select the respective integration type and click on the button *Add*.  
⇒ The name of the integration type now appears in the list in the detail view.

### 5.5.2 Assign servers for Multi-Server Recording

- Click on the tab *Server Assignment* to configure the distribution of the recording components for the *Multi-Server Recording* recording architecture.

#### Group field Recording Control and CTIconnect

In this group field, you can configure recording control. You can configure two different server for this purpose or select the same server.

Multi-Server Recording

Multi-Server Recording

×

<

Details\*

Server Assignment\*

>

Recording Control and CTIconnect

▼

Recording Control*	RC-01	+	-
Used in activated architecture	No		
CTIconnect*	CTI-01	+	-
Used in activated architecture	No		

Recording Server

▼

<

Recording Server

+

✎

≡

Server ↕

Standby ↕

REC-01	REC-02
--------	--------


↑

↓

Save

Reset

Fig. 43: Recording Architecture - tab Server Assignment

- Click on the button  behind the entry field *Recording control*.  
⇒ The window *Servers* appears.

Servers

Name	IP Address	Path
RC-02	192.168.173.176	C:\
REC-01	192.168.173.171	C:\
REC-04	192.168.173.174	C:\
REC-02	192.168.173.172	C:\
RC-01	192.168.173.175	C:\
CTI-01	192.168.173.177	C:\
CTI-02	192.168.173.178	C:\

Rows per page


20

1 - 8 of 8

Add

Cancel

Fig. 44: Recording Architecture - assign server - example


2. Select the server for the *recording control module*.
3. Click on the button *Add*.  
⇒ The name of the server now appears in the detail view.
4. To delete an assignment, click on the button .



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.

5. Repeat the steps and select the server for the *CTIconnect module* in the entry field *CTIconnect*.

### Group field Recording Server

1. In the table headline *Recording Server*, click on the icon .
- ⇒ The following window appears:

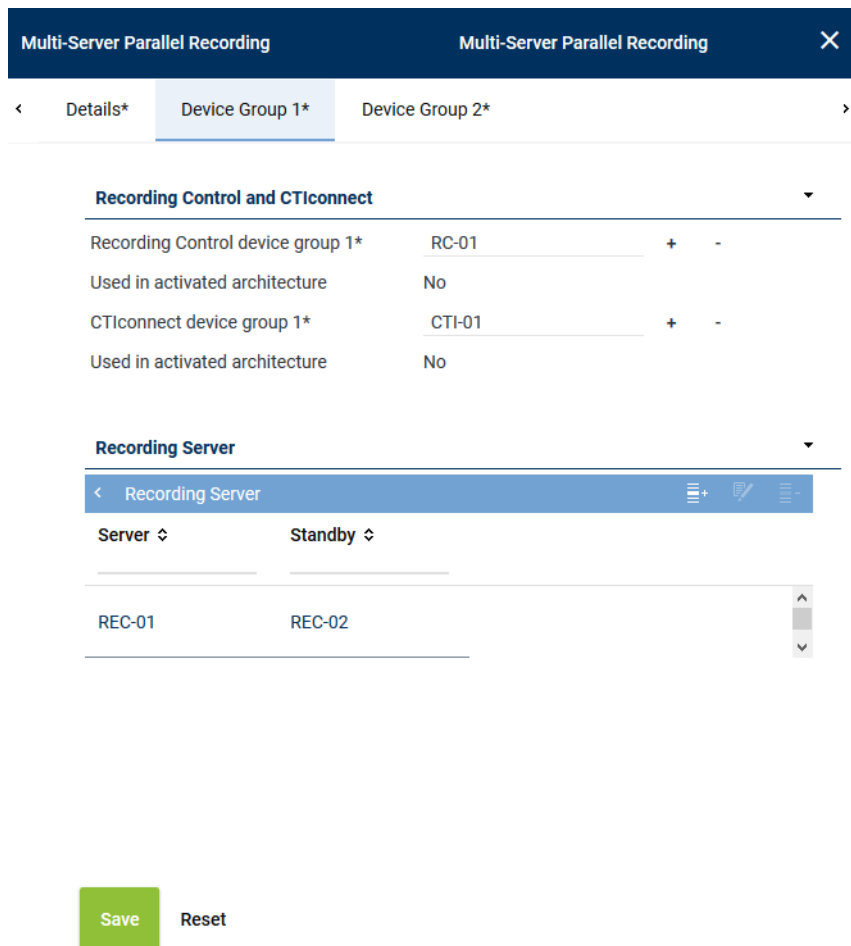









Fig. 45: Add Recording Server

2. As described in the previous steps, go to the entry field *Primary server* and click on the icon  to select the primary server on which the recording is supposed to run.
3. In the entry field *Standby server*, click on the icon  to select the standby server which is supposed to take over recording in case of an error.

4. Select the recording type you would like to use for these servers by activating the check box.  
**NOTICE!** You can activate several recording types if the integration has been designed for this and if you have installed the respective licenses.
5. Click on the button *OK* to close the window.  
⇒ The name of the server now appears in the detail view.
6. To edit the assignment subsequently, click on the icon .  
To delete an assignment, click on the icon .
7. If you would like to add further recording servers, repeat the steps described above.

### 5.5.2.1 Activate recording architecture

1. Once all servers have been assigned, 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 ▾ General ▾			
Name ▾	Type ▾	Active ▾	Standby active ▾
Multi-Server Recording	Multi-Server Recording		

Fig. 46: 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.

## 5.6

### Create recording architecture Multi-Server Failover

If there are several recording servers which are supposed to take over the tasks of another recording server in case of an error, you have to create a recording architecture of the type *Multi-Server Failover*.

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

New Recording Architecture 

Name\*

Multi-Server Failover

Type

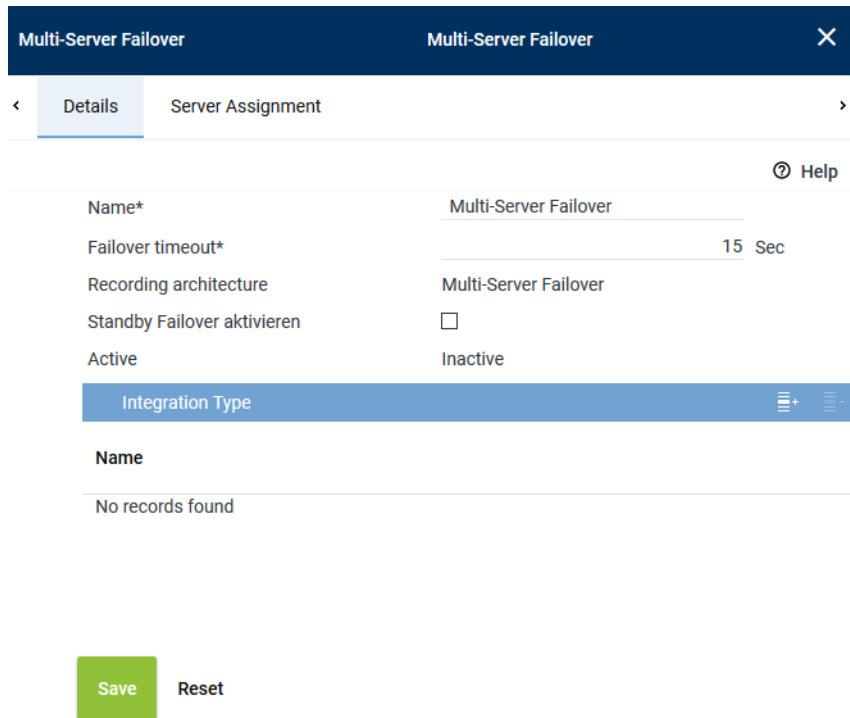
Multi-Server Failover ▾

OK

Cancel

Fig. 47: Create recording architecture - Multi-Server Failover

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 *Multi-Server Failover* .  
**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.



Multi-Server Failover Multi-Server Failover X

< Details Server Assignment >

Help

Name\* Multi-Server Failover

Failover timeout\* 15 Sec

Recording architecture Multi-Server Failover

Standby Failover aktivieren ☐

Active Inactive

Integration Type

Name

No records found


Save Reset

Fig. 48: Recording architecture - tab Details - Multi-Server Failover

As standby components may have been configured for the different active recording servers, a failover timeout may be configured in this recording architecture. For further information about the configuration of failover architectures, see [chapter "Standby management for failover architectures"](#), p. 52.

<i>Failover timeout</i>	<p>Enter a timeout of a minimum of 15 seconds after which the failover process is supposed to start. Depending on the system architecture it may make sense to configure a longer timeout period. The timeout defines the elapse time until the failover process starts. If the status returns to <i>OK</i> within this time, then the failover process is not triggered.</p> <p><b>NOTICE!</b> Check these parameters after an update and set the timeout to 15 seconds, if required.</p>
<i>Activate standby failover</i>	<p>Activate this option if you would like to ensure that the system switches back to the primary server in case of an error of the standby server.</p> <p><b>NOTICE!</b> There is no check whether the primary database is working properly before switching back. As a result it is possible that both databases are in an undefined state.</p> <p><b>NOTICE!</b> After switching back to the original primary server from the standby server, this option is deactivated. If the switching process is supposed to be carried out automatically in the event of a new error, you must activate this option again.</p>
<i>Active</i>	Shows the status of the recording architecture.

### 5.6.1 Add integration type

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

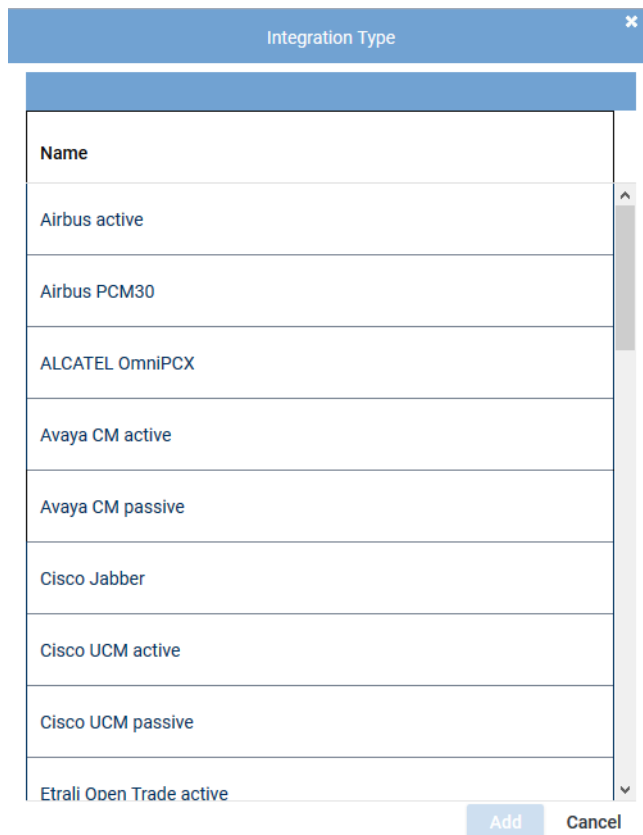


Fig. 49: Select integration type



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.

- From the list of available integration types, select the respective integration type and click on the button *Add*.  
⇒ The name of the integration type now appears in the list in the detail view.

### 5.6.2 Assign servers for Multi-Server Failover

- Click on the tab *Server Assignment* to assign the recording components to the corresponding recording servers for the *Multi-Server Failover* recording architecture.

#### Group field Recording Control and CTIconnect

In this group field, you can configure recording control. You can configure two different server for this purpose or select the same server.

Multi-Server Failover
Multi-Server Failover
X

<
Details\*
Server Assignment\*
>

Recording Control and CTIconnect

Recording Control*	RC-01	+	-
Used in activated architecture	No		
CTIconnect*	CTI-01	+	-
Used in activated architecture	No		

Standby Server

Recording Control standby*	RC-02	+	-
Used in activated architecture	No		
CTIconnect standby*	CTI-02	+	-
Used in activated architecture	No		

Recording Server

<
Recording Server
+
-

Server ↕	Standby ↕
REC-01	REC-02

Save
Reset

Fig. 50: Recording Architecture - tab Server Assignment

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




Servers		
Name ↕	IP Address ↕	Path ↕
RC-02	192.168.173.176	C:\
REC-01	192.168.173.171	C:\
REC-04	192.168.173.174	C:\
REC-02	192.168.173.172	C:\
RC-01	192.168.173.175	C:\
CTI-01	192.168.173.177	C:\
CTI-02	192.168.173.178	C:\

Rows per page 20 1 - 8 of 8

Add Cancel

Fig. 51: Recording Architecture - assign server - example



2. Select the server for the *recording control module*.
3. Click on the button *Add*.  
⇒ The name of the server now appears in the detail view.
4. To delete an assignment, click on the button .




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.

5. Repeat the steps and select the server for the *CTIconnect module* in the entry field *CTIconnect*.

#### Group field Standby Server

1. Click on the button  behind the entry field *Recording control*.
2. Select the standby server for the *recording control module*.
3. Click on the button *Add*.  
⇒ The name of the server now appears in the detail view.
4. Click on the button  behind the entry field *CTIconnect*.
5. Select the standby server for the *CTIconnect module*.
6. Click on the button *Add*.  
⇒ The name of the server now appears in the detail view.

