






Microsoft Teams Integration Guide

Yeastar P-Series Appliance Edition

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-  Support: +86-592-5503301
-  Support: support@yeastar.com
-  <https://www.yeastar.com>

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Integrate Yeastar P-Series PBX System with Microsoft Teams

This topic gives an overview and the prerequisites of the integration of Yeastar P-Series PBX System and Microsoft Teams via Yeastar for Microsoft Teams App.

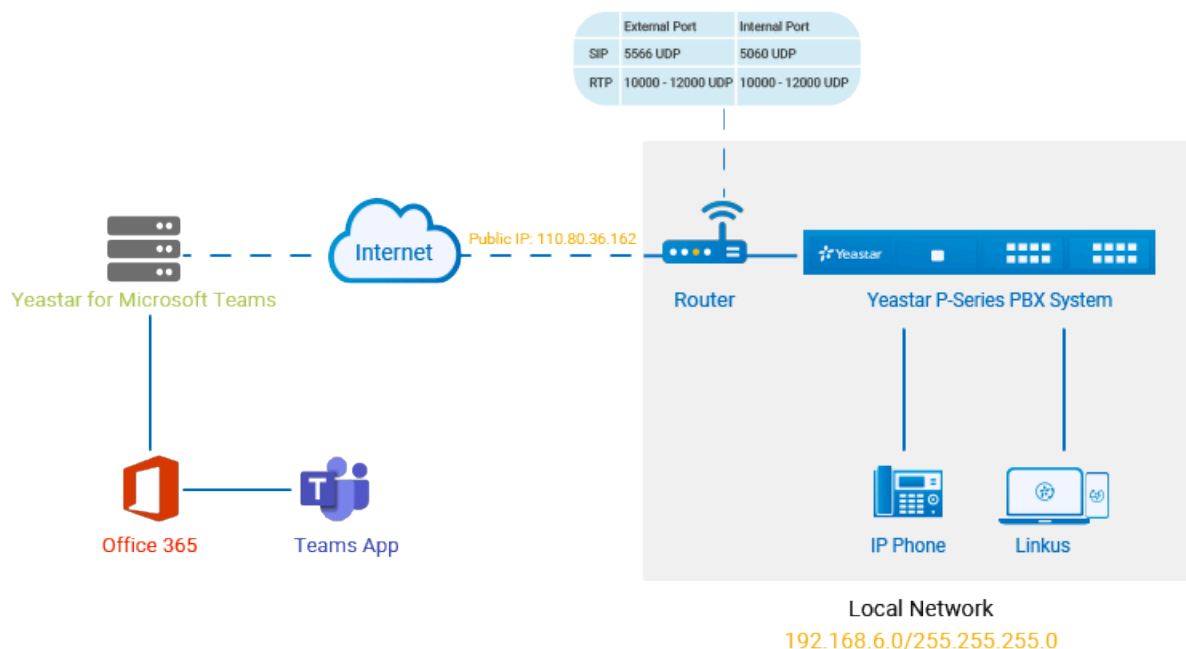
Overview

By associating Teams users with SIP extensions of the Yeastar P-Series PBX System, the Teams App will work as a softphone that is registered to the PBX, and you can achieve the followings:

- Make and receive calls directly from the Teams App.
- Keep your existing phone numbers, SIP phones, and any SIP devices.
- Enjoy advanced PBX features including IVR, call queue, call routing, call recording, and so on.

This topic introduces the integration between Yeastar P-Series PBX System and Microsoft Teams based on the following configurations:


- The Yeastar P-Series PBX System is behind a router and has a public IP address **110.80.36.162**.
- The Yeastar P-Series PBX System is deployed in the local network **192.168.6.0/255.255.255.0**.



