



Yeastar S-Series VoIP PBX / EasyLynq

INSTALLATION AND CONFIGURATION PROCEDURES

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Revision date: 2017-04-06 (Edition 1)

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About this document

The primary audience for the remaining of this document is installation and support personnel.

It is hereafter assumed that the reader is familiar with the EasyLynq product and the Yeastar S-Series VoIP PBX system. Some of the information included in this document may not be accurate or may differ of the one found at a customer's location. For readability reasons, no indication is provided on how to reach the information in the enclosed pictures.

System requirements

The following tables show the minimum specifications of the EasyLynq computer for several configurations. If being used to support other applications, such as EasyLynq IVTS, these specifications may differ.

EasyLynq Enterprise / Server

Extensions	Intel processor	Memory	Storage	Windows type
100	i3 2.2 GHz	4 GB	60 GB	Workstation
500	i5 2.4 GHz	4 GB	100 GB	Workstation
1000	Xeon 2.2 GHz Quad Core	4 GB	160 GB	Server
5000	Dual Xeon 2.8 GHz Quad Core	8 GB	250 GB	Server

EasyLynq Hotel

Rooms	Intel processor	Memory	Storage	Windows type
100	i5 2.4 GHz	4 GB	80 GB	Workstation
300	i7 2.8 GHz	4 GB	120 GB	Workstation
500	Xeon 2.4 GHz Quad Core	4 GB	200 GB	Server
1000	Dual Xeon 2.8 GHz Quad Core	8 GB	250 GB	Server

EasyLynq is compatible with Windows XP SP3 / 2003 Server and more recent. It is certified for Windows 7, 8, 10 and Server 2012, 2016, 2019, 32 and 64 bits.

Conventions

The following special signs are used in this document to point out information that must be carefully read:



Warning: alerts about configuration details that may cause malfunctions or not work as expected.



Notice: indicates additional information as a reference.

The following chapter describes the main steps to set up EasyLynq and S-Series VoIP PBX for billing purposes both for EasyLynq Enterprise/Server and EasyLynq Hotel.

EasyLynq Office/Server integration

Operation overview

The implementation of call accounting requires the installation and configuration of a MySQL ODBC data source in the **PBXAgent** computer.

PBXAgent establishes an ODBC connection to **S-Series VoIP PBX** database, retrieves the call records data and stores them in its own database after processing.

CDRs are extracted from the database using the *uniqueid* field as the query filter.

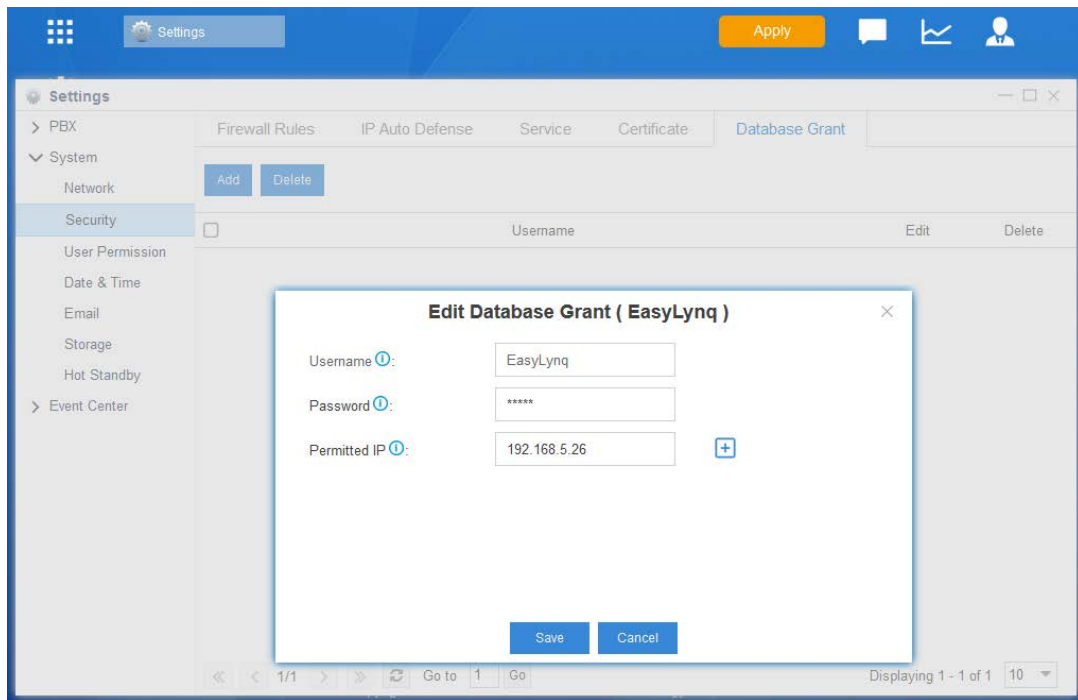
Call Data Records in the MySQL database

The default name for the call records table is *cdr*. However EasyLynq expects to manage monthly tables in the format *cdrYYYYMM*, where *YYYY* stands for the year and *MM* stands for the month.

Configuring the CDR database access in S-Series VoIP PBX

Start your favourite browser and login to S-Series VoIP PBX administration page.

Under **Settings > System group > Security > Database Grant** tab, create an user, assign a password and set the IP address of the PBXAgent computer.



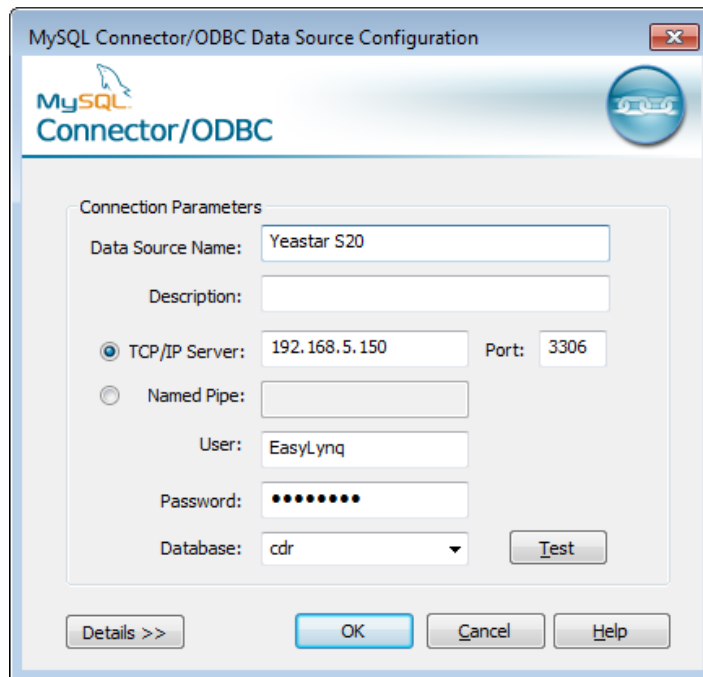
ODBC Data Source configuration

The Windows ODBC driver setup for MySQL database can be found at:
<https://dev.mysql.com/downloads/connector/odbc/3.51.html>

Download the appropriate driver: either 32-bit or 64-bit but it should match the version of PBXAgent. Double-click on the downloaded file and follow the instructions in order to install the driver.

Open **Control Panel** and go to **Administrative Tools > DataSources (ODBC)**. Select the tab **System DSN**, press the button **Add...**, select the **MySQL ODBC driver** and configure the connection.

