



Infinity Connect

Guide for Administrators

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Introduction

Pexip Infinity is a self-hosted, virtualized and distributed multipoint conferencing platform. It can be deployed in an organization's datacenter, or in a private or public cloud such as Microsoft Azure, Amazon Web Services (AWS) or Google Cloud Platform (GCP), as well as in any hybrid combination. It enables scaling of video, voice and data collaboration across organizations, enabling everyone to engage in high definition video, web, and audio conferencing.

It provides any number of users with their own personal Virtual Meeting Rooms, as well as Virtual Auditoriums, which they can use to hold conferences, share presentations, and chat. Participants can join over audio or video from any location using virtually any type of communications tool (such as Microsoft Skype for Business / Lync, a traditional conferencing endpoint, a mobile telephone, or a Pexip Infinity Connect client) for a seamless meeting experience.

Virtual Meeting Rooms and Virtual Auditoriums can also be accessed through a Virtual Reception IVR service, which allows all participants to dial a single number to access Pexip Infinity, and then use the DTMF tones on their endpoint to select the conference they want to join.

The platform also includes the Pexip Distributed Gateway service, which allows end users to place calls to other endpoints that use different protocols and media formats, or to call into an externally-hosted conference, such as a Microsoft Teams or Skype for Business meeting, or Google Hangouts Meet.

Infinity Connect clients

The Infinity Connect suite of clients allows users to join conferences (Virtual Meeting Rooms, Virtual Auditoriums and so on) within the Pexip Infinity deployment.

In addition to sharing audio and video, Infinity Connect users can also control the conference, view presentations, share content, and exchange chat messages with other conference participants. Infinity Connect can also be used in conjunction with the Pexip Distributed Gateway to make person-to-person calls, or join conferences hosted on other platforms, such as Skype for Business / Lync meetings.

All Infinity Connect clients can make calls to Pexip Infinity services. The Infinity Connect desktop client can also register to Pexip Infinity in order to receive calls and use directory services.

Infinity Connect clients are available for almost any device:

- The [Infinity Connect web app](#) is included as part of all Pexip Infinity deployments. It is used to access Pexip Infinity services from all of the major web browsers.
- The [Infinity Connect desktop client](#) is an installable client, supported on Windows, OS X, and Linux.
- The [Infinity Connect mobile clients](#) are available for Android and iOS devices.

All Infinity Connect clients are available for free with the Pexip Infinity platform (although, as with any other endpoint, you must still have a license with sufficient call capacity before you can place calls).

Which clients should I use in my deployment?

The Infinity Connect suite of clients all offer identical conference join and control features, and have the same high-quality video experience. You can use a combination of some or all Infinity Connect clients within your deployment, depending on your requirements. In general, we recommend the following:

- Users connecting from outside your organization and who do not have their own video device should generally use the Infinity Connect web app to access VMRs. This means that they won't need to download or install anything in order to access meetings, but will still have the same high-quality user experience and functionality of participants using the Infinity Connect desktop client.

You'll need to make sure that at least one Conferencing Node is accessible externally, and you'll also need to [set up appropriate DNS records](#) for connections from both inside and outside your network.

- Users connecting from inside your organization should also use the Infinity Connect web app, unless you want them to be able to register to receive incoming calls — in which case they need to use the Infinity Connect desktop client.
- The Infinity Connect desktop client should be used if you want to take advantage of the additional registration (to receive incoming calls) and internal directory service features. Administrators can also set up [Call Routing Rules](#) that apply to registered devices only, meaning that you can permit registered Infinity Connect desktop client users to make calls that Infinity Connect web app users cannot.

If you are deploying the Infinity Connect desktop client in your environment, we recommend that you make use of [provisioning](#), and you'll also need to [set up appropriate DNS records](#).

- The Infinity Connect mobile client is aimed at users who want to be able to control a conference and view presentations while in a meeting using a video device that does not support those features — for example, a video conferencing endpoint in a meeting room.
- The Infinity Connect mobile client can also be used to join a meetings as an audio or video participants, but because of the nature of mobile devices this may result in intensive battery use.