Prerequisites

Microsoft 365

- Get admin access to Microsoft 365 admin center.
- Your Microsoft service must meet the following requirements:

Microsoft 365 version	Requirements
Microsoft 365 Business Basic	Any one of the followings is required: <ul style="list-style-type: none"> # "Common Area Phone" license # "Phone System" license # "Microsoft 365 Business Voice" add-on  Note: Not all of them are available in all the countries, buy any one of them according to your country or region.
Microsoft 365 Business Standard	
Microsoft 365 Business Premium	
Office 365 E1	
Office 365 E3	
Microsoft 365 E3	
Office 365 E5	No additional requirements.
Microsoft 365 E5	

Yeastar for Microsoft Teams App

Purchase the [Yeastar for Microsoft Teams](#) license by your Microsoft 365 admin account; Activate the license when you receive an activation email.

Yeastar P-Series PBX System

Get admin access to Yeastar P-Series PBX System.

Microsoft Teams Integration Preparation

Before the integration, you need to forward the web access port of the PBX on your router according to your network environment, configure NAT on your PBX, and create a PBX extension for the integration.

Step1. Configure port forwarding & NAT

To ensure that Microsoft Teams can communicate with Yeastar P-Series PBX System, you need to forward relevant ports on your router and configure NAT on your PBX.

1. Configure port forwarding on the router that is connected to your PBX.
 - a. Log in to the PBX management portal, go to **PBX Settings > SIP Settings > General > Basic**, check the SIP UDP port and RTP ports.

Basic

* SIP UDP Port: 5060

* SIP TCP Port: 5060

* RTP Port Range: 10000 : 12000

* Outbound SIP Port Range: 5062 : 5082

- b. Log in to your router, forward the SIP UDP port and RTP ports.
 In this scenario, configure the port forwarding as follows:

Port	External port	Internal port
SIP	5566 UDP	5060 UDP
RTP	10000-12000 UDP	10000-12000 UDP

2. Configure NAT on your PBX.

- a. On PBX management portal, go to **System > Network > Public IP and Ports**.
 b. In the **Public IP (NAT)** section, complete the following configurations:

- **Public IP (NAT):** Turn on this option.
- **NAT Type:** Select **Public IP Address**.
- **Public IP Address:** Enter *110.80.36.162*.
- **Local Network Identification:** Add all your local network. This setting will allow all your local devices to communicate with the PBX by the local IP address instead of passing through the router.

In this scenario, add *192.168.6.0/255.255.255.0*.

- **NAT Mode:** Select a SIP NAT mode. In this scenario, select **Yes**.

The PBX will use NAT and ignore the address information in the SIP/SDP headers and reply to the sender's IP address and port.

Public IP (NAT)

* NAT Type: Public IP Address

* Public IP Address: 110.80.36.162

Local Network Identification

Network Number	Subnet Mask	Operations
192.168.6.0	255.255.255.0	

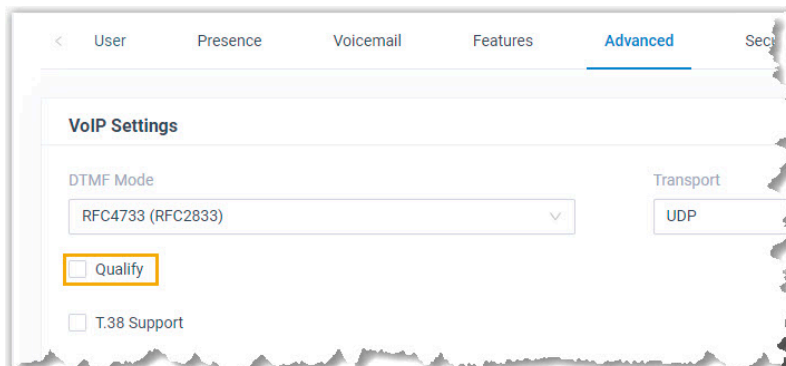
+ Add IP

* NAT Mode: Yes

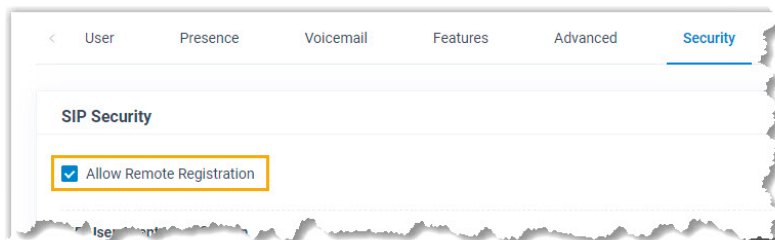
- c. In the **Public Ports** section, complete the following setting:
 • **External SIP UDP Port:** Enter *5566*.
 d. Click **Save** and **Apply**.