#### Group field Recording Server

1. In the table headline *Recording Server*, click on the icon .
- ⇒ The following window appears:

Multi-Server Parallel Recording

Multi-Server Parallel Recording

×

<

Details\*

Device Group 1\*

Device Group 2\*

>

Recording Control and CTIconnect

▼

Recording Control device group 1*	RC-01	+	-
Used in activated architecture	No		
CTIconnect device group 1*	CTI-01	+	-
Used in activated architecture	No		

Recording Server

▼

<

Recording Server

+

✎

⋮

Server ↕	Standby ↕
REC-01	REC-02

Save



Reset

Fig. 52: Add Recording Server




- As described in the previous steps, go to the entry field *Primary server* and click on the icon **+** to select the primary server on which the recording is supposed to run.
- In the entry field *Standby server*, click on the icon **+** to select the standby server which is supposed to take over recording in case of an error.
- Select the recording type you would like to use for these servers by activating the check box.



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



- Click on the button **OK** to close the window.
  - ⇒ The name of the server now appears in the detail view.
- To edit the assignment subsequently, click on the icon . To delete an assignment, click on the icon .
- If you would like to add further recording servers, repeat the steps described above.

### 5.6.2.1 Activate recording architecture

- Once all servers have been assigned, click on the button **Save**.
- Select the recording architecture in the main view so that the icon  (*Activate*) in the toolbar becomes active.
- To activate the recording architecture, click on the icon  (*Activate*).
  - ⇒ In the column *Active*, the icon  (*Active*) appears.

Recording Architecture ▾ General ▾			
Name ▾	Type ▾	Active ▾	Standby active ▾
Multi-Server Failover	Multi-Server Failover	✓	✗

Fig. 53: Recording architecture - activate recording architecture

- 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.



For all recording architectures with failover components, you can manage to the standby components via standby management. This holds true for Multi-Server Recording and Multi-Server Parallel Recording systems if redundancy options are available for these systems. See [chapter "Standby management for failover architectures"](#), p. 52.




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

## 5.7

### Create recording architecture Multi-Server Parallel Recording

If there are several recording servers which are supposed to record the same tracks in parallel, you have to create a recording architecture of the type *Multi-Server Parallel 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.

New Recording Architecture ✕

Name\*

Multi-Server Parallel Recording

Type

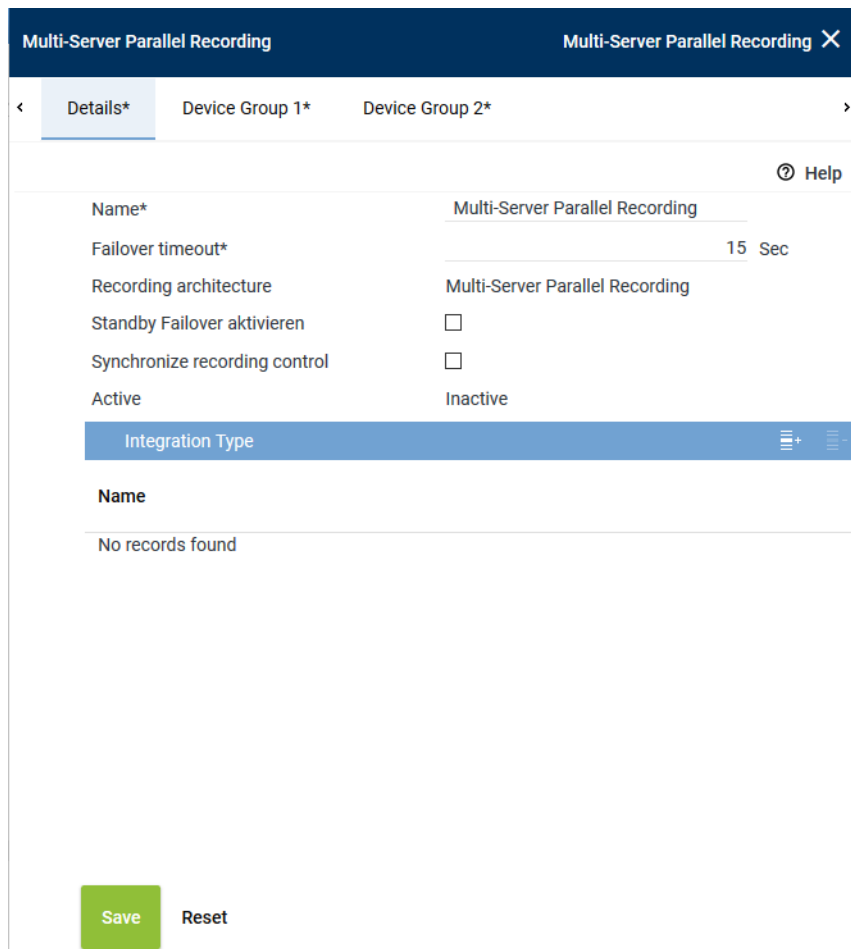
Multi-Server Parallel Recording ▾

OK

Cancel

Fig. 54: Create recording architecture - Multi-Server Parallel Recording

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



Multi-Server Parallel Recording Multi-Server Parallel Recording X

< Details\* Device Group 1\* Device Group 2\* >

Help

Name\* Multi-Server Parallel Recording

Failover timeout\* 15 Sec

Recording architecture Multi-Server Parallel Recording

Standby Failover aktivieren ☐

Synchronize recording control ☐

Active Inactive

Integration Type

Name

No records found

Save Reset

Fig. 55: Recording architecture - tab Details - Multi-Server Parallel Recording


As standby components may have been configured for the different active recording servers, a failover timeout may be configured in this recording architecture. For further information about the configuration of failover architectures, see [chapter "Standby management for failover architectures", p. 52](#).

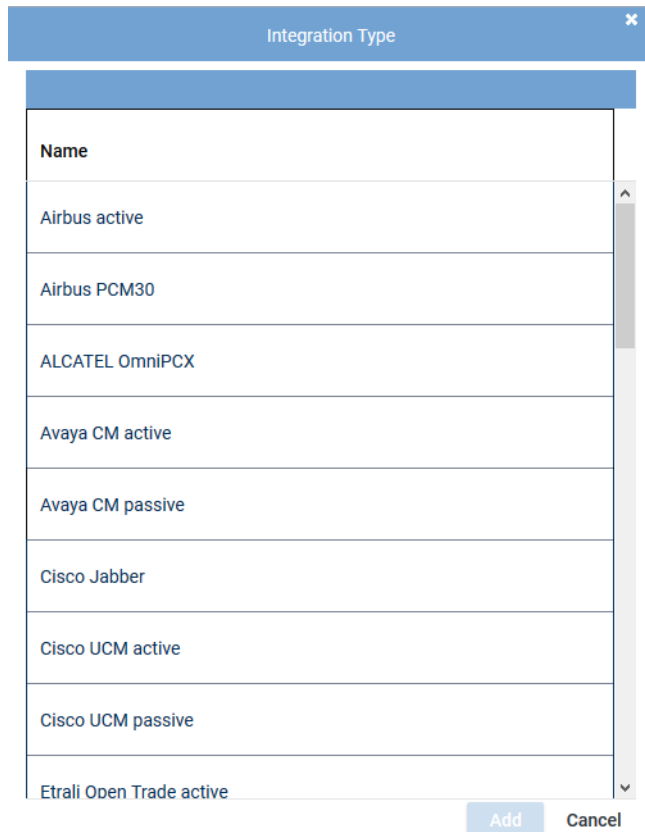
5. Enter a failover timeout of a minimum of 15 seconds after which the failover process is supposed to start. Depending on the system architecture it may make sense to configure a longer timeout period. The timeout defines the elapse time until the failover process starts. If the status returns to *OK* within this time, then the failover process is not triggered.
6. Activate the check box *Synchronize recording control* so that the Recording Control services can be synchronized and only one service controls recording for the two recording servers, see [chapter "Synchronizing recording control", p. 76](#).

**NOTICE!** If you have activated the option *Synchronize recording control*, only one set of data is generated in the database but audio data is recorded on both recording servers. This methods makes duplicate detection impossible. Ensure that there is enough storage capacity for twice the amount of data.

If you do not want to synchronize recording control, you can configure duplicate detection, see [chapter "Duplicates in parallel recording architectures", p. 80](#).

### 5.7.1 Add integration type

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



The dialog box titled "Integration Type" contains a list of integration types. The list is as follows:

Name
Airbus active
Airbus PCM30
ALCATEL OmniPCX
Avaya CM active
Avaya CM passive
Cisco Jabber
Cisco UCM active
Cisco UCM passive
Etrali Open Trade active

At the bottom right of the dialog are two buttons: "Add" and "Cancel".

Fig. 56: 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.

- From the list of available integration types, select the respective integration type and click on the button *Add*.  
⇒ The name of the integration type now appears in the list in the detail view.

## 5.7.2 Assign servers for Multi-Server Parallel Recording

In the architecture type *Multi-Server Parallel Recording* one tab appears for each device group where you can configure the different servers.

### 5.7.2.1 Tab Device Group 1

- Click on the tab *Device Group 1* to configure the distribution of the recording components for the first device group.

#### Group field Recording Control and CTIconnect

In this group field, you can configure recording control. You can configure two different servers for this purpose or select the same server.

Multi-Server Parallel Recording

Multi-Server Parallel Recording

×

<

Details\*

Device Group 1\*

Device Group 2\*

>

Recording Control and CTIconnect

▼

Recording Control device group 1*	RC-01	+	-
Used in activated architecture	No		
CTIconnect device group 1*	CTI-01	+	-
Used in activated architecture	No		

Recording Server

▼

<

Recording Server

+

✎

+

-

Server ↕	Standby ↕
REC-01	REC-02

Save

Reset

Fig. 57: Recording architecture - server assignment device group 1

- Click on the button **+** behind the entry field *Recording control* to assign a server.  
⇒ The window *Servers* appears.

Servers			×
Name ↕	IP Address ↕	Path ↕	
RC-02	192.168.173.176	C:\	^
REC-01	192.168.173.171	C:\	
REC-04	192.168.173.174	C:\	
REC-02	192.168.173.172	C:\	
RC-01	192.168.173.175	C:\	
CTI-01	192.168.173.177	C:\	
CTI-02	192.168.173.178	C:\	▼

<

>

Rows per page

20

1 - 8 of 8

<<

<


>

>>

Add

Cancel

Fig. 58: Recording Architecture - assign server - example


2. Select the server for the *recording control module*.
3. Click on the button *Add*.  
⇒ The name of the server now appears in the detail view.
4. To delete an assignment, click on the button .

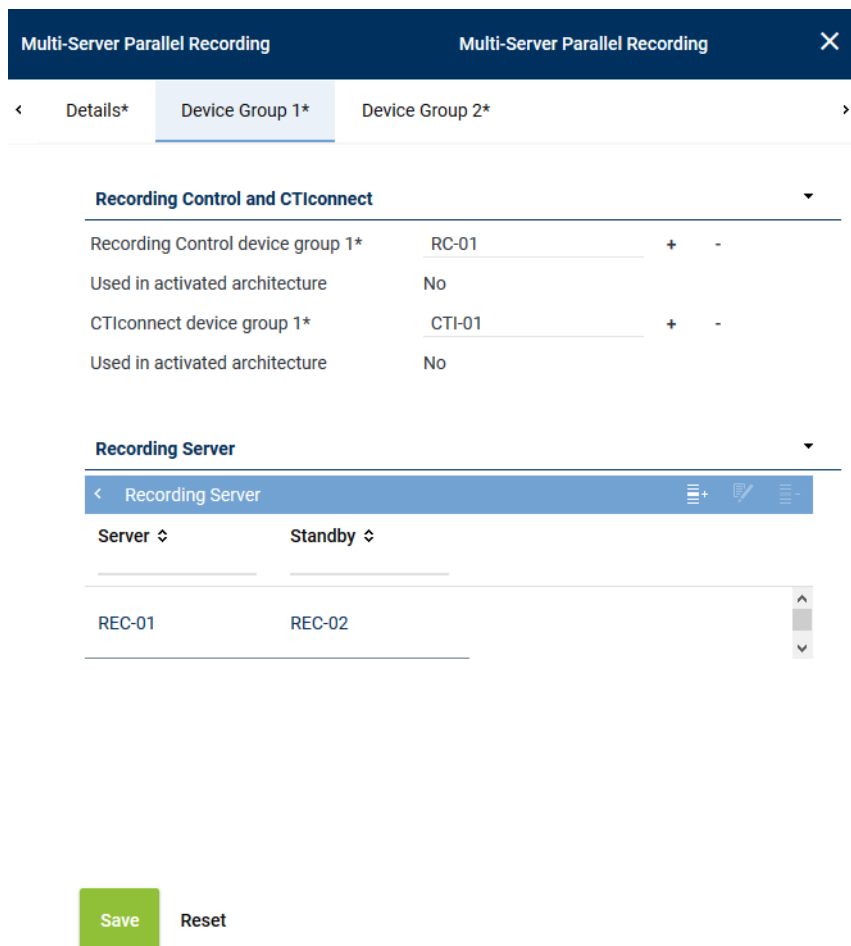


A server can be configured in several recording architectures, but you cannot activate several recording architectures with the same server at the same time.  
If you would like to activate several recording architectures at the same time, you have to use different servers to do so.

