

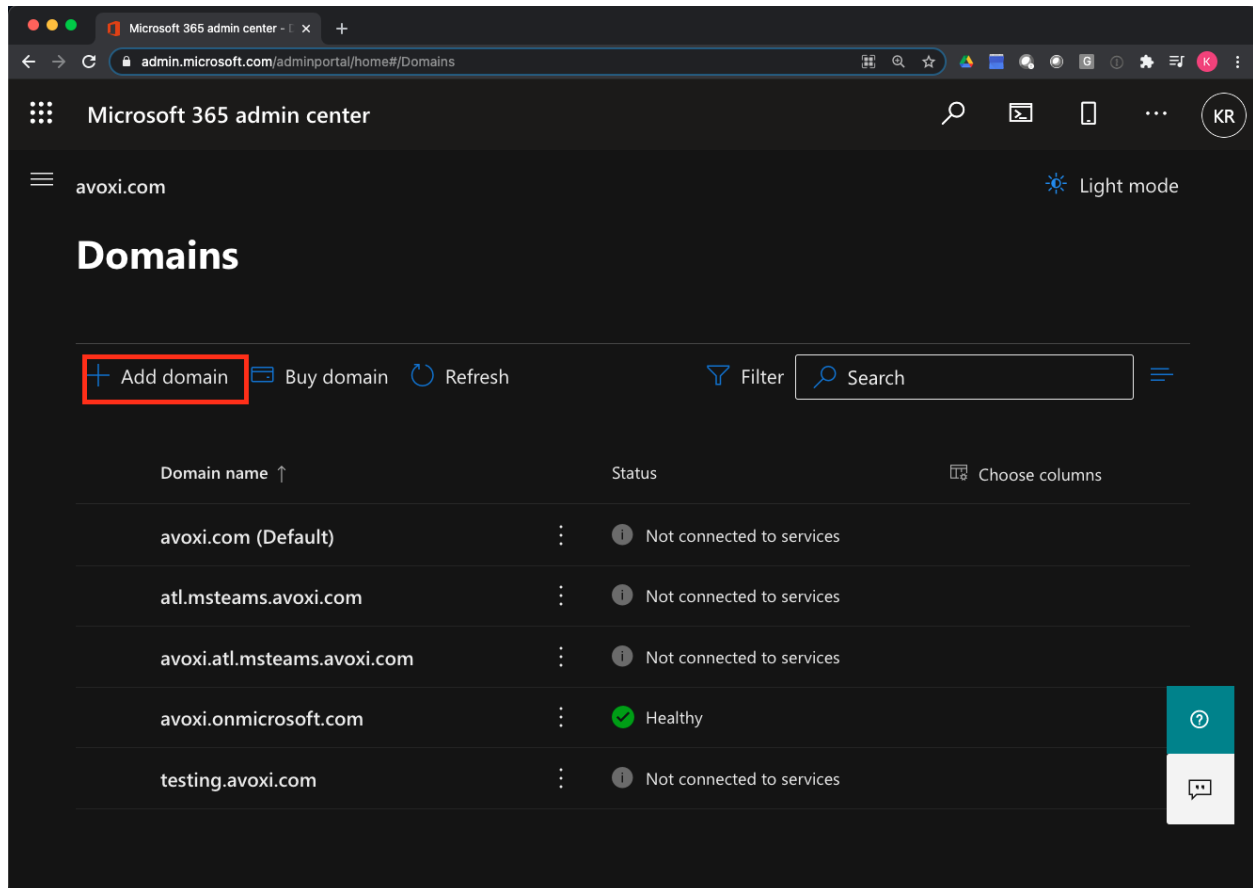
CUSTOMER GUIDE TO MS TEAMS + AVOXI Integration (AVOXI Hosted SBC)

Domain Creation

In order to use AVOXI's Direct Routing service for MS Teams, it is necessary to create a domain in your Teams tenant. The domain will be provided by AVOXI to be added to your tenant. The format of the domain will be <customer-number.atl.msteams.avoxi.com>

