Google Workspace Integration Guide

Yeastar P-Series Software Edition

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Contents
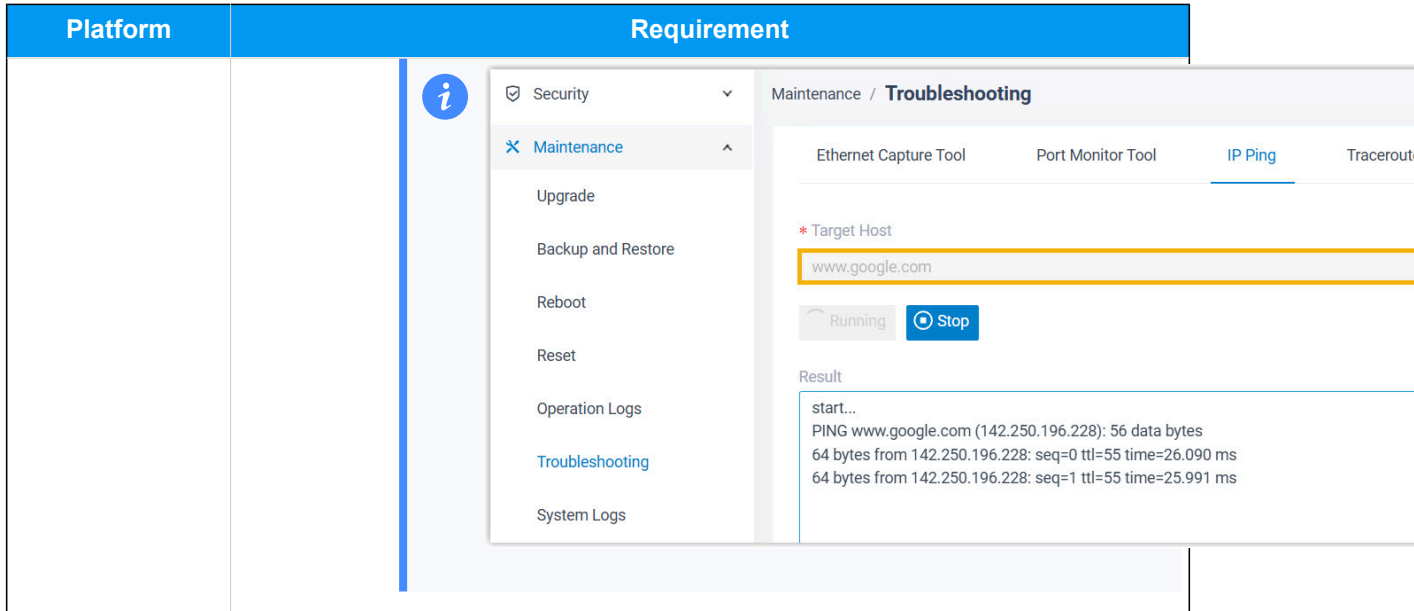
Google Workspace Integration Guide

Yeastar P-Series Software Edition supports the integration with Google Workspace (formerly G Suite), enabling one-way synchronization of user accounts from Google Workspace to the PBX, and allowing Single Sign-on (SSO) for users to log in to Linkus UC Clients using their Google credentials.

Requirements

Platform	Requirement
Google Workspace	• **Edition**: Business or Enterprise edition

Yeastar PBX	• **Firmware**: Version 83.19.0.22 or later
	• **Plan**: Enterprise Plan or Ultimate Plan
	• **Network**:
	  ◦ Well configured with Yeastar FQDN or Public IP (NAT)
	
	Note:
	If you want to implement Google Single Sign-on (SSO), you MUST set up Yeastar PBX with **Yeastar FQDN**, **Yeastar Domain**, or **External Host**, as IP address can't be used as the SSO redirect URI due to Google restriction.
	
	  ◦ Accessible to Google service
	
	Tip:
	You can verify network connectivity using PBX's inbuilt IP Ping feature (Path: **Maintenance > Troubleshooting > IP Ping**):

Platform	Requirement

Key features

The integration of Google Workspace and Yeastar P-Series Software Edition provides the following key features:

Google Workspace User Sync

Support one-way synchronization of user accounts from Google Workspace to Yeastar PBX. User information updates in Google Workspace are automatically synchronized to PBX, thus streamlining user management and reducing manual configuration.

Auto Create Extensions

Automatically create and assign extensions to the synced Google users, allowing them to explore Yeastar PBX's unified communications features through their extensions.

Single Sign-on (SSO)

Allow the synced Google users to log in to Linkus UC Clients using their Google credentials, eliminating the need to remember separate login passwords and simplifies user access.

Integration setup and management

Yeastar P-Series Software Edition integrates with Google Workspace by leveraging Google's OAuth 2.0 protocol for authenticated and authorized API access, enabling access to user data within your organization in a secure manner.

For more information about the integration's setup and management, refer to the followings:

Integration setup

The integration requires minimal configuration. You only need to complete the following configurations on Google and PBX sides:

1. Create resources and credentials on Google side.
    - Create a Google Cloud project to isolate the integration environment.
    - Enable Admin SDK API to allow access to user data within the organization via API.
    - Configure OAuth consent to customize the branding information to be displayed when authorizing the integration.
    - Create a web application and obtain access credentials to authenticate Yeastar PBX to access user data within the organization.
2. Fill in the obtained access credentials on PBX side.

For more information, see [Integrate Yeastar P-Series Software Edition with Google Workspace](#).

Post-integration setup

After the integration is implemented, you should configure PBX to enable Google users to access PBX's unified communications features.

For more information, see [Synchronize Users from Google Workspace to Yeastar P-Series Software Edition](#) and [Allow Users to Log in to Linkus UC Clients with Google SSO](#).

Integration management

Manage the integration as needed, following the topics below:

- [Schedule Automatic User Synchronization](#)
- [Manually Perform User Synchronization](#)
- [Update Client Secret for Google Workspace Integration](#)
- [Pause Google Workspace Synchronization](#)
- [Disable Google Workspace Integration](#)
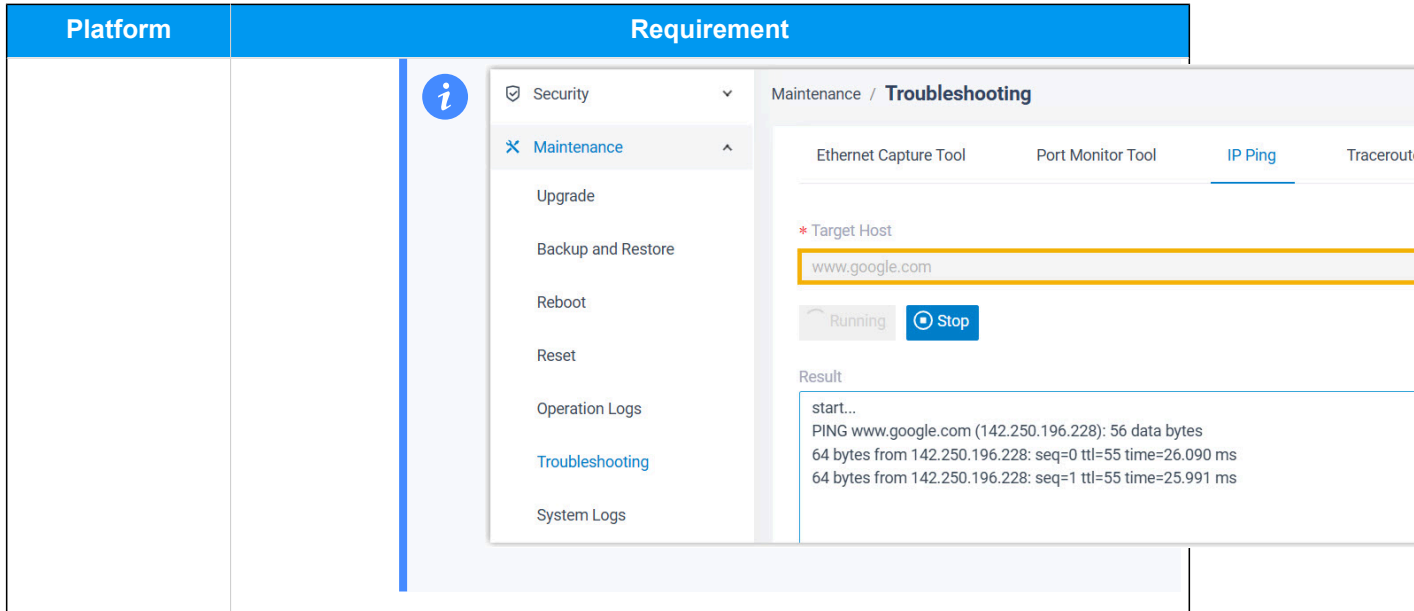- [Disconnect Google Workspace Integration](#)

Set up Google Workspace Integration

Integrate Yeastar P-Series Software Edition with Google Workspace

This topic describes how to integrate Yeastar P-Series Software Edition with Google Workspace.

Requirements

Platform	Requirement
Google Workspace	• **Edition**: Business or Enterprise edition

Yeastar PBX	• **Firmware**: Version 83.19.0.22 or later
	• **Plan**: Enterprise Plan or Ultimate Plan
	• **Network**:
	  ◦ Well configured with Yeastar FQDN or Public IP (NAT)
	
	    📝 **Note:**
	    If you want to implement Google Single Sign-on (SSO), you MUST set up Yeastar PBX with **Yeastar FQDN**, **Yeastar Domain**, or **External Host**, as IP address can't be used as the SSO redirect URI due to Google restriction.
	
	  ◦ Accessible to Google service
	
	    ℹ️ **Tip:**
	    You can verify network connectivity using PBX's inbuilt IP Ping feature (Path: **Maintenance > Troubleshooting > IP Ping**):

| Platform	Requirement

Step 1. Obtain Redirect URIs from Yeastar PBX

Obtain redirect URIs from Yeastar P-Series Software Edition, which are required for the subsequent configuration in Google Workspace.

1. Access the configuration page of Google Workspace integration.
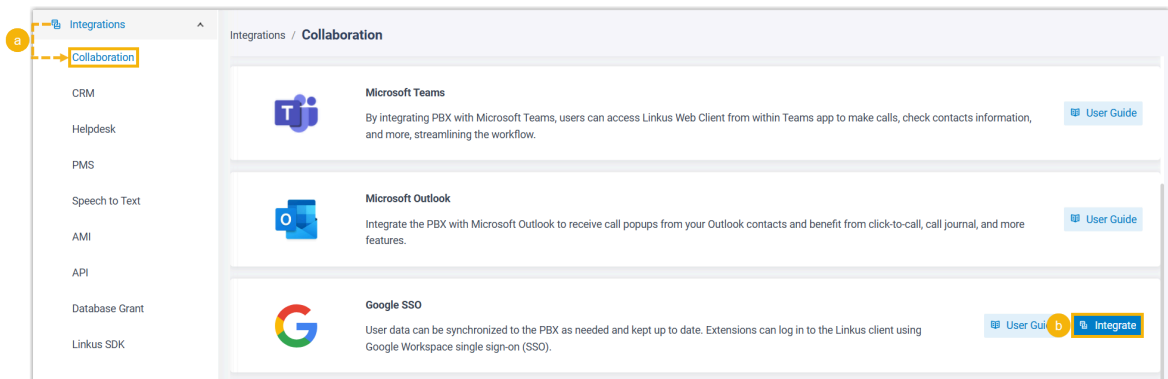
    a. Log in to PBX web portal, go to **Integrations > Collaboration**.

    b. On the right of **Google SSO**, click **Integrate**.

