



Deploying Avaya Calling for MS Teams with IP Office

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Contents

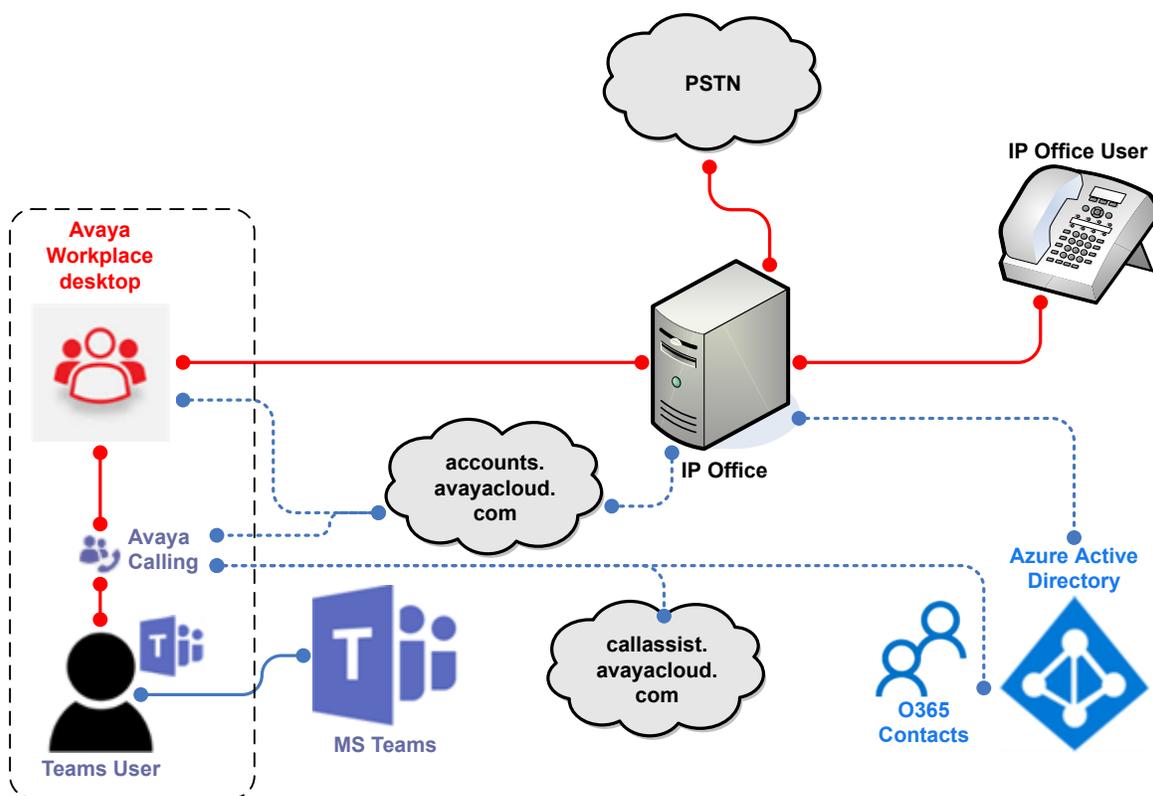
Chapter 1: IP Office and MS Teams	7
IP Office and MS Teams Components.....	8
MS Teams Call Routing Options.....	8
User Types.....	9
Requirements.....	10
Known Call Limitations.....	11
Chapter 2: MS Teams Scenarios	12
Integration Using Avaya Calling.....	12
Integration Using Avaya Calling and Azure Active Directory Synchronization.....	13
Chapter 3: Telephone and Extension Numbers	15
Number Formats.....	15
Telephone Numbers.....	16
Extension Numbers.....	16
How MS Teams uses the telephone numbers.....	17
Routing IP Office Calls to the MS Teams Numbers.....	17
Chapter 4: Configuring the Users in MS Teams	18
User Configuration in MS Teams.....	18
Checking MS Teams User Numbers.....	19
Chapter 5: Configuring the IP Office for MS Teams	20
Manually Adding MS Teams+IP Office Users.....	20
Manually Adding Directory Entries for MS Teams Only Users.....	21
Chapter 6: Azure Active Directory Synchronization	23
Configuring Azure Active Directory App Registration.....	23
Enabling Directory Synchronization.....	24
Configuring Directory Synchronization.....	25
Chapter 7: Configuring User Synchronization	27
Prevent Manual URI Editing.....	27
Creating User and Extension Templates.....	28
Creating User Provisioning Rules.....	29
Setting Up User Synchronization.....	30
Chapter 8: Configuring Avaya Calling for MS Teams	32
Configuring the Avaya Workplace Client.....	33
Add Avaya Calling to the Domain.....	33
Obtain the Avaya Calling Manifest File.....	34
Upload the Manifest File.....	34
Grant the App Contact Permissions.....	35
Create an Application Policy.....	36
Assigning an Application Policy.....	37
Pinning the Application.....	37

Assigning a Setup Policy.....	38
Adding Avaya Calling to the MS Teams Client.....	39
Chapter 9: Additional Help and Documentation.....	41
Additional Manuals and User Guides.....	41
Getting Help.....	41
Finding an Avaya Business Partner.....	42
Additional IP Office resources.....	42
Training.....	43

Chapter 1: IP Office and MS Teams

These notes cover the integration of MS Teams with IP Office systems using the Avaya Calling application. Use these notes in conjunction with the [Avaya Cloud Services](#) section of the [IP Office Avaya Workplace Client Installation Notes](#) manual.

IP Office supports this with IP Office R11.1 FP2 and higher.



Related links

[IP Office and MS Teams Components](#) on page 8

[MS Teams Call Routing Options](#) on page 8

[User Types](#) on page 9

[Requirements](#) on page 10

[Known Call Limitations](#) on page 11

IP Office and MS Teams Components

Key components for MS Teams and IP Office integration are:

Component	Description
MS Teams	MS Teams licensed through Microsoft. IP Office does not support integration with the free version of MS Teams.
IP Office	IP Office R11.1 FP2 and higher.
Avaya Calling	MS Teams+IP Office users can add the Avaya Calling plug-in to their MS Teams client. This allows them to: <ul style="list-style-type: none"> • Make and receive calls (audio and video) from IP Office users. • Make and received external PSTN calls (audio and video) routed by the IP Office. • Instant message and email contacts in their Office 365 Contacts.
Avaya Cloud	The IP Office, Avaya Workplace Client and Avaya Calling components of the solution all need to communicate with services in the Avaya Cloud domain.
Azure Active Directory Synchronization	MS Teams uses Azure Active Directory to store MS Teams user information. IP Office R11.1 FP2 supports integration with Azure Active Directory to perform a range of actions: <ul style="list-style-type: none"> • Automatically add Azure Active Directory user names and numbers to the IP Office system directory. • Automatically create, update and delete IP Office users matching users in the Azure Active Directory.
Avaya Calling	Avaya calling is an alternation method of integrating MS Teams and IP Office. For details, refer to the separate Deploying Avaya Calling for MS Teams with IP Office manual.

Related links

[IP Office and MS Teams](#) on page 7

MS Teams Call Routing Options

MS Teams users can make calls to normal PSTN telephone numbers using the following options. For more details, refer to <https://docs.microsoft.com/en-us/microsoftteams/pstn-connectivity>.

Method	Description
Microsoft Calling Plans	In this scenario, MS Teams routes PSTN calls over Microsoft's PSTN network. This uses Microsoft's price plans for national and international calls.
Avaya Calling	In this scenario, the Avaya Calling plug-in links the MS Teams user's MS Teams and Avaya Workplace Client clients. This routes their PSTN calls through the IP Office. They can also call other IP Office users.

Table continues...

Method	Description
Direct Routing	In this scenario, MS Teams routes user PSTN calls through an ASBCE to the IP Office. They can also call other IP Office users. For details, refer to the separate Deploying MS Teams Direct Routing with IP Office manual.
Operator Connect	This option is like Direct Routing. However, all administration and services use the infrastructure of a PSTN provider who is part of the Microsoft Operator Connect program.