The following picture shows a typical configuration. The parameters may vary according to the specific requirements of the installation. Make sure that the **User** and **Password** fields match those entered in S-Series VoIP PBX configuration (see previous chapter).



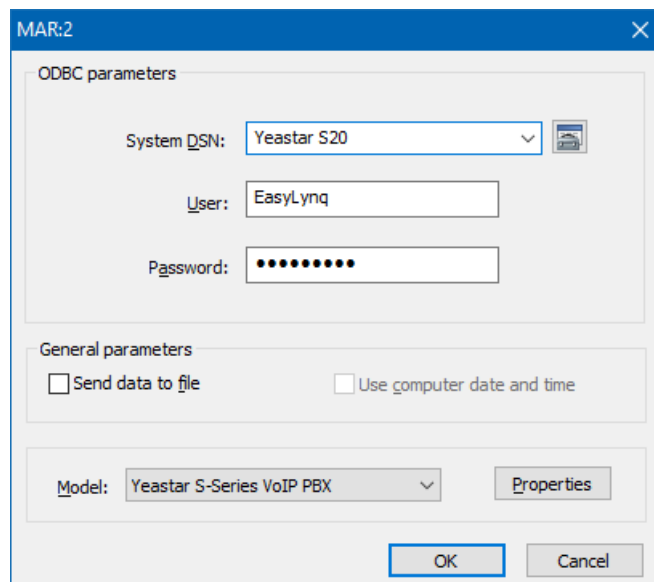
*If you've decided to install the 32-bit versions of both **MySQL** driver and **PBXAgent** on a 64-bit Windows, you must run the ODBC Data Source Administrator located in the folder `C:\Windows\SysWOW64` (`odbcad32.exe`).*

PBXAgent configuration

This chapter describes the required steps to configure **PBXAgent** in order to put the interface up and running.

ODBC connection parameters

1. Enter to the **PBXAgent** configuration window and go to the Interfaces tab.
2. Select an interface for editing. In case the Interface type window appears before you, select ODBC and click <OK>.
3. Change the Model, if required, to **Yeastar S-Series VoIP PBX**.
4. Enter the System DSN (or choose from the list), the user ID and password. These parameters must match those entered during the ODBC configuration.



The screenshot shows a dialog box titled "MAR:2" with a close button (X) in the top right corner. The dialog is divided into three sections:

- ODBC parameters:** Contains three fields: "System DSN:" with a dropdown menu showing "Yeastar S20" and a small icon to its right; "User:" with a text box containing "EasyLynq"; and "Password:" with a text box containing ten black dots.
- General parameters:** Contains two checkboxes: "Send data to file" (unchecked) and "Use computer date and time" (unchecked).
- Model:** Contains a dropdown menu showing "Yeastar S-Series VoIP PBX" and a "Properties" button to its right.

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

Press the **Properties** button.

Property page ODBC

Make sure the table name for billing data is **cdr**. The only permitted access mode is **Process only calls with 'uniqueid' greater than:**.

The screenshot shows the 'Yeastar S-Series VoIP PBX - Properties' dialog box with the 'ODBC' tab selected. The 'Call detail records table' section contains a dropdown menu labeled 'Table:' with 'cdr' selected. The 'Database records' section has three radio button options: 'Process and delete', 'Process only calls terminated after:' (with a date '2017-04-04' and time '17:59:28' selected), and 'Process only calls with 'uniqueid' greater than:' (which is selected). There is an empty text input field below the third option. 'OK' and 'Cancel' buttons are at the bottom.

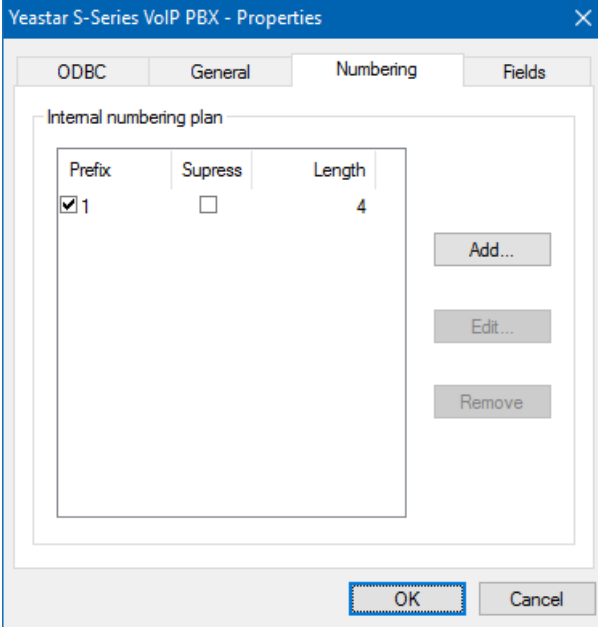
Property page General

Fill in the outward access prefixes table, if required. These prefixes will be stripped out of the dialled numbers on outgoing calls. If **S-Series VoIP PBX** is configured to allow outgoing calls using authorisation codes, add those prefixes to the table and define the length of the authorisation code.

The screenshot shows the 'Yeastar S-Series VoIP PBX - Properties' dialog box with the 'General' tab selected. The 'Outgoing access codes' section has an empty text input field, an 'Add ->' button, and a '<- Remove' button. The 'Authorisation code prefixes' section has an empty text input field, an 'Add ->' button, and a '<- Remove' button. Below this section, 'Number of digits:' is set to '2' with a dropdown arrow. 'OK' and 'Cancel' buttons are at the bottom.

Property page Numbering

Fill in the internal numbering plan table:

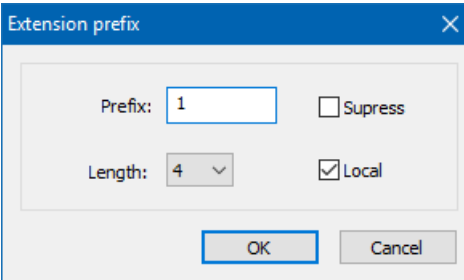


Prefix	Supress	Length
<input checked="" type="checkbox"/> 1	<input type="checkbox"/>	4

Buttons: Add..., Edit..., Remove

Buttons: OK, Cancel

Enter each and every prefix of the internal extensions, specifying the exact length of the extension and whether you want to remove the prefix.



Prefix: 1 Supress

Length: 4 Local

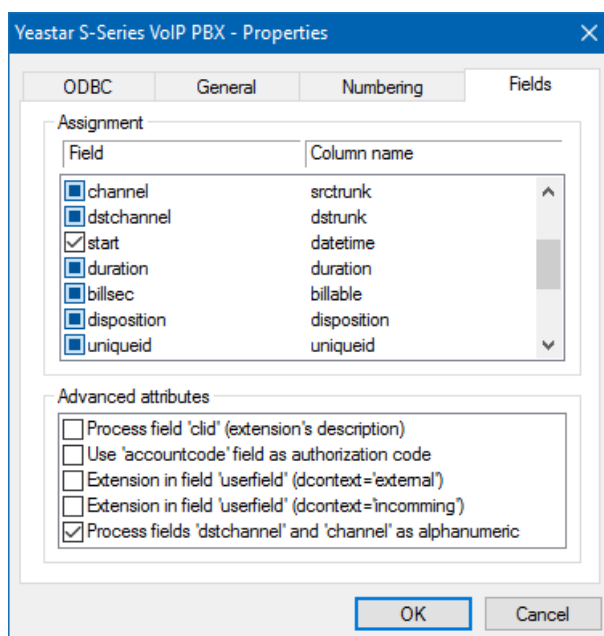
Buttons: OK, Cancel



*On a multi-PBX scenario, remove the check mark on **Local** for prefixes belonging to extensions in remote equipments in order to prevent duplication of internal call records across the voice network.*

Property page Fields

In the **Fields** tab, adjust the column name for each field in the **cdr** table and the attributes table. This operation is for advanced use and usually not required, you should leave the default configuration.