2. In the **App Registration** section, select and note down the following redirect URIs.
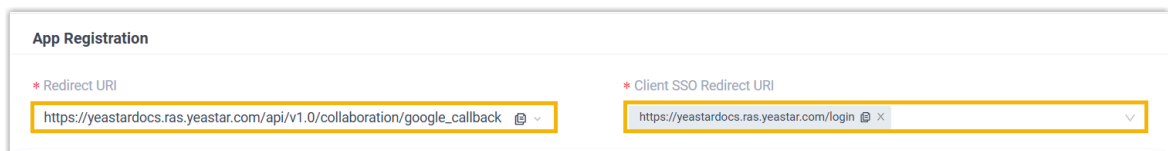
- **Redirect URI**: The URL to which you are redirected after the integration authentication is completed.
- **Client SSO Redirect URI**: The URL via which users can sign in to Linkus UC Clients using their Google credentials.

> ⚠️ **Important:**
> Do NOT select the public IP, as IP address can't be used as the SSO redirect URI due to Google restriction.

Step 2. Create resources and credentials in Google Workspace

Create a Cloud project for the integration and configure the required API settings using a super admin account.

1. Create a dedicated Cloud project under your organization.
   a. Log in to [Google Cloud console](#), search `Create a Project` and select it from the search results.
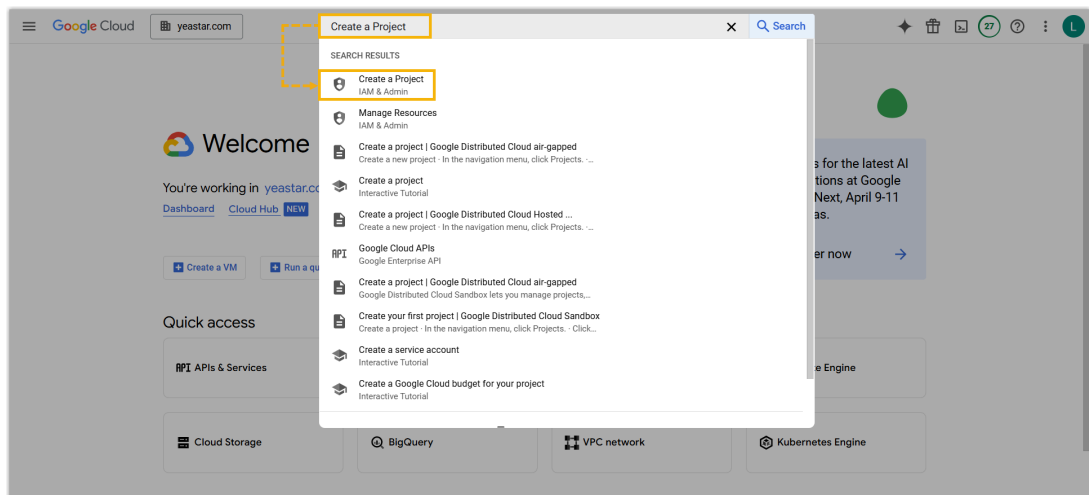
   b. Set up the project, then click **Create**.

- **Project name**: Enter a name to help you identify the project.
- **Organization**: Select an organization to associate with the project.
- **Location**: Select an organization to associate with the project.

2. Enable Admin SDK API in the Cloud project to allow access to user data within the organization via API.

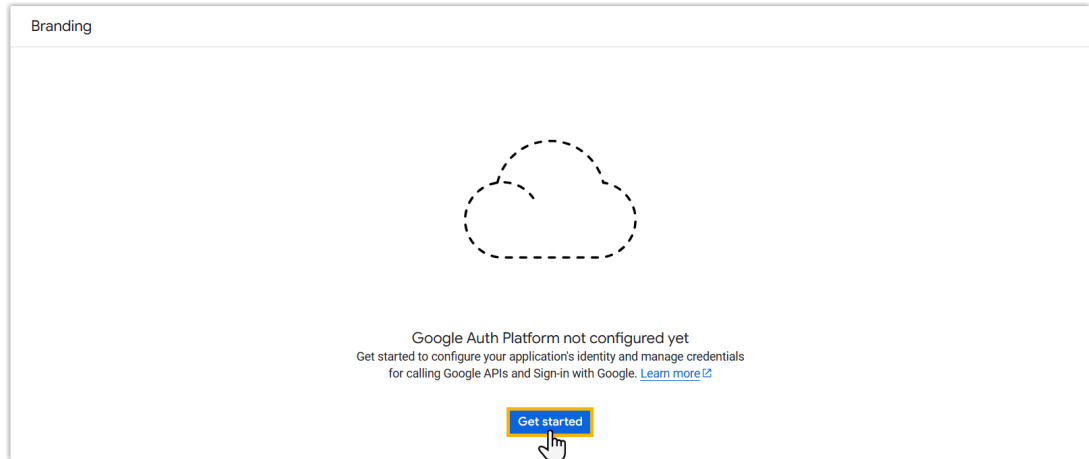   a. In the search bar, search `Admin SDK API` and select it from the search results.
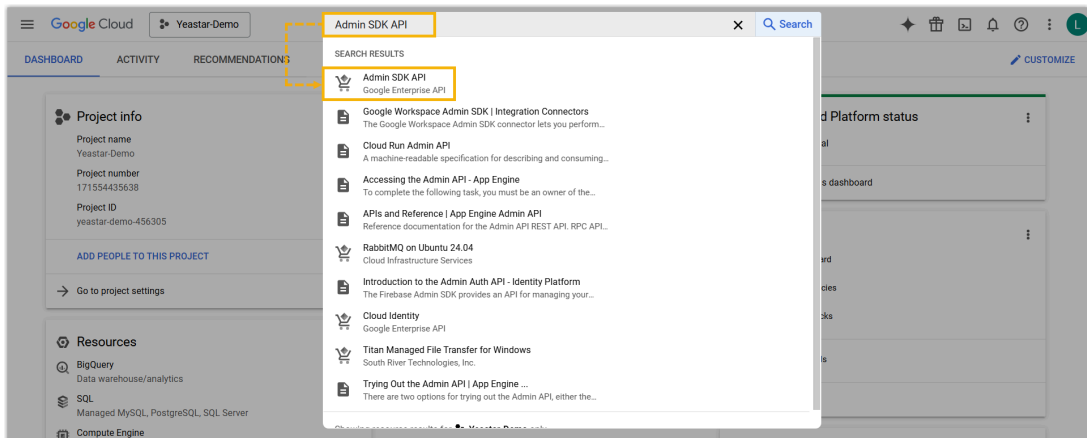
   b. Click **ENABLE**.
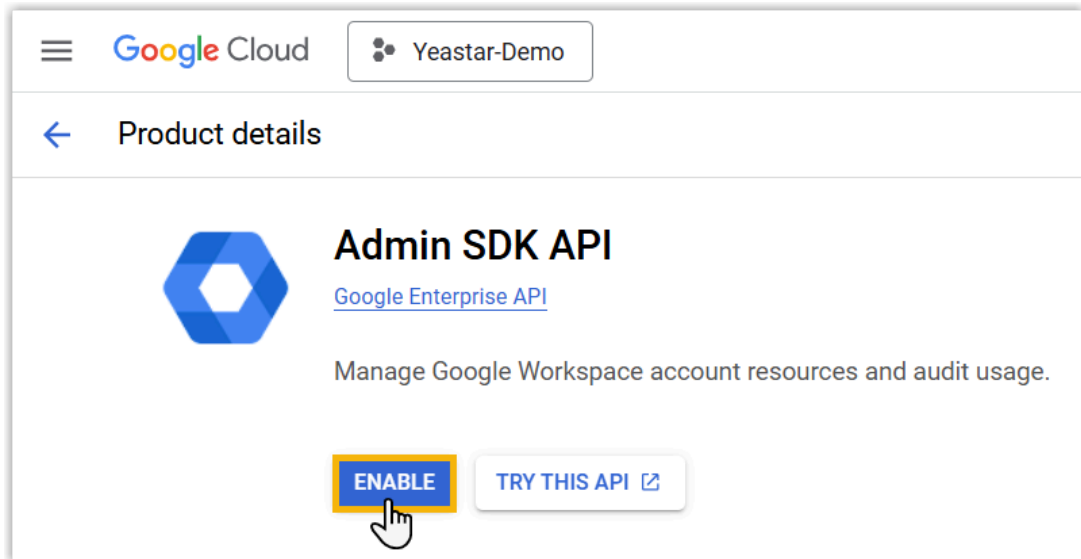
3. Configure OAuth consent screen to customize branding information, which will be displayed when you authorize access to an application (which will be created later).

a. In the search bar, search `Branding` and select it from the search results.
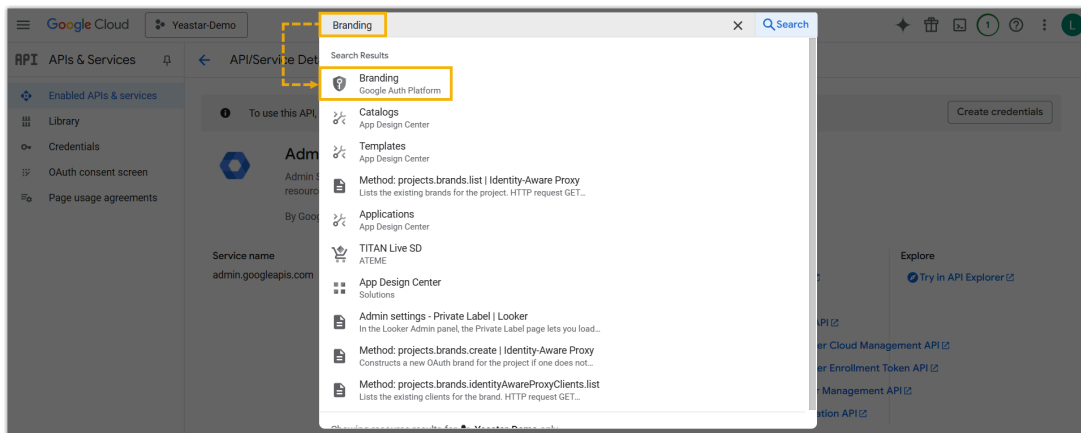
b. Click **Get Started**.

c. Follow the wizard to complete the settings below.