Related links

[IP Office and MS Teams](#) on page 7

User Types

This documentation refers to the following types of users:

User Type	Description
IP Office only user	<p>This type of user:</p> <ul style="list-style-type: none"> • Configured on the IP Office system with an IP Office extension number • Does not require any specific IP Office user profile to interact with MS Teams users. • Can see and call MS Teams users from the IP Office system directory.
MS Teams only user	<p>This type of user:</p> <ul style="list-style-type: none"> • Configured in MS Teams with a MS Teams telephone number and/or extension number. • Requires a MS Teams license (Microsoft 365 Business Voice without Calling Plan). • Does not need any IP Office license or subscription. • Cannot use Avaya Calling. • Cannot be part of IP Office features such as hunt groups, since they do not exist as a user/extension record in the IP Office configuration

Table continues...

User Type	Description
MS Teams+IP Office user	<p>This type of user:</p> <ul style="list-style-type: none"> • Is a MS Teams users using the Avaya Calling plug-in. • Requires Avaya Workplace Client installed and using Avaya Cloud for its connection to the IP Office. • The Avaya Calling plug-in installed in their MS Teams client on the same platform. • Configured as a user in both MS Teams and IP Office. • Has the same extension number on MS Teams and IP Office. • Can also have a MS Teams telephone number. • Requires a MS Teams license (Microsoft 365 Business Voice without Calling Plan). • Requires an IP Office license or subscription for the following: <ul style="list-style-type: none"> - IP Office systems using PLDS licensing support MS Teams+IP Office users using the Office Worker, Teleworker and Power User profiles. - IP Office subscription mode systems support MS Teams+IP Office users using the UC User profile. • Incoming calls alert both their MS Teams client and IP Office extension. The user can use either for calls with other MS Teams or IP Office users. • You can include these users in other IP Office features such as hunt groups, park/page, and so on.

How are these user types created?

In addition to manually creating the users, the creation of the different types of users can be partially automated using Azure Active Directory synchronization. This allows the IP Office to create and update users in its own configuration based on the Azure Active Directory user settings.

Within Azure Active Directory, you can define groups for different types of user. That allows you to configure IP Office synchronization rules for each group.

Related links

[IP Office and MS Teams](#) on page 7

Requirements

The following is a summary of the requirements for installation:

Area	Requirements
IP Office	<ul style="list-style-type: none"> • IP Office R11.1 FP2 running either subscription mode or IP Office Preferred edition. • System configured for Avaya Cloud synchronization.

Table continues...

Area	Requirements
MS Teams+IP Office Users	<ul style="list-style-type: none"> • Unique identity configured. • Avaya Workplace Client R3.22 client connection via Avaya Cloud configured and tested. • MS Teams: MS Teams license without direct routing or calling plan. • IP Office: IP Office User Profile/License: <ul style="list-style-type: none"> - Subscription mode systems: Supported by the UC User profile. - PLDS licensed systems: Supported by the Office Worker, Teleworker and Power User profiles.
Avaya Calling	<ul style="list-style-type: none"> • MS Teams+IP Office users only. • MS Teams client and Avaya Workplace Client R3.22 with Avaya Cloud synchronization running on the same device.
MS Teams	<ul style="list-style-type: none"> • Single tenancy.
Domain	<ul style="list-style-type: none"> • Administrator rights to configure the customer's domain DNS or add files to the domains default website root.
Other requirements	<ul style="list-style-type: none"> • Administrator rights to the customer's tenancy through the Azure Active Directory and MS Teams admin portals.

Related links

[IP Office and MS Teams](#) on page 7

Known Call Limitations

The following are current known limitations for MS Teams integration with IP Office:

- **MS Teams does not propagate name updates:**

In scenarios such as call transfers and forwards, the MS Teams user still sees the original call name. For example:

- If MS Teams user Alice calls IP Office user Bob, and Bob then transfers the call to user Carol, Alice's display still shows the call as being with Bob.

- **MS Teams does not propagate hold indication:**

With MS Teams, if MS Teams puts an IP Office user on hold, or vice versa, there is no indication that the call is on hold. However, the held user still hears hold music.

- **No Favorites or Avaya Contacts:**

When used with IP Office, the Avaya Calling plug-in only shows Office 365 Contacts.

Related links

[IP Office and MS Teams](#) on page 7

Chapter 2: MS Teams Scenarios

The integration with MS Teams covered in this documentation covers the following scenarios:

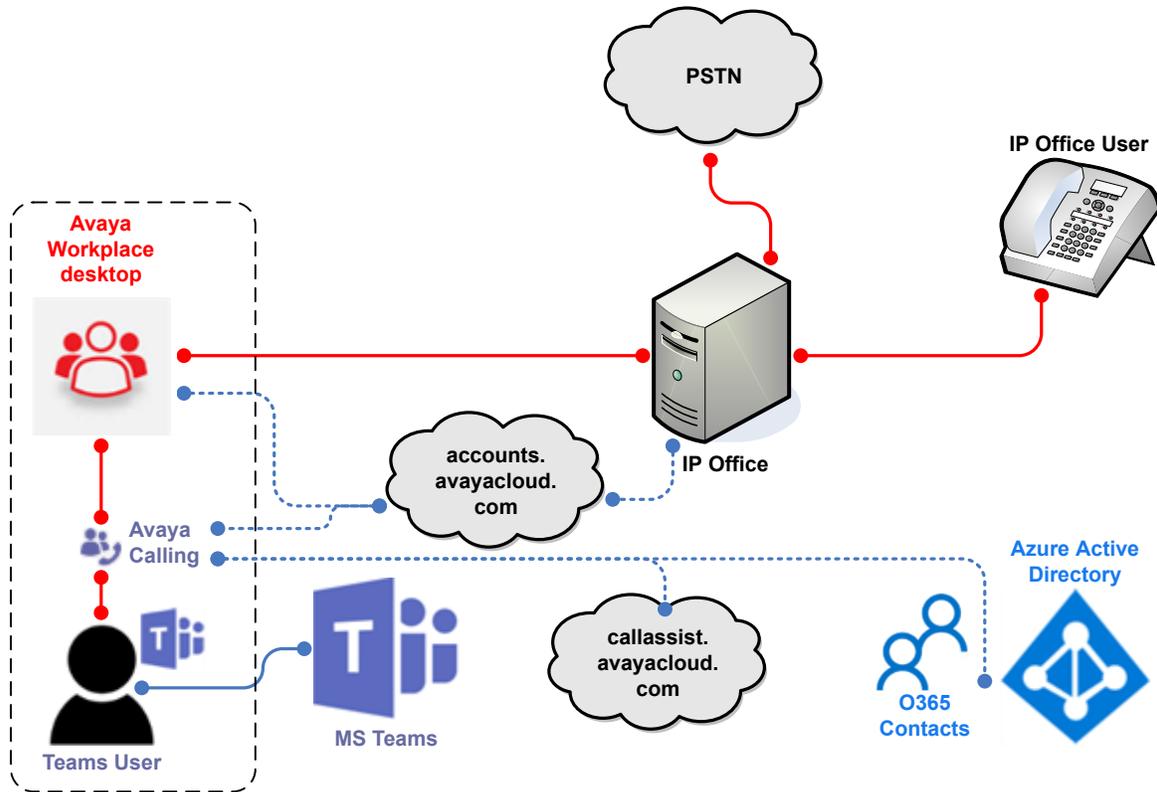
Scenario	Description
Avaya Calling	MS Teams+IP Office users can use the Avaya Calling app. Adding the app to the user's MS Teams client creates a link between that client and Avaya Workplace Client on the same device.
Avaya Calling with Azure Active Directory Synchronization	IP Office R11.1 FP2 and higher can connect to Azure Active Directory to obtain MS Teams user information. You can use this to update IP Office directory information and/or create IP Office users.

Related links

- [Integration Using Avaya Calling](#) on page 12
- [Integration Using Avaya Calling and Azure Active Directory Synchronization](#) on page 13

Integration Using Avaya Calling

MS Teams+IP Office users can use the Avaya Calling app. Adding the app to the user's MS Teams client creates a link between that client and Avaya Workplace Client on the same device.



