

Microsoft SQL Integration Guide

Yeastar P-Series Cloud Edition

Version: 84.16.0.70

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Microsoft SQL Integration Guide

Yeastar P-Series Cloud Edition supports the integration with Microsoft SQL, which allows for automatically triggering contact lookup in your Microsoft SQL database when an inbound call reaches your PBX and displaying caller's name if a match is found. In addition, contact synchronization with phonebook(s) enables convenient outbound calling from Linkus UC Clients and intelligent inbound call routing based on phonebook(s) matches.

Requirements

Make sure that PBX server meets the following requirements:

- **Plan:** Enterprise Plan (EP) or Ultimate Plan (UP)
- **Firmware:** Version 84.16.0.70 or later



Note:

There are no specific requirements for Microsoft SQL, all versions of Microsoft SQL Server can be integrated with Yeastar P-Series Cloud Edition.

Integration flow

The integration between Yeastar P-Series Cloud Edition and Microsoft SQL enables a variety of features, including caller ID name display, contact synchronization, and intelligent inbound call routing based on phonebook matches.

Depending on the features that you want to implement, you will need to perform different operations for the integration, as shown below:

Scenario: Caller ID name display

1. [Integrate Yeastar P-Series Cloud Edition with Microsoft SQL](#)

Scenario: Caller ID name display and contact synchronization

1. [Integrate Yeastar P-Series Cloud Edition with Microsoft SQL](#)
2. [Set up Contact Synchronization from Microsoft SQL](#)

Scenario: Caller ID name display, contact synchronization, and inbound call routing based on phonebook match

1. [Integrate Yeastar P-Series Cloud Edition with Microsoft SQL](#)
2. [Set up Contact Synchronization from Microsoft SQL](#)
3. [Set up inbound routes based on phonebook matches](#)

Integrate Yeastar P-Series Cloud Edition with Microsoft SQL

With the integration between Yeastar P-Series Cloud Edition and Microsoft SQL, inbound calls to PBX will automatically trigger contact lookup in your Microsoft SQL database and display the caller's name if a match is found.

Requirements

Make sure that PBX server meets the following requirements:

- **Plan:** Enterprise Plan (EP) or Ultimate Plan (UP)
- **Firmware:** Version 84.16.0.70 or later

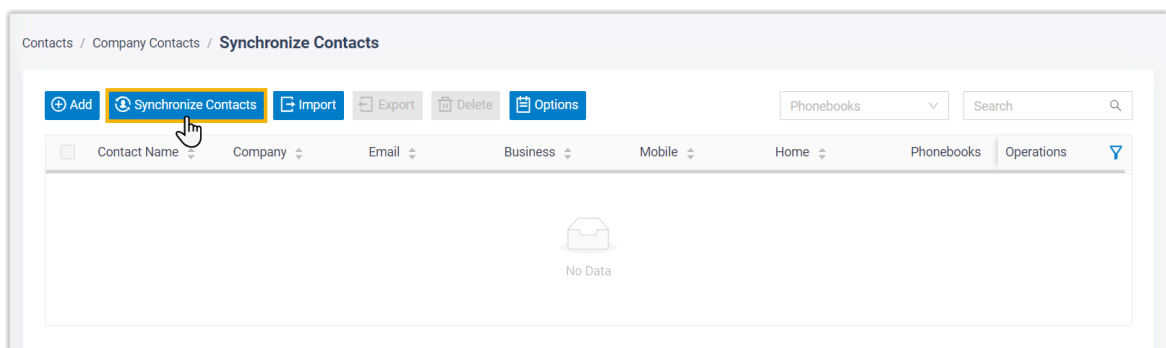


Note:

There are no specific requirements for Microsoft SQL, all versions of Microsoft SQL Server can be integrated with Yeastar P-Series Cloud Edition.

Step 1. Enable Microsoft SQL integration

1. Log in to PBX web portal, go to **Contacts > Company Contacts**.
2. At the top of the page, click **Synchronize Contacts**.