Advanced attributes:

- **Process field 'clid' (extension's description)**
Check whenever you want EasyLynq to retrieve the extension's description from the call detail record.
- **Use 'accountcode' field as authorization code**
Check to change the way EasyLynq should process this field.
- **Extension in field 'userfield' (dcontext='external')**
Check whenever the extension number must be retrieved from 'userfield' on outgoing calls. The 'dcontext' field must carry the value 'external' in these cases.
- **Process fields 'dstchannel' and 'channel' as alphanumeric**
Check this attribute in order to reduce the number of channels created by EasyLynq.



*It is strongly recommended that you check the attribute **Process fields 'dstchannel' and 'channel' as alphanumeric** in order to prevent EasyLynq from creating a huge number of channels in its database.*

Validate the configuration. In the **Interfaces** tab of the main window, select the **S-Series VoIP PBX** interface and press **Monitoring**. Check for the proper configuration of the database connection and watch the call records flowing.

EasyLynq Hotel integration

Operation overview

The **AMI Hospitality Service** is available starting on **S-Series VoIP PBX** version 30.3.0.35 and hosted on all subsequent platforms.

S-Series VoIP PBX AMI interface implements the following basic services:

- Check-in, with the assignment of the guest's name and language to the room phone sets and permission for outward access.
- Check-out, with restriction for establishing outgoing calls to PSTN.
- Do Not Disturb service.
- Message Waiting Indicator, to signal new voice mail messages and written messages at the hotel reception.

EasyLynq SIP Messaging interface extends the hospitality service to a higher level, adding the following features:

- Full wake-up service (set / cancel / change / answer control), in nine languages.
- Room-status.
- Minibar/Laundry posting.

EasyLynq IVTS Hotel can replace **SIP Messaging** and adds advanced functionality such as voice mail in 9 languages for guests and staff, Text-To-Speech and much more.



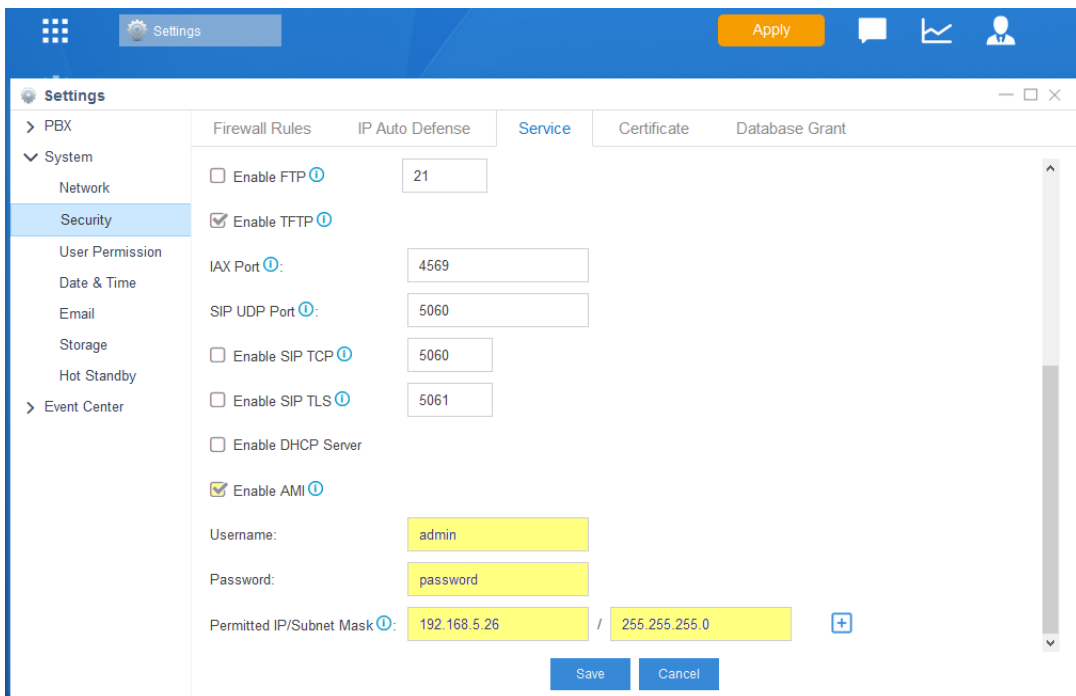
*For the sake of simplicity, only the configuration for **SIP Messaging** is explained in this chapter. The same steps also apply to **IVTS**.*

S-Series VoIP PBX configuration

Start your favourite browser and login to **S-Series VoIP PBX** administration page.

Enable AMI connectivity

Under **Settings** > **System group** > **Security** > **Service** tab, enable AMI and define an user and password.



The screenshot shows the 'Settings' application window with the 'Service' tab selected under the 'Security' category. The configuration includes:

- Enable FTP (Port: 21)
- Enable TFTP
- IAX Port: 4569
- SIP UDP Port: 5060
- Enable SIP TCP (Port: 5060)
- Enable SIP TLS (Port: 5061)
- Enable DHCP Server
- Enable AMI
- Username: admin
- Password: password
- Permitted IP/Subnet Mask: 192.168.5.26 / 255.255.255.0

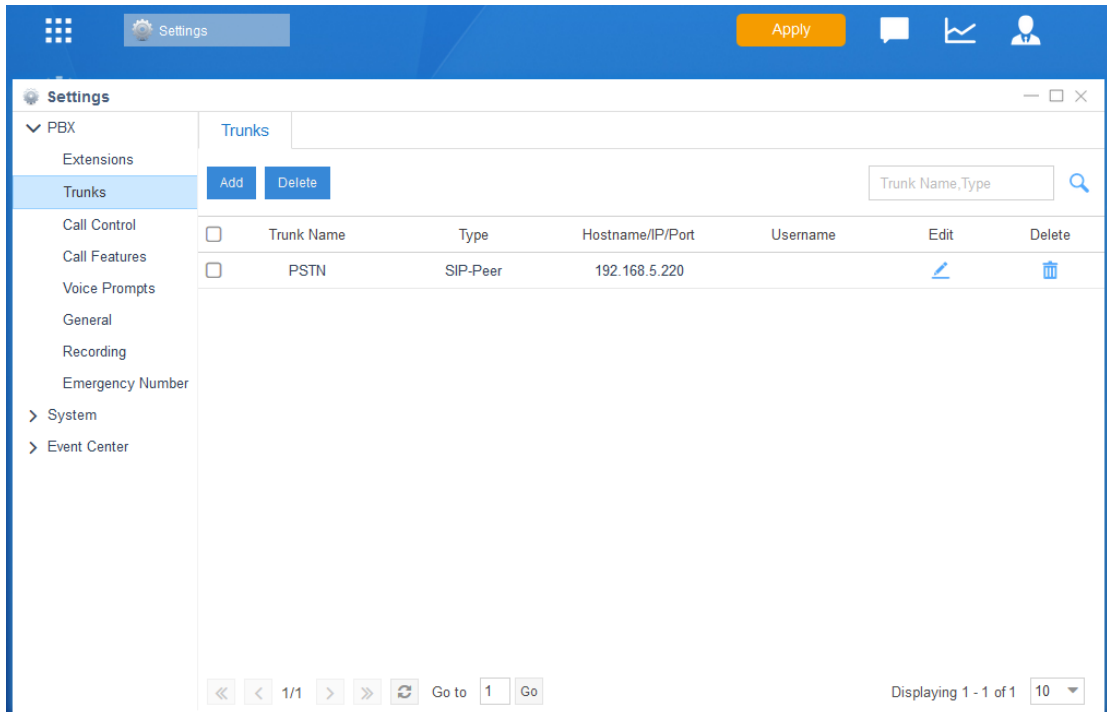
Buttons for 'Save' and 'Cancel' are visible at the bottom.