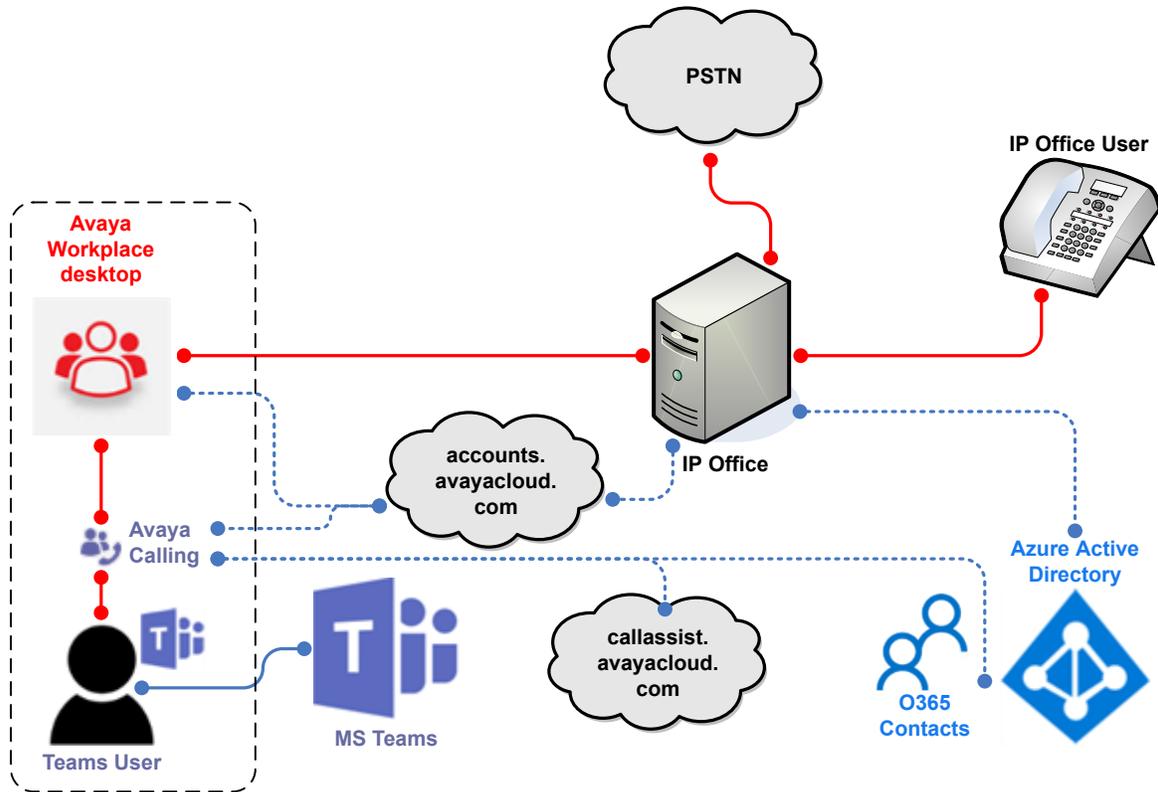
- The MS Teams user requires Avaya Workplace Client and MS Teams with the Avaya Calling plug-in on the same device.
- The IP Office system needs to support Avaya Cloud synchronization.
- The MS Teams client supports the user's Office 365 contacts which they can use to make calls, IM and email. It does not support the Favorites or Avaya Contacts.
- The user still uses their Avaya Workplace Client to receive incoming calls.

Related links

[MS Teams Scenarios](#) on page 12

Integration Using Avaya Calling and Azure Active Directory Synchronization

This scenario builds on the previous integration by adding Azure Active Directory synchronization.



Adding Azure Active Directory synchronization allows the following:

- Automatically add MS Teams user contact details to the IP Office system directory.
- Create and maintain IP Office users from user records in Azure Active Directory. Those users can be ordinary IP Office users and/or MS Teams+IP Office users.

Related links

[MS Teams Scenarios](#) on page 12

Chapter 3: Telephone and Extension Numbers

Within MS Teams, a user can have a telephone number and/or extension number. MS Teams can use either to route calls to the user. For more information, refer to <https://docs.microsoft.com/en-us/microsoftteams/manage-phone-numbers-landing-page>.

Related links

- [Number Formats](#) on page 15
- [Telephone Numbers](#) on page 16
- [Extension Numbers](#) on page 16
- [How MS Teams uses the telephone numbers](#) on page 17
- [Routing IP Office Calls to the MS Teams Numbers](#) on page 17

Number Formats

It is important to look at the formats used to enter and display telephone numbers. MS Teams-IP Office integration involves different interfaces which differ in how they display the same number.

Interface		Telephone Number and Extension	Telephone Number Only	Extension Only
Azure AD Admin Portal		+441632768402 x402	+441632768402	x402
		441632768402 x402	441632768402	
Teams Admin Portal		tel:441632768402;ext=402	tel:441632768402	402
IP Office Admin Menu	MS Teams URI	441632768000;ext=402	441632768402	+402
	System Directory Number	441632768402-402	441632768402	+402
MS Teams Client		(1632) 768 8402 extn 402	(1632) 768 8402	+402

Table continues...

Interface	Telephone Number and Extension	Telephone Number Only	Extension Only
IP Office SIP URI ^[1]	+441632768402;ext=402	+441632768402	–

1. The IP Office also adds the required protocol prefix and domain/port suffix elements (for example `sip:+441632768402;ext=402@sip.pstnhub.microsoft.com:5061`).

Related links

[Telephone and Extension Numbers](#) on page 15

Telephone Numbers

This documentation assumes that incoming calls for all telephone numbers from the PSTN are route through the IP Office. It does not cover scenarios where the customer has telephone numbers routed directly to MS Teams through Microsoft calling plans.

- Note that the expected telephone number is a full number including international country code but no country specific international dialing prefix (except+ where indicated).
- If the customer has telephone numbers registered to Microsoft calling plans, those numbers must be migrated to one of the IP Office line providers.
- Microsoft recommend that customers configure phone numbers as full E.164 phone numbers with country code. MS Teams also supports phone numbers with extensions. MS Teams uses these match a user when the lookup against the telephone number returns more than one user.

Related links

[Telephone and Extension Numbers](#) on page 15

Extension Numbers

For scenarios that include MS Teams only users:

- The MS Teams only users' extension numbers must be unique from the IP Office extension numbers used by IP Office only and MS Teams+IP Office users.
- For ease of configuration and maintenance, use extension ranges for each that do not overlap.
- Due to the operation of MS Teams, the + indicator used for E.164 international numbers also appears on extension numbers in some interfaces.

Related links

[Telephone and Extension Numbers](#) on page 15

How MS Teams uses the telephone numbers

Where possible, Avaya recommends using the telephone number and extension number format. However, the values used depend on the scenario:

Common MS Teams Telephone Number	<p>For scenarios where you need to use the same external PSTN number for all or several MS Teams users, you can combine the PSTN number and individual extension numbers.</p> <p>For example:</p> <ul style="list-style-type: none"> • User A: <i>441632768000 x401</i> • User B: <i>441632768000 x402</i>
Individual MS Teams Telephone Numbers	<p>For scenarios where you have an individual PSTN numbers for each user, you can configure the user with just that telephone number or with both their individual telephone number and an extension number.</p> <p>For example:</p> <ul style="list-style-type: none"> • User A: <i>441632768401</i> or <i>441632768000 x401</i> • User B: <i>441632768402</i> or <i>441632768000 x402</i>
MS Teams Extension Number Only	<p>For scenarios where you want users to have just an extension number, you can omit the telephone number.</p> <p>For example:</p> <ul style="list-style-type: none"> • User A: <i>x401</i> • User B: <i>x402</i>

Related links

[Telephone and Extension Numbers](#) on page 15

Routing IP Office Calls to the MS Teams Numbers

Once you have added the contact numbers for MS Teams users to the IP Office system directory, IP Office users can call MS Teams users using the directory. For incoming PSTN calls to the IP Office, you must add routing through incoming call routes.

You can add MS Teams numbers to the IP Office system directory either manually or using automatic directory synchronization.

Related links

[Telephone and Extension Numbers](#) on page 15

Chapter 4: Configuring the Users in MS Teams

This section covers the general configuration of users within MS Teams.

Related links

[User Configuration in MS Teams](#) on page 18

[Checking MS Teams User Numbers](#) on page 19

User Configuration in MS Teams

You configure the user telephone numbers for MS Teams users in Azure Active Directory.

Procedure

1. Using a user account with full administrator rights, login to Azure Active Directory at <https://portal.azure.com>.
2. Select **Azure AD** and then **Users**.
3. Select the required user.
4. Select **Contact Info**.
5. Set the user's **Office phone number** as required. Azure Active Directory stores this as the `businessPhone` value. The format varies depending on the type of number being set, see [Telephone and Extension Numbers](#) on page 15.