Infinity Connect guides for end users

This guide covers topics that are only relevant to an administrator.

We publish a series of quick guides aimed at end users of the Infinity Connect desktop client, the Infinity Connect web app, and the Infinity Connect mobile client. These guides are available in PDF format from https://docs.pexip.com/admin/download_pdf.htm#enduser.

Enabling and disabling use of Infinity Connect clients

Access to conferences from all Infinity Connect clients is enabled by default. If you do not want users to access conferences within your deployment from Infinity Connect clients, you can disable this functionality.

To disable or re-enable this functionality:

1. Go to **Platform > Global Settings**.
2. From within the **Connectivity** section:
 - a. Deselect or select **Enable support for Pexip Infinity Connect and Mobile App**. This controls access from all Infinity Connect clients and third-party clients using the client APIs.
 - b. When **Enable support for Pexip Infinity Connect and Mobile App** is selected, you must also ensure that **Enable WebRTC** and **Enable RTMP** are deselected or selected as appropriate to enable the clients that use those protocols to access conferences.

When access has been disabled, users attempting to use Infinity Connect clients to access a conference or make a call will be presented with the message **Call Failed: Disabled** (you can customize the clients to change the wording of this message if required).

Choosing which web app version to use

An updated "next-generation" suite of Infinity Connect clients was released with Pexip Infinity v18. You can choose whether your deployment uses the next-generation web app, or whether to use the legacy version. For more information, see [Switching between next-generation and legacy Infinity Connect web app](#).

Making calls from Infinity Connect clients

For an Infinity Connect client to make a call, it must be able to connect to a Conferencing Node that can route that call on its behalf.

Infinity Connect web app clients connect directly to a Conferencing Node or Reverse Proxy (via the host's FQDN or IP address). When a call is placed from the client, it is treated as an **incoming call request** by the Conferencing Node, and routed accordingly. For more information, see [Service precedence](#). All other Infinity Connect clients typically use DNS SRV records to find a Conferencing Node to connect to.

You must ensure that your deployment has appropriate internal and external DNS configured to allow clients located inside and outside your internal network to resolve the Conferencing Node address successfully. The actual address clients use when attempting to locate a host Conferencing Node depends on the domain being called and the client's own configuration. For more information, see [Setting up DNS records and firewalls for Infinity Connect client connectivity](#).

Receiving calls to Infinity Connect clients

For an Infinity Connect client to receive a call, it must register with a Conferencing Node. The client's **Registration Host** setting specifies the domain, FQDN or IP address of the Conferencing Node that it should register to; therefore, you must ensure that the address used is reachable from the client from the internal or external network as appropriate, and that any FQDNs can be resolved via DNS lookups. For more information, see [Registering and provisioning the Infinity Connect clients](#).

Currently, only the Infinity Connect desktop client can register to a Conferencing Node.

Branding the Infinity Connect clients

The branding and styling of the Infinity Connect clients (web app, mobile and desktop) can be customized. This changes the look and feel of the Infinity Connect client regardless of which service is being accessed. See [Customizing the Infinity Connect clients](#) for more information.

Comparison of legacy and next-generation Infinity Connect clients

The next-generation Infinity Connect web app has been enabled by default for new installations of Pexip Infinity since version 18. In addition, next-generation versions of the Infinity Connect desktop client and Infinity Connect mobile clients for iOS and Android have also been released.

These next-generation clients aim to achieve feature parity to users across different browsers, desktops and mobile devices. While most of the functionality remains the same as the legacy version of the clients, the look and feel has been updated, and new features have been added.

For a summary of how to use the legacy version of the Infinity Connect clients, see [Using legacy clients](#). For full details on how to administer and use the legacy clients, see the [v17 Infinity Connect documentation](#).

Below are the main user-facing and administrator-facing changes between the legacy and the most recent next-generation versions of the Infinity Connect clients.