Step2. Create a SIP extension

1. Go to **Extension and Trunk > Extension**, click **Add** and select **Add**.
2. In the **Basic** section, select **SIP Extension** from the drop-down list of **Extension Type**.
3. In the **User Information** section, configure user information as follows:
 - **First Name**: Enter the user's first name.
 - **Last Name**: Enter the user's last name.
 - **Email Address**: Leave it blank or configure it as needed.
 - **Mobile Number**: Leave it blank or configure it as needed.
 - **User Password**: Retain default value or configure it as needed.
 - **User Role**: Retain default value or configure it as needed.
4. In the **Extension Information** section, configure extension information as follows:
 - **Extension Number**: Enter a desired extension number.
 - **Caller ID**: Retain default value or configure it as needed.
 - **Registration Name**: Retain default value or configure it as needed.
 - **Registration Password**: Retain default value or configure it as needed.
 - **Concurrent Registrations**: Select a value from the drop-down list. This option defines how many SIP phones are allowed to register with the extension. The maximum number of concurrent registrations is 3.
5. Click **Advanced** tab, unselect the checkbox of **Qualify**.



6. Click **Security** tab, select the checkbox of **Allow Remote Registration**.



7. Click **Save** and **Apply**.

Note: The following SIP credentials are required when you configure Teams users on the configuration portal.

- Extension number

- Registration name
- Registration password

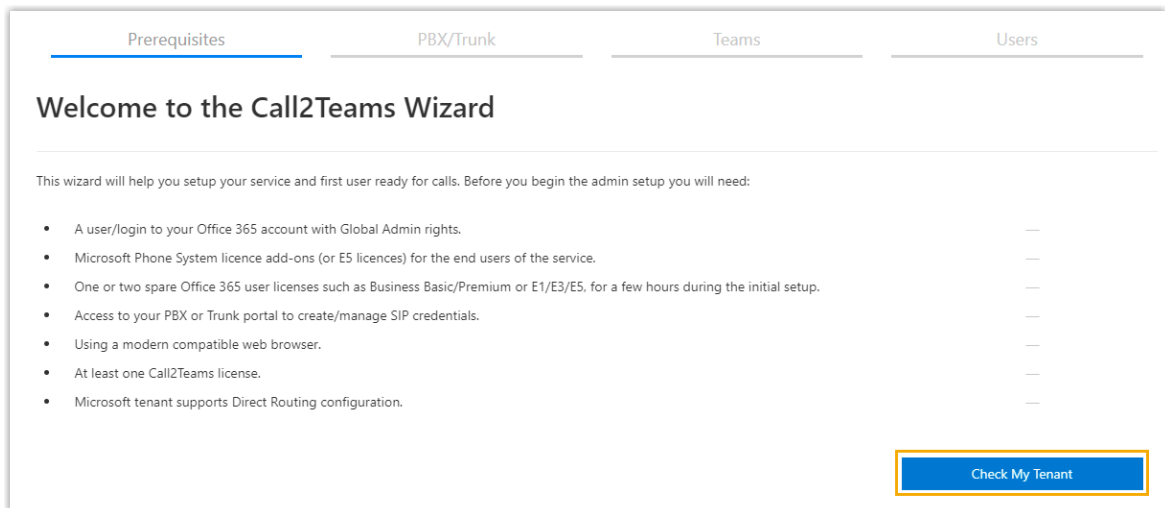
Integrate Yeastar P-Series PBX System and Microsoft Teams

After the preparation, log in to the [configuration portal](#) by your Microsoft 365 admin account to integrate Yeastar P-Series PBX System and Microsoft Teams.

Step1. Check your tenant

Check if your Microsoft 365 tenant is ready for the integration.

1. On the top navigation bar, click **Getting Started** tab.
2. On the **Prerequisites** page, click **Check My Tenant**.