5. Repeat the steps and select the server for the *CTIconnect module* in the entry field *CTIconnect*.

### Group field Recording Server

1. In the table headline Recording Server, click on the icon  to add a recording server and a standby server.  
⇒ The following window appears:






**Multi-Server Parallel Recording** ×

< Details\* Device Group 1\* Device Group 2\* >

**Recording Control and CTIconnect** ▼

Recording Control device group 1*	RC-01	+	-
Used in activated architecture	No		
CTIconnect device group 1*	CTI-01	+	-
Used in activated architecture	No		

**Recording Server** ▼

< Recording Server   

Server ↕	Standby ↕
REC-01	REC-02







 

Fig. 59: Add Recording Server

2. As described in the previous steps, go to the entry field *Primary server* and click on the icon  to select the primary server on which the recording is supposed to run.
3. In the entry field *Standby server*, click on the icon  to select the standby server which is supposed to take over recording in case of an error.

4. Select the recording type you would like to use for these servers by activating the check box.  
**NOTICE!** You can activate several recording types if the integration has been designed for this and if you have installed the respective licenses.
5. Click on the button *OK* to close the window.  
⇒ The name of the server now appears in the detail view.
6. To edit the assignment subsequently, click on the icon .  
To delete an assignment, click on the icon .
7. If you would like to add further recording servers, repeat the steps described above.




### 5.7.2.2 Tab Device Group 2

1. Click on the tab *Device Group 2* to configure the distribution of the recording components for the second device group.
2. Proceed as described in the configuration of tab *Device Group 1*.



In the same device group, you can select the same server for both recording components. For device group 2, you cannot use a server which is already used in device group 1.

### 5.7.3 Activate recording architecture

1. Once all servers have been assigned, 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 ▾ General ▾			
Name ▾	Type ▾	Active ▾	Standby active ▾
Multi-Server Parallel Recording	Multi-Server Parallel Recording		

Fig. 60: Recording architecture - activate recording architecture - example

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.



Parallel recording results in redundant recording data in the system. To make sure that this data does not remain in the system permanently, you can configure duplicate detection so that duplicate sets of data are deleted, see [chapter "Configure duplicate detection", p. 80](#).

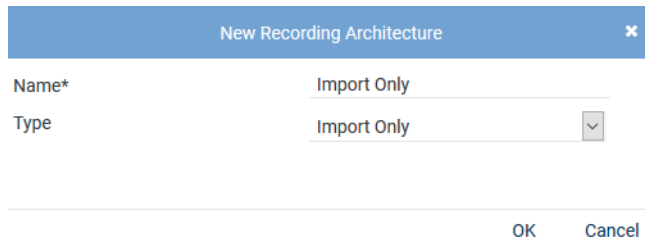


If you install an extension for the integration subsequently, you must deactivate the recording architecture and activate it again after having installed the license.

### 5.8 Create recording architecture Import Only

1. Select the recording architecture type *Import Only* if you would like to use this recording architecture exclusively for import purposes and not for recordings.





New Recording Architecture

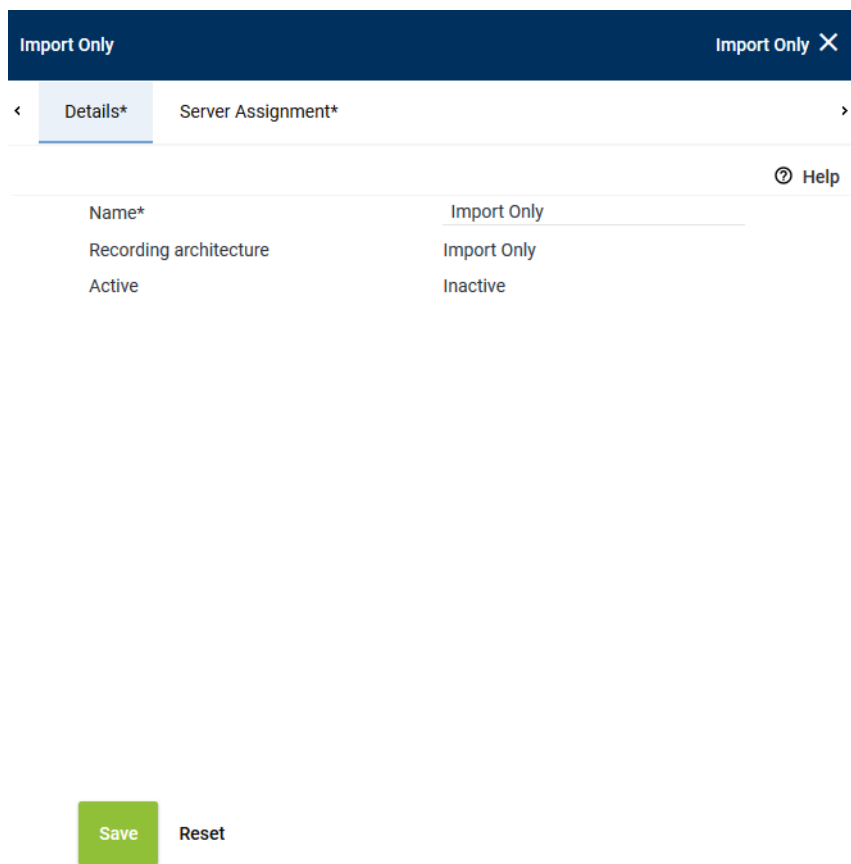
Name\* Import Only

Type Import Only

OK Cancel

Fig. 61: Create recording architecture - Import Only

2. In the entry field *Name*, enter a descriptive name for the recording architecture.
3. Select the recording architecture type *Import Only* from the drop-down list *Type*.  
**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.



Import Only Import Only X

< Details\* Server Assignment\* >

Help

Name*	Import Only
Recording architecture	Import Only
Active	Inactive

Save Reset

Fig. 62: Recording architecture - tab Details - Import Only

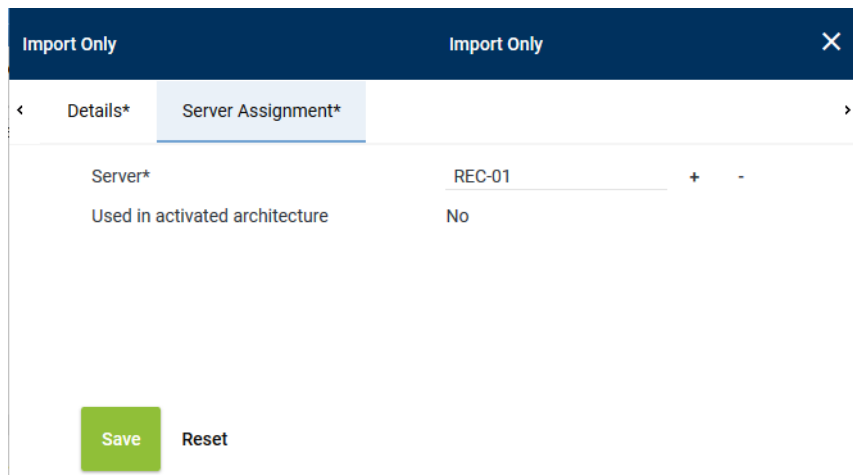
In this architecture, you do not have to assign an integration type as no additional recording takes place. To import recordings, you can create a dummy PBX *Universal Import* which serves to assign the recordings.



For information about creating a PBX of the type *Universal Import* refer to the administration manual *Migration*.

### 5.8.1 Assign servers for Import Only

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



Import Only Import Only X


< Details\* Server Assignment\* >

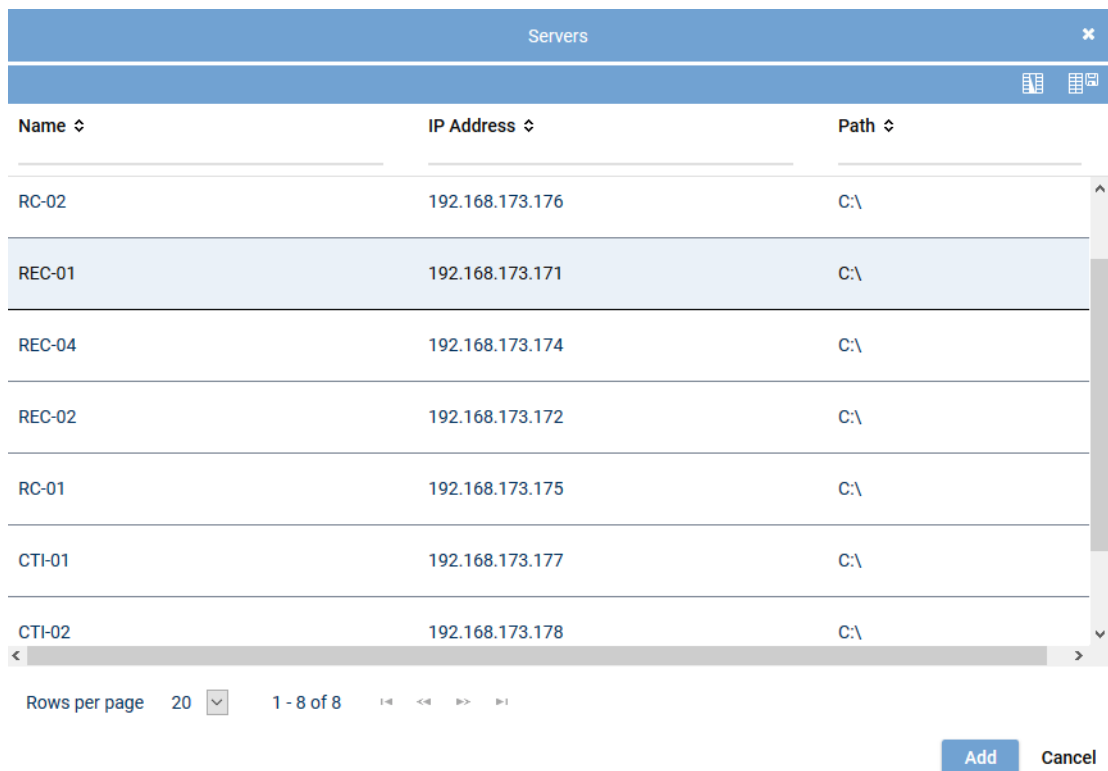
Server\* REC-01 + -

Used in activated architecture No

Save Reset

Fig. 63: Recording Architecture - tab Server Assignment

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



Name ↕	IP Address ↕	Path ↕
RC-02	192.168.173.176	C:\
REC-01	192.168.173.171	C:\
REC-04	192.168.173.174	C:\
REC-02	192.168.173.172	C:\
RC-01	192.168.173.175	C:\
CTI-01	192.168.173.177	C:\
CTI-02	192.168.173.178	C:\




Rows per page 20 1 - 8 of 8

Add Cancel

Fig. 64: Recording Architecture - assign server - example

- Select the server you want to import to.
- Click on the button *Add*.  
⇒ The name of the server now appears in the detail view.

#### 5.8.1.1 Activate recording architecture

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







     General ▾			
Name ▾	Type ▾	Active ▾	Standby active ▾
Import only	Import Only	✓	✗

Fig. 65: Recording Architecture - activate recording architecture

4. To deactivate the recording architecture if necessary, 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

## Standby management for failover architectures

For architectures with failover concepts, you can go to the standby management to manually select which server with which components is supposed to be active.

For architectures of the type *Parallel Recording*, you can also use the standby management if you have provided for the respective resources.

Using the standby management makes sense in the following cases:

- You would like to switch back to the primary server, e. g. when the standby server has automatically taken over and the primary server is now available again.
- You would like to switch to the standby server manually, e. g. during maintenance of the primary server.



You can only edit the standby management if the corresponding architecture has been activated.

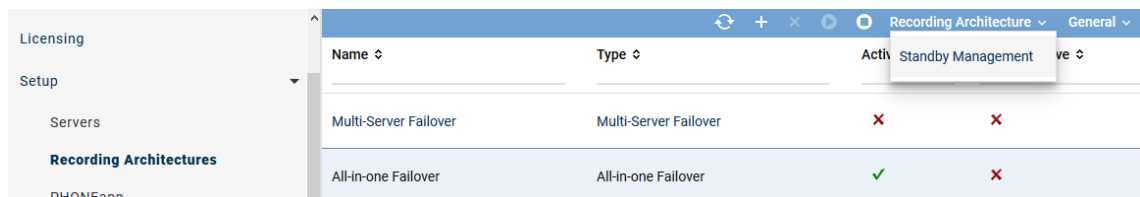
## 6.1

## Standby management for All-in-one Failover

For failover recording architectures, the menu *Recording Architectures* appears in the toolbar of the main view. If you have installed the required redundancy options on different servers, you can switch from primary to standby server and vice versa by clicking on the menu item *Standby Management*.