Feature	Change	More information
Administrator-facing changes		
New Infinity Connect web app now default	The next-generation version of the Infinity Connect web app is now default for new deployments, and for upgrades from v17 deployments that had the tech preview of this feature enabled.	Enabling the next-generation Infinity Connect web app
Consistent branding across all Infinity Connect clients	Branding customizations that have been applied to the Infinity Connect web app can now also be applied to the Infinity Connect desktop and mobile clients. The administrator can use Pexip Infinity's provisioning features to instruct the Infinity Connect client to use the same branding that has been uploaded to Pexip Infinity (and which is being used automatically by the web app).	Customizing the Infinity Connect clients
Call routing from registered desktop clients	There is now an option to control whether registered next-generation desktop clients route their calls via the Conferencing Node to which they are registered, or via DNS.	Route calls via registrar
DNS SRV domain selection	When attempting to locate a Conferencing Node via DNS, the domains used, and the order in which they are selected, has changed.	Setting up DNS records and firewalls for Infinity Connect client connectivity
Protocol used when adding a participant	Previously users had to select the protocol to use when adding a participant to a conference; now this is done automatically - but appropriate Call Routing Rules that apply to Outgoing calls from a conference must be configured to support this.	Call Routing Rules

Feature	Change	More information
Pre-configured URLs to launch conferences automatically	<p>The format and parameters of pre-configured URLs for web app, desktop and mobile clients has changed:</p> <ul style="list-style-type: none"> The format for web app links has changed from <code>https://<address>/?conference=<alias>&etc...</code> to <code>https://<address>/webapp/conference/<alias>?etc...</code> <p>However, any existing legacy-style links may still be used and they will be redirected to the new style.</p> <ul style="list-style-type: none"> Parameters that are no longer supported are <code>escalate</code>, <code>join</code>, <code>forceguest</code>, <code>media</code>, and <code>audioonly</code>. They have been replaced with <code>muteMicrophone</code>, <code>muteCamera</code> and <code>callType</code>. As an alternative to <code>join</code>, you can set <code>role</code> to <code>guest</code> if you want to allow Guests to automatically join a conference that has no Guest PIN. Links to the desktop and mobile clients now support additional parameters. <p>If required, web app users can still use the legacy-style web app links and associated parameters by inserting <code>/webapp1</code> after the Conferencing Node address, followed by the legacy parameters.</p>	Creating preconfigured links to launch conferences via Infinity Connect
Plugins	The next-generation clients support the use of plugins.	Creating and deploying Infinity Connect plugins
User-facing changes		
Layout of home screen	The look and feel of the home screen, and the way in which users select devices and enter the address of the person or conference they wish to call, has changed.	
Content of side panel	The side panel to the left of the window now contains two tabs: Participant list and Events . Users can toggle between these two tabs.	
Timeline, events tab and chat messages	A timeline of events is shown along the bottom of the window, and these events, including any chat messages sent or received, are listed in the separate Events tab on the side panel.	Timeline
Selection of uploaded files to share	There are changes to the way in which users select which files they wish to share from the selection they have uploaded.	Share images or PDFs with all other participants
Joining a meeting as a presentation and control-only participant	The workflow for joining a meeting as a presentation and control-only participant (i.e. without sending or receiving audio or video) has changed.	Using Infinity Connect for presentation, chat and conference control only
Joining a meeting as an audio-only participant	When a user has joined as an audio-only participant, the main video window will now display an infographic showing the names of the other participants.	
Location of the meeting controls	The controls that were previously at the bottom right of the window have now been merged into either the toolbar or the main meeting control menu.	
Accessibility	A high-contrast option has been included to support WCAG compliance.	High contrast