Step 1 Create Domain

- Log into admin portal at <https://admin.microsoft.com>
- On the side panel click "Show all"
- Click "Settings" and select "Domains"
- Click "Add Domain"



- In the “Domain name” type the name of the domain provided by AVOXI. (**In the example below we are using C12345.atl.msteams.avoxi.com but customers will give the specific one provided to them)

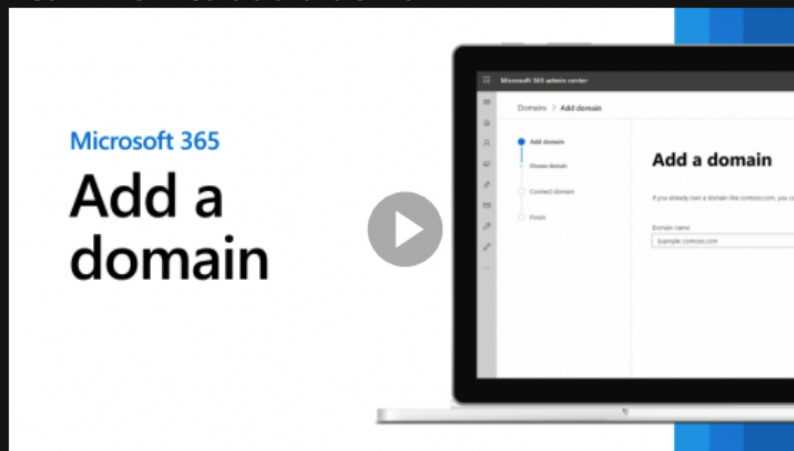
Add a domain

If you already own a domain like contoso.com, you can add it to your account here.

Domain name

C12345.atl.msteams.avoxi.com

Learn how to add a domain



Add your domain to Microsoft 365. If you're using a common domain registrar like GoDaddy, it's an easy 3-step process. Otherwise, you can update your DNS records yourself.

- Click “Use this domain”
- On the “How do you want to verify your domain?” page, make sure that “Add a TXT record to the domain’s DNS records” is selected and click “Continue”
- On the “Verify you own this domain” page, copy the value under “TXT value (ex. MS=ms50276108)” and provide it to AVOXI to have this created on the AVOXI DNS servers.

Step 2 Verify Domain Until AVOXI creates the DNS record for your company domain, the newly created domain will show as being “incomplete.” Once AVOXI confirms that the DNS record has been completed...

- Click on the domain and click “Continue setup”
- Click “Continue” until you get the page that allows you to click the “Verify” button.
- Ensure that the
- Once verified, the domain should show a status of “Healthy” in the portal.

Step 3 In order to enable users to receive inbound calls as well as configuring outbound calling through AVOXI, A PSTN Usage, a Voice Route, a Voice Routing Policy and the SBC must be created on the customer MS Teams tenant.

Create PSTN Usage in customer MS Teams tenant

- In order to complete this task it is necessary for the customer to download and install Powershell in order to configure PSTN Usage.
 - Go to <https://docs.microsoft.com/en-us/powershell/>
 - Click on the link "Setup and installation"
 - Choose the version of Powershell for the operating system running on your computer
 - Once installed, you'll need to log into your tenant in Powershell. This will require you to have administrator permissions to create the PSTN Usage.
 - Open Powershell and run the command "Connect-MicrosoftTeams"
 - You will then be redirected to a web browser to select the Microsoft account with which you'd like to log in. Select the account.
 - Enter the password
 - Once in your tenant enter the following command
 - `Set-CsOnlinePstnUsage -Identity Global -Usage @{Add="AvoxiATLTeams"}`
 - You will need to wait at least 15 minutes before the setting change will take effect in Azure