3. Turn on the option **Enable Microsoft SQL Integration**, then complete the following settings.

Enable Microsoft SQL Integration

Status
 Disconnected

* Server Address * Database Name

* Timeout(s)

* User * Password

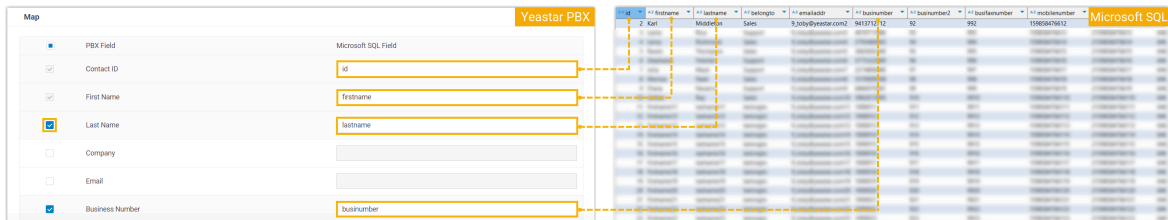
* Auto-match Contact Filter

Item	Description
Server Address	<p>Enter the address of Microsoft SQL server based on your situation.</p> <ul style="list-style-type: none"> If Microsoft SQL server runs on the default port 1433, enter the server's IP address or domain name. For example, enter 112.48.21.123. If Microsoft SQL server runs on a non-default port, enter the server's IP address/domain name and port. For example, enter 112.48.21.123:20001.
Database Name	Enter the name of the database.
Timeout(s)	Set the timeout for the connection to Microsoft SQL server.
User	Enter the username to connect to the database.
Password	Enter the password to connect to the database.
Auto-match Contact Filter	<p>Enter a SELECT statement for contact caller ID matching, in the format select \${MAP} from {schema_name}.{table_name} where {condition_to_filter_number}.</p> <p>Example: select \${MAP} from testpbx.contacts where businumber like CONCAT('%', \${NUMBER}, '%')</p> <ul style="list-style-type: none"> select \${MAP}: Specify the name of the column in the database that you want to display as the caller ID name. <div style="border-left: 2px solid #0070c0; border-bottom: 2px solid #0070c0; padding: 10px; margin-top: 10px;"> <p> Note: \${MAP} will be replaced by the field values corresponding to the PBX field (First Name, Last Name, or both) enabled in the Map section.</p> </div>

Item	Description
	<ul style="list-style-type: none"> • from testpbx.contacts: The table from which you want to select data, which must include two-part names (schema name and table name) in the format <code>{schema_name}.{table_name}</code>. • where businumber like CONCAT('%', \${NUMBER}, '%'); Retrieve the records where businumber contains the value of \${NUMBER} anywhere within it.

Step 2. Map contact fields between Yeastar P-Series Cloud Edition and Microsoft SQL

1. Scroll down to the **Map** section.
2. Map the fields that are required for displaying caller's name.



- a. For **Contacts ID, First Name, and Business Number**, enter the corresponding column name in Microsoft SQL contacts table.



Note:

In this example, **Business Number** is mapped because it is used as a [number filter](#). You **MUST** map the number field based on your situation.

When an inbound call matches a contact in your database, the contact's first name will be displayed.

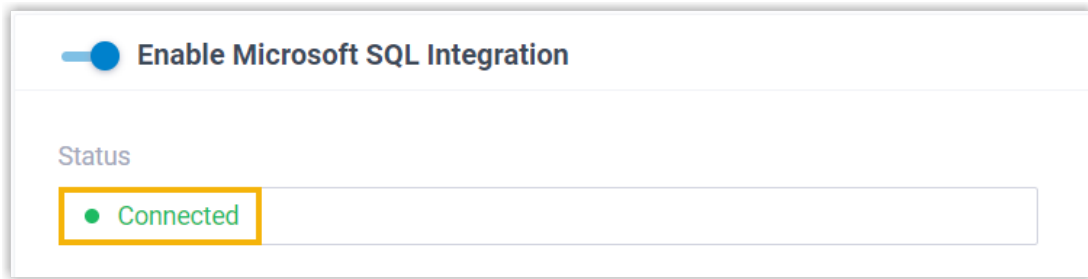
- b. **Optional:** To display contact's last name as well, select the checkbox of **Last Name**, then enter the corresponding column name in Microsoft SQL field.
3. If you want to synchronize Microsoft SQL contacts to PBX, enable and map the desired fields.