Feature	Change	More information
Presentation-only Hosts starting conference	<p>All legacy client users; v1.2 and later desktop and mobile client users, v20 and later web app users</p> <p>When a presentation and control-only Host joins a conference they must manually start the conference before Guests can join.</p> <p>v19 and earlier next-generation web app users; v1.1 desktop and mobile client users</p> <p>A presentation and control-only Host joining a conference will automatically trigger Guests to join.</p>	Allow waiting Guests to join a new meeting without a Host
Changing media devices during a call	All clients (except the web app via Microsoft Edge) now support the option to change the camera, microphone or speakers during a call.	Change your camera, microphone or speakers during a call
Using NFC to join conference	Use of NFC to automatically dial an endpoint into a VMR is not currently supported.	
Changing the screensharing framerate	Previously, desktop client users could, during a call, change the framerate being used to send their presentation (although the presentation would still have to be started and stopped for the change to take effect). Now any changes to the framerate to be used must be made before making the call.	Screen sharing quality
Desktop client registration password	In the next-generation desktop clients, the registration password is automatically saved so the option to "remember my password" no longer appears.	
iOS client bandwidth selection	Previously the iOS client would automatically select an appropriate bandwidth based on whether the connection was WiFi or cellular. Now, all bandwidth selection is manual and done by the end user prior to placing the call.	Bandwidth
Registration for Android clients	Infinity Connect mobile clients for Android do not currently support registrations.	
Default domain	Users can no longer specify a default domain (which was used when no domain was specified in the address being called).	
Adding a streaming participant	<p>Users must enter an <code>rtmp:</code> prefix when adding a streaming participant.</p> <p>Dual streaming is not currently supported.</p>	Streaming and recording a conference
Guest can enter Host PIN	If a participant has joined a meeting as a Guest, whether by selecting "Join" (for a meeting with a Host PIN but no Guest PIN) or by entering the Guest PIN, they will have a keypad available on their toolbar that can be used to enter the Host PIN, thus allowing them to join as a Host.	
Diagnostic features	<p>The About this app menu now has the following options:</p> <ul style="list-style-type: none"> clear the app's storage and settings copy logs to clipboard. 	
Automatic language selection	If an administrator has enabled support for a given language and an Infinity Connect user's browser or device uses that language as a default, their client will automatically use that language.	

Comparison of Infinity Connect and other video endpoints

Infinity Connect is an integrated part of the Pexip Infinity platform. This direct integration means that there are some differences in the experience of joining and participating in a Pexip Infinity conference using an Infinity Connect client, when compared with users of Skype for Business / Lync clients, and other types of software and hardware endpoints.

The table below summarizes these differences.

Feature	Infinity Connect client	Skype for Business / Lync clients	Other video clients
Appearing in the Infinity Connect participant list	Participants will appear in the roster after they have successfully joined the conference.	Participants will appear in the roster while they are waiting to join the conference, for example while they are being held at the PIN entry screen or waiting for a Host* to join. At this point, they will not have a role assigned.	<ul style="list-style-type: none"> i A Host using an Infinity Connect client (including Hosts who have joined in presentation and control-only mode) can let these participants into the conference without them having to enter a PIN. For instructions, see Changing a participant's role from Guest to Host (and vice versa).
Joining a Host+Guest conference that has a Host PIN but no Guest PIN *	<p>Whether or not a Host has already joined, participants will have the option to enter the Host PIN (to join as a Host), or simply select "Join" (to join as a Guest).</p> <p>If they choose to join as Guest:</p> <ul style="list-style-type: none"> If a Host has not yet joined, they will be taken to the "Waiting for Host" screen. <p>While waiting for a Host to join, they will see a keypad on their toolbar which they can use to enter the Host PIN and join as a Host</p> <ul style="list-style-type: none"> if a Host has already joined, they will be taken straight into the conference. 	<ul style="list-style-type: none"> If a Host has not already joined, participants will be taken to the "Waiting for Host" screen, where they will have the opportunity to enter the Host PIN. If a Host has already joined, participants will automatically join as a Guest, unless they have included the Host PIN as part of the dial string. 	
Joining a Host+Guest conference that has a Host PIN and Guest PIN *	<p>Participants will be asked to enter the conference PIN.</p> <p>If they enter the Host PIN, they will join the conference.</p> <p>If they enter the Guest PIN:</p> <ul style="list-style-type: none"> if a Host has not yet joined, they will be taken to the "Waiting for Host" screen. if a Host has already joined, they will be taken straight into the conference. 		
Conference PINs with a trailing #	When entering PINs, any trailing # is optional.	Participants will hear the "please enter the # key" prompts, and must enter the # after the PIN.	