Create Voice Routes in customer MS Teams tenant

- This task must be completed in Powershell
 - Connect to your tenant (see how to connect to your MS Teams tenant in "Step 8" above).
 - Run the following command
 - `New-CsOnlineVoiceRoute -Identity "AvoxiATLTeams" -NumberPattern ".*" -OnlinePstnGatewayList <customer-number>.atl.msteams.avoxi.com -Priority 1 -OnlinePstnUsages "AvoxiATLTeams"`
 - **Ex. `New-CsOnlineVoiceRoute -Identity "AvoxiATLTeams" -NumberPattern ".*" -OnlinePstnGatewayList c12345.atl.msteams.avoxi.com -Priority 1 -OnlinePstnUsages "AvoxiATLTeams"`**

Create Voice Routing Policy in customer MS Teams tenant

- This task must be completed in Powershell
 - Connect to your tenant (see how to connect to your MS Teams tenant in "Step 8" above).
 - Run the following command
 - `New-CsOnLineVoiceRoutingPolicy "AvoxiATLTeams" -OnlinePstnUsages "AvoxiATLTeams"`

Add SBC in customer MS Teams tenant

In order to allow the MS Teams users to make outbound calls through AVOXI, the SBC must be set up in the customer tenant. This can be completed either in Powershell or in the MS Teams admin center. Once the SBC is created, you must associate the newly created Voice Route with the SBC.

Powershell

To do so in Powershell, you would simply run the following command to create the SBC.

```
New-CsOnlinePSTNGateway -Fqdn <SBC FQDN> -SipSignalingPort <SBC SIP Port> -MaxConcurrentSessions <Max Concurrent Sessions the SBC can handle> -Enabled $true
```

Ex. New-CsOnlinePSTNGateway -Fqdn c12345.atl.msteams.avoxi.com -SipSignalingPort 5061 -MaxConcurrentSessions 24 -Enabled \$true

You can then check then check whether the SBC is now in the list of paired SBCs by running the following command.

```
Get-CsOnlinePSTNGateway -Identity <SBC FQDN>
```

Ex. Get-CsOnlinePSTNGateway -Identity c12345.atl.msteams.avoxi.com

Running this command should return a result similar to below.

```
Identity       : c12345.atl.msteams.avoxi.com
Fqdn           : c12345.atl.msteams.avoxi.com
SipSignalingPort : 5061
CodecPriority   : SILKWB,SILKNB,PCMU,PCMA
ExcludedCodecs :
FailoverTimeSeconds : 10
ForwardCallHistory : False
ForwardPai      : False
SendSipOptions  : True
MaxConcurrentSessions : 24
Enabled        : True
```

Microsoft Teams Admin Center

- In the left navigation, go to Voice > Direct Routing, and then click the SBCs tab.
- Click Add.
- Enter a FQDN for the SBC.
- Configure the following settings for the SBC, based on your organization's needs
 - SBC FQDN
 - Toggle "Enable" to "On."
 - SIP Signaling Port
 - Toggle "Forward P-Asserted-Identity (PAI) header" to "On."

Ex.

c12345.atl.msteams.avoxi.com

You must use the SBC's FQDN that has the host name registered in DNS. For example, if your organization owns **contoso.com** then **sbc.contoso.com** is good name for the SBC, but **sbc.contoso.onmicrosoft.com** isn't. [Learn more](#)

SBC settings

When you are adding this SBC, you can turn on or off the SBC and change settings that are specific to the SBC.

Enabled	<input type="checkbox"/> Off
SIP signaling port	<input type="text" value="5061"/>
Send SIP options ⓘ	<input checked="" type="checkbox"/> On
Forward call history	<input type="checkbox"/> Off
Forward P-Asserted-Identity (PAI) header ⓘ	<input checked="" type="checkbox"/> On
Concurrent call capacity	<input type="text" value="24"/>
Failover response codes	<input type="text" value="408, 503, 504"/>
Failover time (seconds) ⓘ	<input type="text" value="10"/>
Preferred country/region for media traffic	<input type="text" value="Auto"/> ▾
SBC supports PIDF/LO for emergency calls	<input type="checkbox"/> Off
Ring phone while trying to find the user	<input checked="" type="checkbox"/> On

Location based routing and media optimization

Location based routing lets you control the voice routing for VoIP and PSTN endpoints based on the location of the people that are on the call.