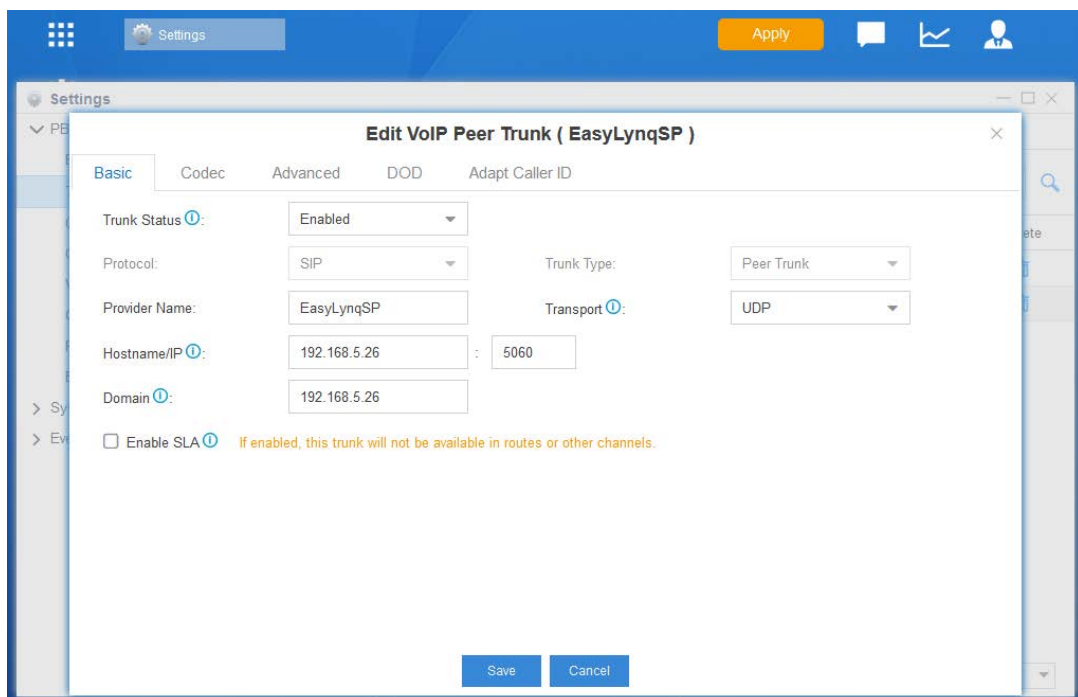
*For security reasons, assign the IP address of the **PBXAgent** computer as the only permitted client.*

SIP trunk configuration for SIP Messaging and IVTS

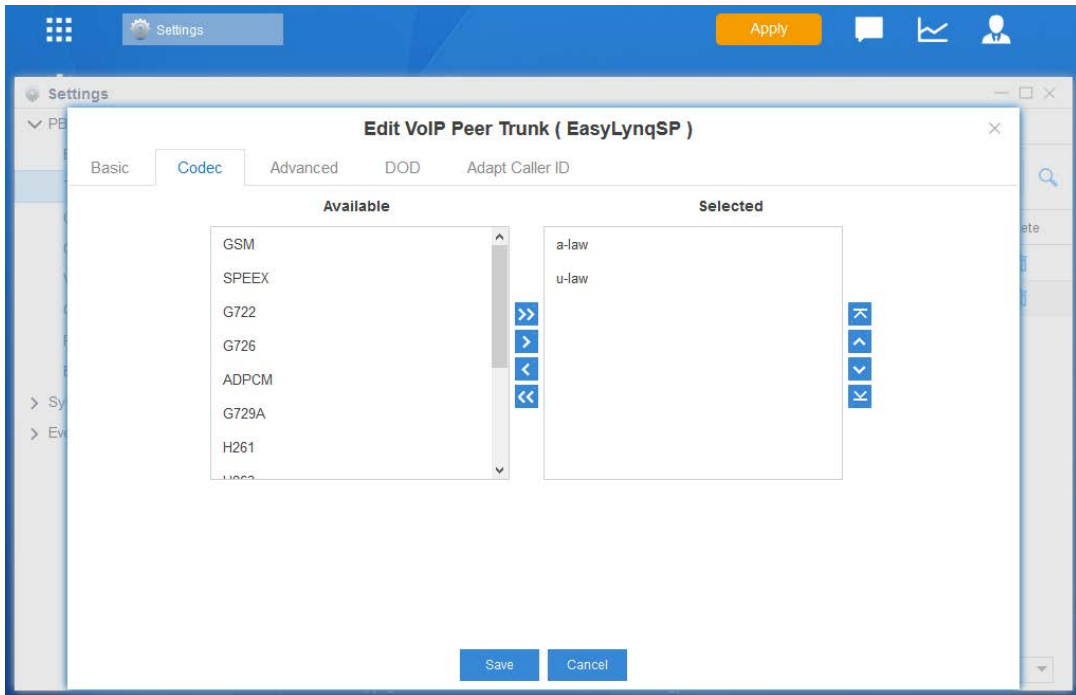
Navigate to **Settings > PBX group > Trunks**.



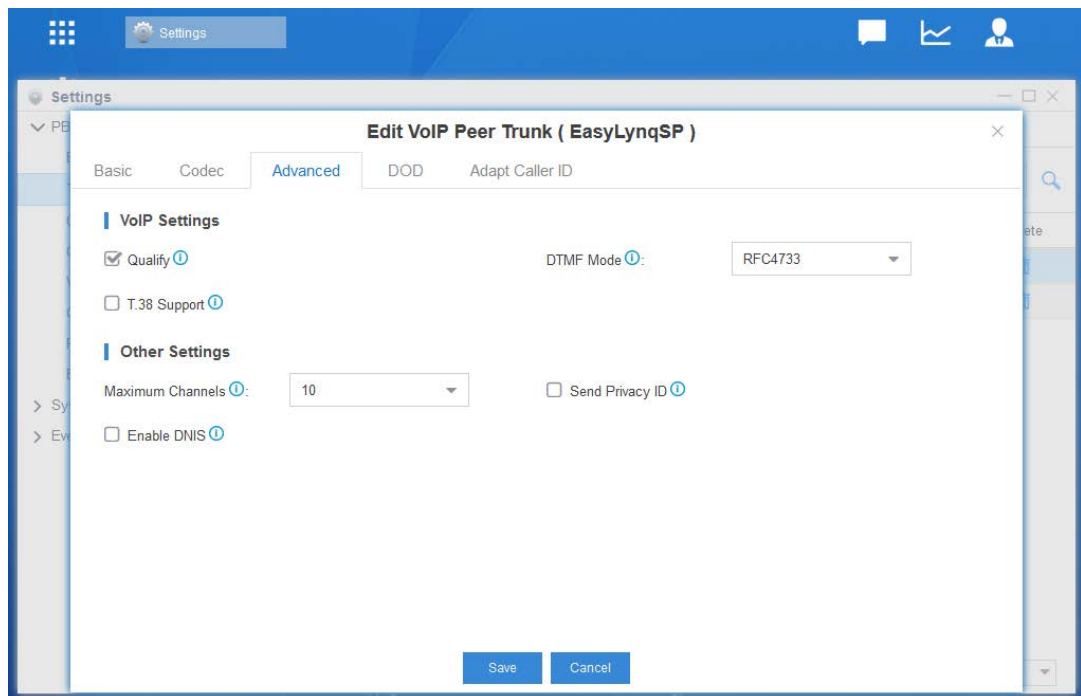
Press the button **Add**. Enter the IP address of the **PBXAgent** computer in the **Hostname/IP** field. Adjust the other parameters according to the picture below.