3. In the pop-up window, select your Microsoft 365 admin account.

The configuration portal starts checking your Microsoft 365 tenant.

4. If your tenant is ready, click **Next** to set up PBX service.

Prerequisites PBX/Trunk Teams Users

Welcome to the Call2Teams Wizard

This wizard will help you setup your service and first user ready for calls. Before you begin the admin setup you will need:

- A user/login to your Office 365 account with Global Admin rights. ✓
- Microsoft Phone System licence add-ons (or E5 licences) for the end users of the service. ✓
- One or two spare Office 365 user licenses such as Business Basic/Premium or E1/E3/E5, for a few hours during the initial setup. ✓
- Access to your PBX or Trunk portal to create/manage SIP credentials. ✓
- Using a modern compatible web browser. ✓
- At least one Call2Teams license. ✓
- Microsoft tenant supports Direct Routing configuration. ✓

Check My Tenant

Next

Step2. Set up PBX service

1. On the **PBX/Trunk** page, click **PBX** tab.
2. Set up PBX service.

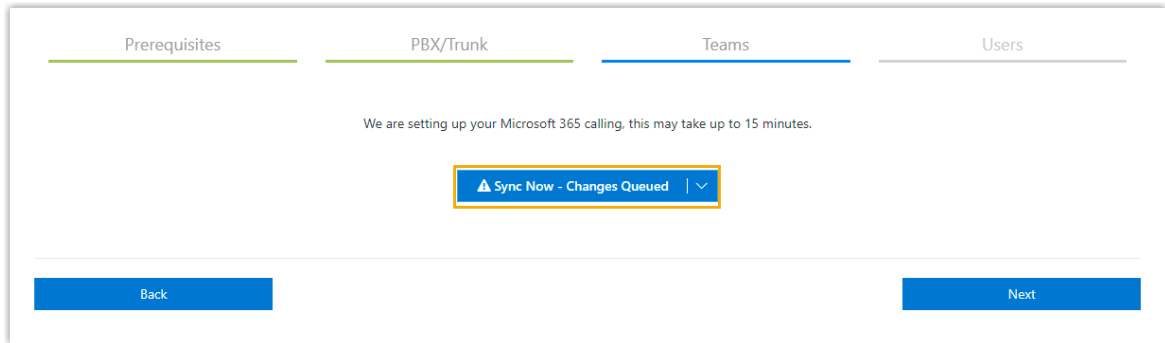
The screenshot shows a web interface for configuring a PBX system. At the top, there are tabs for 'PBX' and 'Trunk'. Below the tabs, a message says 'Start by selecting your PBX from the available templates:' followed by a dropdown menu with 'Yeastar P-series VoIP PBX' selected. A link below the dropdown says 'My PBX is not listed'. The main configuration area includes several fields: 'Country *' with 'China' selected; 'SIP Domain *' with '110.80.36.162'; 'SIP Proxy *' with '110.80.36.162:5566'; 'Authentication Type *' with 'Registration'; 'Calling Policy *' with a checkbox for 'Manage Teams Calling Policy' that is unchecked; 'Teams Voicemail' with 'Allow Voicemail' selected; 'Music On Hold' with 'Teams Hold Music' selected; and 'Protocol *' with 'UDP' selected. An 'Add PBX' button is located at the bottom right of the form.

- **Start by selecting your PBX from the available templates:** Select **Yeastar P-series VoIP PBX**.
 - **Country:** Select your country.
 - **SIP Domain:** Enter the public IP address of your PBX. In this scenario, enter *110.80.36.162*.
 - **SIP Proxy:** Enter the public IP address and external SIP port of your PBX. In this scenario, enter *110.80.36.162:5566*.
 - **Authentication Type:** Select **Registration**.
 - **Protocol:** Select the protocol of which SIP port you have forwarded. In this scenario, select **UDP**.
3. Click **Add PBX**.

A green checkmark prompting "Service successfully enabled" appears. It automatically enters into **Teams** page to synchronize Yeastar P-Series PBX System with Microsoft 365.