The menu item *Standby Management* is only active if the selected recording architecture has been activated.

1. In the main view, select the recording architecture the standby management of which you would like to call up.
2. Click on the menu *Recording Architectures* in the toolbar of the main view.
  - ⇒ If the selected recording architecture has been activated, the menu item *Standby Management* is active.



Name	Type	Active	Standby Management
Multi-Server Failover	Multi-Server Failover	✗	✗
All-in-one Failover	All-in-one Failover	✓	✗

Fig. 66: Configure standby management


3. Click on the menu item *Standby Management*.
  - ⇒ The window *Standby Management* appears.

Standby Management				
Server Name	Status	Oldest Running Activity	Running Activities	Version
RC - REC-01 / REC-02				
REC-01	Active		Activities: 0	60.01.00
REC-02	In Standby		Activities: 0	
RIA - REC-01 / REC-02				
REC-01	Active		Activities: 0	60.01.00
REC-02	In Standby		Activities: 0	
RM - REC-01 / REC-02				
REC-01	Active		Activities: 0	60.00.00
REC-02	In Standby		Activities: 0	

Fig. 67: Switch server

Here, you see the assignment of the deployed components.

In the column *Status*, you can see which component is currently active.



- To activate a standby server, select the respective server in the list.
  - Click on the icon  (*Activate*) in the toolbar.
- ⇒ The status of the standby server changes from *In Standby* to *Active*.

### Activate shutdown mode for maintenance purposes

If you would like to shut down a server for maintenance purposes, you can activate shutdown mode for this server



This function is not useful for architectures for All-in-one Failover as no additional server can be activated in shutdown mode in this architecture.

- To activate shutdown mode for a server, select the respective server in the list.
  - Click on the icon  (*Activate shutdown mode*) in the toolbar.
- ⇒ The status of the server changes from *Active* to *Shutdown Mode*.
- To deactivate shutdown mode again, click on the icon  in the toolbar again.
- ⇒ The status of the server changes from *Shutdown Mode* to *Active*.




In shutdown mode, the standby components are not activated automatically. Only those conversations which are already running are continued to be recorded. Once you make manual configurations in the standby management, you must make sure that one of the respective components relevant for recording has been activated. New recordings will not be accepted before another server has been activated manually.

### Activate failover components

For another standby server to take over the recording of new conversations, you must activate it manually.

- To activate a standby server, select the respective server in the list.

2. Click on the icon  (*Activate*) in the toolbar.
- ⇒ The status of the standby server changes from *In Standby* to *Active*. Only now can this server record new conversations.

## 6.2 Standby management for Multi-Server Failover

For failover recording architectures, the menu *Recording Architectures* appears in the toolbar of the main view. If you have installed the required redundancy options on different servers, you can switch from primary to standby server and vice versa by clicking on the menu item *Standby Management*.

The menu item *Standby Management* is only active if the selected recording architecture has been activated.

1. In the main view, select the recording architecture the standby management of which you would like to call up.
2. Click on the menu *Recording Architectures* in the toolbar of the main view.
  - ⇒ If the selected recording architecture has been activated, the menu item *Standby Management* is active.

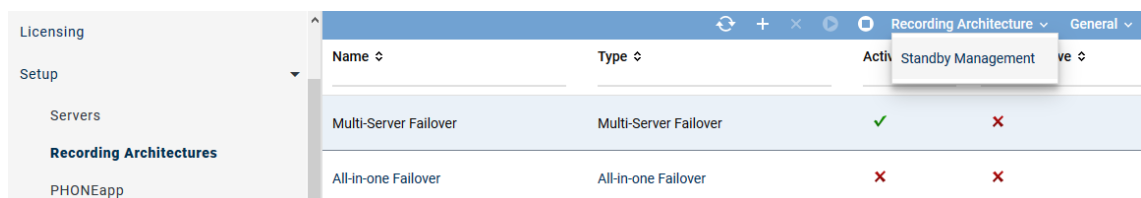


Fig. 68: Menu of the standby management

3. Click on the menu item *Standby Management*.
  - ⇒ The window *Standby Management* appears.

Standby Management				
Server Name	Status	Oldest Running Activity	Running Activities	Version
RC - RC-01 / RC-02				
RC-01	Active		Activities: 0	60.01.00
RC-02	In Standby		Activities: 0	60.00.00
RM - REC-01 / REC-02				
REC-01	Active		Activities: 0	60.00.00
REC-02	In Standby		Activities: 0	
RIA - CTI-01 / CTI-02				
CTI-01	Active		Activities: 0	60.01.00
CTI-02	In Standby		Activities: 0	60.00.00

Fig. 69: Switch server

If you have installed the required redundancy options on different servers, you can use standby management for the following components:

- **RC** (*Recording Control Standby Management*) to secure recording control

- **RM** (*Recorder Standby Management*) to secure recording
- **RIA** (*CTIconnect Standby Management*) to secure the additional data of the recordings

Here, you see the assignment of the deployed components.

In the column *Status*, you can see which component is currently active.

4. To activate a standby server, select the respective server in the list.

5. Click on the icon  (*Activate*) in the toolbar.

⇒ The status of the standby server changes from *In Standby* to *Active*.

### Activate shutdown mode for maintenance purposes

If you would like to shut down a server for maintenance purposes, you can activate shutdown mode for this server




This function is not useful for architectures for All-in-one Failover as no additional server can be activated in shutdown mode in this architecture.

1. To activate shutdown mode for a server, select the respective server in the list.

2. Click on the icon  (*Activate shutdown mode*) in the toolbar.

⇒ The status of the server changes from *Active* to *Shutdown Mode*.

3. To deactivate shutdown mode again, click on the icon  in the toolbar again.

⇒ The status of the server changes from *Shutdown Mode* to *Active*.



In shutdown mode, the standby components are not activated automatically. Only those conversations which are already running are continued to be recorded. Once you make manual configurations in the standby management, you must make sure that one of the respective components relevant for recording has been activated. New recordings will not be accepted before another server has been activated manually.

### Activate failover components

For another standby server to take over the recording of new conversations, you must activate it manually.

1. To activate a standby server, select the respective server in the list.

2. Click on the icon  (*Activate*) in the toolbar.

⇒ The status of the standby server changes from *In Standby* to *Active*.

Only now can this server record new conversations.

## 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:

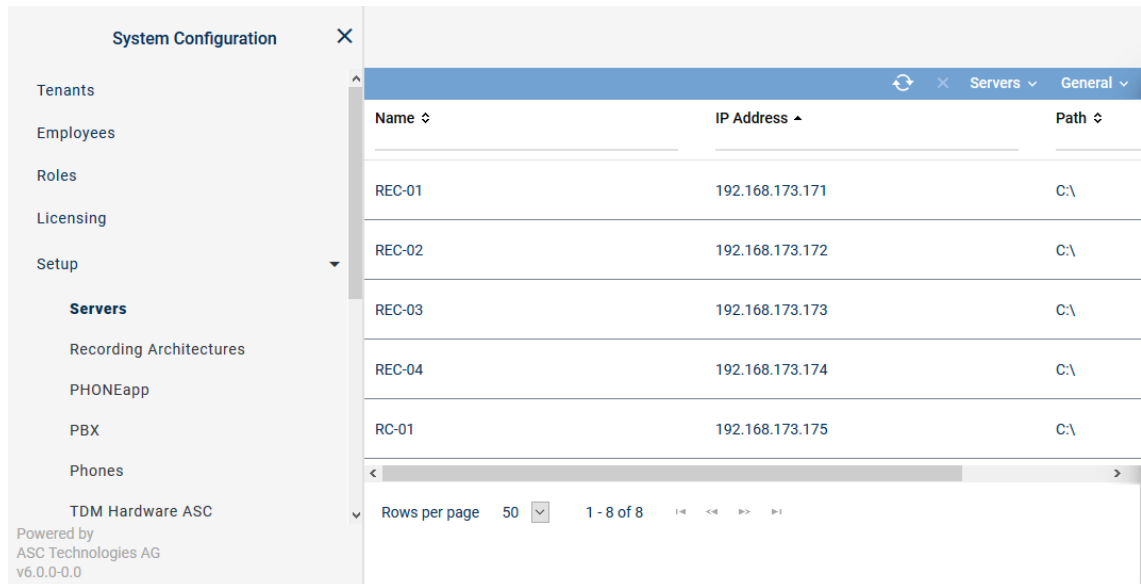


Fig. 70: Servers - main view

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 IP 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*.

### 7.1

#### Toolbar of the Servers module

The toolbar offers the following functions.

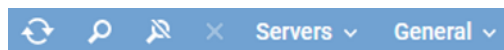







Fig. 71: Toolbar Servers module

	<i>Refresh</i>	Refreshes the main view.
	<i>Search</i>	Opens the window of the search function. The search function allows searching systematically for sets of data which meet certain criteria.  The icon  is displayed whenever the search has been adjusted by means of a filter.
	<i>Reset search</i>	Resets all search filters so that all sets of data are displayed in the main view again.



	<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", p. 57</a> .
	<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", p. 74</a> .
	<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>General Help</i>	Opens the online help.
	<i>Module Help</i>	Opens the module-specific online help.



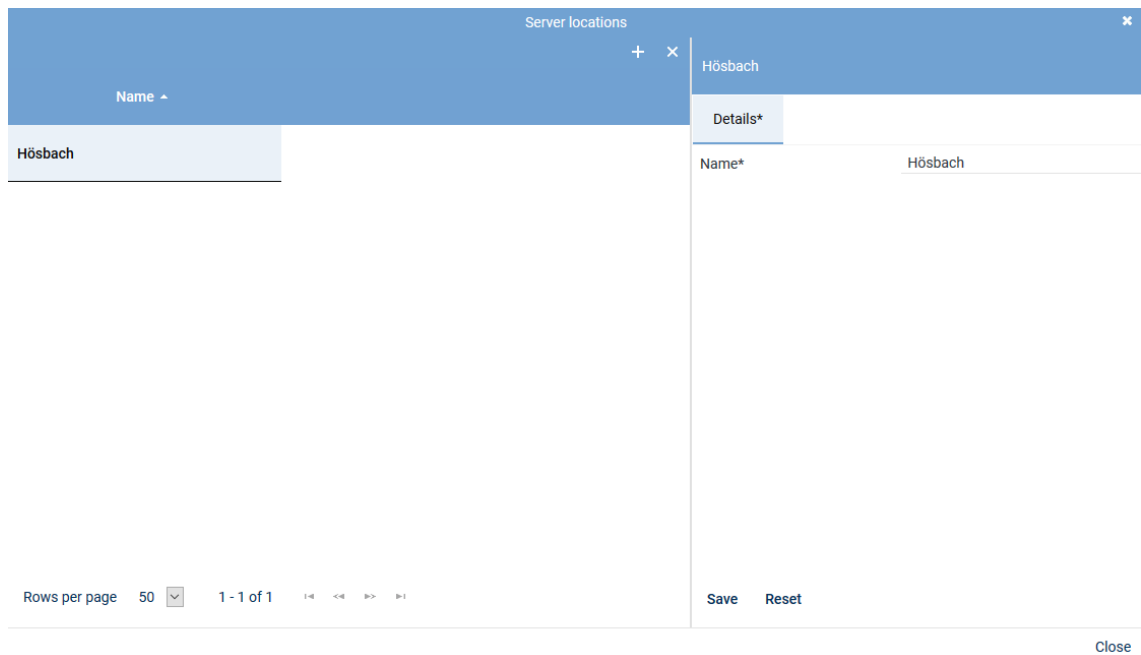
For detailed information on default functions such as *Print*, *Adjust table*, or *Help* refer to the user manual for administrators *System Configuration - General Information*.

## 7.2 Administrate server locations

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


### 7.2.1 Add server locations

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



The screenshot shows a window titled "Server locations" with a close button (x) in the top right corner. Below the title bar is a toolbar with a plus icon (+) and a minus icon (-). The main area is divided into two panes. The left pane contains a table with one row: "Hösbach". The right pane is titled "Details\*" and contains a form with a label "Name\*" and a text input field containing "Hösbach". At the bottom of the right pane are "Save" and "Reset" buttons. At the bottom of the left pane, there is a pagination bar showing "Rows per page 50", "1 - 1 of 1", and navigation icons. A "Close" button is located at the bottom right of the window.