Number	Example Azure Active Directory Phone Number Format
Telephone Number and Extension	+441632768000;ext=402
Telephone Number Only	+441632768402
Extension Number Only	x402

6. Repeat this process for all other users.

Related links

[Configuring the Users in MS Teams](#) on page 18

Checking MS Teams User Numbers

Use the following process to check that the *Office* phone numbers set for users in Azure Active Directory. MS Teams uses this number as the user's *Phone number*.

Procedure

1. Login to the MS Teams admin portal at <https://admin.teams.microsoft.com/user>.
2. If necessary, select **User**.
3. MS Teams displays the list of users, including their MS Teams telephone numbers.

Display name ↑	Username	Phone number	Location ↓	Policies assigned
Diego Siciliani	DiegoS@example.com	tel:441632768202;ext=202	United Kingdom	View policies
Grady Archie	GradyA@example.com	tel:441632768202	United Kingdom	View policies
Teresa Green	TeresaG@example.com	202	United Kingdom	View policies

4. Verify that the **Phone number** is correct. For more information, see [Telephone and Extension Numbers](#) on page 15.

Number	Example MS Teams Format
Telephone Number and Extension	tel:441632768202;ext=202
Telephone Number only	tel:441632768202
Extension Number only	202

Related links

[Configuring the Users in MS Teams](#) on page 18

Chapter 5: Configuring the IP Office for MS Teams

This section covers the basic steps for configuring the IP Office system to support MS Teams.

Related links

[Manually Adding MS Teams+IP Office Users](#) on page 20

[Manually Adding Directory Entries for MS Teams Only Users](#) on page 21

Manually Adding MS Teams+IP Office Users

The process below describes the steps for adding a MS Teams+IP Office user manually.

- If configured to only allow automatic updates through Azure Active Directory synchronization, IP Office grays out the **MS Teams URI** field.

Procedure

1. Using IP Office Manager or IP Office Web Manager, access the IP Office system configuration.
2. Configure the user as required for their IP Office operation. This process only covers the changes required for MS Teams.
3. Select **User** or **Call Management | Users**.
4. Add a new user or select the existing user you want to edit.
5. Select the **User** tab:
 - a. Enter the user's **Unique Identity**. This is the email address that they will use with Avaya Cloud. Note that the name part before the @ is limited to 15 characters.
 - b. Select a **Profile** that supports MS Teams user integration:
 - **On subscription mode systems:** The IP Office supports MS Teams+IP Office users using the **UC User** profile.
 - **On PLDS licensed systems:** The IP Office supports MS Teams+IP Office users using the **Office Worker**, **Teleworker** and **Power User** profiles.
 - c. Select **Enable MS Teams Client**.

6. Select the **Mobility** tab:

The screenshot shows the 'Mobility' tab in the IP Office configuration interface. It features several sections:

- Simultaneous**: A sub-section containing a 'Coverage Delay (secs)' spinner set to 0 and an 'MS Teams URI' text field containing '+441632768202;ext=202'.
- Internal Twinning**: A section with an unchecked checkbox and a 'Twinned Handset' dropdown menu currently set to '<None>'.

- a. The **Coverage Delay** sets a pause, if required, between calls alerting on the user's IP Office extension devices and then also alerting on their MS Teams client.
- b. The user's **MS Teams URI** should match their Office phone setting as specified in Azure Active Directory (for more information, see [Telephone and Extension Numbers](#) on page 15):

Number	Example MS Teams URI Format
Telephone Number and Extension	+441632768202;ext=202
Telephone Number Only	+441632768202
Extension Only	+202

7. Click **OK** or **Save**.
8. If prompted to allow the system to automatically create a matching extension entry, allow the system to create one matching the type of IP Office extension the user uses.
9. If using IP Office Manager, save the configuration back to the IP Office system.

Related links

[Configuring the IP Office for MS Teams](#) on page 20

Manually Adding Directory Entries for MS Teams Only Users

MS Teams only users do not exist in the IP Office configuration. However, you can add their details to the IP Office system directory. This allows IP Office users to select and call MS Teams only users from the directory.

Procedure

1. Using IP Office Web Manager, access the IP Office system configuration.
2. Select **System Settings > Directory**.
3. Select **Add Directory Entry**.

4. For the **Name**, enter the user's name followed by a space and MST. For example: Diego Siciliani MST
5. For the **Number**, use one of the following formats (for more information, see [Telephone and Extension Numbers](#) on page 15):

Number	IP Office Format
Extension and DDI Number	441632768402-402 [a], [b]
Telephone Number Only	441632768402
Extension Number Only	+402

- a. A dash is a delimiter signifying that the following number is an extension number.
 - b. Dialing either number matches the directory entry.
6. Click **Save**.

Related links

[Configuring the IP Office for MS Teams](#) on page 20

Chapter 6: Azure Active Directory Synchronization

IP Office R11.1 FP2 supports connection to LDAP directories including Active Directory. For MS Teams support, it can also connect to the Azure Active Directory used by MS Teams to store user details.

- **IP500 V2 Systems** - The Azure Active Directory connection uses the **Collaboration Service** on Linux-based IP Office servers. For standalone IP500 V2 systems, the service requires an IP Office Application Server or Unified Communications Module. However, this only supports directory synchronization.

You can set up connections for multiple purposes:

- Automatically updating the IP Office system directory with the names and numbers of MS Teams users.
- Automatically creating, updating and deleting entries for MS Teams+IP Office users in the IP Office system configuration.

You can combine the options into one connection or use separate connections as required. You can configure each connection with a schedule for when and how frequently it runs.

Related links

[Configuring Azure Active Directory App Registration](#) on page 23

[Enabling Directory Synchronization](#) on page 24

[Configuring Directory Synchronization](#) on page 25

Configuring Azure Active Directory App Registration

To connect the IP Office to Azure Active Directory, you must register an application ('app') in Azure Active Directory. During that process, Azure Active Directory assigns the app a *Client ID* and *Client Secret*. The IP Office uses those values to connect to Azure Active Directory.

In addition, IP Office connections require the customer's *Tenant ID* and, if setting up a connection for a specific group of users, that group's *Group ID*.

Procedure

1. Using a user account with full administrator rights, login to Azure Active Directory at <https://portal.azure.com>.

2. Search for and select **Azure Active Directory**.
3. Select **Overview**.
4. The **Basic Information** section includes the *Tenant ID* required for IP Office connections. Copy the value to a text file.
5. If planning to create a connection for a particular group of users:
 - a. Select **Groups** and locate the required group.
 - b. Select the group. Select **Properties**.
 - c. The **Object ID** shown next to the group name is the **Group ID** needed for the connection. Copy the value to the text file.
6. Select **App registrations**.
 - a. Click **New registration**.
 - b. For the **Display name**, enter a unique descriptive name such as `IPOSync`.
 - c. Note the displayed **Application (client) ID**. This is the **Client ID** value required by the IP Office. Copy the value to the text file.
 - d. Click the link next to **Client credentials**.
 - e. Click **New client secret**.
 - f. Copy the **Value** shown (not the **Secret ID**) to the text file.
7. Select **API Permissions**.

Using the **Add a permission** option, add read permission for calendars and contacts. Add read all permission for the directory and groups.
8. You now have the information required to create connections between the IP Office and Azure Active Directory.

Next steps

- Proceed to [Enabling Directory Synchronization](#) on page 24.

Related links

[Azure Active Directory Synchronization](#) on page 23

Enabling Directory Synchronization

Directory synchronization with Azure Active Directory uses a service called Collaboration Service running on the IP Office server. For IP500 V2 systems, an IP Office Application Server or Unified Communications Module provides the service.

Before you begin

- [Configuring Azure Active Directory App Registration](#) on page 23.

Procedure

1. Using IP Office Manager or IP Office Web Manager, load the IP Office configuration.
2. Select **System** or **System Settings > System**. If necessary, select the required server in the network.
3. Select **Directory Services**.
4. Select **HTTP**.
5. Set the **Directory Type** to **Collaboration Services**.
6. The default **Resync Interval** is set to 3600 seconds (1 hour). Adjust the value if required.
7. Click **OK** or **Update** to save the changes.
8. If using IP Office Manager, save the configuration back to the IP Office system.