Location based routing ⓘ	<input type="checkbox"/> Off
Gateway site ID	<input type="text" value="None"/> ▾
Bypass mode ⓘ	<input type="text" value="None"/> ▾

- Click "Save."

Assign AVOXI Virtual Number to Microsoft Teams User

Ensure that the user is homed online and phone number is not being synced from on-premises (applicable for Skype for Business Server Enterprise Voice enabled users being migrated to Teams Direct Routing)

Direct Routing requires the user to be homed online. You can check by looking at the RegistrarPool parameter, which needs to have a value in the infra.lync.com domain. "OnPremLineUriManuallySet" parameter should also be set to

True. This is achieved by configuring the phone number and enabling enterprise voice and voicemail using Skype for Business Online PowerShell (This task must be completed in Powershell).

- Connect to your tenant (see how to connect to your MS Teams tenant in “Step 8” above).
- Run the following command
 - `Get-CsOnlineUser -Identity "<User name>" | fl RegistrarPool,OnPremLineUriManuallySet,OnPremLineUri,LineUri` (**Replace <user name> with the name of the MS Teams user)
- In case “OnPremLineUriManuallySet” is set to False and LineUri is populated with a <E.164 phone number>, please clean the parameters using on-premises Skype for Business Management Shell, before configuring the phone number using Skype for Business Online PowerShell.
- Run the following command
 - `Set-CsUser -Identity "<User name>" -LineUri $null -EnterpriseVoiceEnabled $False -HostedVoiceMail $False` (**Replace <user name> with the name of the MS Teams user)
- After the changes have synced to Office 365 the expected output of `Get-CsOnlineUser -Identity "<User name>" | fl RegistrarPool,OnPremLineUriManuallySet,OnPremLineUri,LineUri` command would be:

```
RegistrarPool           : pool.infra.lync.com
OnPremLineURIManuallySet : True
OnPremLineURI           :
LineURI                  :
```

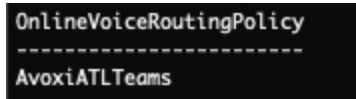
Configure the phone number and enable enterprise voice and voicemail

After you have created the user and assigned a license, the next step is to configure the user's Virtual Number and voicemail. To add the phone number and enable voicemail, this task must be completed in Powershell.

- Run the following command
 - `Set-CsUser -Identity "<User name>" -EnterpriseVoiceEnabled $true -HostedVoiceMail $true -OnPremLineURI tel:<phone number>` (**Make sure that the <phone number> is programmed as the full number (ex. 16783485041).
- To confirm that the number is now assigned to the user, run the `Get-CsOnlineUser -Identity "<User name>" | fl RegistrarPool,OnPremLineUriManuallySet,OnPremLineUri,LineUri` command again. You should now see the phone number in the “OnPremLineURI” and “LineURI.”
- The user is not ready to receive calls.

Once your number has been assigned to your MS Teams user account, you will need to enable the diapad on the user account as it is not visible by default.

- Run the the following command
 - `Grant-CsOnlineVoiceRoutingPolicy -Identity "<username>" -PolicyName AvoxiATLTeams` (ex. `Grant-CsOnlineVoiceRoutingPolicy -Identity "criss.soto@avoxi.com" -PolicyName AvoxiATLTeams`)
- To confirm that the user is now using the proper Voice Routing Policy, run the below command:
 - `Get-CsOnlineUser "<username>" | select OnlineVoiceRoutingPolicy`
- You should get an output that looks similar to the following.