Fig. 72: Add server locations

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

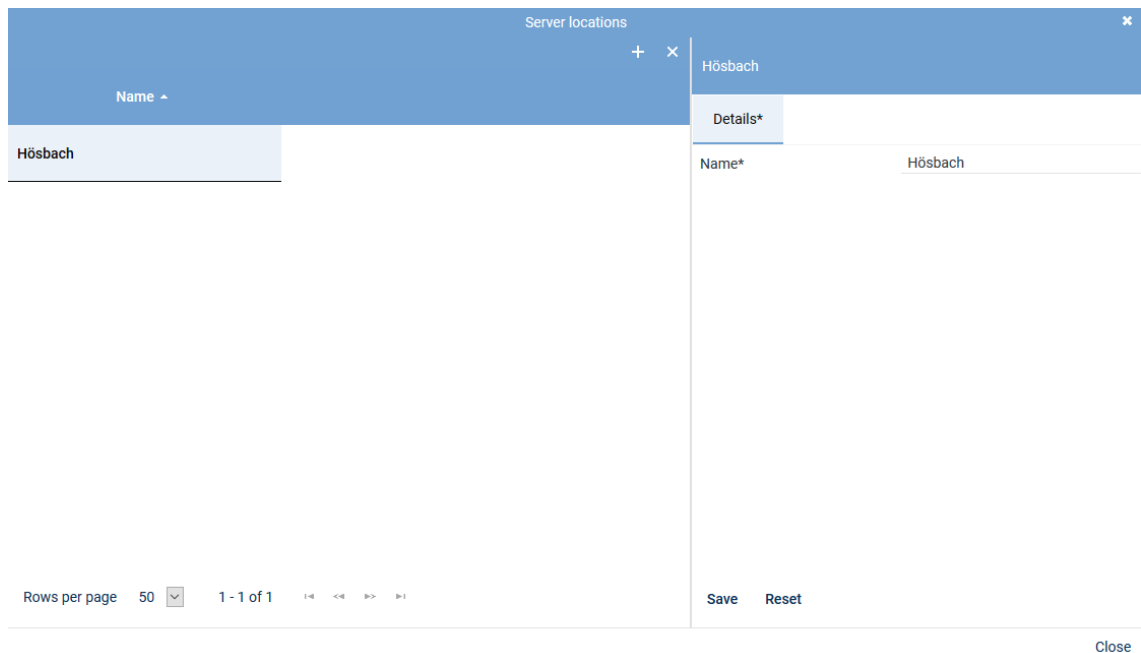
### 7.2.2

#### 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.



The screenshot shows a window titled "Server locations" with a close button (x) in the top right. Below the title bar is a table with one row containing the name "Hörsbach". To the right of the table is a "Details\*" tab. Below the tab, there is a form with a label "Name\*" and a text input field containing "Hörsbach". At the bottom of the window, there are "Save" and "Reset" buttons. A "Close" button is located at the bottom right of the window frame.

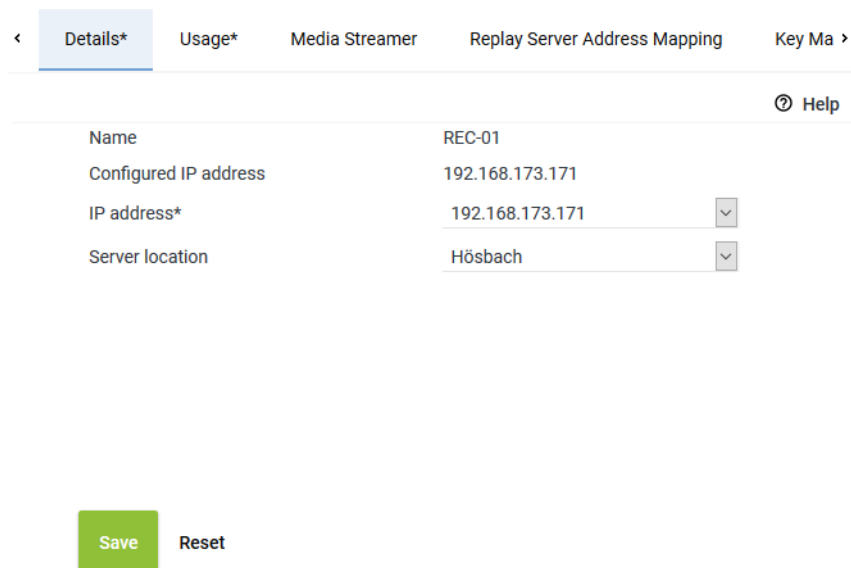
Fig. 73: Delete server location

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*.



### 7.3

#### 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.



The screenshot shows a window titled "Servers - tab Details" with a close button (x) in the top right. Below the title bar is a tabbed interface with tabs: "Details\*", "Usage\*", "Media Streamer", "Replay Server Address Mapping", and "Key Ma". The "Details\*" tab is active. Below the tabs is a form with the following fields:

Name	REC-01
Configured IP address	192.168.173.171
IP address*	192.168.173.171 
Server location	Hörsbach 

At the bottom of the window, there are "Save" and "Reset" buttons. A "Help" icon is located at the bottom right of the window frame.

Fig. 74: Servers - tab Details

2. From the drop-down list, select the IP address which is supposed to be used as default address of the server in the system.
3. Select the *Server location* in the drop-down list. The drop-down list displays all locations which have been created in the location management.

4. Click on the button **Save** if the entries are correct.

#### 7.4 Tab Usage

1. Click on the tab *Usage* to configure the intended purpose.



As a server may be used for several recording solutions, all intended purposes are displayed. Note that some intended purposes do not apply for certain recording solutions. In chat recording, for instance, audio analysis or replay via phone cannot be used.

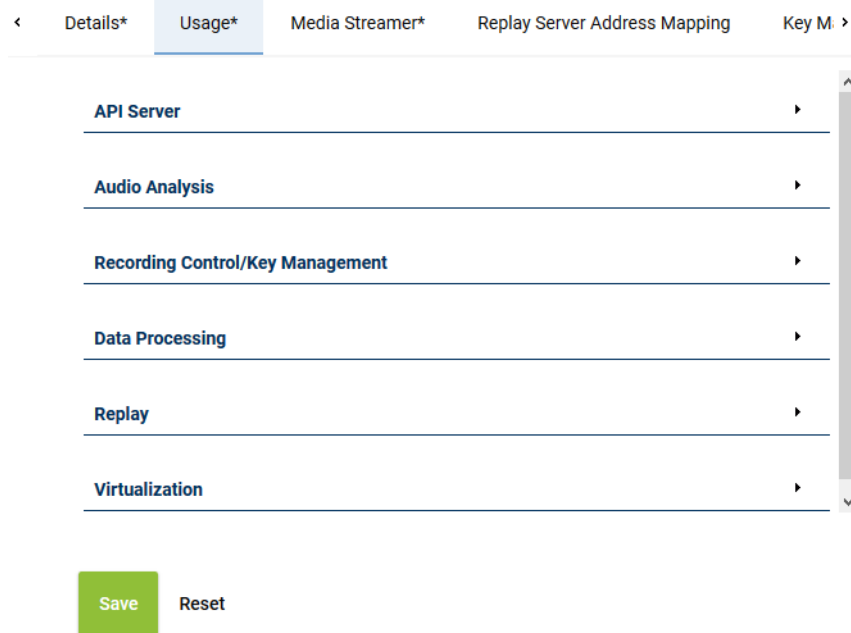


Fig. 75: Servers - tab usage

##### 7.4.1 Group field API Server

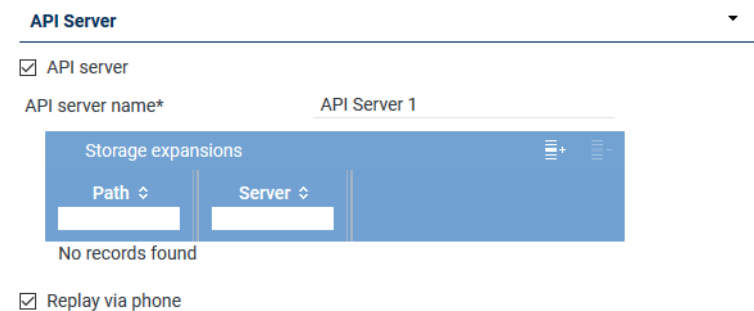


Fig. 76: Group field API Server



The ASC API Server is a service within the neo software.



The ASC API Server must have been activated on every server where the Recording Control service runs.


The ASC API Server does not only offer an interface for the internal modules; additionally, the client applications communicate with the neo system by means of this interface, too, using defined commands.

Furthermore, the ASC API Server is responsible for replay by means of the web browser. Not until the ASC API Server has started, can the replay server be activated and the corresponding ASC API Server assigned for replay in 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. 70.</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. 62.</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>
<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.</p> <p><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 POWER<del>play</del> Pro</li> <li>Application POWER<del>play</del> 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>

Parameter	Value/Description
	<b>NOTICE!</b> In the tab <i>Media Streamer</i> , you have to assign this function to a <a href="#">PBX</a> , see <a href="#">chapter "Tab Media Streamer", p. 69</a> . To be able to do so, at least 1 <a href="#">PBX</a> must have been configured in the system.

#### 7.4.1.1 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.

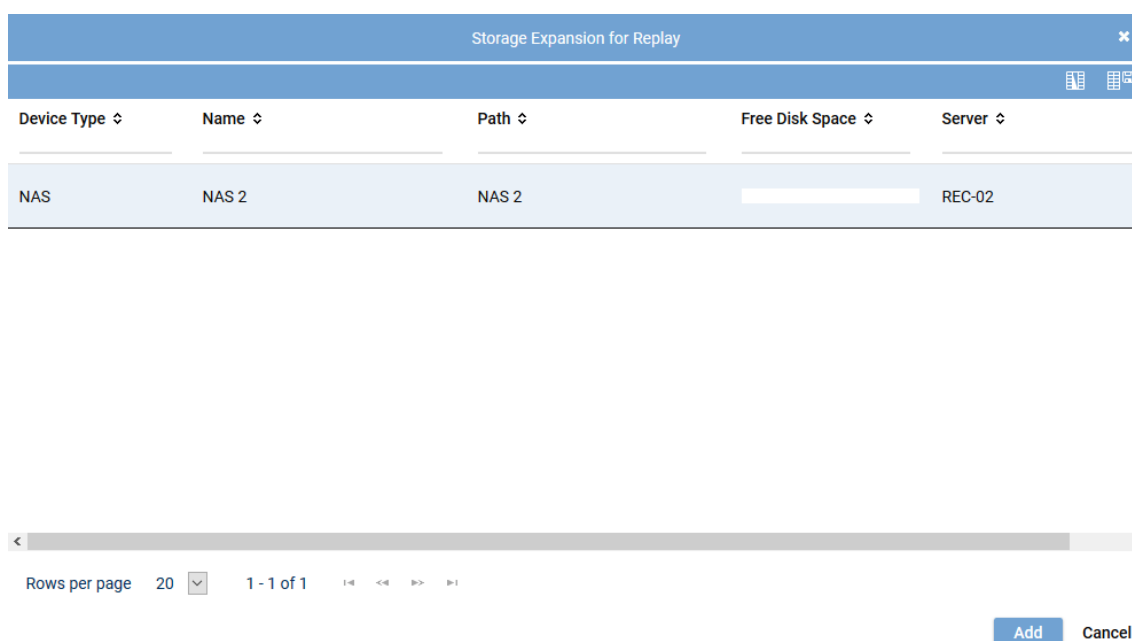


Fig. 77: Select storage expansion

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*.

#### 7.4.2 Group field Audio analysis



Fig. 78: Group field Audio analysis

Parameter	Value/Description
<i>Emotion detection</i>	Activate this check box to activate emotion detection for audio analysis. <input checked="" type="checkbox"/> = Function has been activated. Tenants can use the function emotion detection. <input type="checkbox"/> = Function has not been activated.

Tab. 1: Configure audio analysis

### 7.4.3 Group field Recording Control/Key Management

**Recording Control/Key Management** ▼

---

☒ Recording control/Monitoring

Recording architecture      Please choose... ▼

☒ neo key management

Fig. 79: Group field Recording Control/Key Management

Parameter	Value/Description
<i>Recording control/monitoring</i>	<p>Activate the check box, if you would like to use CLIENT<code>command</code> or API recording control. The function 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 recording architecture via which you would like to control the recording.</li> </ul>
<i>neo key management</i>	<p>This function serves for customer-specific recording encryption. To be able to configure the conditions for key management, activate the check box <i>Key management</i>.</p> <p>The function can only be activated if the license <code>ASC_KEY_MANAGEMENT</code> is available.</p> <p>For more information about the configuration of key management refer to the administration manual <i>Configuration server and recording architectures</i> and to the installation manual <i>Installation Dongle Manager</i>.</p>

Tab. 2: Configure recording control/key management

#### 7.4.4 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. 80: 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  (<i>Add</i>), you can add the target server, see <a href="#">chapter "Add target server to a list", p. 65</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 an API server and a replay server have been configured.</p>
<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>



Parameter	Value/Description
	<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. 65</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 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>	Activate the check box <i>Archiving</i> if you would like to use the server for archiving purposes.
<i>Export</i>	Activate the check box <i>Export</i> to allow the export from this server.
<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. 3: Configure data storage

#### 7.4.4.1 Add target server to a list

- In the toolbar of the list *Target Server*, click on the icon  (Add).
- 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. 81: Select server

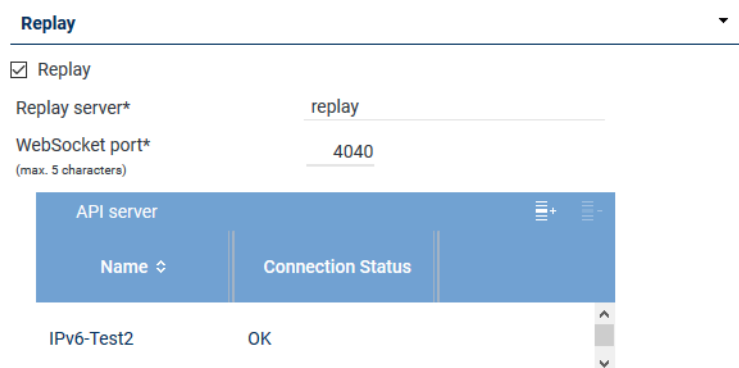


Only those servers are available on which the function *Data storage* has been activated.