Select the tab **Codec**. Make sure the codecs **G711 a-Law** and **u-Law** are selected.

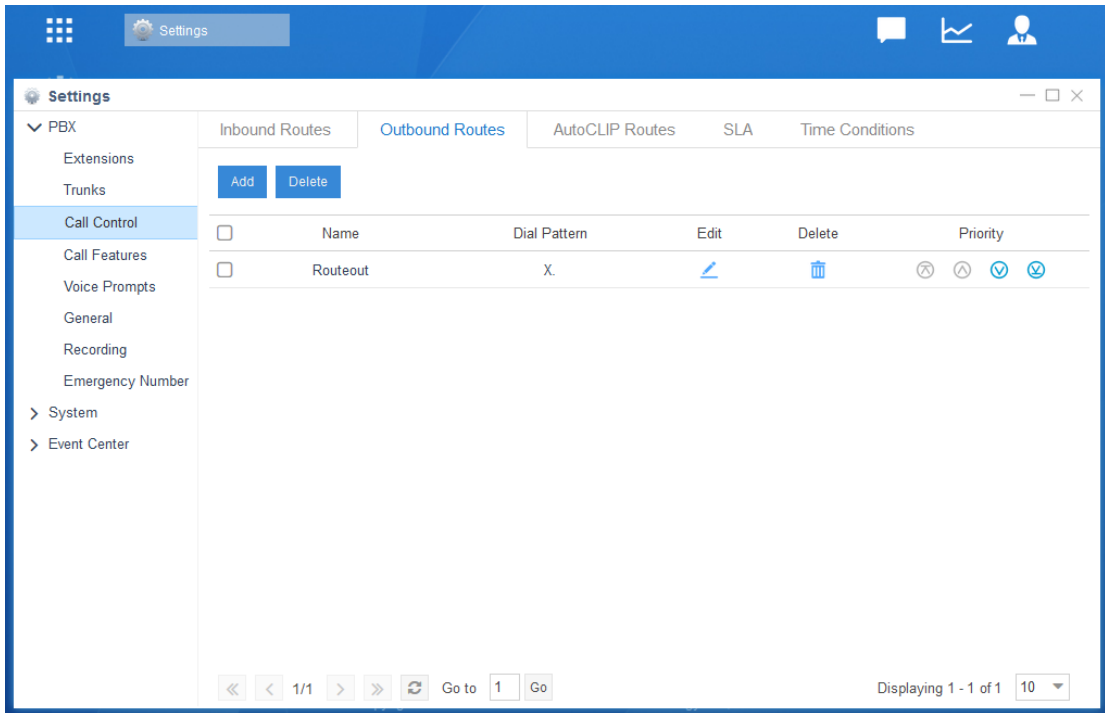


Select the tab **Advanced**. The value of **Maximum Channels** must be set to the number of allowed simultaneous conversations as defined in the EasyLynq license.

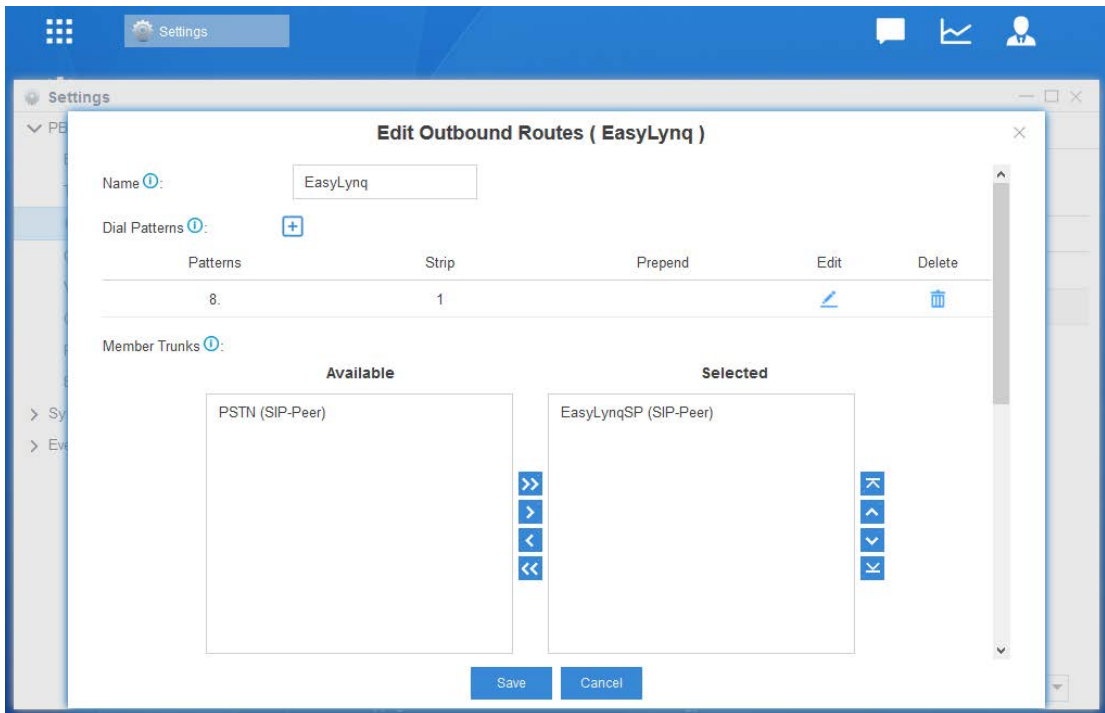


Press the **Save** button.