Map		
<input type="checkbox"/>	PBX Field	Microsoft SQL Field
<input checked="" type="checkbox"/>	Contacts ID	<input type="text" value="id"/>
<input checked="" type="checkbox"/>	First Name	<input type="text" value="firstname"/>
<input checked="" type="checkbox"/>	Last Name	<input type="text" value="lastname"/>
<input checked="" type="checkbox"/>	Company	<input type="text" value="companyinfo"/>
<input checked="" type="checkbox"/>	Email	<input type="text" value="emailaddr"/>
<input checked="" type="checkbox"/>	Business Number	<input type="text" value="businumber"/>
<input type="checkbox"/>	Business Number 2	<input type="text"/>
<input type="checkbox"/>	Business Fax Number	<input type="text"/>
<input checked="" type="checkbox"/>	Mobile Number	<input type="text" value="mobilenumber"/>
<input type="checkbox"/>	Mobile Number 2	<input type="text"/>
<input type="checkbox"/>	Home Number	<input type="text"/>
<input type="checkbox"/>	Home Number 2	<input type="text"/>
<input type="checkbox"/>	Home Fax Number	<input type="text"/>
<input type="checkbox"/>	Other Number	<input type="text"/>
<input type="checkbox"/>	Zip Code	<input type="text"/>
<input type="checkbox"/>	Street	<input type="text"/>
<input type="checkbox"/>	City	<input type="text"/>
<input type="checkbox"/>	State	<input type="text"/>
<input type="checkbox"/>	Country	<input type="text"/>
<input type="checkbox"/>	Remark	<input type="text"/>

4. Click **Save**.

Result

- Yeastar P-Series Cloud Edition is connected to your Microsoft SQL server.



- When an inbound call matches a contact in your database, the caller's name will be displayed.

What to do next

If you want to allow extension users to conveniently call Microsoft SQL contacts from Linkus UC Clients, you need to set up contact synchronization from Microsoft SQL server.

For more information, see [Set up Contact Synchronization from Microsoft SQL](#).

Set up Contact Synchronization from Microsoft SQL

By synchronizing Microsoft SQL contacts to Yeastar P-Series Cloud Edition, extension users can conveniently call these contacts from Linkus UC Clients. In addition, the system can automatically route inbound calls from Microsoft SQL contacts to the specified destinations based on phonebook matches.

Restrictions

Refer to the table below for the maximum number of company contacts and phonebooks supported by your system.

Maximum Number of Extensions (N)	$N \leq 50$	$50 < N \leq 200$	$N > 200$
Company contacts (total)	50,000	200,000	500,000
Company phonebooks	100	200	500

Prerequisites

[You have mapped the desired contact fields between Yeastar P-Series Cloud Edition and Microsoft SQL.](#)

Procedure

1. On Microsoft SQL configuration page, scroll down to the **Contacts Synchronization** section.
2. Enable and set up contact synchronization from Microsoft SQL server.
 - a. Turn on the option **Contacts Synchronization**.
 - b. Complete the following settings.

* Synchronize to Phonebook

Create New

* Data Synchronization Frequency

Daily

Feedback Email

demo@yeastar.com

* Sync Contact Filter

select \${MAP} from testpbx.contacts order by id desc

* Phonebook Name

Microsoft SQL-Synchronization

*

00:30

Sync Now

Remove existing contacts which are not received from the server

Item	Description
Synchronize to Phonebook	<p>Select where to store the contacts that will be synchronized from your database.</p> <ul style="list-style-type: none"> • Create New: Create a new phonebook from scratch to store the synced contacts. If you choose the option, enter the phonebook name in the Phonebook Name field. • Read Specific Property Value and Create New: Create a new phonebook based on the property value of a specific column in your contact table to store the synced contacts. If you choose the option, enter a column name of the contact table in the Property Name field. <div style="border: 1px solid #007bff; padding: 10px; margin-top: 10px;"> <p> Note: This is helpful when you want to route inbound calls from Microsoft SQL contacts to the specified destinations in PBX based on phonebook matches. For example, there is a column named as belongto, which designates the team responsible for servicing the contacts - Sales and Support. By entering <code>belongto</code> in the field, the system will create two phonebooks - Sales and Support after you save the setting, and route inbound calls to the responsible team based on the phonebook matches after you configure proper inbound routes.</p> </div> <ul style="list-style-type: none"> • {existing_phonebook}: Select an existing empty phonebook to store the synced contacts.

Item	Description
	<div data-bbox="792 268 836 319"></div> <p>Note: The existing empty phonebooks are synchronized from Contacts > Phonebooks.</p>

Item	Description
	<ul style="list-style-type: none"> • order by id desc: Sort the result in descending order.
Remove existing contacts which are not received from the server	If enabled, contacts that were successfully synchronized last time but do not exist in the current synchronization will be deleted by default.

c. Click **Save**.