1 App Information

App name *
Yeastar

The name of the app asking for consent

User support email *
demo@yeastar.com

For users to contact you with questions about their consent. Learn more

Next

2 Audience

◉ Internal ⑦

Only available to users within your organization. You will not need to submit your app for verification. Learn more about user type

◯ External ⑦

Available to any test user with a Google Account. Your app will start in testing mode and will only be available to users you add to the list of test users. Once your app is ready to push to production, you may need to verify your app. Learn more about user type

Next

3 Contact Information

Email addresses *
demo@yeastar.com ⊗

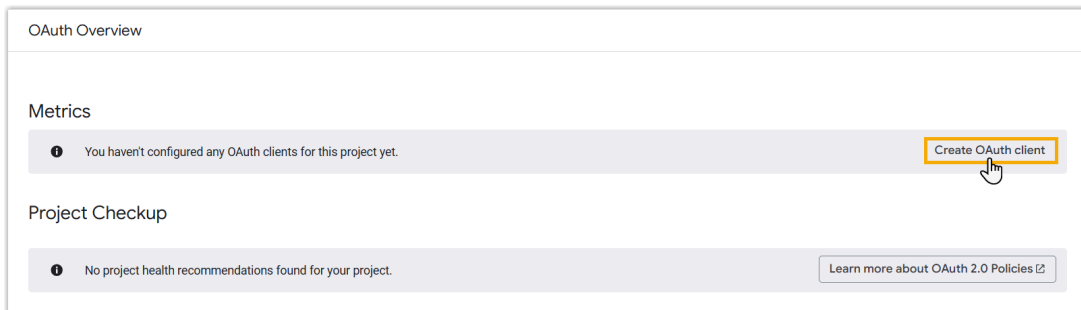These email addresses are for Google to notify you about any changes to your project.

Next

4 Finish

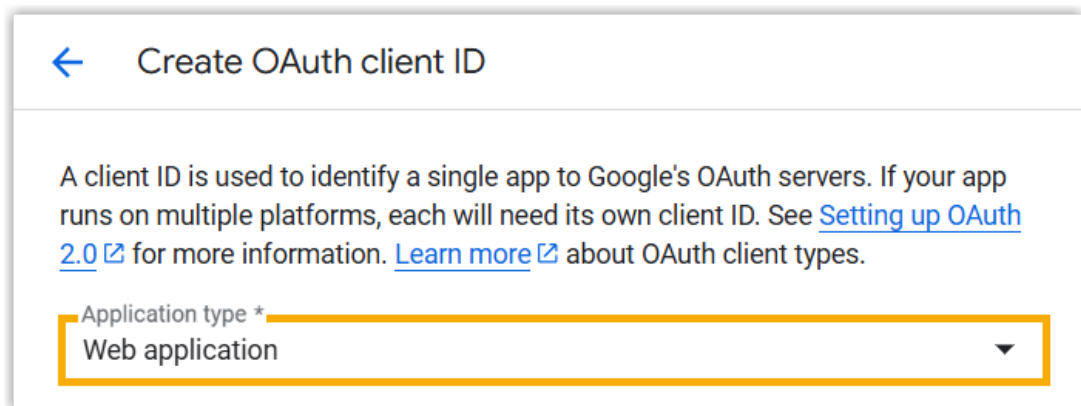☑ I agree to the Google API Services: User Data Policy.

Continue

Create   Cancel

4. Create a web application and obtain access credentials to authenticate Yeastar PBX to access user data within the organization.

   a. Click **Create OAuth client**.

   b. In the **Application type** drop-down list, select **Web application**.

   c. In the **Name** field, enter a name to help you identify the application.
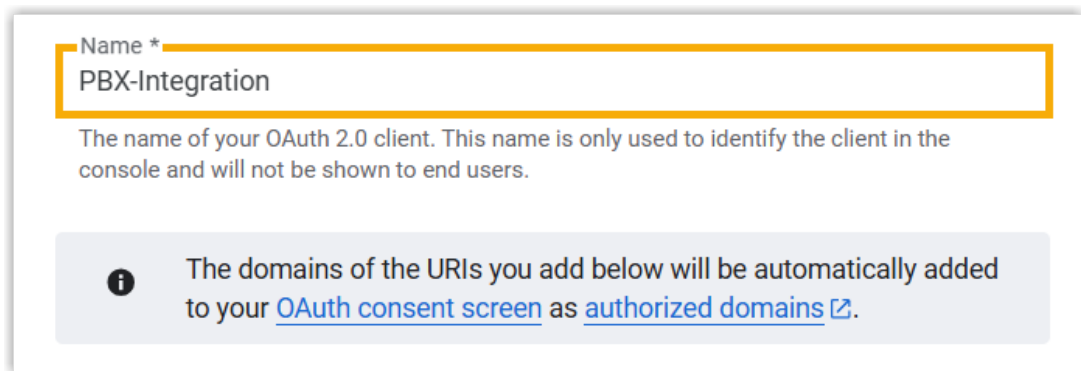
   d. In the **Authorized redirect URIs** section, add the redirect URIs that you have obtained from Yeastar P-Series Software Edition.

   > ⚠ **Important:**

> ⚠ Do NOT add the public IP, as IP address can't be used as the SSO redirect URI due to Google restriction.

e. Click **Create**.

Access credentials are created and displayed in the pop-up window.

f. Copy and note down the client ID and client secret, which are required for the subsequent configuration in Yeastar PBX.
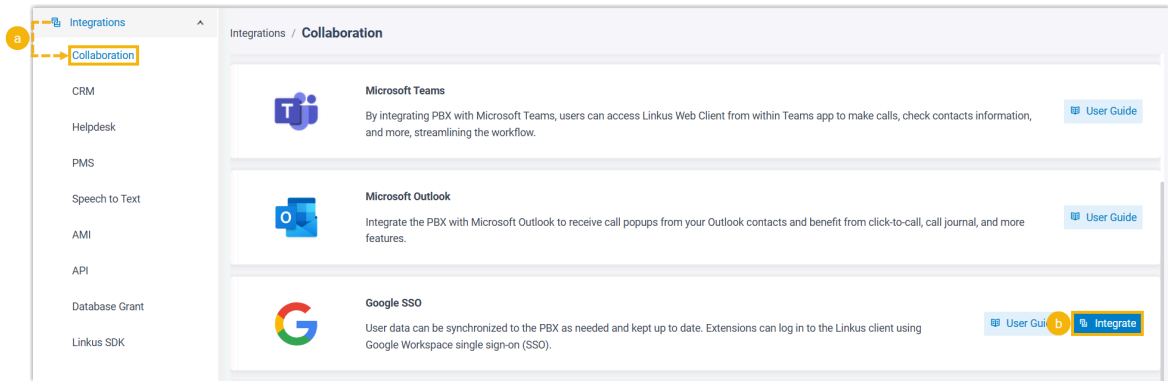
Note:

If you don't see the client secret, click **Download JSON** to get the credentials, or refer to the instructions below.


Step 3. Connect Yeastar PBX and Google Workspace

Enter the obtained client ID and client secret into Yeastar PBX to implement the integration.

1. Access the configuration page of Google Workspace integration.

a. Log in to PBX web portal, go to **Integrations > Collaboration**.

b. On the right of **Google SSO**, click **Integrate**.

2. In the **Certificates & Secrets** section, paste the [credentials](#) that you have obtained from Google Workspace.
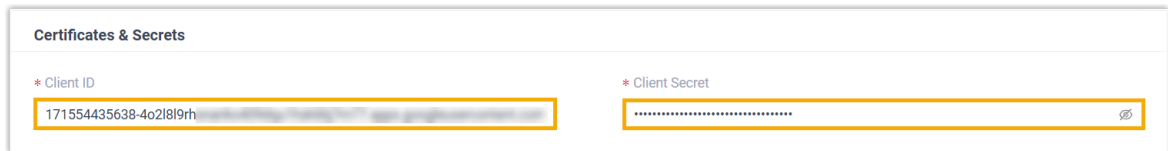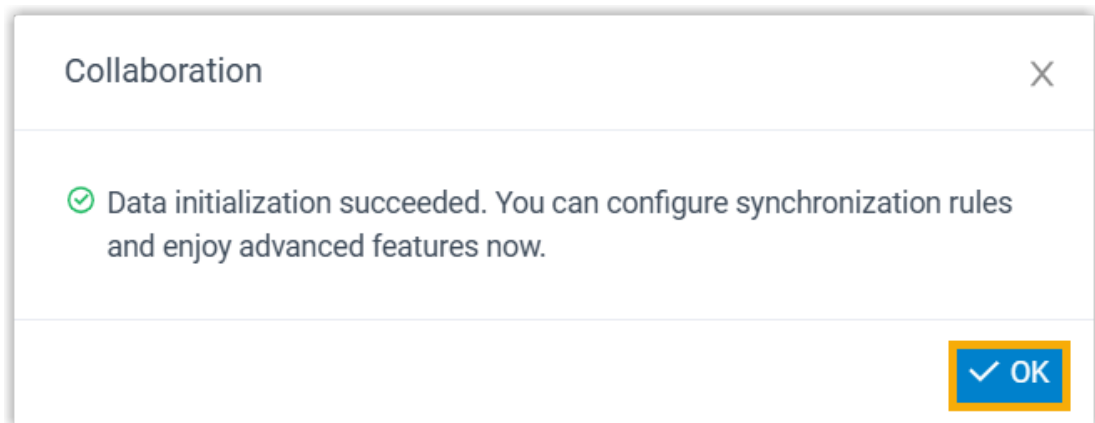

3. Click **Save**.

You are redirected to the Google sign-in page.