Step3. Synchronize Yeastar P-Series PBX System with Microsoft 365

1. Click **Sync Now - Changes Queued** to synchronize Yeastar P-Series PBX System with Microsoft 365.



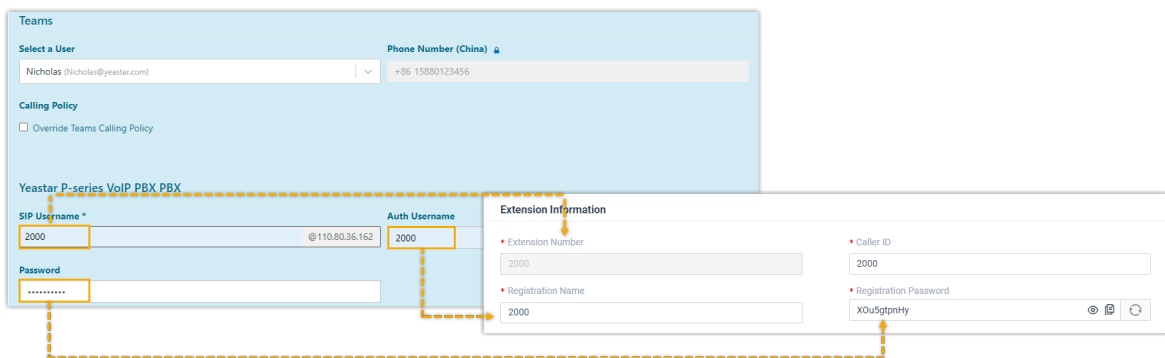
It takes several minutes to proceed with the synchronization.

2. After the synchronization completes, click **Next** to associate Teams users with SIP extensions.

Step4. Associate a Microsoft Teams user with a SIP extension

To ensure that users can make and receive calls on Microsoft Teams using the PBX phone service, you need to associate Microsoft Teams users with SIP extensions.

1. On the **Users** page, complete the followings:



- **Select a User:** Select a Teams user from the drop-down list.

Note: Make sure the selected user has the required licenses of both [Microsoft](#) and [Yeastar for Microsoft Teams](#), or the user can NOT make or receive calls.

- **Phone Number:** Set the user's phone number.
- **SIP Username:** Enter the extension's **Extension Number**.
- **Auth Username:** Enter the extension's **Registration Name**.
- **Password:** Enter the extension's **Registration password**.

2. Click **Add User and Sync**.

A green checkmark prompting "Service user successfully added" appears.

If the user is successfully associated with the PBX, the Registration status shows ●.

User	Service Type	SIP User	Registration	Calls
Nicholas	Standard User	2000	All	

Result

After integrating Yeastar P-Series PBX System with Microsoft Teams, Teams users can make and receive internal calls from the PBX extensions.

- To allow Teams users to make outbound calls through PBX's trunk, you need to [configure dial plans in Microsoft Teams](#).
- To allow Teams users to receive inbound calls through PBX's trunk, you need to make sure at least an inbound route is configured to reach the extensions that are associated with the Teams users.

Configure Dial Plans in Microsoft Teams

To allow Teams users to make outbound calls through PBX's trunk, you need to set up normalization rules of dial plan in Microsoft teams.

Background information

Microsoft Teams generates a dial plan rule named "Call2Teams" after you integrate Yeastar P-Series PBX System with Microsoft Teams. The default rule with the pattern `^([*\#][*\#d]+|[1-9]\d{0,5})$` only allows Teams users to dial numbers with maximum 6 digits, and start with digit 1-9.


Normalization rules					
Normalization rules define how phone numbers expressed in various formats are to be translated. One or more normalization rules must be assigned to the dial plan and are matched from the top to bottom.					
+ Add Edit Move up Move down Delete 1 item					
Rank	Name	Description	Pattern	Translation	
1	Call2Teams	Call2Teams	<code>^([*\#][*\#d]+ [1-9]\d{0,5})\$</code>	\$1	

Procedure

1. Log in to [Microsoft Teams admin center](#).
2. In the left navigation bar, click **Voice > Dial plans**.
3. Click the default dial plan **Global (Org-wide default)**.
4. In the **Normalization rules** section, click **+Add** to add a dial plan rule.