3. Click **Sync Now** to synchronize contacts to PBX immediately.

The screenshot shows the configuration interface for synchronizing contacts to a phonebook. Key elements include:

- Synchronize to Phonebook:** A dropdown menu set to 'Create New'.
- Data Synchronization Frequency:** A dropdown menu set to 'Daily'.
- Feedback Email:** A text field containing 'demo@yeastar.com'.
- Phonebook Name:** A text field containing 'Microsoft SQL-Synchronization'.
- Sync Contact Filter Criteria:** A text area containing the SQL query: 'select S(MAP) from testpbx.contacts order by id desc'.
- Sync Now:** A blue button with a yellow highlight and a hand cursor pointing to it.
- Remove existing contacts which are not received from the server:** A checkbox that is currently unchecked.

Result

- A notification banner is appeared, displaying the number of contacts that have been successfully synchronized to PBX.

The screenshot shows a notification banner titled 'Contacts Synchronization'. The banner text reads: 'When the contact synchronization feature is enabled, contacts from the database can be queried in real-time and synchronized to the PBX. If the contact synchronization feature is disabled, contacts from the database can still be queried in real-time, but they will not be synchronized to the PBX.' Below this, a blue banner with a yellow border states: '716 contacts have been synced to the PBX.' The configuration form from the previous screenshot is visible below the banner, with the 'Sync Now' button highlighted.

- You can check the synchronized contacts and their associated phonebook(s) in **Contacts > Company Contacts / Phonebooks**, which are tagged as **Microsoft SQL**.

The screenshot shows the 'Contacts / Phonebooks' management interface. On the left is a sidebar with navigation options like 'Extension and Trunk', 'Contacts', 'Company Contacts', 'Phonebooks', 'LDAP Server', 'Auto Provisioning', and 'Call Control'. The main area displays a table of phonebooks:

Phonebook Name	Total Contacts	Operations
All Company Contacts_Phonebook	716	[Add] [Delete]
Microsoft SQL-Synchronization Microsoft SQL	716	[Add] [Delete]

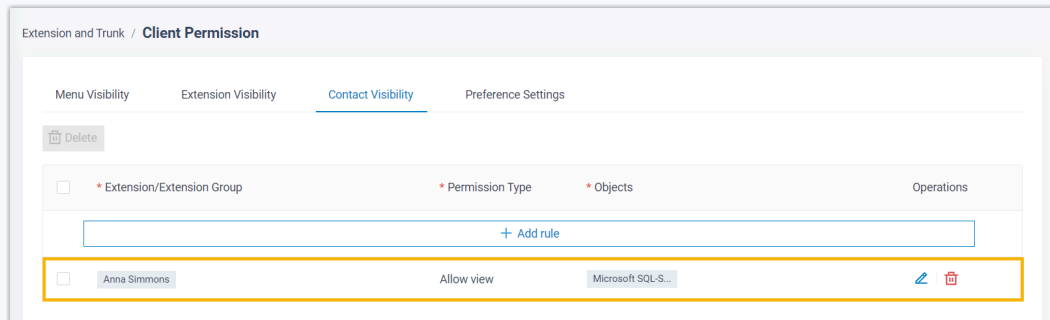
The 'Microsoft SQL-Synchronization' row is highlighted with a yellow border. At the bottom right, there is a pagination control showing 'Total: 2', '1' of 1 page, and '20 / page'.

- Authorized extension users can view and call the contacts directly from Linkus UC Clients.

**Note:**

To achieve this, you need to grant the viewing permission of the associated phonebook to extension users (Path: **Extension and Trunk > Client Permission > Contact Visibility**) and extension users need to upgrade Linkus UC Clients to the specified version, as shown below:

- Linkus iOS Client: Version 5.7.3 or later
- Linkus Android Client: Version 5.7.4 or later
- Linkus Windows Desktop: Version 1.7.3 or later
- Linkus Mac Desktop: Version 1.7.3 or later

**What to do next**

If you want to route inbound calls to specified destinations based on phonebook matches, you need to configure inbound routes to route calls by matching contacts in different phonebooks.

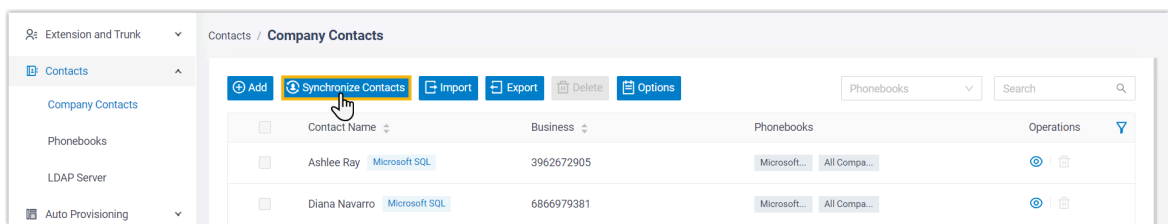
For more information, see [Route Inbound Calls by Matched Phonebook Contacts](#).