4. Sign in to your Google Workspace super admin account and authorize the web application to access user data within your organization.
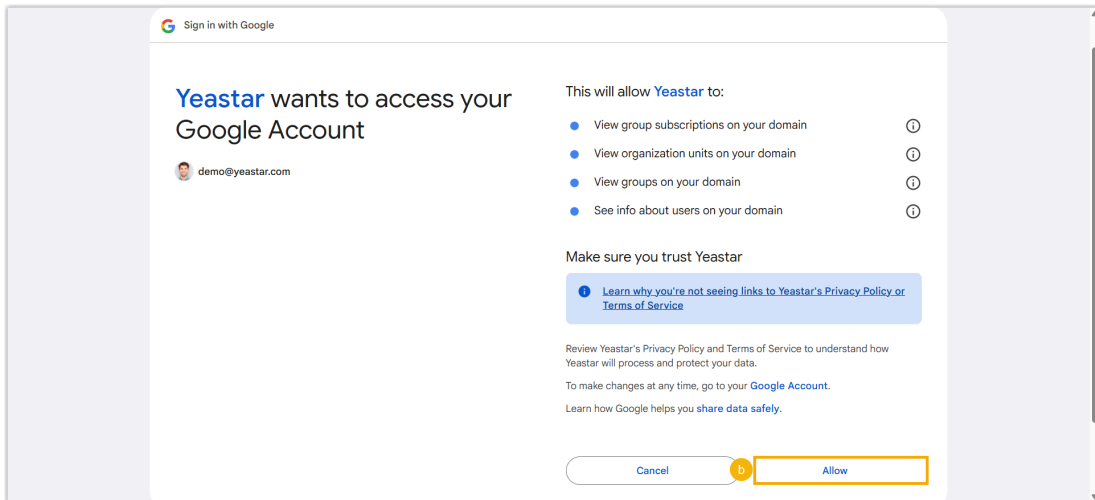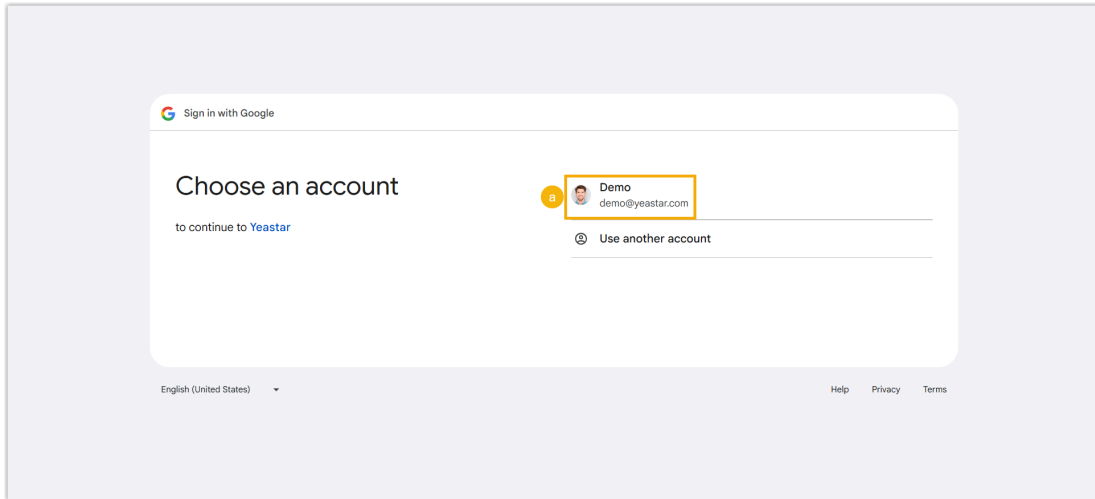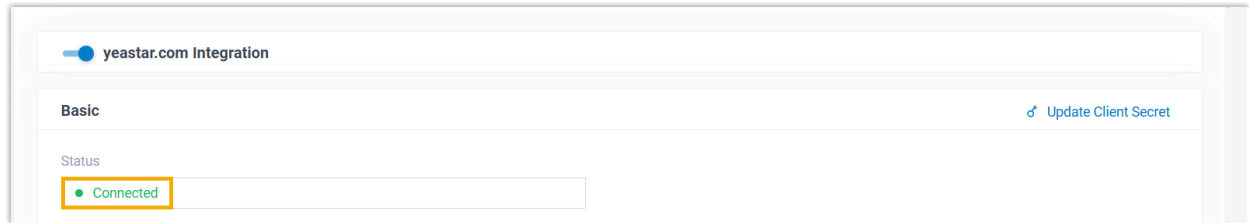
5. On PBX web portal, click **OK** to close the dialog box.

Result

The status of the integration displays **Connected**, indicating that the PBX is successfully connected to your Google Workspace.

What to do next

[Synchronize Users from Google Workspace to Yeastar P-Series Software Edition](#).

Synchronize Users from Google Workspace to Yeastar P-Series Software Edition

After integrating Yeastar P-Series Software Edition with Google Workspace, you need to synchronize Google user accounts to Yeastar PBX and assign them extensions, so that the users can engage in business communications using their office extensions.

Introduction

Before you begin, read the following information on the supported number and scope of user synchronization.

Number of users supported for synchronization

The number of users that can be synchronized from Google Workspace depends on the number of extensions that PBX system can create.

### Scopes of user for synchronization

Yeastar PBX allows you to flexibly define the synchronization scope for Google users. Refer to the following table for more details.

| Synchroniza tion scope	Description	Instruction
Synchronize all users	Synchronize all users within the organization, regardless of their status.	[Synchronize all Google users to Yeastar PBX](#)

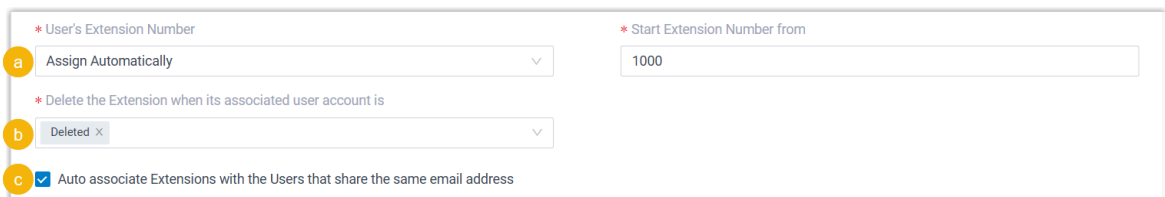| Synchronization scope	Description	Instruction
	Extensions will be automatically created and associated with the synced users based on your assignment rule.	
Synchronize users in specific organizational unit	Synchronize users from specific organizational unit(s), excluding deleted users. Extensions will be automatically created and associated with the synced users based on your assignment rule.	Synchronize Google users in specific organizational unit to Yeastar PBX
Synchronize users in specific group	Synchronize users from specific group(s), excluding deleted users. Extensions will be automatically created and associated with the synced users based on your assignment rule.	Synchronize Google users in specific group to Yeastar PBX
Synchronize specific users	Synchronize manually selected users, excluding archived and deleted users. You need to assign extensions manually for the synced users. **Note:** This requires you to create extensions in advance before you set up user synchronization from Google Workspace.	Synchronize specific Google users to Yeastar PBX

Synchronize all Google users to Yeastar PBX

1. Access the configuration page of user synchronization.
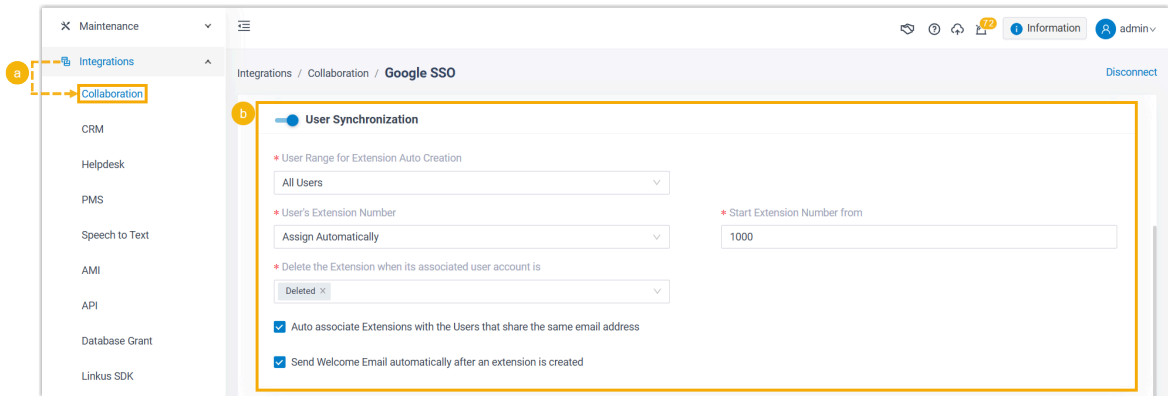
a. Log in to PBX web portal, go to **Integrations > Collaboration**.

b. Scroll down to the **User Synchronization** section.

2. In the **User Range for Extension Auto Creation** drop-down list, select **All Users**.
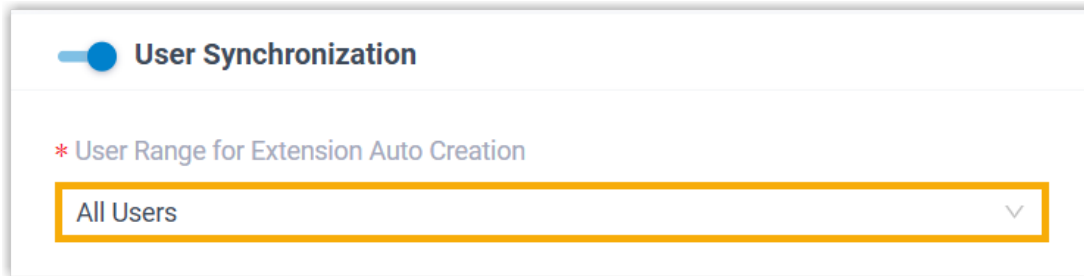
3. Set up extension assignment policies to define how the synced Google users are associated with PBX extensions.
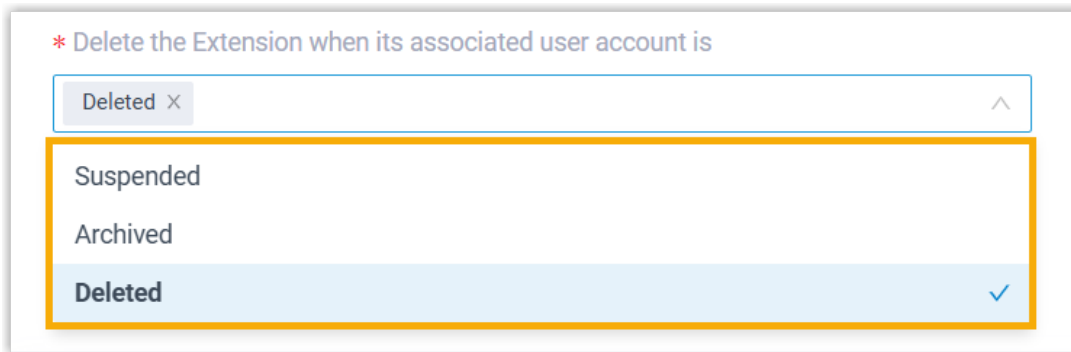

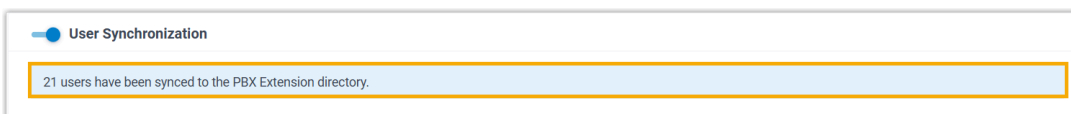a. In the **User's Extension Number** drop-down list, select a rule for assigning extensions.

Item	Description
Assign Automatically	Assign extension numbers from a specific starting number. If you select this option, you need to specify a starting number in the **Start Extension Number from** field.
Read Specific Property Value	Assign extension numbers based on the value of a specific user account property.

Item	Description
	If you select this option, you need to specify a property name in the **Property Name** field. **Example**: externalIds.#(type=="organization").value

b. In the **Delete the Extension when its associated user account is** drop-down list, select the account status(es) at which PBX will stop synchronizing the users, and delete their associated extensions.

c. In the **Auto associate Extensions with the Users that share the same email address** option, set whether to synchronize the Google users who have the same email addresses as existing extensions.

- If selected, the users with same mailboxes will be synchronized to PBX and associated with the existing extensions.

  The extensions' user information will be overwritten by that of the users.
- If unselected, the users with same mailboxes will NOT be synchronized to PBX, as Yeastar PBX does NOT allow duplicated email addresses.

4. If you want to send Linkus Welcome Email to the synced users, select the checkbox of **Send Welcome Email automatically after an extension is created**.

5. Click **Save**.

PBX will perform the initial user synchronization immediately. When the synchronization is completed, the followings are achieved:

- A notification banner appears to show the synchronization result.