An E1 license is all that is needed to take advantage of AVOXI's Microsoft Teams Direct Routing service, however if you'd like to see the full list of Microsoft Teams licenses and the benefits they provide, go to [Your Complete Guide: Understanding Microsoft Teams Voice Licensing](#) which outlines the required licensing.

Once this has been completed, you will need to forward your AVOXI Virtual Number to the MS Teams cloud. In order to do so, follow the link below which details the steps.

https://support.avoxi.com/153319-sip-configuration-guides/how-to-setup-sip-forwarding-in-genius?from_search=66234774

Assign an AVOXI Virtual Number to a Microsoft Teams Auto Attendant or Call Queue

Customers may have a need to direct their AVOXI Virtual Numbers to an auto attendant or a call queue that exists in their Microsoft Teams tenant.

Virtual User License

For each auto attendant and call queue, also referred to as "resource accounts" you must also have a Microsoft Virtual User License assigned to each resource account. By default, all Teams tenants come with one free Virtual User license. A Virtual User license will need to be purchased for all subsequent resources that require a number assignment. The link below provides details on how to purchase Virtual Resources licenses.

<https://docs.microsoft.com/en-us/microsoftteams/teams-add-on-licensing/virtual-user>

Once purchased the license will need to be assigned to a resource account. The link below details the procedure for managing resource accounts.

<https://docs.microsoft.com/en-us/microsoftteams/manage-resource-accounts>

Assigning your AVOXI Virtual Number to the resource account is also detailed in the link above. However, if you prefer to assign the number to a resource account using Microsoft Powershell, you can do so by running the following command:

```
Set-CsOnlineApplicationInstance -Identity "<name.of.account>" -OnpremPhoneNumber <phone.number>
```

```
Ex. Set-CsOnlineApplicationInstance -Identity "cq-demo-avoxi@avoxi.onmicrosoft.com" -OnpremPhoneNumber +18006133491
```

If no auto attendants or call queues currently exist, follow the links below for instructions on how to set them up.

Setup Auto Attendant

<https://docs.microsoft.com/en-us/microsoftteams/create-a-phone-system-auto-attendant>

Setup Call Queue

<https://docs.microsoft.com/en-us/microsoftteams/create-a-phone-system-call-queue>

Using an Auto Attendant number for Outbound Caller ID

It is possible to use a Virtual Number which has been assigned to an Auto Attendant as the outbound caller ID when users make outbound calls to the PSTN. This can be beneficial if there is a requirement to have all returned, inbound phone calls to land on the auto attendant. This also precludes customers from having to provision a dedicated Virtual Number for all users that require outbound calling. To accomplish this, a customer Caller ID Policy must be created and assigned to each user that wishes to use the Virtual Number as their caller ID.

****To configure this in Powershell it is required that you be running version 2.3.1 or higher. To determine which version you are currently using, run the command *Get-Module -Name MicrosoftTeams* while logged into your tenant in Powershell. If you are not running version 2.3.1 or higher run the command *Update-Module -Name MicrosoftTeams*.**

Create Custom Caller ID Policy

In order to create the custom Caller ID Policy, open MS Powershell and run the following commands:

```
$ObjId = (Get-CsOnlineApplicationInstance -Identity <auto attendant username>).ObjectId
```

```
New-CsCallingLineIdentity -Identity <common name for policy> -CallingIDSubstitute Resource -EnableUserOverride $false -ResourceAccount $ObjId -CompanyName "company name"
```

Ex.

```
$ObjId = (Get-CsOnlineApplicationInstance -Identity aa-demo-avoxi@avoxi.onmicrosoft.com).ObjectId
```

```
New-CsCallingLineIdentity -Identity AA-DEMO-AVOXI -CallingIDSubstitute Resource -EnableUserOverride $false -ResourceAccount $ObjId -CompanyName "AVOXI"
```

*****You can find the username for the auto attendant by logging into the Microsoft 365 Admin Portal and going to Users > Active Users.**

After running those commands you should see the new Caller ID Policy in the Microsoft Teams Admin Center by going to Voice > Caller ID Policies