Disable Microsoft SQL Integration

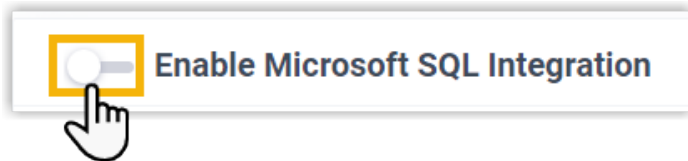
You can disable Microsoft SQL integration on Yeastar P-Series Cloud Edition at any time when you want to pause the database integration.

Procedure

1. Log in to PBX web portal, go to **Contacts > Company Contacts**.
2. At the top of the page, click **Synchronize Contacts**.



3. Turn off the option **Enable Microsoft SQL Integration**.



4. Click **Save**.

Result

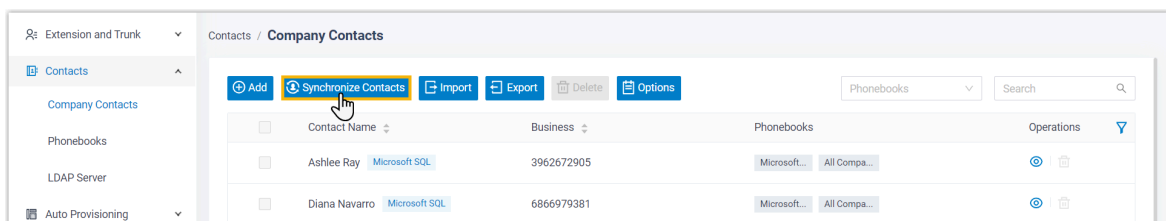
- The **Status** field displays **Disabled**.
- The Microsoft SQL configurations are retained, and can be used directly the next time the integration is enabled again.

Disconnect Microsoft SQL Integration

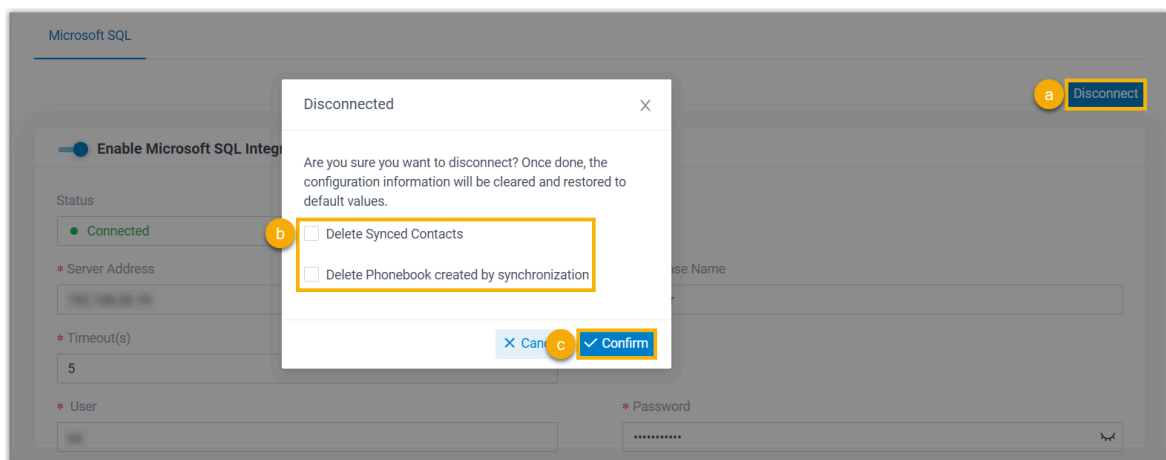
If you want to integrate with another database, you need to disconnect the current Microsoft SQL integration first.

Procedure

1. Log in to PBX web portal, go to **Contacts > Company Contacts**.
2. At the top of the page, click **Synchronize Contacts**.



3. Disconnect Microsoft SQL integration.



- a. At the top-right corner, click **Disconnect**.
- b. **Optional:** To delete the synced contacts or created phonebook, select the checkbox of **Delete Synced Contacts** and **Delete Phonebook created by synchronization**.
- c. Click **Confirm**.

Result

The Microsoft SQL integration is disconnected.