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

#### 7.4.5

#### Group field Replay



**Replay**

☒ Replay



Replay server\*

WebSocket port\*   
(max. 5 characters)

Name	Connection Status
IPv6-Test2	OK

Fig. 82: Group field Replay

Parameter	Value/Description
<i>Replay</i>	<p>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.</p> <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>

Parameter	Value/Description
<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</a> server 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 (maximum of 5 characters)</i>	Enter the port via which the data to be replayed in <i>POWERplay</i> Web are supposed to be transmitted.
<i>List 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. 67.</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. 4: Configure replay

#### 7.4.5.1 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.

#### 7.4.5.2 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. 83: Select server



Only those servers are available on which the [API](#) service has been installed and activated. See [chapter "Group field API Server", p. 60](#).

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

#### 7.4.6

#### Group field Virtualization



Fig. 84: 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. 5: 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.

- 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.

## 7.5

## 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*.

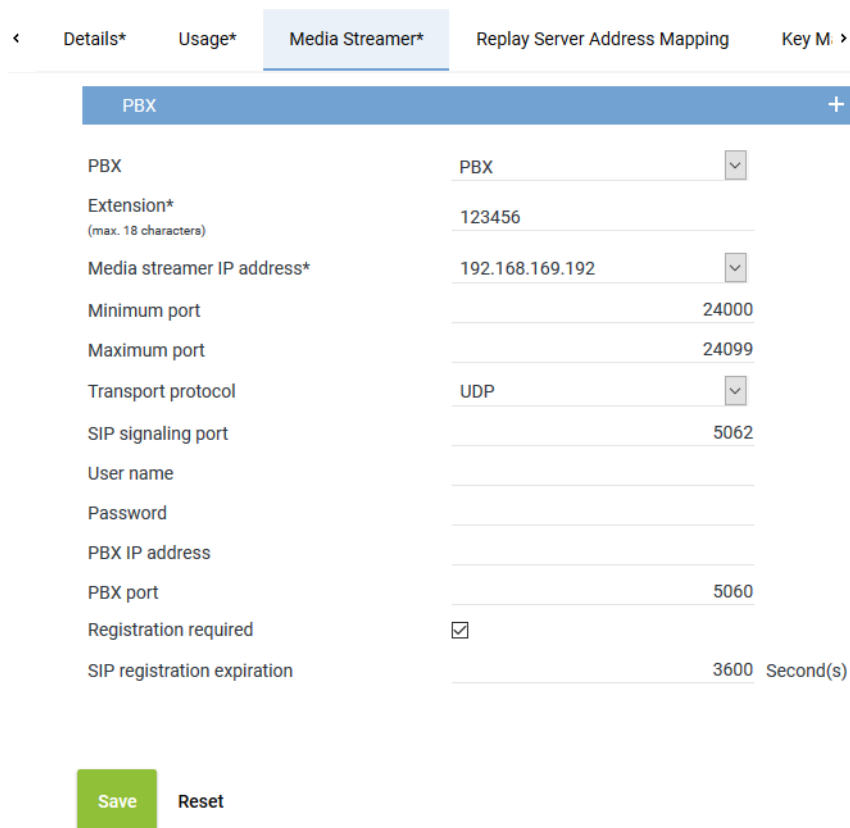


Fig. 85: Servers module - tab Media Streamer

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 Create <b>PBX</b>.</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>
<b>Media streamer IP address</b>	<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>	Enter the maximum port which is supposed to be used for the audio data exchange.  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.
<i>Transport protocol</i>	Select the transport protocol type you would like to use for the <a href="#">SIP</a> communication from the drop-down list.  <a href="#">TCP</a> = unencrypted <a href="#">UDP</a> = unencrypted <a href="#">TLS</a> = encrypted  If an external analog gateway has been integrated, select <a href="#">UDP</a> in the drop-down list.
<i>SIP signaling port</i>	Enter the port for the <a href="#">SIP</a> communication. Port for data exchange: 5062
<i>User name</i>	Enter the user name for the authentication on the <a href="#">SIP</a> server.
<i>Password</i>	Enter the password for the authentication on the <a href="#">SIP</a> server.
<i>PBX IP address</i>	Enter the IP address of the <a href="#">SIP</a> registrar of the <a href="#">PBX</a> .  If an external analog gateway has been integrated, enter the IP address 169.254.254.101.
<i>PBX port</i>	Enter the port of the <a href="#">SIP</a> registrar of the <a href="#">PBX</a> .  If an external analog gateway has been integrated, enter the value 5060.
<i>Registration required</i>	Select whether the <a href="#">SIP</a> extension has to be registered with the <a href="#">SIP</a> registrar of the <a href="#">PBX</a> .  <input checked="" type="checkbox"/> = <a href="#">SIP</a> extension has to be registered. <input type="checkbox"/> = <a href="#">SIP</a> extension does not have to be registered.  If an external analog gateway has been integrated, deactivate the check box <i>Registration required</i> .
<i>SIP registration expiration</i>	Enter the time interval after which the registration has to be repeated.

## 7.6

**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*.

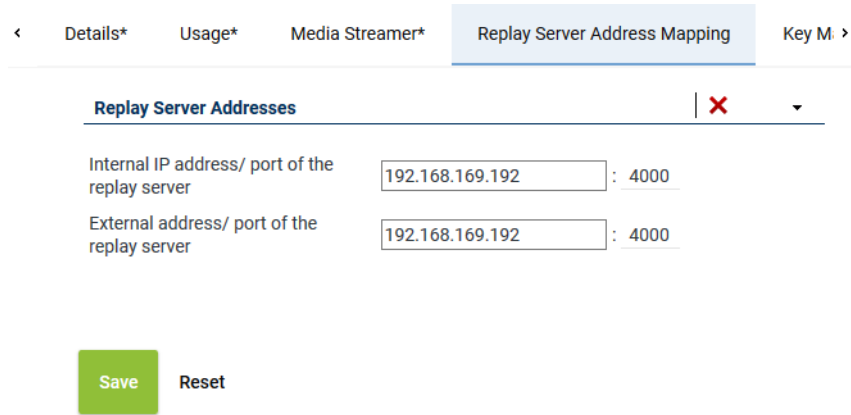


Fig. 86: Servers Module - tab Replay Server Address Mapping

### 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*.

## 7.7

### 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. 87: 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*.

## 7.8

### Tab Keystore/Virtualization

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

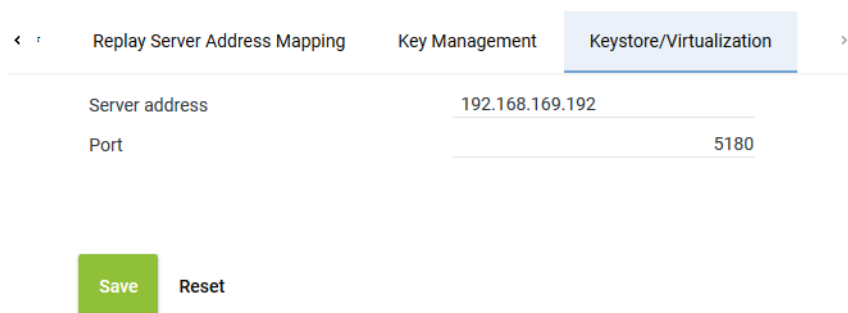
In this tab, you can configure the connection data for the service *DongleMan* for the neo key management and for the authentication of the VM.



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 the configuration interface for the 'Keystore/Virtualization' tab. At the top, there are three tabs: 'Replay Server Address Mapping', 'Key Management', and 'Keystore/Virtualization'. Below the tabs, there are two input fields: 'Server address' with the value '192.168.169.192' and 'Port' with the value '5180'. At the bottom, there are two buttons: 'Save' (green) and 'Reset' (grey).

Fig. 88: 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*

- If you use only the ASC key management:  
IP address of the server with the master password database

**Port** Enter the port for the connection.  
Default value: 5180

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

## 7.9 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.

### 7.9.1 Add NTP server

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

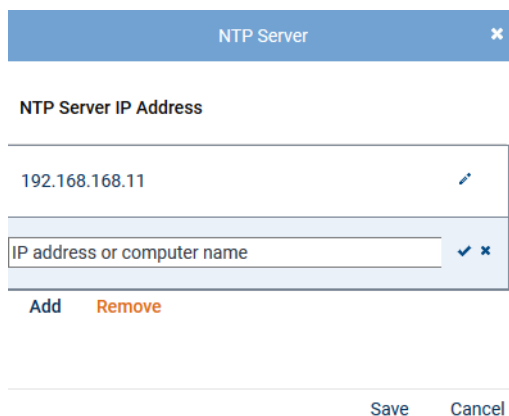





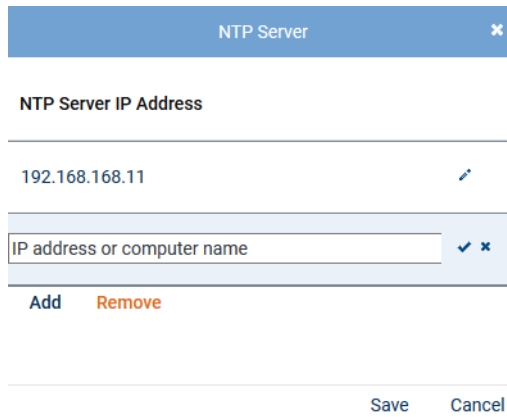
Fig. 89: Add NTP server

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

2. To add a server, click on the button *Add*.
3. In the newly added row, click on the icon  (*Edit*).
4. Enter the **IP** address or the name of the **NTP** server in the entry field.
5. To save the entry in the row, click on the icon  (*Save*).  
To discard the entry in the row, click on the icon  (*Discard*).
6. 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*.




### 7.9.2 Edit IP address

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



The screenshot shows a window titled "NTP Server" with a close button (X). Below the title bar, the text "NTP Server IP Address" is displayed. A table contains one row with the IP address "192.168.168.11" and an edit icon (pencil). Below the table is a text input field labeled "IP address or computer name" with a checkmark and an X icon. At the bottom of the window are "Add" and "Remove" buttons, and at the very bottom are "Save" and "Cancel" buttons.

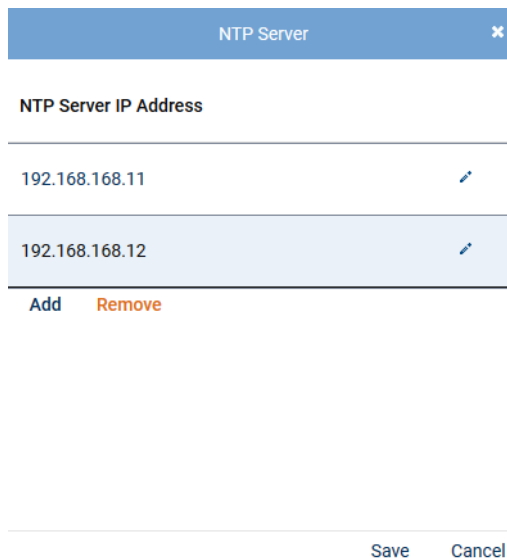
Fig. 90: Edit IP address

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*.

### 7.9.3

#### 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 a window titled "NTP Server" with a close button (X). Below the title bar, the text "NTP Server IP Address" is displayed. A table contains two rows: the first with IP address "192.168.168.11" and an edit icon, and the second with 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. 91: 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*.

## 8

## Synchronization options

There are 2 different types of synchronization:

- Synchronization of the Recording Control service for recording control
- Synchronization of the system storage to compare recording data

## 8.1

## Synchronizing recording control

## Recording Control services

In parallel recording servers which have been installed and configured in the same system architecture, you can configure the synchronization of recording control.

**DANGER!**

Before the configuration, contact your ASC support to ensure that this function is suitable for your recording solution and to avoid a possible loss of recordings!

For information about which recording solutions support this function refer to the file *neo* Integration Overview.