Next steps

- Proceed to [Configuring Directory Synchronization](#) on page 25.

Related links

[Azure Active Directory Synchronization](#) on page 23

Configuring Directory Synchronization

The process below configures a link that copies the details of MS Teams users from Azure Active Directory to the IP Office system directory.

- Once configured, directory synchronization occurs whenever the IP Office system restarts and by default once an hour thereafter.
- The IP Office supports a maximum of 10,000 user records using external directory links.

Before you begin

- [Enabling Directory Synchronization](#) on page 24.

Procedure

1. Check you have the require configuration IDs from Azure Active Directory. See [Configuring Azure Active Directory App Registration](#) on page 23.
2. Using IP Office Web Manager, access the IP Office system configuration. For a standalone IP500 V2 systems, use the IP Office Web Manager menus of the system's IP Office Application Server or Unified Communications Module.
3. Select **Solution**.
4. Select **Solution Settings** and then **User Synchronization**.
5. Click **+ADD** and select **User Synchronization using Microsoft Teams**.
6. Select the **Connect to Directory Service** tab.

7. Enter a **Configuration Name** to identify the purpose for this connection. For example, `TeamsDirectory`.
8. For **Collaboration Client**, select **Directory Service**.
 - a. Select the type of **Directory**.
 - Use **Tenant Directory** to synchronize all the numbers of all the customer's users.
 - Use **Group Directory** to synchronize just the numbers of those users who are members of a specific group.
 - b. Enter the details obtained from Azure Active Directory into the matching fields.
 - c. Click **Test Connection** and wait a couple of minutes.
 - d. If successful, continue with the configuration. Otherwise, check and adjust the settings.
9. Enter the names for the Azure Active Directory user fields to use to populate the IP Office system directory entries. The defaults use `displayName` for the user's name and `businessPhones` for the user's telephone number.
 - You can import multiple numbers for each Azure Active Directory user. For example: Entering `businessPhones, mobilePhone=M` will create separate directory entries for the user's business phone and mobile phone numbers. The directory adds a `M` suffix to the name shown for the mobile number.
10. Click **Save**.

Related links

[Azure Active Directory Synchronization](#) on page 23

Chapter 7: Configuring User Synchronization

You can use the IP Office connections to Azure Active Directory to automatically create matching IP Office user and extension entries for Azure Active Directory users. You can use connections to automatically update and/or delete users.

Related links

[Prevent Manual URI Editing](#) on page 27

[Creating User and Extension Templates](#) on page 28

[Creating User Provisioning Rules](#) on page 29

[Setting Up User Synchronization](#) on page 30

Prevent Manual URI Editing

If the IP Office is using automatic Azure Active Directory synchronization to create and update MS Teams+IP Office users, you must prevent the manual editing of the user **MS Team URI** settings.

Procedure

1. Using IP Office Manager or IP Office Web Manager, load the IP Office system configuration.
2. Select **System** or **System Settings > System**.
3. Select the **Telephony** settings and then select the **MS Teams** tab.
4. To prevent manual editing of **MS Teams URI** settings, select **Auto Populate MS Teams Data**.
5. Click **Update** or **OK**.
6. If using IP Office Manager, save the configuration changes back to the IP Office system.

Next steps

- Proceed to [Creating User and Extension Templates](#) on page 28.

Related links

[Configuring User Synchronization](#) on page 27

Creating User and Extension Templates

When creating new IP Office users, the synchronization process uses a 'user provisioning rule' to define element such as the starting extension number and extension type. The user provisioning rule can also use extension and user templates to automatically configure settings not taken from Azure Active Directory details. If you do not use templates, then those settings use the IP Office system default values.

- The process below uses the template management menus to create or upload new templates. You can also create templates from existing users or extensions by selecting them and then clicking **Save As Template**.
- For MS Teams+IP Office users, the user template used must configure the user's **Profile** setting to one of the following and enable the **Enable MS Teams Client** setting.

- **On subscription mode IP Office systems:**

The IP Office supports MS Teams+IP Office users using the **UC User** profile.

- **On PLDS licensed IP Officesystems:**

The IP Office supports MS Teams+IP Office users using the **Office Worker, Teleworker** and **Power User** profiles.

Before you begin

- [Prevent Manual URI Editing](#) on page 27.

Procedure

1. Using IP Office Web Manager, access the IP Office configuration.
2. Select **Call Management** and then either **Users** or **Extensions**.
3. Click **Actions** and select **Template Management**.
 - a. To create a new template, click **+Add**. For extension templates, you also need to select the type of extension.
 - b. You can use the menu to edit, rename and delete existing templates.
 - c. You can also download the templates as `.xml` files.
 - d. You can upload `.xml` template files that you have downloaded from another IP Office.

Next steps

- Proceed to [Creating User Provisioning Rules](#) on page 29.

Related links

[Configuring User Synchronization](#) on page 27

Creating User Provisioning Rules

When using a connection to Azure Active Directory to create new IP Office users, the connection settings specify which IP Office 'user provisioning rule' to use. That rule:

- Sets the starting extension number for new users.
- Sets the extension type for the new users using either a specified extension template or specified extension type.
- Sets user settings, other than those taken from Azure Active Directory, for the new users using a user template. The IP Office applies default user settings if you do not specify a user template.
- Optionally configure on which IP Office in a network the IP Office creates each new user.

Before you begin

- [Creating User and Extension Templates](#) on page 28.

Procedure

1. Using IP Office Web Manager, access the IP Office system configuration.
2. Select **Solution**.
3. Select **Solution Settings** and then **User Synchronization**.
4. Click **+ADD** and select **User Synchronization using Microsoft Teams**.
5. Click **Manage User Provisioning Rules**.
6. Click **+Add User Provisioning Rule**.
7. Enter a name for the rule.
8. For an IP Office network, set how the synchronization process determines on which IP Office to create new users. The process can:
 - Use the **IP Office** field to select the IP Office system on which to create the users.
 - Use a field in the users Azure Active Directory settings to set the system name, FQDN or LAN1/LAN2 IP address of the required system.
 - Otherwise, the process creates all the new users on the primary server.
9. If not setting the extension numbers using a value received from Azure Active Directory, set the **Starting Extension** number. Otherwise, leave this field blank.
10. Select the required extension template or select an extension type.
 - If you select an extension type, the IP Office applies the default extension settings to the new users' extensions.
11. Select the required user template. If you do not select a user template, the IP Office applies default settings to the new users.
12. Click **Save**.

Next steps

- Proceed to [Setting Up User Synchronization](#) on page 30.

Related links

[Configuring User Synchronization](#) on page 27

Setting Up User Synchronization

After configuring any templates and/or user provisioning rules required, you can use the following process to configure synchronization. You can configure multiple synchronization settings if necessary.

Before you begin

- [Creating User Provisioning Rules](#) on page 29.

Procedure

1. Check you have the require configuration IDs from Azure Active Directory. See [Configuring Azure Active Directory App Registration](#) on page 23.
2. Using IP Office Web Manager, access the IP Office system configuration.
3. Select **Solution**.
4. Select **Solution Settings** and then **User Synchronization**.
5. Click **+ADD** and select **User Synchronization using Microsoft Teams**.
6. Select the **Connect to Directory Service** tab.
 - a. Enter a **Configuration Name** to identify the purpose for this connection. For example, TeamsUsers.
 - b. For **Collaboration Client**, select **Directory Service**.
 - c. Select the type of **Directory**.
 - Use **Tenant Directory** to manage IP Office entries for all the customer's Azure Active Directory users.
 - Use **Group Directory** to manage IP Office entries for just those users who are members of a specific Azure Active Directory group.
 - d. Enter the details obtained from Azure Active Directory into the matching fields.
 - e. Click **Test Connection** and wait a couple of minutes.
 - f. If successful, continue with the configuration. Otherwise, check and adjust the settings.