Microsoft Teams admin center

Caller ID policies

Caller ID policies are used to change or block the Caller ID (also called a Calling Line ID) for users. By default, the user's phone number is displayed when a call is made to a PSTN phone number such as a landline or mobile phone. You can use the Global (Org-wide default) policy and [customize it](#) or create a custom policy that provides an alternate number to display, or to block any number from being displayed. [Learn more](#)

Caller ID policies summary

2 Default policies 1 Custom policy

User statistics

1 Custom policy
49 Default policies

+ Add Edit Duplicate Delete Reset Global policy 3 items Search

✓	Name ↑	Description	Custom policy
	AA-DEMO-AVOXI		Yes
	SBAnon		No
	Global (Org-wide default)		No

Assign Custom Caller ID Policy to a User

Once the custom Caller ID Policy is created, assigning it to a user is simple.

- In the Microsoft Teams Admin Center, go to Users
- Search for the user and select
- Click on the “Policies” tab and click “Edit” next to “Assigned Policies”

Microsoft Teams admin center

Users \ Kevin Robinson

Kevin Robinson

United States

Phone number
+1 678 348 5041

Email
kevin.robinson@avoxi.com

Directory status
Online

7-DAY QUALITY

Quality	Count
Good	100%
Poor	0%
Unknown	0%

7-DAY ACTIVITY

0 Meetings

14 Calls

Account Voice Meetings & calls **Policies**

Assigned policies [Edit](#)

Meeting policy
Global (Org-wide default)

Messaging policy
Global (Org-wide default)

Policy package [Edit](#)

Package assigned
None

- Click the drop-down for “Caller ID policy” and select your newly created customer Caller ID Policy

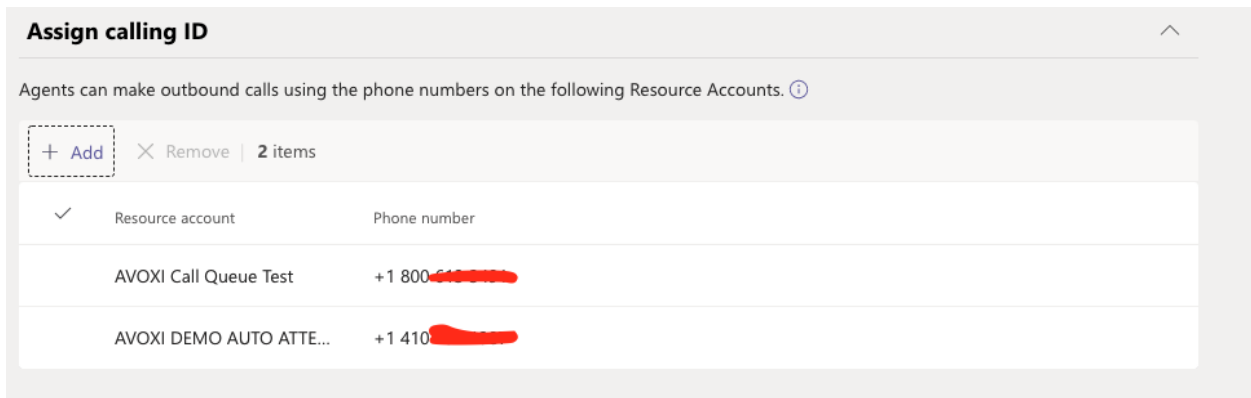
The screenshot shows the Microsoft Teams admin center interface. On the left, there's a navigation pane with icons for Home, People, Alerts, Global, Teams, Meetings, and Settings. The main area displays user information for Kevin Robinson (KR), including his phone number (+1 678 348 5041), email (kevin.robinson@), and directory status (Online). Below this, there are two charts: '7-DAY QUALITY' (a donut chart with segments for Good, Poor, and Unknown) and '7-DAY ACTIVITY' (showing 0 Meetings and 14 Calls). At the bottom, there are tabs for Account, Voice, Meetings & calls, and Policies. The 'Assigned policies' section lists various policies, all set to 'Global (Org-wide default)'. On the right, the 'Edit user policies' dialog is open, showing a list of policies with dropdown menus. The 'Caller ID policy' dropdown is highlighted with a red box and set to 'AA-DEMO-AVOXI'. At the bottom of the dialog, there are 'Apply' and 'Cancel' buttons.