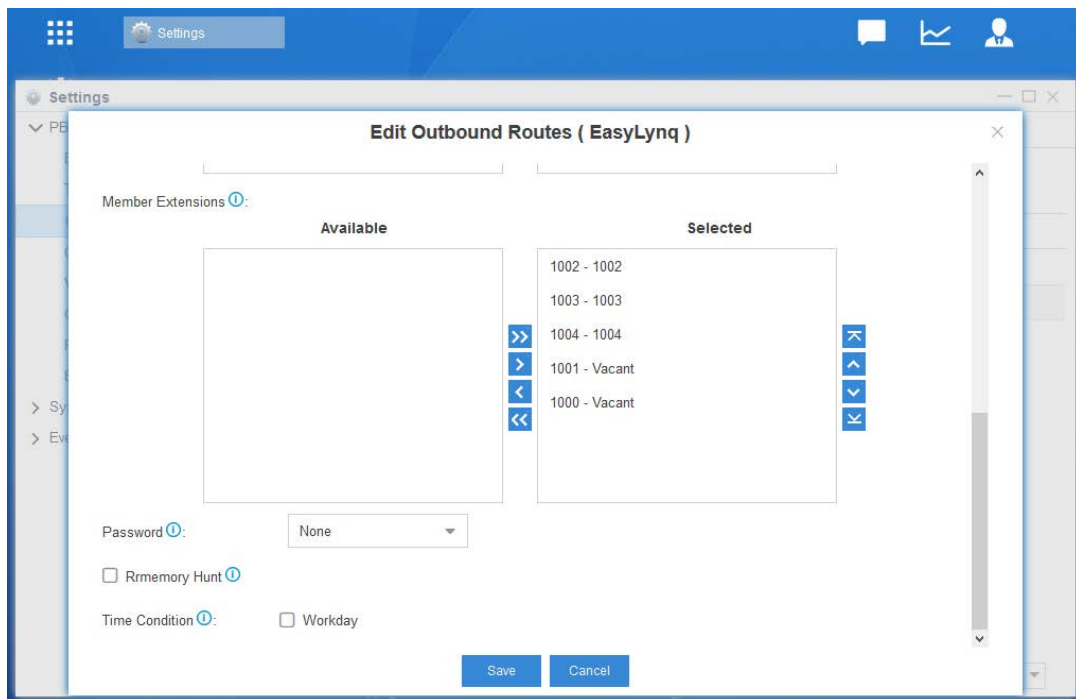
Navigate to **Settings > PBX group > Call Control**.



Press the button **Add**. Create an outbound route as shown in the picture below. Add a **Dial Pattern** and make sure the previously created trunk is added to the group **Selected**.



Scroll down to **Member Extensions**. Add all room extensions to group **Selected**.



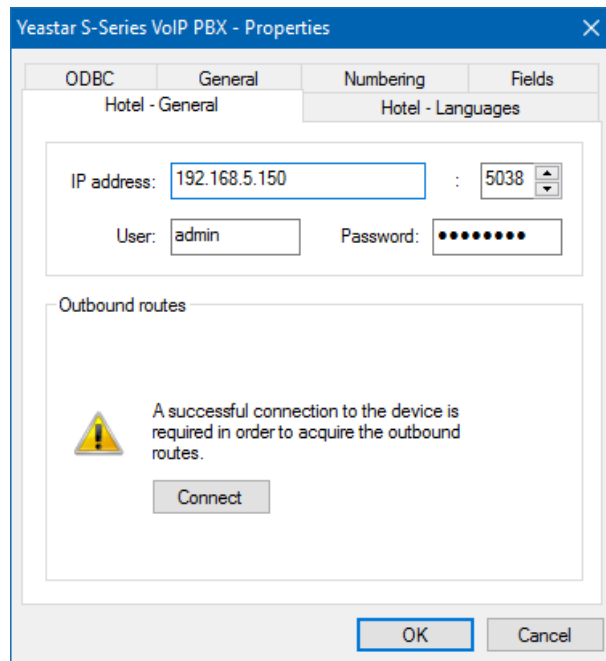
Press the **Save** button.

PBXAgent configuration for S-Series VoIP PBX Hotel interface

When running in Hotel mode, PBXAgent provides two additional property pages.

Property page Hotel - General

Enter the IP address of **S-Series VoIP PBX**, do not change the default port 5038. The **User** and **Password** fields must match those of the AMI settings (see chapter [Enable AMI connectivity](#)). Press the button **Connect** when done in order to acquire the outbound routes.



The screenshot shows a window titled "Yeastar S-Series VoIP PBX - Properties" with a close button (X) in the top right corner. The window has four tabs: "ODBC", "General", "Numbering", and "Fields". The "General" tab is selected, and it is further divided into "Hotel - General" and "Hotel - Languages". The "Hotel - General" section contains the following fields:

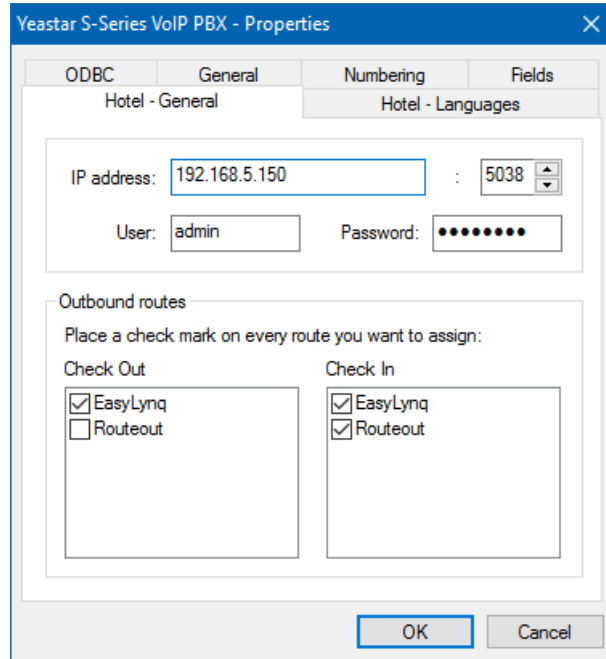
- IP address: 192.168.5.150
- Port: 5038
- User: admin
- Password: [masked with 8 dots]

Below these fields is a section titled "Outbound routes" which contains a warning icon (a yellow triangle with an exclamation mark) and the text: "A successful connection to the device is required in order to acquire the outbound routes." Below this text is a "Connect" button. At the bottom of the dialog box are "OK" and "Cancel" buttons.



The connection must be established in order to define the outbound routes that shall be assigned on a guest check-in and removed on check-out.

After a successful connection, the aspect of the property page is changed. Check the appropriate outbound routes for PSTN and mobile gateways in the **Check In** group.



Yeastar S-Series VoIP PBX - Properties

ODBC General Numbering Fields

Hotel - General Hotel - Languages

IP address: 192.168.5.150 : 5038

User: admin Password: ●●●●●●

Outbound routes

Place a check mark on every route you want to assign:

Check Out

EasyLynq
 Routeout

Check In

EasyLynq
 Routeout

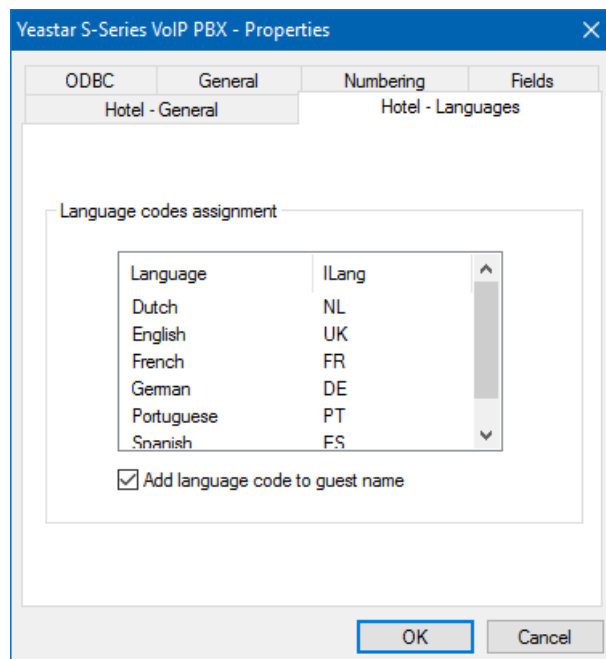
OK Cancel



*Make sure to enable access to the SIP trunk for SIP Messaging or IVTS both in the **Check Out** and **Check in** groups otherwise the housekeeping staff will not be able to change room-status or post minibar/laundry articles.*

Property page Hotel - Languages

Assign each EasyLynq language to the corresponding **ILang** code.