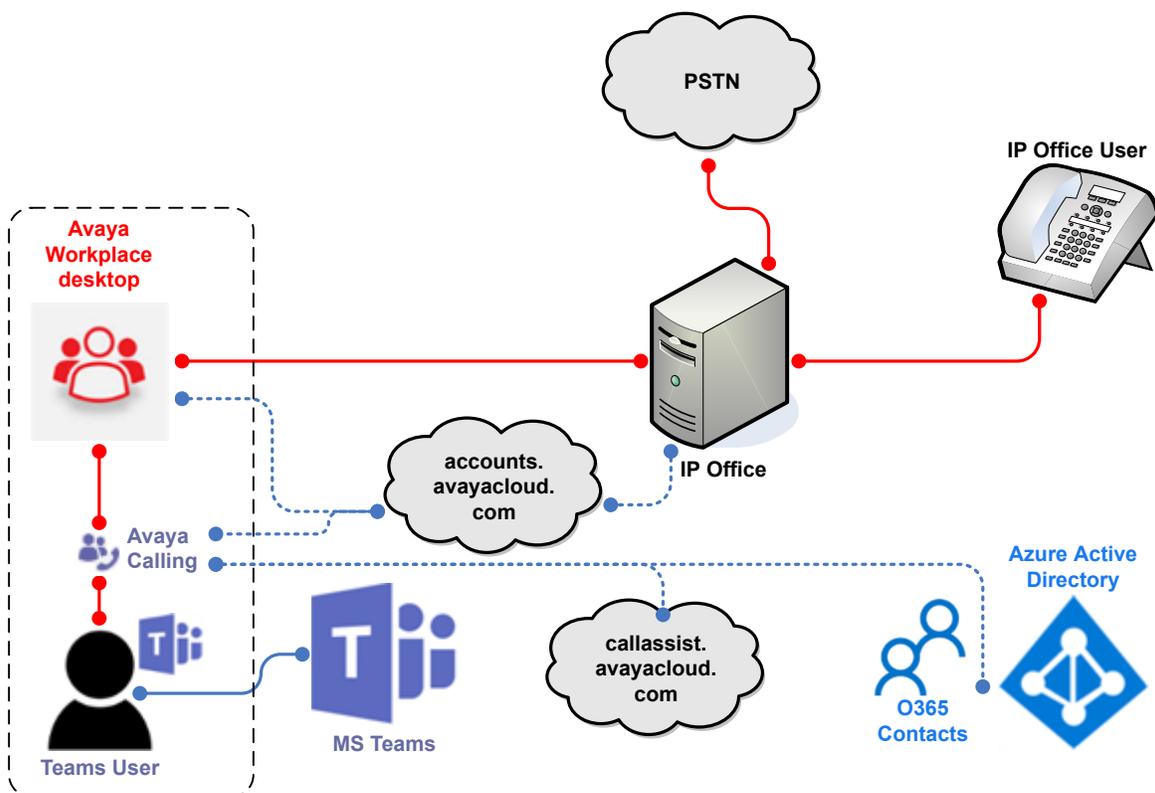
7. Select the **Synchronize User Fields** tab:
 - a. Use the drop-down menus in the **Microsoft Teams Fields** column to select which Azure Active Directory field the synchronization process will use to set the value for the matching IP Office configuration settings.
 - Selecting fields for the **User Identification** and **Name** fields is mandatory. All other fields are optional and will use the values defined by the user/extension templates or default IP Office values.
 - The **User Identification** must be unique. The IP Office uses this to ensure that it applies future synchronization update/delete actions to the correct users.
 - You can use the final pair of drop-downs to set on which IP Office system in a network the synchronization process creates new users. If not set, you can specify the required IP Office system in the user provisioning rule. Otherwise, the synchronization process creates new users on the primary system.
 - b. Select which functions the synchronization process performs. You can select more than one function:
 - **New** - Create new IP Office user and extension records for any user whose user identification is not already present.
 - **Update** - Update the settings, if required, of the user with the same user identification.
 - **Delete** - Delete the user and extension records for any users whose user identification is not present in the latest synchronization.
 - c. If you want the IP Office to regularly perform synchronization, click **Use Schedule** and define the required schedule.
 - d. Click **Preview Results**. The menu shows a summary of the changes that would occur. If necessary, amend the settings.
 - e. When complete, click **Synchronize**.
8. Click **Save**.

Related links

[Configuring User Synchronization](#) on page 27

Chapter 8: Configuring Avaya Calling for MS Teams

MS Teams+IP Office users can use the Avaya Calling app. Adding the app to the user's MS Teams client creates a link between that client and Avaya Workplace Client on the same device.



- The MS Teams user requires Avaya Workplace Client and MS Teams with the Avaya Calling plug-in on the same device.
- The IP Office system needs to support Avaya Cloud synchronization.
- The MS Teams client supports the user's Office 365 contacts which they can use to make calls, IM and email. It does not support the Favorites or Avaya Contacts.
- The user still uses their Avaya Workplace Client to receive incoming calls.

Related links

[Configuring the Avaya Workplace Client](#) on page 33

[Add Avaya Calling to the Domain](#) on page 33

- [Obtain the Avaya Calling Manifest File](#) on page 34
- [Upload the Manifest File](#) on page 34
- [Grant the App Contact Permissions](#) on page 35
- [Create an Application Policy](#) on page 36
- [Assigning an Application Policy](#) on page 37
- [Pinning the Application](#) on page 37
- [Assigning a Setup Policy](#) on page 38
- [Adding Avaya Calling to the MS Teams Client](#) on page 39

Configuring the Avaya Workplace Client

Use of Avaya Calling requires you to configure the IP Office to Avaya Cloud. That includes configuring the user with a **Unique Identity** in the IP Office configuration.

For details of how to configure IP Office support for Avaya Workplace Client with Avaya Cloud, see the [IP Office Avaya Workplace Client Installation Notes](#) manual.

Related links

- [Configuring Avaya Calling for MS Teams](#) on page 32

Add Avaya Calling to the Domain

After you have verified correct operation of the Avaya Workplace Client clients with Avaya Cloud, you can add support for the Avaya Calling application to the customer's Avaya Cloud domain.

Before you begin

- [Configuring the Avaya Workplace Client](#) on page 33.

Procedure

1. Log in to Avaya Cloud at <https://accounts.avayacloud.com>.
2. Click **Manage Companies**.
3. Click the company name.
4. Click **Apps**.
5. Click **Configure New App**.
6. In the **Product** field, select **Avaya Calling For Teams**.
7. In the **Public Settings** field, enter the following:

```
{  
  "Client_Settings_File_Address": []  
}
```

8. Click **Save**.

Next steps

- Proceed to [Obtain the Avaya Calling Manifest File](#) on page 34.

Related links

[Configuring Avaya Calling for MS Teams](#) on page 32

Obtain the Avaya Calling Manifest File

Supporting Avaya Calling requires you to add the application's manifest file to the customer's MS Teams apps library.

- Note: This process requires you to have PLDS rights to download files from Avaya support.

Before you begin

- [Add Avaya Calling to the Domain](#) on page 33.

Procedure

1. Go to <https://support.avaya.com>.
2. Click **Support by Product** and select **Downloads**.
3. In the **Enter Product Name** field, enter **Avaya Workplace Client For Windows** or **Avaya Workplace Client For Mac**. It is not important which you use, all Avaya Workplace Client platforms use the same file.
4. Select the link for **Avaya Calling for Microsoft Teams**.
5. Click on the link for the manifest file.
6. If prompted, login to the support site using your PLDS download credentials.
7. Click on **Download** to download the file to your PC.

Next steps

- Proceed to [Upload the Manifest File](#) on page 34.

Related links

[Configuring Avaya Calling for MS Teams](#) on page 32

Upload the Manifest File

Use this process to upload the Avaya Calling manifest file to the customer's MS Teams apps library.

Before you begin

- [Obtain the Avaya Calling Manifest File](#) on page 34.

Procedure

1. Login to the admin portal at <https://admin.microsoft.com/Adminportal>.
2. Select **Teams apps** and then **Manage apps**.
3. Click **Upload**.
4. Click **Select a file** and upload the Avaya Calling manifest zip file.

Next steps

- Proceed to [Grant the App Contact Permissions](#) on page 35.

Related links

[Configuring Avaya Calling for MS Teams](#) on page 32

Grant the App Contact Permissions

To display Office 365 contacts, you must grant the following permissions to the Avaya Calling application:

- **Sign in and read user profile**
- **Read all users' basic profiles**
- **Read user contacts**

To display Office 365 enterprise search results with phone numbers, you must also grant the following permission:

- **Read directory data**

If you are a global admin, then on behalf of all users in your organization you can review and grant consent for the permissions requested by the app. By doing that, the individual users do not need to review and accept the permissions when they start the app. For more details, refer to <https://docs.microsoft.com/en-us/microsoftteams/app-permissions-admin-center>.