- All Google users are synchronized to the PBX and assigned extensions (Path: **Extension and Trunk > Extension**). These extensions are marked with ![G], and can NOT be deleted from PBX.
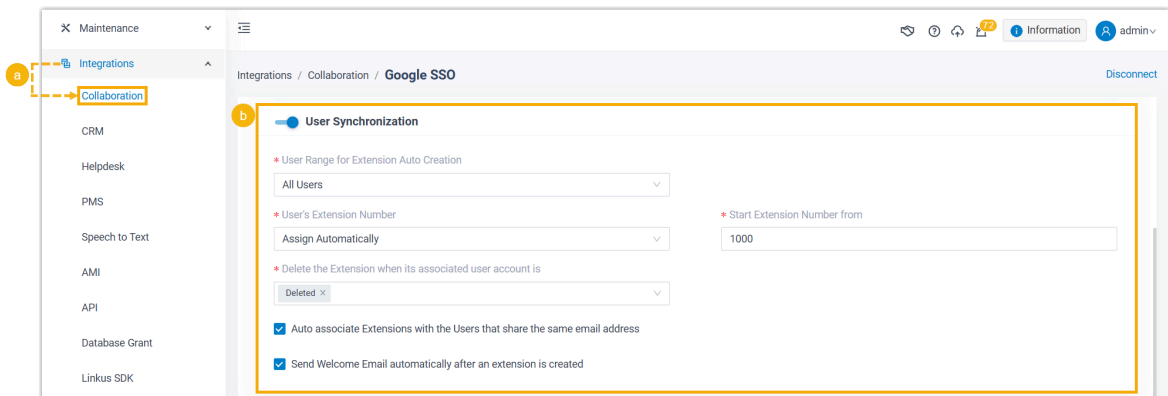
> **Note:**
>
> The **First Name**, **Last Name**, **Email Address**, **Mobile Number**, and **Job Title** of these extensions are synchronized from Google. Therefore, they can only be updated in Google, and the changes will be reflected to the PBX during a synchronization.

Synchronize Google users in specific organizational unit to Yeastar PBX
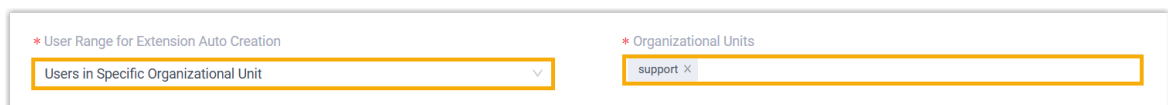
1. Access the configuration page of user synchronization.

    a. Log in to PBX web portal, go to **Integrations > Collaboration**.

    b. Scroll down to the **User Synchronization** section.

2. Set the system to synchronize users from specific organizational unit(s).

a. In the **User Range for Extension Auto Creation** drop-down list, select **Users in Specific Organizational Unit**.

b. In the **Organizational Units** drop-down list, select one or more organization units.

3. Set up extension assignment policies to define how the synced Google users are associated with PBX extensions.

a. If you want the system to automatically delete the extensions associated with out-of-sync Google users, select the checkbox of **Auto delete the Extensions no longer in sync**.
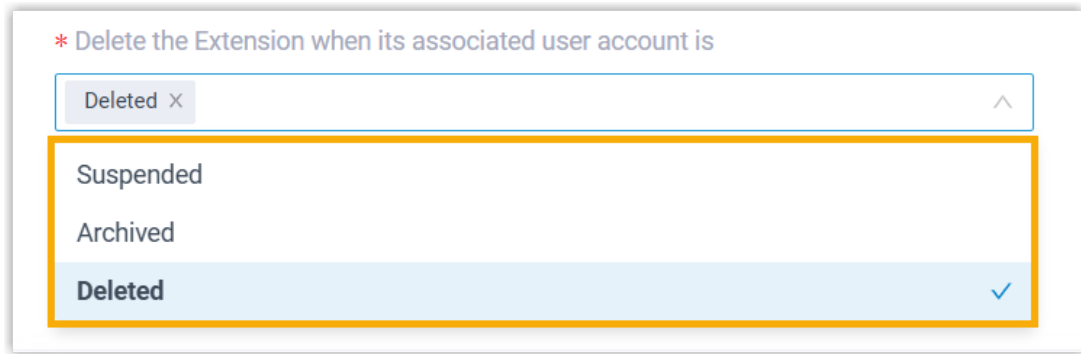
> ✏ **Note:**
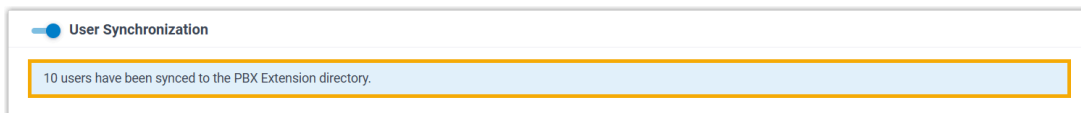> This helps automatically remove unused extensions when the user synchronization scope changes.

b. In the **User's Extension Number** drop-down list, select a rule for assigning extensions.

Item	Description
Assign Automatically	Assign extension numbers from a specific starting number. If you select this option, you need to specify a starting number in the **Start Extension Number from** field.
Read Specific Property Value	Assign extension numbers based on the value of a specific user account property. If you select this option, you need to specify a property name in the **Property Name** field. **Example**: externalIds.#(type=="organization").value

c. In the **Delete the Extension when its associated user account is** drop-down list, select the account status(es) at which PBX will stop synchronizing the users, and delete their associated extensions.

d. In the **Auto associate Extensions with the Users that share the same email address** option, set whether to synchronize the Google users who have the same email addresses as existing extensions.

- If selected, the users with same mailboxes will be synchronized to PBX and associated with the existing extensions.

  The extensions' user information will be overwritten by that of the users.
- If unselected, the users with same mailboxes will NOT be synchronized to PBX, as Yeastar PBX does NOT allow duplicated email addresses.

4. If you want to send Linkus Welcome Email to the synced users, select the checkbox of **Send Welcome Email automatically after an extension is created**.

5. Click **Save**.

   PBX will perform the initial user synchronization immediately. When the synchronization is completed, the followings are achieved:

   - A notification banner appears to show the synchronization result.

   - Google users in the specified organizational unit(s) are synchronized to the PBX and assigned extensions (Path: **Extension and Trunk > Extension**). These extensions are marked with , and can NOT be deleted from PBX.
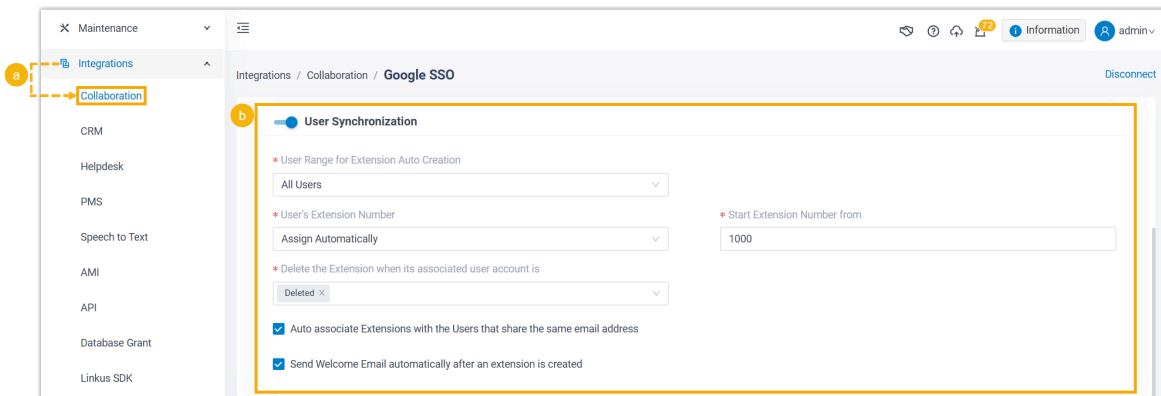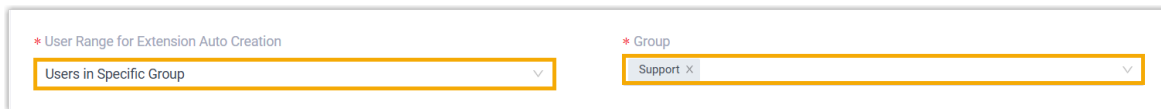
> **Note:**
>
> The **First Name**, **Last Name**, **Email Address**, **Mobile Number**, and **Job Title** of these extensions are synchronized from Google. Therefore, they can only be updated in Google, and the changes will be reflected to the PBX during a synchronization.

Synchronize Google users in specific group to Yeastar PBX

1. Access the configuration page of user synchronization.

    a. Log in to PBX web portal, go to **Integrations > Collaboration**.

    b. Scroll down to the **User Synchronization** section.

2. Set the system to synchronize users from specific group(s).

  a. In the **User Range for Extension Auto Creation** drop-down list, select **Users in Specific Group**.

  b. In the **Group** drop-down list, select one or more groups.

3. Set up extension assignment policies to define how the synced Google users are associated with PBX extensions.

  a. If you want the system to automatically delete the extensions associated with out-of-sync Google users, select the checkbox of **Auto delete the Extensions no longer in sync**.

> **Note:**
> This helps automatically remove unused extensions when the user synchronization scope changes.

  b. In the **User's Extension Number** drop-down list, select a rule for assigning extensions.

Item	Description
Assign Automatically	Assign extension numbers from a specific starting number.
	If you select this option, you need to specify a starting number in the **Start Extension Number from** field.
Read Specific Property Value	Assign extension numbers based on the value of a specific user account property.
	If you select this option, you need to specify a property name in the **Property Name** field.
	Example: externalIds.#(type=="organization").value

  c. In the **Delete the Extension when its associated user account is** drop-down list, select the account status(es) at which PBX will stop synchronizing the users, and delete their associated extensions.

d. In the **Auto associate Extensions with the Users that share the same email address** option, set whether to synchronize the Google users who have the same email addresses as existing extensions.

- • If selected, the users with same mailboxes will be synchronized to PBX and associated with the existing extensions.

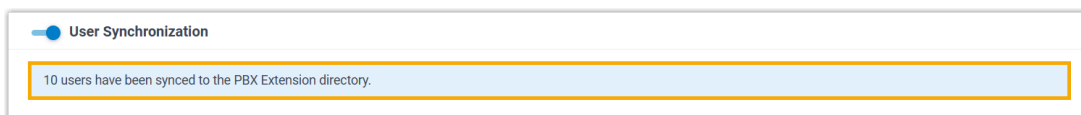 The extensions' user information will be overwritten by that of the users.

- • If unselected, the users with same mailboxes will NOT be synchronized to PBX, as Yeastar PBX does NOT allow duplicated email addresses.

4. If you want to send Linkus Welcome Email to the synced users, select the checkbox of **Send Welcome Email automatically after an extension is created**.

5. Click **Save**.

PBX will perform the initial user synchronization immediately. When the synchronization is completed, the followings are achieved:

- • A notification banner appears to show the synchronization result.