- Click “Apply” and “Save”

Configure Dynamic Caller ID

It is possible that a customer may have a requirement for allowing their users to choose from a list of numbers to present as their caller ID when making an outbound call. This can be accomplished by creating a call queue (see the section for [Call Queue Setup](#)). Only users, who are assigned to this queue will be able to use the Virtual Numbers defined in this queue. When configuring the users on one of these queues being used for caller ID, it is best practice to set up a Team and a Channel. That will allow all of the users in the specified Team to use the Dynamic Caller ID capability. In order for those users to access the caller IDs when making outbound calls, they must use either the Microsoft Windows or Mac OS Microsoft Teams desktop client.

- In queue edit mode, go to the section called “Assign calling ID” and click “Add.”
- Do a search for the research accounts you wish to use that have the desired Virtual Number assigned to them and click “Add” on each.



- Click "Save" at the bottom of the page.

Assign Voice Policy to Resources Accounts

It is required that the resource accounts that have been assigned the Virtual Numbers to be used as outbound caller IDs be given access to the Voice Routing Policy. To do so you can run the following command in Powershell

```
Grant-CsOnlineVoiceRoutingPolicy -Identity "<resource account username>" -PolicyName AvoxiATLTeams
```

Ex. Grant-CsOnlineVoiceRoutingPolicy -Identity "cq-demo-avoxi@avoxi.onmicrosoft.com" -PolicyName AvoxiATLTeams

To confirm that the Voice Routing Policy has been applied to the resource account run the following command.

```
Get-CsOnlineUser "<resource account username>" | select OnlineVoiceRoutingPolicy
```

Ex. Get-CsOnlineUser "cq-demo-avoxi@avoxi.onmicrosoft.com" | select OnlineVoiceRoutingPolicy

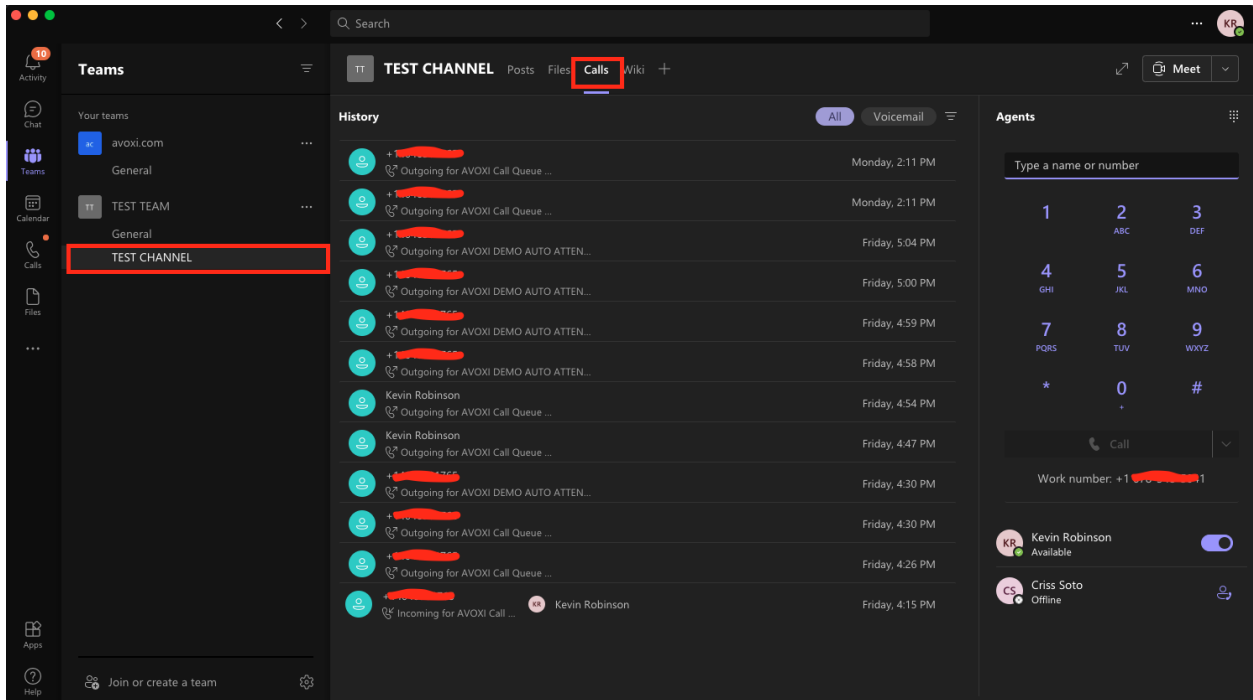
You should get an output that looks similar to the following.

```
OnlineVoiceRoutingPolicy
-----
AvoxATLTeams
```