Before you begin

- [Upload the Manifest File](#) on page 34.

Procedure

1. Login to the admin portal at <https://admin.microsoft.com/Adminportal> using a global administrator account.
2. Select **Teams apps** and then **Manage apps**.
3. Locate and click on the Avaya Calling app to display its details.
4. Select the **Permissions** tab.

5. Under **Org-wide permissions**, click **Review permissions and consent**.
6. Check that the list includes the required permissions.
7. Click **Accept**.

Next steps

- Proceed to [Create an Application Policy](#) on page 36.

Related links

[Configuring Avaya Calling for MS Teams](#) on page 32

Create an Application Policy

MS Teams uses applications policies to control what additional apps, if any, users can add to their MS Teams client.

For more details, refer to <https://docs.microsoft.com/en-us/microsoftteams/manage-apps>.

Before you begin

- [Grant the App Contact Permissions](#) on page 35.

Procedure

1. Login to the admin portal at <https://admin.microsoft.com/Adminportal>.
2. Select **Teams apps** and then **Permission policies**.
3. Either:
 - Select an existing policy and click **Edit**.
 - Click **Add** to add a new policy.
4. Set the policy name as required.
5. For each of the policy categories, select the allowed policy. Avaya Calling is a custom app, so this needs to be set to either **Allow all apps** or **Allow specific apps and block all others**.
6. If set to **Allow specific apps and block all others**, you need to add the allowed apps:
 - a. Select **Allow apps**.
 - b. Search the list of apps and click **Add** next to each app you want allowed, including the Avaya Calling app.
 - c. Click **Allow**.
7. Click **Save**.

Next steps

- Proceed to [Assigning an Application Policy](#) on page 37.

Related links

[Configuring Avaya Calling for MS Teams](#) on page 32

Assigning an Application Policy

Each MS Teams user uses either, the default global voice routing policy, or the policy specifically assigned to them using this process.

- This process assigns a policy to individual users and is an example. You can also assign policies to groups of users or globally. For more information, see <https://docs.microsoft.com/en-us/microsoftteams/assign-policies-users-and-groups>.

Before you begin

- [Create an Application Policy](#) on page 36.

Procedure

1. Login to the MS Teams admin portal at <https://admin.teams.microsoft.com>.
2. Select **Users**.
3. Select the required user or users.
4. Click **Edit settings**.
5. Select the **Policies** tab and click **Edit**.
6. In the **Application policy** drop-down, select the policy you want to assign to the user or users and click **Apply**.

Next steps

- Proceed to [Pinning the Application](#) on page 37.

Related links

[Configuring Avaya Calling for MS Teams](#) on page 32

Pinning the Application

By default, to install an app, users search for it within their MS Teams client and then install it. You can use a setup policy to define a set of apps that automatically appear in the user's MS Teams client's apps bar. To do this, create an app setup policy and assign it to users. To learn more, see [Assigning a Setup Policy](#) on page 38.

Before you begin

- [Assigning an Application Policy](#) on page 37.

Procedure

1. Login to the admin portal at <https://admin.microsoft.com/Adminportal>.
2. Select **Teams apps** and **Setup Policies**.
3. Select **Add** and enter a description name for the policy.
4. Enable **Allow user pinning**.
5. Under **Pinned Apps**, select **Add apps**.
6. Search for the Avaya Calling app. Select it and click **Add**.
7. Click **Add**.
8. Click **Save**.

Next steps

- Proceed to [Assigning a Setup Policy](#) on page 38.

Related links

[Configuring Avaya Calling for MS Teams](#) on page 32

Assigning a Setup Policy

After creating a setup policy, you can assign it to users.

- This process assigns a policy to individual users and is an example. You can also assign policies to groups of users or globally. For more information, see <https://docs.microsoft.com/en-us/microsoftteams/assign-policies-users-and-groups>.

Before you begin

- [Pinning the Application](#) on page 37.

Procedure

1. Login to the MS Teams admin portal at <https://admin.teams.microsoft.com>.
2. Select **Users**.
3. Select the required user or users.
4. Click **Edit settings**.
5. Select the **Policies** tab and click **Edit**.
6. In the **Setup policy** drop-down, select the policy you want to assign to the user or users and click **Apply**.

Next steps

- Proceed to [Adding Avaya Calling to the MS Teams Client](#) on page 39.

Related links

[Configuring Avaya Calling for MS Teams](#) on page 32

Adding Avaya Calling to the MS Teams Client

The use of the Avaya Calling plug-in is optional when using direct routing between MS Teams and the IP Office.

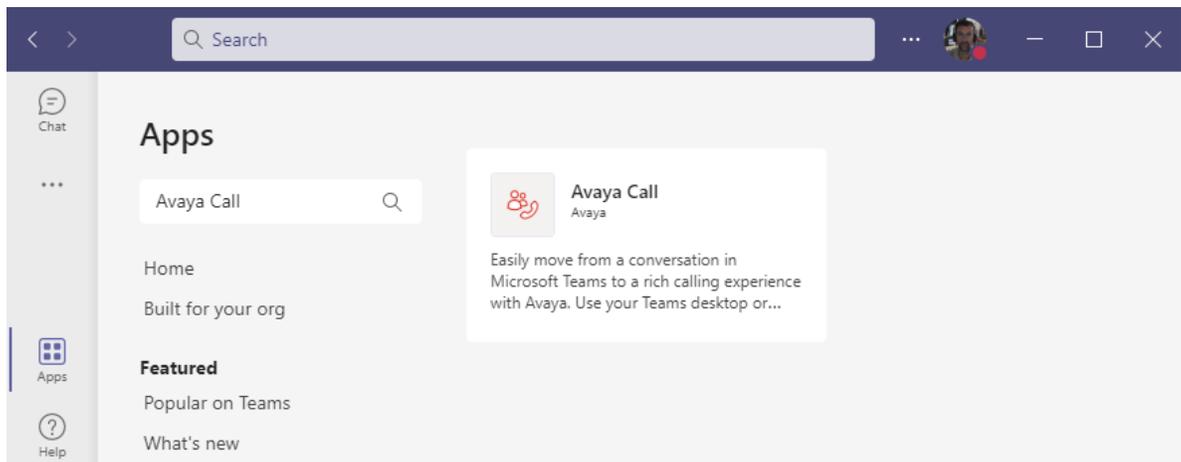
- The user's PC must have Avaya Workplace Client installed and operational (not covered in this document).
- You must configure the user to support MS Teams integration with IP Office. See [Manually Adding MS Teams+IP Office Users](#) on page 20.

Before you begin

- [Assigning a Setup Policy](#) on page 38.

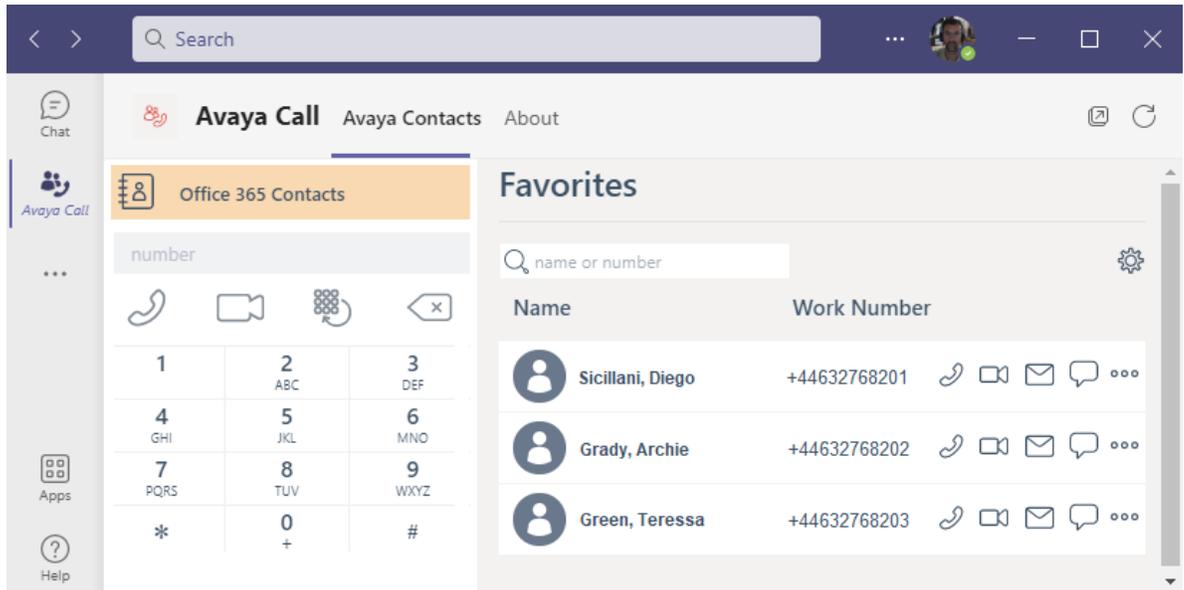
Procedure

1. On the user's PC, start MS Teams and login if necessary.
2. Click **Apps**.
3. In the **Search all apps** search box, enter **Avaya Call**.