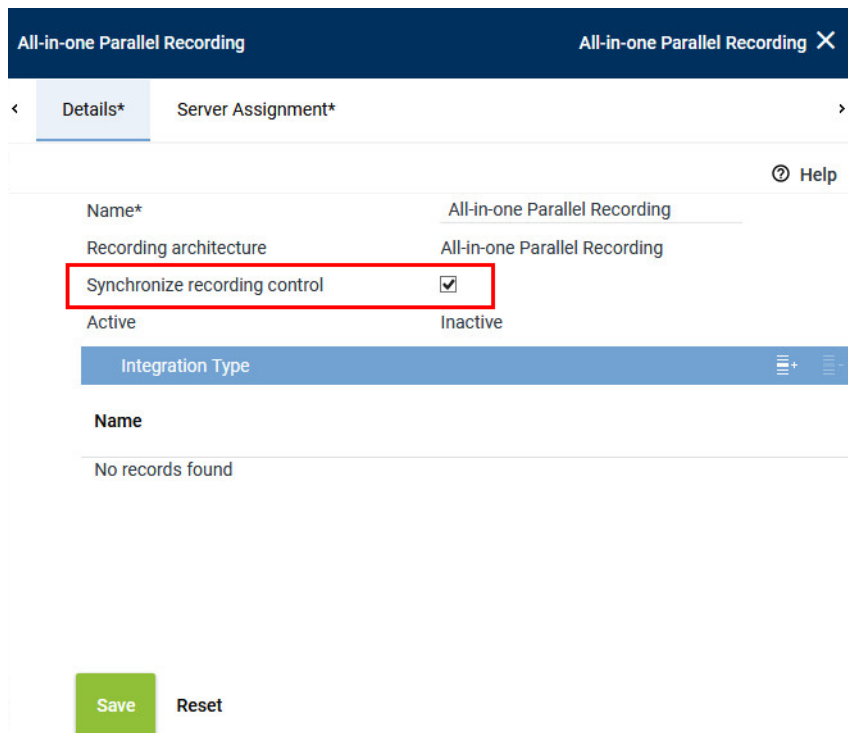
If recording control is supposed to take place by means of external applications such as *CLIENTcommand*, *PHONEapp*, or *SCREENrec* scan Editor, a synchronization of the Recording Control services of the parallel recording servers must be set up.

Primarily, recording control is carried out by the 1st Recording Control service. The Recording Control service guarantees that the conversations are recorded by both recording servers.

If the 1st Recording Control service fails, the 2nd Recording Control service takes over the task of recording control for both recording servers, both of which will record the conversations then.

Synchronization of recording control is configured in the Recording Architectures module. In parallel recording architectures, the check box *Synchronize recording control* appears in the tab *Details*.

1. Activate the check box *Synchronize recording control* so that the Recording Control services can be synchronized and only one service controls recording for the two recording servers.



The screenshot shows a web interface for configuring 'All-in-one Parallel Recording'. At the top, there's a dark blue header with the title and a close button. Below it, a navigation bar has 'Details\*' and 'Server Assignment\*'. The main form area contains several fields: 'Name\*' (All-in-one Parallel Recording), 'Recording architecture' (All-in-one Parallel Recording), 'Synchronize recording control' (checked, highlighted with a red box), and 'Active' (Inactive). Below the form is a blue bar for 'Integration Type' with expand/collapse icons. At the bottom, there's a 'Name' label and a message 'No records found'. At the very bottom, there are 'Save' and 'Reset' buttons.

Fig. 92: Synchronize recording control

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

**If you subsequently activate or deactivate this synchronization options, you have to carry out the following configuration steps again before the changes take effect:**

1. Set the requested state of the recording control:
  - ☒ = *recording control is synchronized*
  - ☐ = *recording control is not synchronized*
2. Deactivate the integration.
3. Deactivate the recording architecture.
4. Check that the following services have been stopped.
  - *ASC RecordingControl*
  - *ASC RecordingModule*
  - *ASC CTIconnect(integration name)*
5. Activate the recording architecture.

**WARNING! In this status, all services have received the updated configuration, but may be in a conflict status.**

**Therefore, you have to carry out the following steps again:**

6. Deactivate the recording architecture again.
  7. Check that the following services have been stopped.
  8. Activate the recording architecture again.
  9. Activate the integration.
- ⇒ Now, the changes have been applied.

## 8.2 Synchronization of system storage

In recording architectures with 2 system storages, you can configure a synchronization for comparing the recordings.

A synchronization configuration is always created for 2 system storages. All recordings which are added to one system storage are copied to the other system storage, too, and vice versa. That way, all recordings of both system storages are available on the 2 system storages simultaneously. If one of the two system storages fails, you can thus access the recordings of the failed system storage via the other system storage.

Synchronization of system storage is configured in the Servers module.

1. To create a synchronization configuration, click on the menu item *Servers > Manage synchronization configuration* in the toolbar of the main view.



Fig. 93: Menu item Manage synchronization configuration

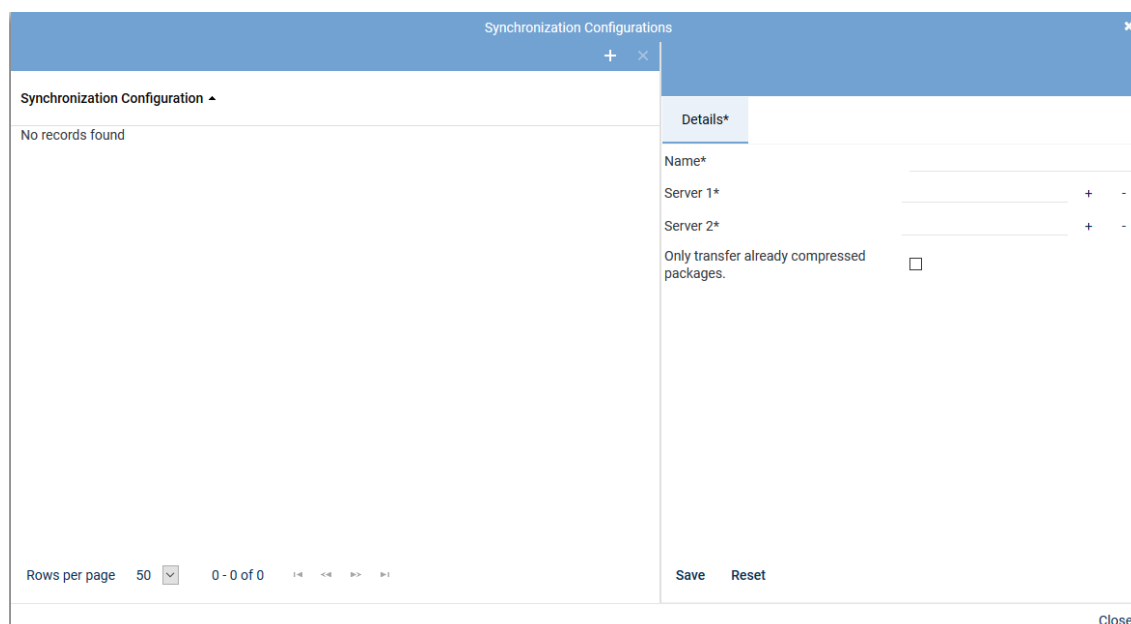




Fig. 94: Configure synchronization configurations

The following options are available:

	<b>Create</b>	Creates a new synchronization configuration (see <a href="#">chapter "Create synchronization configuration", p. 78</a> ).
	<b>Delete</b>	Deletes the selected synchronization configuration (see <a href="#">chapter "Delete synchronization configuration", p. 79</a> ).

A synchronization configuration becomes active upon saving it and continues running until it is deleted. During this period both system storages are regularly checked for new content and synchronized.

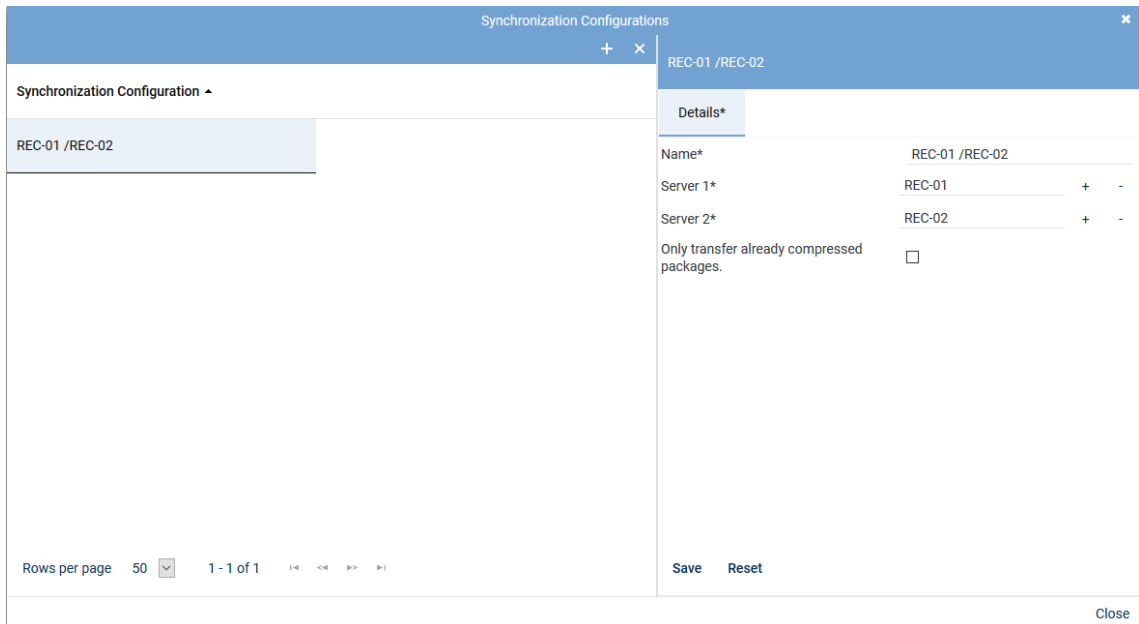


A server which is already used in a synchronization configuration cannot be used in another synchronization configuration.

### 8.2.1 Create synchronization configuration

1. In the window *Administrate Synchronization Configuration*, click on the icon  (*Create*).

⇒ The tab *Details* becomes active.



The screenshot shows a window titled "Synchronization Configurations" with a close button (X) in the top right. The window has two tabs: "Synchronization Configuration" (selected) and "Details\*". The "Synchronization Configuration" tab shows a list with one entry: "REC-01 / REC-02". The "Details\*" tab is active and shows the following fields:

- Name\*: REC-01 / REC-02
- Server 1\*: REC-01 (with a "+" button to the right)
- Server 2\*: REC-02 (with a "+" button to the right)
- Only transfer already compressed packages: ☐

At the bottom of the "Details\*" tab, there are "Save" and "Reset" buttons. At the bottom right of the window, there is a "Close" button.


Fig. 95: Create synchronization configuration

2. Complete all fields for the new synchronization configuration:

<b>Name</b>	Enter a name for the synchronization configuration.
<b>Server 1 / Server 2</b>	Click on the button <b>+</b> next to the entry field to select the respective server for the synchronization of the system storage from the list of available servers.  If you would like to delete an entry in one of the entry fields, click on the button <b>-</b> next to the respective entry field.
<b>Only transfer already compressed packages</b>	Select whether data which has not yet been compressed is supposed to be transferred, too. <input checked="" type="checkbox"/> = Uncompressed data is transferred, too. <input type="checkbox"/> = Only compressed data is transferred.  <b>NOTICE!</b> This option is not available until you have entered and saved the two servers.

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

### 8.2.2 Delete synchronization configuration

- In the window *Administrate synchronization configurations*, select the synchronization configuration you would like to delete.
  - Click on the icon  (*Delete*) in the toolbar of the window.
- ⇒ The synchronization of the two entered system storages is finished.
- ⇒ The selected synchronization configuration is deleted.



In parallel recording architectures in which recording control is synchronized, no duplicates are created which could be deleted. Both recordings are merged in one package and thus cannot be deleted separately. Keep in mind that more storage space must thus be available for the recordings.

A parallel recording without synchronization results in redundant recording data in the system. To avoid that conversations are displayed twice in the replay applications (e. g. *POWERplay Web*) because the database contains them twice, you can delete duplicates so that only one of the double recordings remains.

Conversations with the following characteristics are considered identical:

- Identical start and end times

You can define an allowed difference for the start and end times so that the conversations are still considered duplicates despite a differing start or end time, see [chapter "Configure duplicate detection", p. 80](#).

The start and end times of complete conversations as well as the start and end times of the individual recordings belonging to a conversation are checked.

- Identical call participants
- Identical additional data

Duplicate detection is configured in the Integrations module. There, you can configure for each integration individually under which circumstances conversations are supposed to be considered identical. Upon selecting an architecture for an integration which is based on parallel recording, the tab *Parallel Recording* is displayed which allows adjusting the required settings, see [chapter "Configure duplicate detection", p. 80](#).