- • Google users in the specified group(s) are synchronized to the PBX and assigned extensions (Path: **Extension and Trunk > Extension**). These extensions are marked with , and can NOT be deleted from PBX.
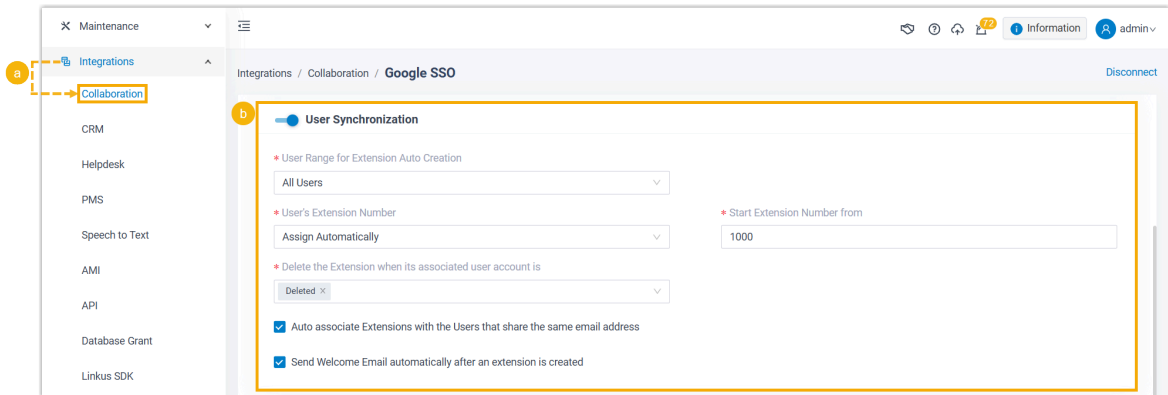

> **Note:**
>
> The **First Name**, **Last Name**, **Email Address**, **Mobile Number**, and **Job Title** of these extensions are synchronized from Google. Therefore, they can only be updated in Google, and the changes will be reflected to the PBX during a synchronization.

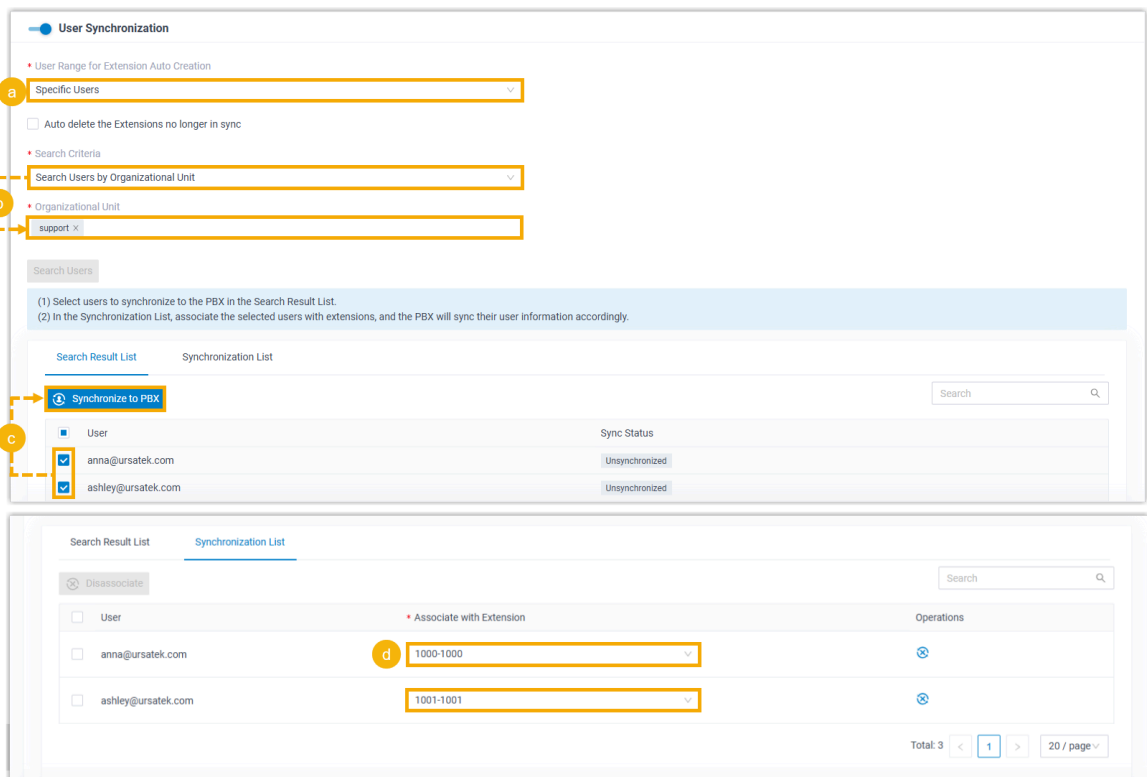# Synchronize specific Google users to Yeastar PBX

1. Access the configuration page of user synchronization.

    a. Log in to PBX web portal, go to **Integrations > Collaboration**.

    b. Scroll down to the **User Synchronization** section.

2. Set the system to synchronize specific users and manually assign extensions to the users.

    a. In the **User Range for Extension Auto Creation** drop-down list, select **Specific Users**.

b. In the **Search Criteria** drop-down list, set whether to search users by organizational unit or by group. Then specify the target unit or group, and click **Search Users**.
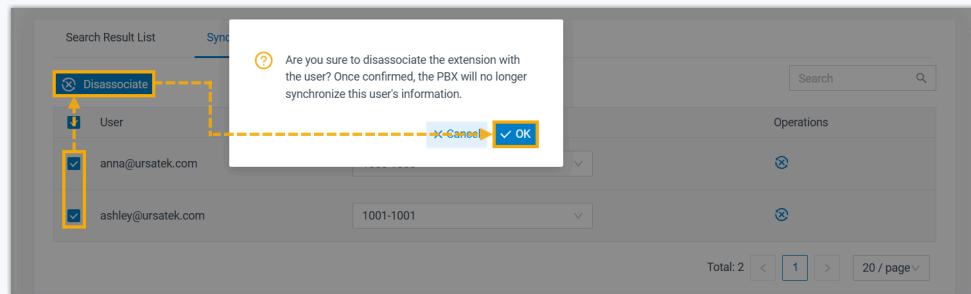
Users that match the selected criteria are listed in the search results.

c. In the **Search Result List** section, select the checkboxes of the desired users, then click **Synchronize to PBX**.

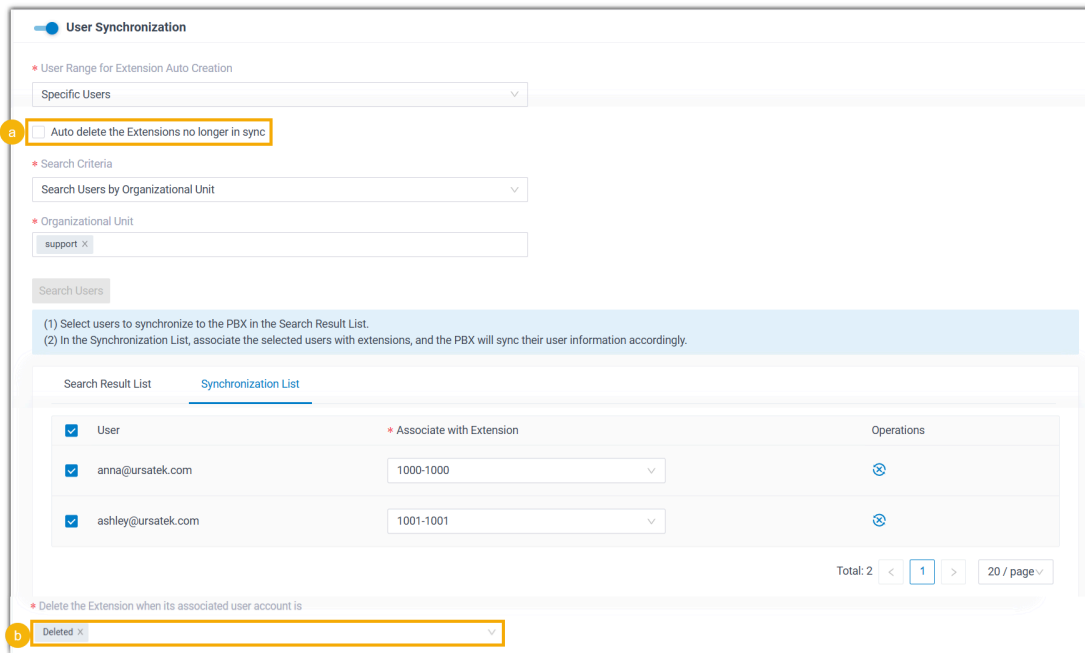d. In the **Synchronization List**, select an extension from the drop-down list to associate with the user.

> ✏️ **Note:**
> In case you want to cancel syncing a selected Google user, proceed as follows:
>
>

3. Set up extension management policies to define how to handle the extensions associated with Google users when the user synchronization scope or user account status changes.

a. If you want the system to automatically delete the extensions associated with out-of-sync Google users, select the checkbox of **Auto delete the Extensions no longer in sync**.

> ✏️ **Note:**
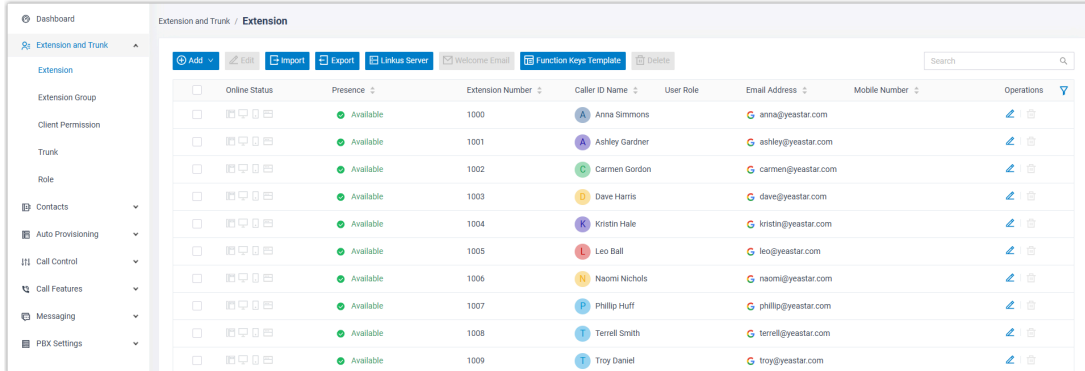> This helps automatically remove unused extensions when the user synchronization scope changes.

b. In the **Delete the Extension when its associated user account is** drop-down list, select the account status(es) at which PBX will stop synchronizing the users, and delete their associated extensions.

4. If you want to send Linkus Welcome Email to the synced users, select the checkbox of **Send Welcome Email automatically after an extension is created**.

5. Click **Save**.

PBX will perform the initial user synchronization immediately. When the synchronization is completed, the followings are achieved:

• A notification banner appears to show the synchronization result.
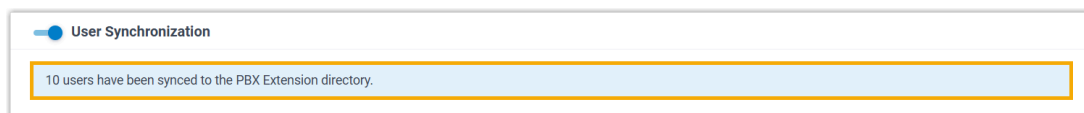
- The specified Google users are synchronized to PBX and assigned extensions (Path: **Extension and Trunk > Extension**). These extensions are marked with G, and can NOT be deleted from PBX.