Yeastar S-Series VoIP PBX - Properties

ODBC General Numbering Fields

Hotel - General Hotel - Languages

Language codes assignment

Language	ILang
Dutch	NL
English	UK
French	FR
German	DE
Portuguese	PT
Spanish	FS

Add language code to guest name

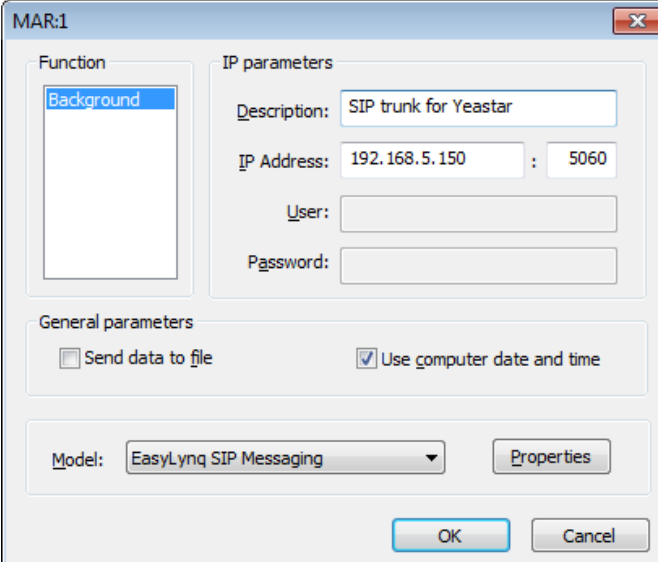
OK Cancel

PBXAgent configuration for S-Series VoIP PBX SIP route

This chapter describes the steps to configure the **EasyLynq SIP Messaging** interface on **PBXAgent**. The same steps also apply to IVTS Hotel.

SIP connection parameters

1. Enter to the **PBXAgent** configuration window and go to the Interfaces tab.
2. Select an interface for editing. In case the Interface type window appears before you, select TCP/IP and click <OK>.
3. Change the Model, if required, to **EasyLynq SIP Messaging**.
4. Enter an optional description of the interface, the IP address and the SIP port number of the **S-Series VoIP PBX**.



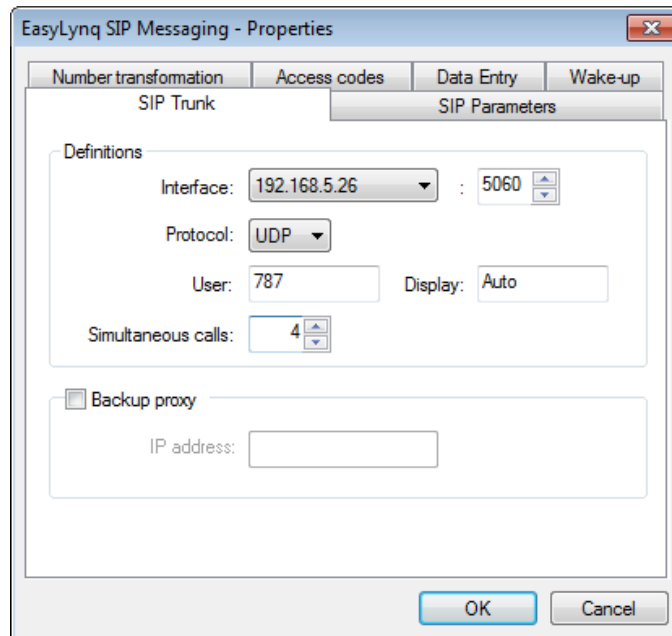
The screenshot shows a configuration window titled "MAR:1" with a close button in the top right corner. The window is divided into several sections:

- Function:** A list box containing "Background".
- IP parameters:** Fields for "Description" (containing "SIP trunk for Yeastar"), "IP Address" (containing "192.168.5.150"), and "Port" (containing "5060"). There are also empty fields for "User:" and "Password:".
- General parameters:** Two checkboxes: "Send data to file" (unchecked) and "Use computer date and time" (checked).
- Model:** A dropdown menu currently set to "EasyLynq SIP Messaging".
- Buttons:** "Properties", "OK", and "Cancel".

Press the button **Properties** in order to enter in the advanced configuration of this interface.

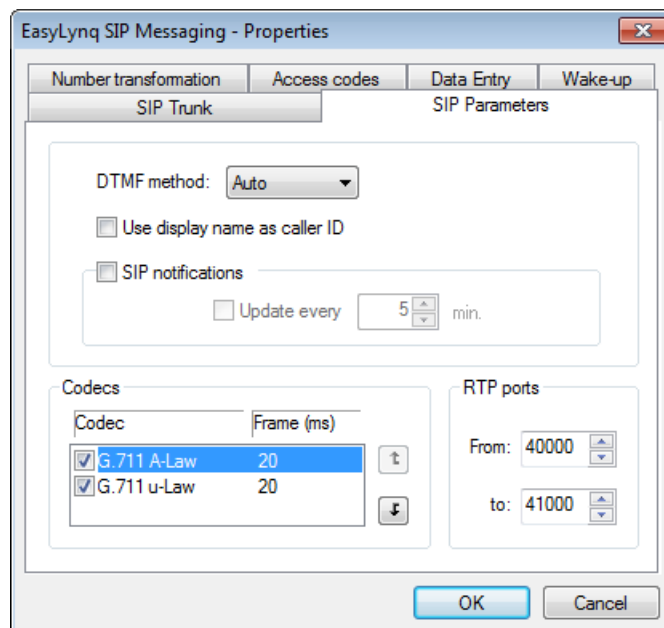
Property page SIP Trunk

Select the appropriate interface (if more than 1 NIC is installed on the computer) and adjust the number of allowed simultaneous calls to the maximum value permitted by the EasyLynq license. You may also want to modify the **User** and **Display** fields.



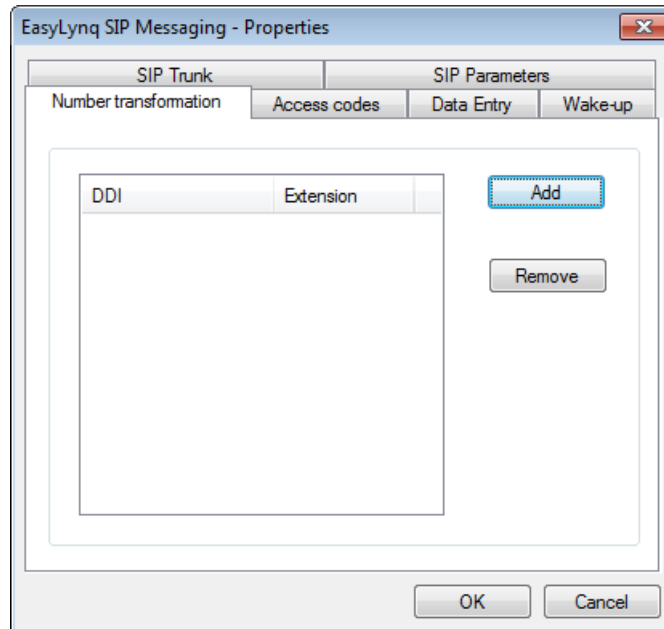
Property page SIP Parameters

In general, you do not need to change the default parameters of this page.