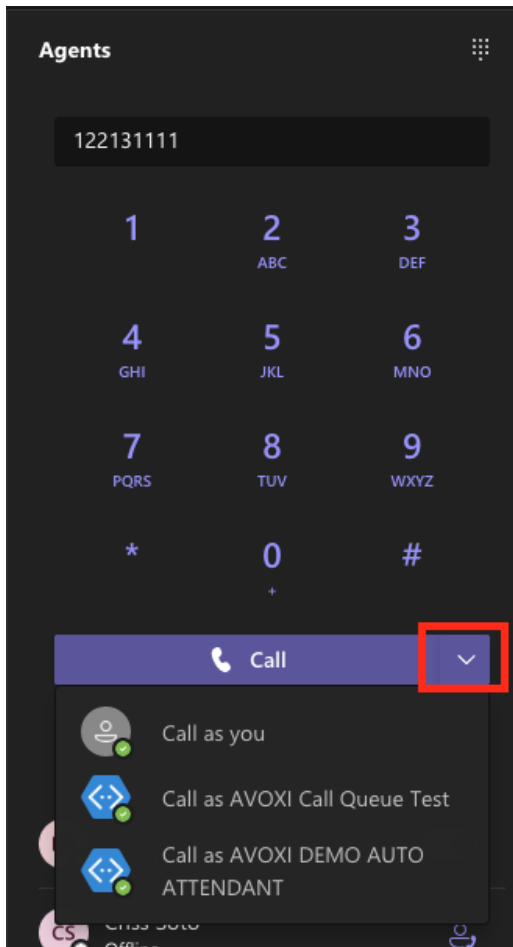
Make a call using call queue assigned numbers

As stated above, it is required for a user to use the Microsoft Windows or Mac OS Teams Desktop Client if they wish to choose from a list of caller IDs when making an outbound call. Once the above configuration has been completed, the user would:

- Log into their Microsoft Teams Desktop Client and click on "Teams" and the Channel that was configured in the "Call answering" section of the queue that is being used for Dynamic Caller ID.
- Click on "Calls" tab at the top of the window



- By using the dial pad in the right-hand pane of the client, enter the number you wish to dial.
- Once you finish entering your number, you will see that there is a drop-down button available on the “Call” button.



- Select the queue or auto attendant that has the Virtual Number assigned to it that you wish to show as your caller ID.
- Once selected, the call attempt shall be made.

For further information related to setting up Dynamic Caller ID, go to

<https://www.linkedin.com/pulse/teams-dynamic-caller-id-thomas-eklund/?trackingId=wrwOI5j%2BtP3ytVoJKm4wEw%3D%3D>