> **Note:**
>
> The **First Name**, **Last Name**, **Email Address**, **Mobile Number**, and **Job Title** of these extensions are synchronized from Google. Therefore, they can only be updated in Google, and the changes will be reflected to the PBX during a synchronization.

What to do next

If you want to allow the synced users to log in to Linkus UC Clients using their Google accounts, you need to configure the Single Sign-on (SSO) feature.

For more information, see [Allow Users to Log in to Linkus UC Clients with Google SSO](#).

Allow Users to Log in to Linkus UC Clients with Google SSO

After synchronizing users from Google Workspace to Yeastar P-Series Software Edition, you can enable the Single Sign-on (SSO) feature, allowing the synced users to log in to Linkus UC Clients using their Google credentials.
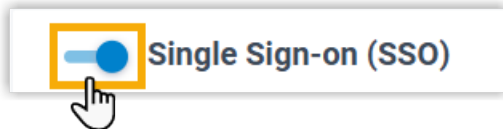
Prerequisites

- [You have integrated Yeastar P-Series Software Edition with Google Workspace](#).

- You have synchronized users from Google Workspace to Yeastar P-Series Software Edition.

Procedure

1. Log in to PBX web portal, go to **Integrations > Collaboration**.
2. Scroll down to the **Single Sign-on (SSO)** section, then turn on the switch.

Client SSO Redirect URI field displays the URL via which users can log in to Linkus UC Clients using their Google credentials.

> ✏️ **Note:**
> Make sure the Client SSO Redirect URI is added to the Google application.
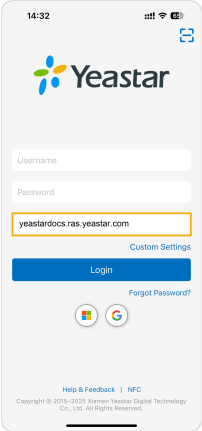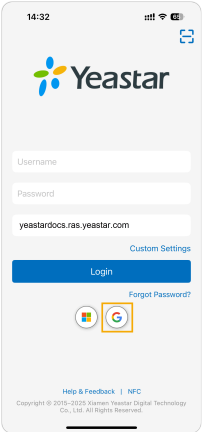
3. Click **Save**.

Result

The synced users can directly log in to Linkus UC Clients using their Google credentials.
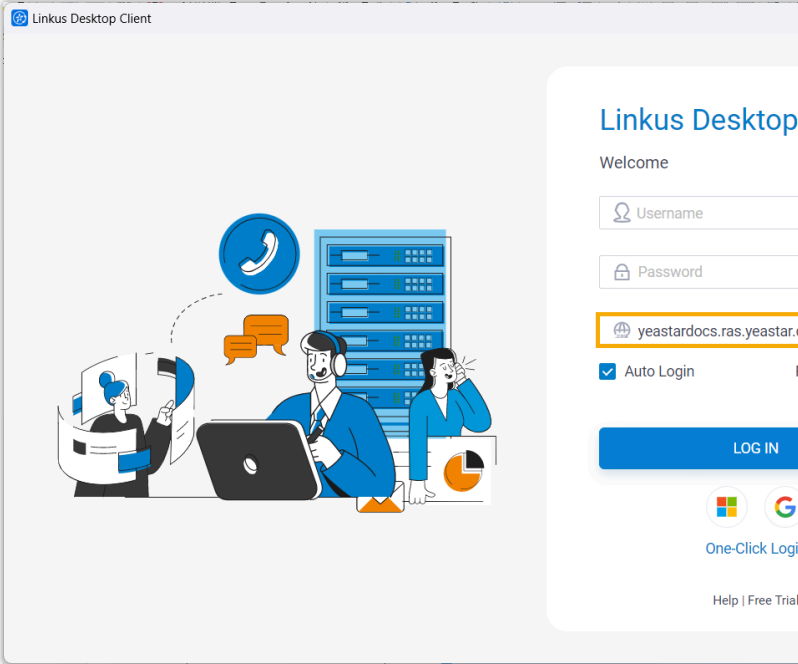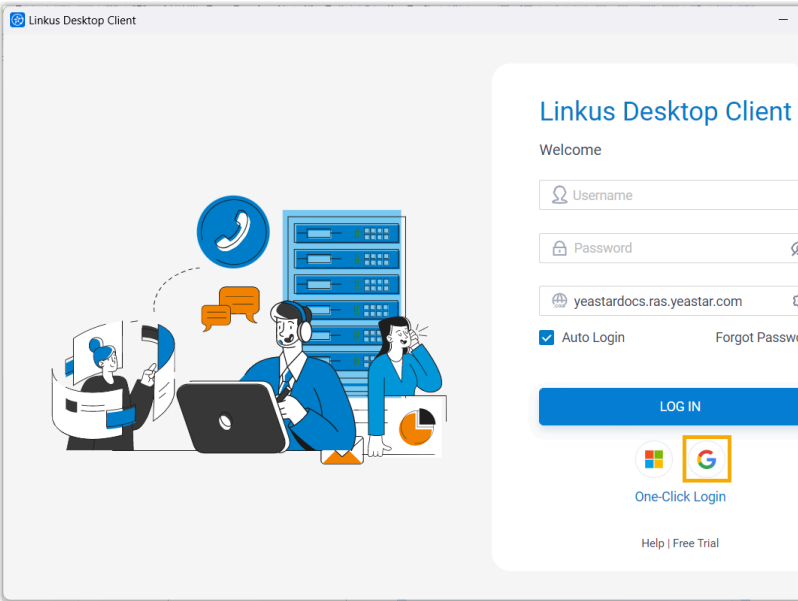
What to do next

Instruct users on how to log in to Linkus UC Clients using their Google credentials.

Client	Instruction
Linkus Mobile Client	1. Upgrade Linkus Mobile Client. • For Linkus iOS Client: Version 5.14.3 or later • For Linkus Android Client: Version 5.14.4 or later 2. In the **SN/Domain** field, enter the PBX address that is allowed for Google SSO.

Client	Instruction
	3. Tap ![G], and sign in with Google credentials.
Linkus Desktop Client	1. Upgrade Linkus Desktop Client to version 1.12.4 or later.
	2. In the **Domain** field, enter the PBX address that is allowed for Google SSO.

Client	Instruction
	  3. Click G, and sign in with Google credentials.
Linkus Web Client	1. Access Linkus Web Client using the PBX address that is allowed for Google SSO. 2. Click G, and sign in with Google credentials.

Client	Instruction

Manage Google Workspace Integration

Schedule Automatic User Synchronization

By default, Yeastar P-Series Software Edition automatically performs user synchronization at 00:30 everyday. You can customize the automatic synchronization schedule to synchronize users from Google Workspace to Yeastar P-Series Software Edition at a specified time.

Procedure

1. Log in to PBX web portal, go to **Integrations > Collaboration**.
2. In the **Basic** section, select the data synchronization frequency and set a specific time.

> ✏️ **Note:**
> It's recommended to schedule synchronization during non-office hours.


3. Click **Save**.

Result

The PBX system will automatically perform periodic synchronizations according to the schedule.

Manually Perform User Synchronization

In case you want to immediately apply a new synchronization rule or update the information changes from Google Workspace to Yeastar P-Series Software Edition, you can manually start a synchronization.

Procedure

1. Log in to PBX web portal, go to **Integrations > Collaboration**.
2. In the **Basic** section, click **Update Now**.
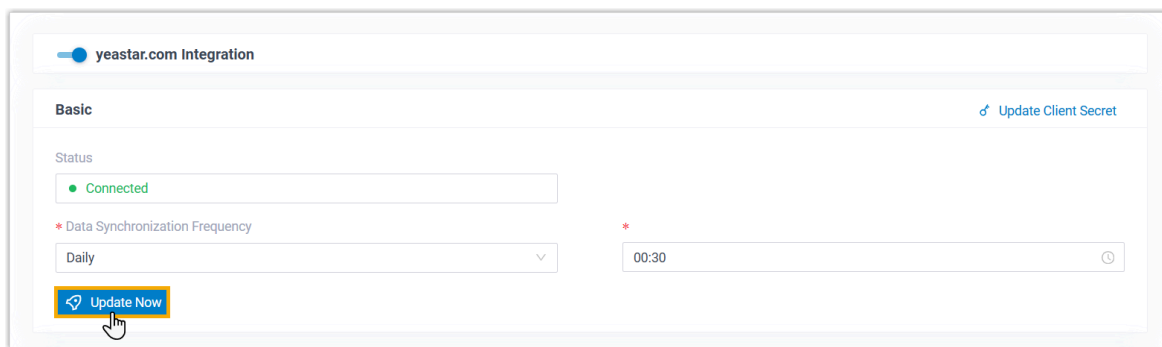
Result
The PBX system immediately performs user synchronization once.
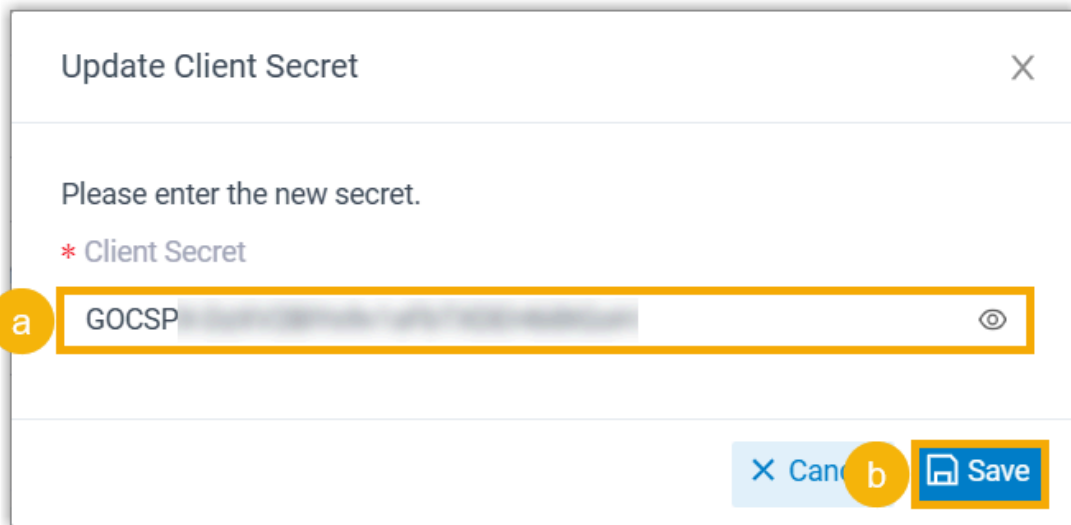
Update Client Secret for Google Workspace Integration

In case you want to replace client secret for the integration, you can follow this topic to proceed.