4. Click on the app listing shown and select **Add**.

5. Enter your username and password and click **Sign In**.



Related links

[Configuring Avaya Calling for MS Teams](#) on page 32

Chapter 9: Additional Help and Documentation

The following pages provide sources for additional help.

Related links

[Additional Manuals and User Guides](#) on page 41

[Getting Help](#) on page 41

[Finding an Avaya Business Partner](#) on page 42

[Additional IP Office resources](#) on page 42

[Training](#) on page 43

Additional Manuals and User Guides

The [Avaya Documentation Center](#) website contains user guides and manuals for Avaya products including IP Office.

- For a listing of the current IP Office manuals and user guides, look at the [Avaya IP Office™ Platform Manuals and User Guides](#) document.
- The [Avaya IP Office Knowledgebase](#) and [Avaya Support](#) websites also provide access to the IP Office technical manuals and users guides.
 - Note that where possible these sites redirect users to the version of the document hosted by the [Avaya Documentation Center](#).

For other types of documents and other resources, visit the various Avaya websites (see [Additional IP Office resources](#) on page 42).

Related links

[Additional Help and Documentation](#) on page 41

Getting Help

Avaya sells IP Office through accredited business partners. Those business partners provide direct support to their customers and can escalate issues to Avaya when necessary.

If your IP Office system currently does not have an Avaya business partner providing support and maintenance for it, you can use the Avaya Partner Locator tool to find a business partner. See [Finding an Avaya Business Partner](#) on page 42.

Related links

[Additional Help and Documentation](#) on page 41

Finding an Avaya Business Partner

If your IP Office system currently does not have an Avaya business partner providing support and maintenance for it, you can use the Avaya Partner Locator tool to find a business partner.

Procedure

1. Using a browser, go to the [Avaya Website](#) at <https://www.avaya.com>
2. Select **Partners** and then **Find a Partner**.
3. Enter your location information.
4. For IP Office business partners, using the **Filter**, select **Small/Medium Business**.

Related links

[Additional Help and Documentation](#) on page 41

Additional IP Office resources

In addition to the documentation website (see [Additional Manuals and User Guides](#) on page 41), there are a range of website that provide information about Avaya products and services including IP Office.

- [Avaya Website](#) (<https://www.avaya.com>)

This is the official Avaya website. The front page also provides access to individual Avaya websites for different regions and countries.

- [Avaya Sales & Partner Portal](#) (<https://sales.avaya.com>)

This is the official website for all Avaya business partners. The site requires registration for a user name and password. Once accessed, you can customize the portal to show specific products and information type that you want to see.

- [Avaya IP Office Knowledgebase](#) (<https://ipofficekb.avaya.com>)

This site provides access to an online, regularly updated version of IP Office user guides and technical manual.

- [Avaya Support](#) (<https://support.avaya.com>)

This site provide access to Avaya product software, documentation and other services for Avaya product installers and maintainers.

- [Avaya Support Forums](https://support.avaya.com/forums/index.php) (<https://support.avaya.com/forums/index.php>)

This site provides forums for discussing product issues.

- [International Avaya User Group](https://www.iuag.org) (<https://www.iuag.org>)

This is the organization for Avaya customers. It provides discussion groups and forums.

- [Avaya DevConnect](https://www.devconnectprogram.com/) (<https://www.devconnectprogram.com/>)

This site provides details on APIs and SDKs for Avaya products, including IP Office. The site also provides application notes for third-party non-Avaya products that interoperate with IP Office using those APIs and SDKs.

- [Avaya Learning](https://www.avaya-learning.com/) (<https://www.avaya-learning.com/>)

This site provides access to training courses and accreditation programs for Avaya products.

Related links

[Additional Help and Documentation](#) on page 41

Training

Avaya training and credentials ensure our Business Partners have the capabilities and skills to successfully sell, implement, and support Avaya solutions and exceed customer expectations. The following credentials are available:

- Avaya Certified Sales Specialist (APSS)
- Avaya Implementation Professional Specialist (AIPS)
- Avaya Certified Support Specialist (ACSS)

Credential maps are available on the [Avaya Learning](#) website.

Related links

[Additional Help and Documentation](#) on page 41

Index

A

- Active Directory [13](#), [23](#)
 - App registration [23](#)
- Administrator [41](#)
- APIs [42](#)
- App registration [23](#)
- Application
 - Pin [37](#)
- Application Notes [42](#)
- Application Policy [36](#), [37](#)
- Avaya Calling [8](#), [12](#), [32](#)
 - ...with Active Directory [13](#)
 - Add to MS Teams [39](#)
 - Application Policy [36](#)
 - Download [34](#)
 - Permissions [35](#)
 - Pin the application [37](#)
- Avaya Workplace [33](#)
- Azure [23](#)
 - App registration [23](#)
- Azure Active Directory [13](#)

B

- Both user [9](#)
- business partner locator [42](#)

C

- Calling Plans [8](#)
- Client ID [23](#)
- Components [8](#)
- courses [42](#)

D

- Direct Routing [8](#)
- Directory
 - Manual editing [21](#)
 - Synchronization [24](#), [25](#)
- Domain
 - Add Avaya Calling [33](#)
- Download
 - Avaya Calling [34](#)
 - Manifest file [34](#)

E

- Extension
 - IP Office templates [28](#)
- Extension numbers [16](#)

- Extension numbers (*continued*)
 - Formats [15](#)
- Extensions numbers [15](#)

F

- Format
 - Telephone numbers [15](#)
- forums [42](#)

G

- Group ID [23](#)

H

- Help [41](#)
- Hold indication [11](#)

I

- IP Office
 - Configuration [20](#)
 - Extension templates [28](#)
 - Prevent URI editing [27](#)
 - Routing calls [17](#)
 - User provisioning rules [29](#)
 - User templates [28](#)
- IP Office only user [9](#)

K

- Known call limitations [11](#)

L

- Limitations [11](#)

M

- Manifest file
 - Download [34](#)
 - Upload [34](#)
- Manual editing
 - Directory entries [21](#)
- Manuals [41](#)
- Microsoft
 - Calling Plans [8](#)
- MS Teams
 - Add Avaya Calling [39](#)
 - Avaya Calling [8](#)

MS Teams (<i>continued</i>)		T	
Call options	8	Technical Bulletins	42
Calling plans	8	Telephone numbers	15 , 16
Deployment scenarios	12	Formats	15
Direct Routing	8	Tenant ID	23
Operator Connect	8	training	42 , 43
User numbers	19		
Users	18	U	
MS Teams only user	9	Upload	
N		Manifest files	34
Name updates	11	UPR	29
Numbers	15 , 16	URI editing	27
Extension numbers	16	User	
Formats	15	IP Office templates	28
MS Teams	19	MS Teams configuration	18
User numbers	19	MS Teams numbers	19
		Synchronization	27 , 30
O		User types	9
Object ID	23	User Guides	41
Operator Connect	8	User provisioning rules	29
		Users	
P		Add	20
Permissions	35	MS Teams	18
Phone numbers	16		
Formats	15	W	
Pin	37	websites	42
Policies		Workplace	33
Application Policy	36 , 37		
Setup Policy	38		
Prevent URI editing	27		
Q			
Quick Reference Guides	41		
R			
Reseller	41		
S			
sales	42		
Scenarios	12		
SDKs	42		
Setup Policy	38		
support	42		
Synchronization			
Directory	24 , 25		
User	30		
System Administrator	41		