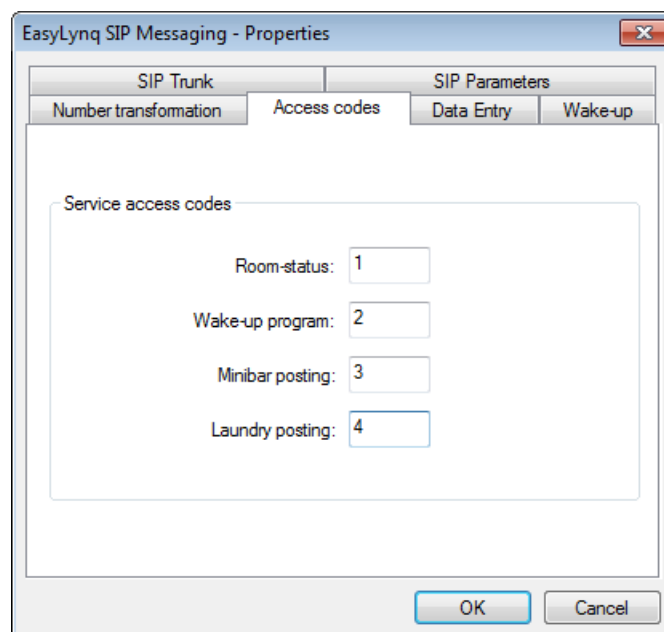
Property page Number transformation

In general, you do not need to add any rules for number transformation.



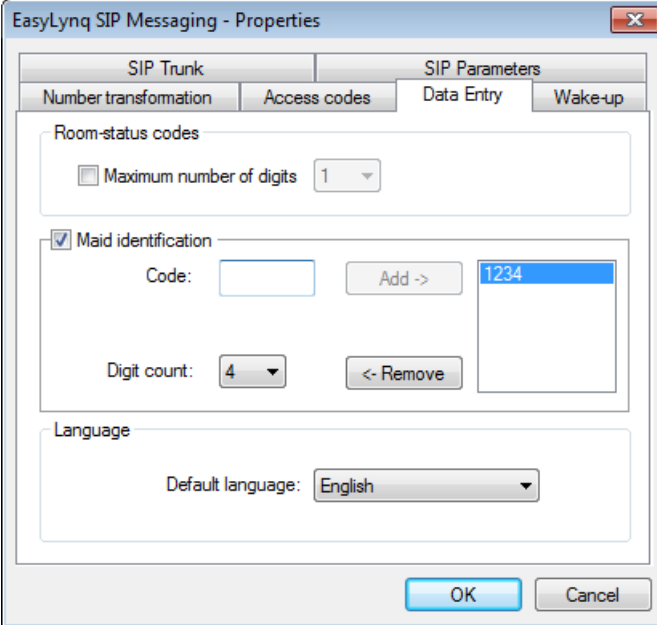
Property page Access codes

Enter the digits to access the various services. For a better understanding of the meaning of these digits, please refer to chapters [Examples of room-status and minibar posting](#) and [Wake-up programming at the phone set](#).



Property page Data Entry

Adjust these parameters accordingly.



The screenshot shows the 'EasyLynq SIP Messaging - Properties' dialog box with the 'Data Entry' tab selected. The dialog is divided into two main sections: 'SIP Trunk' and 'SIP Parameters'. Under 'SIP Parameters', there are four sub-tabs: 'Number transformation', 'Access codes', 'Data Entry', and 'Wake-up'. The 'Data Entry' sub-tab is active and contains the following settings:

- Room-status codes:**
 - Maximum number of digits: 1
- Maid identification:**
 - Code: [] [Add ->] [1234]
 - Digit count: 4 [<- Remove]
- Language:**
 - Default language: English

At the bottom of the dialog are 'OK' and 'Cancel' buttons.



It is highly recommended to use maid identification in order to prevent the housekeeping services to be accidentally accessed by the guest.



*If the number of digits for every room-status code is the same, you may choose to set the value **Maximum number of digits**. This will slightly ease the input by the housekeeping staff since it is no longer required to dial the validation digit (see chapter [Examples of room-status and minibar posting](#)).*

Property page Wake-up

Adjust the wake-up timings accordingly and assign the EasyLynq languages to the supported voice messages. The number of wake-up retries is configured at the complex properties in the EasyLynq administration module.

EasyLynq SIP Messaging - Properties

SIP Trunk | SIP Parameters

Number transformation | Access codes | Data Entry | **Wake-up**

Timers (in seconds)

Maximum attempt duration: 40

Gap between retries: 60

Language codes assignment



Language	ILang
English	UK
French	FR
German	DE
Spanish	ES

OK Cancel

Examples of room-status and minibar posting



The following examples assume the digit **8** as the access code for the EasyLynq SIP trunk.

Room-status input, according to the previous snap-shots:

Operation	Digits	Comments
Maid lifts the handset		
Maid dials SIP Trunk access code plus "Room-status" service code	8 1 SEND	Message "Room-status" is heard
Maid dials an invalid ID	4 4 4 4	Message "Code rejected" is heard
Maid dials ID again	1 2 3 4	Message "Code accepted" is heard
Maid dials room-status code	5	
Maid dials validation digit *	#	Message "Code accepted" is heard
Maid hangs up		Room changes to status PBX code 5

* may not be required, see chapter [Property page Data Entry](#).

Example of minibar posting:



Operation	Digits	Comments
Maid lifts the handset		
Maid dials SIP Trunk access code plus "Minibar" service code	8 3 SEND	Message "Minibar" is heard
Maid dials a valid ID	1 2 3 4	Message "Code accepted" is heard
Maid dials article code	5 4 1	Code for article #1
Maid dials intermediate digit	*	Message "Code accepted" is heard
Maid dials article code	2 7 4	No such article
Maid dials intermediate digit	*	Message "Code rejected" is heard
Maid dials article code	2 7 5	Code for article #2
Maid dials termination digit	#	Message "Code accepted" is heard
Maid hangs up		2 articles are charged to the room

Wake-up programming at the phone set



This chapter presents several voice messages and exemplify how to mark, modify and cancel an automatic wake-up service using the interactive voice response system of EasyLynq.

Wake-up times must be entered in 24 hour format and refer to a time in the 24 hour period starting at the current time. The following examples assume the access code for the EasyLynq SIP trunk is the digit **8**.


a) Wake-up mark (no wake-up is set)

Guest lifts the handset		
Guest dials SIP Trunk access code plus "Wake-up" code	8 2 SEND	"Welcome to the automatic awakening call service. Please enter the time for the awakening call in 24 hour clock notation."
Guest dials	0 7 1 5	"Your awakening call has now been set."
Guest hangs up		

b) Wake-up modification

Guest lifts the handset		
Guest dials SIP Trunk access code plus "Wake-up" code	8 2 SEND	"Welcome to the automatic awakening call service. You have a service for awakening set for 7 hours and 15 minutes. Press 1 to modify this call or press 3 to delete it."
Guest dials	1	"Please enter the time for the awakening call in 24 hour clock notation."
Guest dials	0 7 3 0	"Your awakening call has now been set."
Guest hangs up		

c) Wake-up cancellation

Guest lifts the handset		
Guest dials SIP Trunk access code plus "Wake-up" code	8 2 SEND	"Welcome to the automatic awakening call service. You have a service for awakening set for 7 hours and 30 minutes. Press 1 to modify this call or press 3 to delete it."
Guest dials	3	"Your awakening call has been deleted."
Guest hangs up	