The shorter one of the two identical recordings is deleted. To calculate the total recording length, the recording lengths of all sections of a conversation are added. The additional data as well as the audio data of the duplicate are deleted. On which of the two recording servers a duplicate is deleted thus depends on the location where the shorter recording has been saved. If the recording length is the same, the recording which has been checked second is considered a duplicate and deleted.

Duplicate detection is executed regularly for all new recordings from the moment on it has been activated but not for past recordings. This means Recordings which already exist when duplicate detection is activated are not checked for duplicates.



For information about the status of a job refer to the Jobs module in the application System Monitoring, see user manual *Usage System Monitoring*.



If you would like to delete duplicates but nevertheless want that all conversations exist on both recording servers, you can create a synchronization configuration in the Servers module which synchronizes the system storages of the two recording servers.

### 9.1

#### Configure duplicate detection

In the Integrations module, you can configure for each integration separately under which circumstances 2 conversations are supposed to be considered identical. Upon selecting an architecture for an integration which is based on parallel recording, the tab *Parallel Recording* is displayed which allows adjusting the required settings.

1. In the main view of the Integrations module, select the integration for which you would like to configure duplicate detection.
2. Select the tab *Parallel Recording* in the detail view and adjust the following settings:



Details\*

Parallel Recording

☒ Delete duplicates if the participants of the conversations are identical and the following criteria are met:

The start times differ in a maximum of  Milliseconds

The end times differ in a maximum of  Milliseconds

Additional settings

Time after which conversations are to be checked at the earliest \*  minutes

Interval in which the check is to take place \*  minutes

Additional Data

ID	Displayed Name
customCP02	Comment

Criteria to Be Ignored



Available attributes	Ignored attributes
CHATIDENTIFIER	PBXID
DISPLAYNAME	
EMAILADDRESS	
EMPLOYEEID	
EXTENSION	
IPADDRESS	
MACADDRESS	
PBXAGENTID	
PBXPHONEID	

Save

Reset

Fig. 96: Tab Parallel Recording (integration)

<i>Delete duplicates,....</i>	<p>When activating this option, you can define by means of the displayed criteria when 2 recordings are supposed to be identified as identical.</p> <p><input checked="" type="checkbox"/> = Duplicate detection has been activated. Duplicates are deleted according to the defined criteria.</p> <p><input type="checkbox"/> = Duplicate detection has been deactivated.</p>
<i>The start times differ in a maximum of</i>	<p>Enter the maximum difference with regards to the start time. The start times of complete conversations as well as the start times of the individual recordings belonging to a conversation are checked.</p> <p>Example: <i>1000 milliseconds</i></p> <p>If one conversation started at 2:20:15 PM and a second conversation started at 2:20:16 PM, and if the start times of the individual recordings of those two conversations differ less than 1000 milliseconds, then these conversations are considered possible duplicates with regards to their start time.</p>
<i>The end times differ in a maximum of</i>	<p>Enter the maximum difference with regards to the end time. The end times of complete conversations as well as the end times of the individual recording sections belonging to a conversation are checked.</p> <p>Example: <i>1000 milliseconds</i></p> <p>If one conversation ended at 2:20:15 PM and a second conversation ended at 2:20:16 PM, and if the end times of the individual recordings</p>

	of those two conversations differ less than 1000 milliseconds, then these conversations are considered possible duplicates with regards to their end time.
<i>Time after which conversations are to be checked at the earliest</i>	<p>Enter the time interval which is supposed to pass before a recording is checked for duplicates.</p> <p>Example: 3 minutes</p> <p>If one conversation ended at 2:20 PM, i. e. the recording has been saved at 2:20 PM, then the recording is not check for duplicates before 2:23 PM.</p>
<i>Interval in which the check is to take place</i>	<p>Select the intervals in which the job for duplicate detection is supposed to be executed.</p> <p>Example: 2 minutes</p> <p>The job for duplicate detection is started over again every 2 minutes to search for new recordings and possible duplicates and to delete duplicates.</p>
<i>List Additional Data</i>	<p>Add all additional data to the list which are supposed to be used as criteria. When searching for duplicates, only those recordings are considered which contain an additional data type from the list. If an additional data type is empty in both conversations, this is considered identical, too, and one of the conversations is deleted.</p> <p> = Add additional data to the list, see <a href="#">chapter "Map additional data", p. 82</a>.</p> <p> = Remove additional data from the list, see <a href="#">chapter "Delete additional data assignment", p. 83</a>.</p>

3. To save the settings, click on the button **Save**.

⇒ Upon activating the option *Delete duplicates...* the recordings are checked for duplicates and the detected duplicates are deleted.

### 9.1.1 Map additional data

In addition to the start time and the end time, you can configure more additional data which is supposed to be used for checking for duplicates.

1. In the list *Additional data*, click on the icon  (*Add*) to configure more additional data.

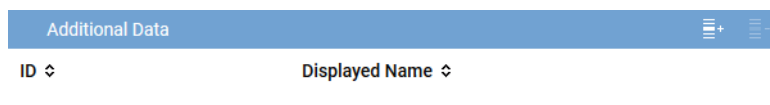


Fig. 97: Map additional data

2. Select the respective additional data from the list which are supposed to be used additionally to check for duplicates.  
To select several entries or revoke a selection, click on the respective line while holding the [Ctrl] key down.

Additional Data <span>✕</span>			
Displayed Name ⇅	Available ⇅	Editable ⇅	External Recording Control ⇅
Kommentar	✓	✓	✗
Universal Call ID	✓	✓	✗
<div> Rows per page 20 <span>▼</span> 1 - 2 of 2 <span>1 &lt; &lt; &gt; &gt; 2</span> </div>			
			Add Cancel

Fig. 98: Select additional data

**NOTICE!** The list contains only additional data which have been configured in the Additional Data module previously.




For information about the configuration of additional data refer to the administration manual for system providers *Additional Data module*

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

### 9.1.2

#### Delete additional data assignment

- Select the tab *Parallel Recording*.
- Select the additional data that you would like to remove in the list *Additional Data*.
- Click on the icon  (*Delete*).

Additional Data <span>⋮</span> <span>⋮</span>	
ID ⇅	Displayed Name ⇅
customCP01	Kommentar
customCP02	Universal Call ID

Fig. 99: Delete additional data assignment

## List of figures

Fig. 1	Basic structure of the recording system .....	7
Fig. 2	Data stream in the recording process .....	8
Fig. 3	Standby scenario (by the example of a multi-server recording architecture) .....	9
Fig. 4	Data storage on one single server .....	10
Fig. 5	Color code recording architectures: .....	11
Fig. 6	Architecture type All-in-one Basic .....	11
Fig. 7	Architecture type All-in-one Basic with 2 servers .....	11
Fig. 8	Architecture type Multi-server recording with redundant recording servers .....	12
Fig. 9	Architecture type Multi-server recording with redundant recording control .....	12
Fig. 10	Architecture type All-in-one Failover .....	13
Fig. 11	Architecture type Multi-Server Failover with single pool of recording servers .....	14
Fig. 12	Architecture type multi-server failover with all redundancy options .....	15
Fig. 13	Architecture type All-in-one Parallel Recording .....	16
Fig. 14	Architecture type All-in-one Parallel Recording with 3 servers .....	17
Fig. 15	Architecture type Multi-Server Parallel Recording .....	17
Fig. 16	Recording Architectures module - main view .....	18
Fig. 17	Selecting recording architecture types .....	19
Fig. 18	Toolbar Recording Architectures module .....	19
Fig. 19	Create recording architecture - All-in-one Basic Recording .....	20
Fig. 20	Recording architecture - tab Details .....	21
Fig. 21	Select integration type .....	21
Fig. 22	Recording Architecture - tab Server Assignment .....	22
Fig. 23	Recording Architecture - assign server .....	22
Fig. 24	Recording Architecture - activate recording type .....	23
Fig. 25	Recording architecture - activate recording architecture .....	23
Fig. 26	Create recording architecture - All-in-one Failover .....	24
Fig. 27	Recording architecture - tab Details - All-in-one Failover .....	24
Fig. 28	Select integration type .....	25
Fig. 29	Recording Architecture - tab Server Assignment .....	26
Fig. 30	Recording Architecture - assign server - example .....	26
Fig. 31	Recording Architecture - activate recording type .....	27
Fig. 32	Recording architecture - activate recording architecture .....	27
Fig. 33	Create recording architecture - All-in-one Parallel Recording .....	28
Fig. 34	Recording architecture - tab Details - All-in-one Parallel Recording .....	29
Fig. 35	Select integration type .....	30
Fig. 36	Recording Architecture - tab Server Assignment .....	31
Fig. 37	Recording Architecture - assign server - example .....	31
Fig. 38	Recording Architecture - activate recording type .....	32
Fig. 39	Activate recording architecture .....	32
Fig. 40	Create recording architecture - Multi-Server Recording .....	33
Fig. 41	Recording architecture - tab Details - Multi-Server Recording .....	33

Fig. 42	Select integration type.....	34
Fig. 43	Recording Architecture - tab Server Assignment .....	35
Fig. 44	Recording Architecture - assign server - example .....	35
Fig. 45	Add Recording Server .....	36
Fig. 46	Recording architecture - activate recording architecture.....	37
Fig. 47	Create recording architecture - Multi-Server Failover .....	37
Fig. 48	Recording architecture - tab Details - Multi-Server Failover .....	38
Fig. 49	Select integration type.....	39
Fig. 50	Recording Architecture - tab Server Assignment .....	40
Fig. 51	Recording Architecture - assign server - example .....	41
Fig. 52	Add Recording Server .....	42
Fig. 53	Recording architecture - activate recording architecture.....	43
Fig. 54	Create recording architecture - Multi-Server Parallel Recording.....	43
Fig. 55	Recording architecture - tab Details - Multi-Server Parallel Recording .....	44
Fig. 56	Select integration type.....	45
Fig. 57	Recording architecture - server assignment device group 1 .....	46
Fig. 58	Recording Architecture - assign server - example .....	46
Fig. 59	Add Recording Server .....	47
Fig. 60	Recording architecture - activate recording architecture - example.....	48
Fig. 61	Create recording architecture - Import Only .....	49
Fig. 62	Recording architecture - tab Details - Import Only .....	49
Fig. 63	Recording Architecture - tab Server Assignment .....	50
Fig. 64	Recording Architecture - assign server - example .....	50
Fig. 65	Recording Architecture - activate recording architecture .....	51
Fig. 66	Configure standby management .....	52
Fig. 67	Switch server.....	53
Fig. 68	Menu of the standby management.....	54
Fig. 69	Switch server.....	54
Fig. 70	Servers - main view.....	56
Fig. 71	Toolbar Servers module.....	56
Fig. 72	Add server locations.....	58
Fig. 73	Delete server location .....	59
Fig. 74	Servers - tab Details.....	59
Fig. 75	Servers - tab usage .....	60
Fig. 76	Group field API Server .....	60
Fig. 77	Select storage expansion.....	62
Fig. 78	Group field Audio analysis .....	62
Fig. 79	Group field Recording Control/Key Management .....	63
Fig. 80	Group field Data Processing .....	64
Fig. 81	Select server .....	66
Fig. 82	Group field Replay .....	66
Fig. 83	Select server .....	68

Fig. 84	Group field Virtualization .....	68
Fig. 85	Servers module - tab Media Streamer .....	69
Fig. 86	Servers Module - tab Replay Server Address Mapping .....	71
Fig. 87	Servers module - tab Key Management.....	72
Fig. 88	Servers module - tab Keystore/Virtualization .....	73
Fig. 89	Add NTP server.....	74
Fig. 90	Edit IP address.....	75
Fig. 91	Remove NTP server.....	75
Fig. 92	Synchronize recording control.....	77
Fig. 93	Menu item Manage synchronization configuration .....	78
Fig. 94	Configure synchronization configurations .....	78
Fig. 95	Create synchronization configuration .....	79
Fig. 96	Tab Parallel Recording (integration) .....	81
Fig. 97	Map additional data .....	82
Fig. 98	Select additional data .....	83
Fig. 99	Delete additional data assignment .....	83

### List of tables

Tab. 1	Configure audio analysis.....	62
Tab. 2	Configure recording control/key management .....	63
Tab. 3	Configure data storage.....	64
Tab. 4	Configure replay.....	66
Tab. 5	Configure virtualization.....	68

---

## Glossary

### API

Application Programming Interface

---

### API server

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

---

### App server

Application server or web server. In the system architectures: the server on which the Enterprise Core and the GlassFish software have been installed.

---

### CTI

Computer Telephony Integration

---

### 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

---

### RC

The Recording Control module controls the recording.

---

### Recording server

Server that the Recording Module service runs on. This service creates the recording data. A Recording system can contain one or several recording servers.

---

### RM

The Recording module records.

---

### SIP

Session Initiation Protocol

---

### TCP

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

---



---

### **TDM**

Time Division Multiplexing is an umbrella term for time-slot-oriented interfaces, ITU G.703 defined. The term is used ASC-wide representative for conventional telephony.

---

### **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