Procedure

1. Log in to PBX web portal, go to **Integrations > Collaboration**.
2. At the top-right of the **Basic** section, click **Update Client Secret**.
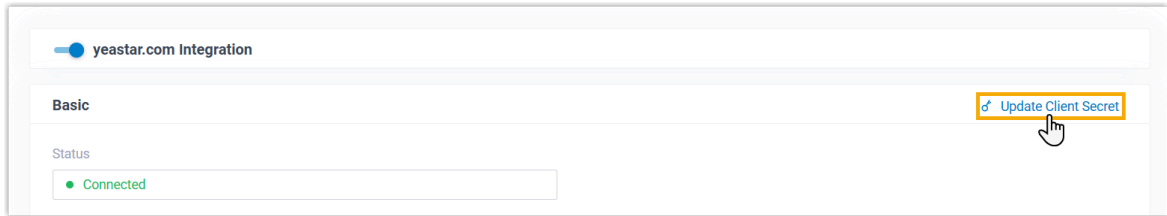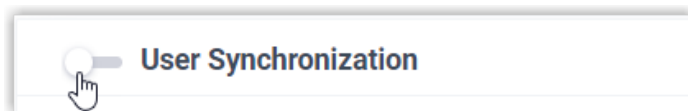
3. In the pop-up window, do as follows:

    a. In the **Client Secret** field, paste the new client secret.

    b. Click **Save**.

Pause Google Workspace Synchronization

If you want to prevent the synced user data from being overwritten by the updates from Google Workspace, you can temporarily put the sync on hold. This topic describes how to pause the user synchronization from Google Workspace.
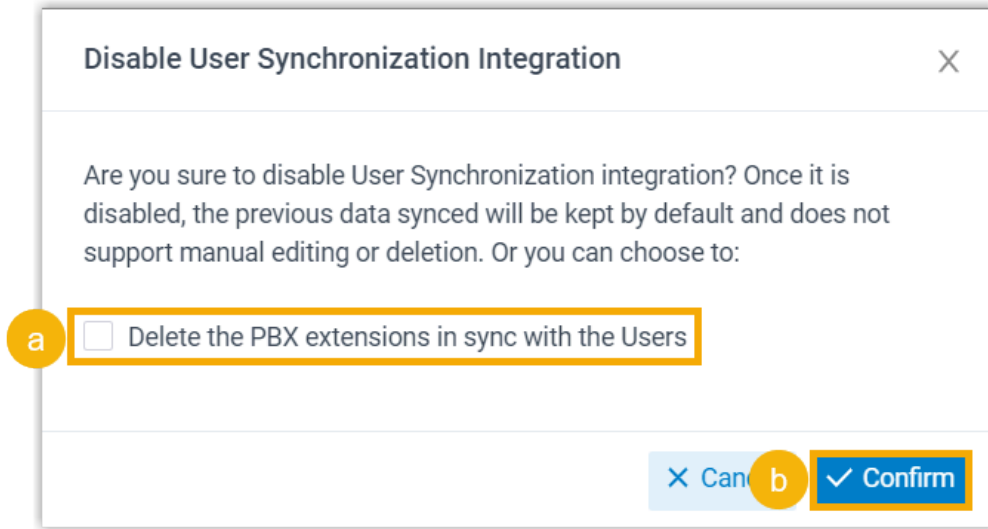
Procedure

1. Log in to PBX web portal, go to **Integrations > Collaboration**.

2. In the **User Synchronization** section, turn off the switch.

3. Click **Save**.

4. In the pop-up window, do as follows:

a. If you want to delete the PBX extensions associated with the synced users, select the checkbox of **Delete the PBX extensions in sync with the Users**.

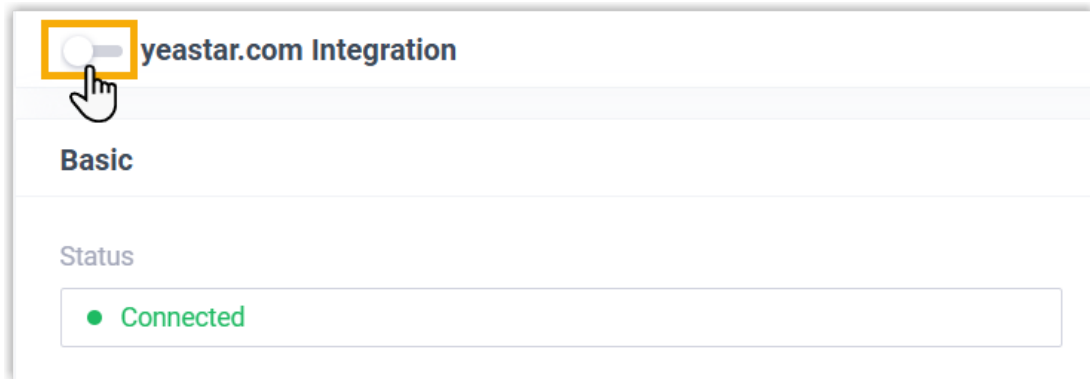b. Click **Confirm** to proceed.

Result

- The user synchronization is paused.
- The settings of **User Synchronization** remain and can not be edited.
- If you choose to retain the associated PBX extensions, you can NOT update the user information of the extensions or delete the extensions.

# Disable Google Workspace Integration

If there is a fix ongoing, and you might need to turn off the integration for troubleshooting, you can suspend the Google Workspace integration instead of disconnecting it. This topic describes how to disable the Google Workspace integration temporarily without losing the existing configurations.

Procedure

1. Log in to PBX web portal, go to **Integrations > Collaboration**.
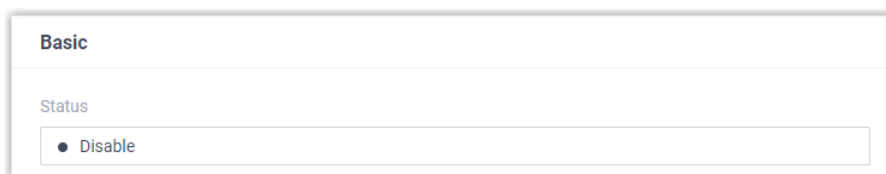2. On the top of the integration page, turn off the switch.
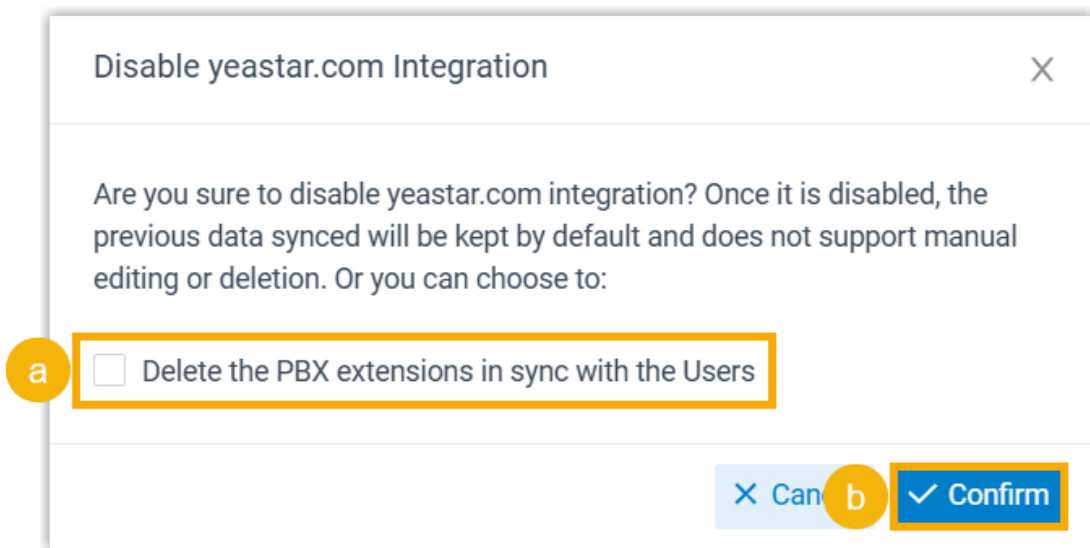
3. Click **Save**.

4. In the pop-up window, do as follows:

a. If you want to delete the PBX extensions associated with the synced users, select the checkbox of **Delete the PBX extensions in sync with the Users**.

b. Click **Confirm** to proceed.

Result

- The **Status** displays "Disable", indicating that the integration is suspended.

- The integration configurations remain and can not be edited.

- The synced users can NOT log in to Linkus UC Clients using their Google credentials for now.
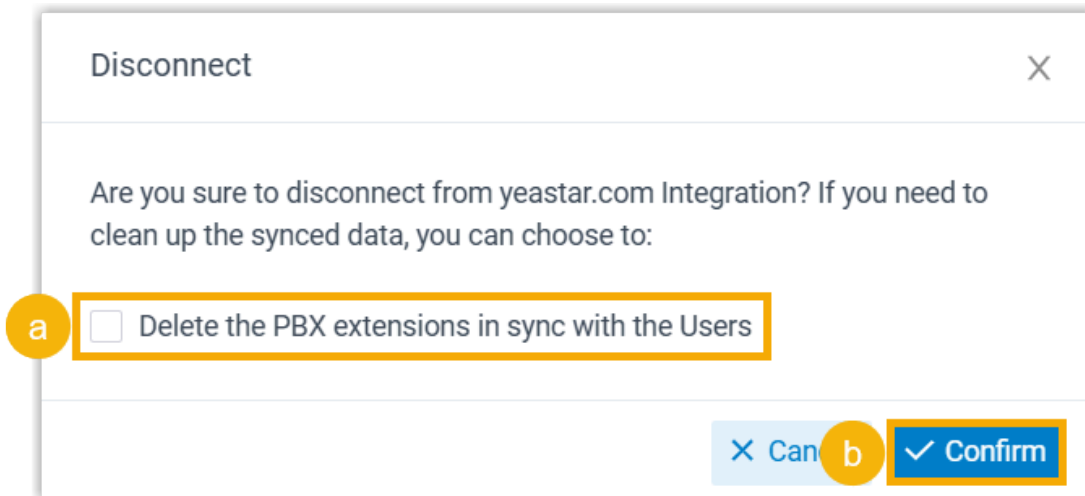
Disconnect Google Workspace Integration

If you want to integrate with another directory, you need to disconnect the current Google Workspace integration first. This topic describes how to disconnect the integration.

Procedure

1. Log in to PBX web portal, go to **Integrations > Collaboration**.
2. At the top-right of the integration page, click **Disconnect**.
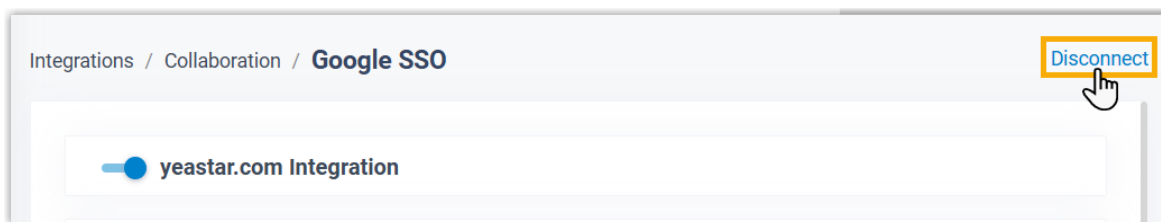
3. In the pop-up window, do as follows:

   a. If you want to delete the PBX extensions associated with the synced users, select the checkbox of **Delete the PBX extensions in sync with the Users**.
   b. Click **Confirm** to proceed.

Result

The Google Workspace integration is disconnected.