5. On the **Add new rule** page, set the rule.
 - a. In the **Name** field, set a name for the rule.
 - b. **Optional:** In the **Description** field, add a note to the rule.
 - c. Select **Advanced**.
 - d. Go to **If condition > The number dialed matches this regular expression**, enter $^(d^*)\$$.

Teams users can make outbound calls to any numbers.
 - e. Go to **Then do this > Translate the number based on this regular expression**, enter $\$1$, which means no translation, Microsoft Teams will send the dialed number out without any modification.
 - f. Go to **Test this rule > Enter a phone number to test**, enter a phone number and click **Test** to test if the number matches the pattern.
 - g. Click **Save**.
6. Change the rule's priority.

 **Note:** Microsoft Teams traverses the list of normalization rules from the top down, and uses the first rule that matches the dialed number. Move the rule to the top, or users may fail to call out.

- a. In the column, click the desired rule.
- b. On the menu bar, click **Move up** to move the rule to the top.

Normalization rules

Normalization rules define how phone numbers expressed in various formats are to be translated. One or more normalization rules must be assigned to the dial plan and are matched from the top to bottom.

+ Add Edit Move up Move down Delete | 2 items

<input checked="" type="checkbox"/>	Rank	Name	Description	Pattern	Translation
<input checked="" type="checkbox"/>	1	No Translate1		$^(d^*)\$$	$\$1$
<input type="checkbox"/>	2	Call2Teams	Call2Teams	$^([\^#\][\^#\d]+ [1-9])\d{0,...$	$\$1$

- c. Click **Save**.

Result


Teams users can dial external numbers according to the dial pattern of PBX's outbound route.


Test Phone Calls on Microsoft Teams

After the integration, you can test phone calls on Microsoft Teams.

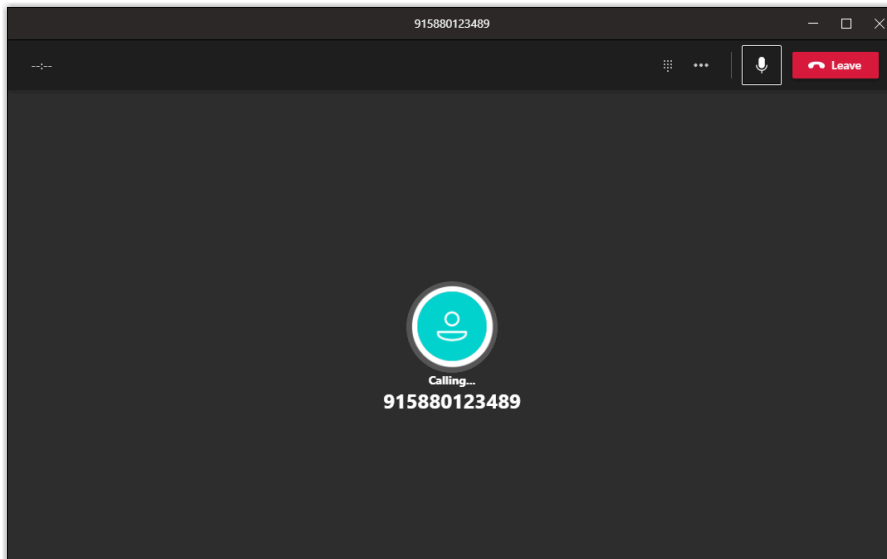
Make a call

1. On the left navigation bar, click **Calls**.
2. Click **Make a call**.
3. On the dialpad, enter a desired number.

 **Note:** Make sure the dialed number matches at least one outbound route on Yeastar P-Series PBX System. For example, there is an outbound route on the PBX as follows. In this case, you need to dial 915880123489 in order to reach 15880123489.

Dial Pattern			
Dial Matching Settings			
* Pattern	Strip	Prepend	Operations
9.	1		

4. Click **Call**.



Receive a call

When a call reaches a user's extension number, the user will receive a pop-up notification of an incoming call, and the user can decide whether to answer the call or not.