Feature	Infinity Connect client	Skype for Business / Lync clients	Other video clients
Joining a VMR via a Virtual Reception	Participants must dial into the Virtual Reception first, and then at the prompt enter the numeric alias of the target Virtual Meeting Room. However, if your dial plan allows, participants can simply enter the alias of the target VMR and not have to use the Virtual Reception at all.	Participants using SIP and H.323 endpoints and Skype for Business / Lync clients can dial a VMR via a Virtual Reception in a single step. They do this by dialing <reception_alias>*<destination_alias>@<domain>. H.323 devices can also use the dial format <reception_alias>#<destination_alias>@<domain>. For more information, see Including the numeric alias of the VMR in the dial string .	
Viewing roster	Participants can view the roster.	The roster will not be available.	
Conference control	Host participants can control the conference (add, mute, and disconnect participants; change a participant's role; lock and unlock the conference).	Participants will not have access to conference control, apart from a limited set of controls available to endpoints that support DTMF. For more information, see Using DTMF to control an conference .	
Chat	Participants can send and receive chat messages.		Participants will not have access to chat.

* At least one Host must join with media (video and/or audio) in order for Guests to be able to join. Alternatively, Infinity Connect users who have joined as a Host in presentation and control-only mode (and who therefore will not act as a trigger for starting the conference) can elect to [Start the meeting](#).

Installing and using Infinity Connect

About the Infinity Connect web app

The Infinity Connect web app is automatically available as part of all Pexip Infinity deployments. It provides a WebRTC interface to Pexip Infinity conferencing services. Browsers that are not WebRTC-compatible use a Flash-based interface to the legacy version of the app.

The web app is supported in the following browser versions, although we strongly recommend using the latest publicly-released version (i.e. "stable version" or "supported release") of a browser:

- Google Chrome version 61 and later (64-bit only)
- Mozilla Firefox version 60 ESR and later (Firefox version 68 and later requires Pexip Infinity version 21 and later)
- Microsoft Edge version 41 and later
- Opera version 53 and later
- Apple Safari version 11.1 and later on macOS. Note that Safari version 11 and later will not work with Pexip Infinity version 15 or earlier.
- Apple Safari on iOS 11.2 and later.
- Microsoft Internet Explorer version 11 and later on Windows 7 (requires Flash Player 11 and later ActiveX® plugin, and must not be in Compatibility View). We do not support Internet Explorer on Windows 10. In all cases, Internet Explorer will be redirected to the legacy web app. As of 1 January 2020, Pexip Infinity will no longer support use of Microsoft Internet Explorer with the Infinity Connect web app.

i Infinity Connect web app is not supported on devices running on a Windows Phone OS.

Infinity Connect users can share images and PDFs from any browser. Additionally, users on Chrome, Opera and Firefox can share their screen.

Accessing a conference or making a call

To access a conference or make a call using the Infinity Connect web app, users enter into the address bar the IP address or domain name of their nearest Conferencing Node (or reverse proxy if, for example, it is being used to host a customized version of the web app), followed by `/webapp/home` (for example, `confnode.example.com/webapp/home`). Users are then presented with the home screen, from where they can check their setup and then select **Call** to enter the alias of the conference or person they want to call.

System administrators and conference organizers can also [provide a preconfigured link](#) to a conference alias.

If your Pexip Infinity deployment is located inside a private network and you want to allow Infinity Connect users who are located outside your network to connect to your deployment, see [Using Infinity Connect from outside your network](#).

Hardware requirements

The performance of the Infinity Connect web app typically depends upon a combination of the choice of browser and which other applications are currently running on the client system.

However, as a minimum we recommend that your client system has:

- 4 GB of RAM
- Intel Core i5 processor or equivalent

About the Infinity Connect desktop client

i The Infinity Connect desktop client is released separately to Pexip Infinity, and may have been updated since this Administrator Guide was released. For the most up-to-date Infinity Connect desktop client user documentation, see [Introduction to Infinity Connect](#).

The Pexip Infinity Connect desktop client is a stand-alone video client that provides access to Pexip Infinity services. It is currently supported on:

- Microsoft Windows 7 and later
- macOS 10.11 and later
- Ubuntu Linux 16.04 and later

Note that 32-bit operating systems are not supported with the next-generation Infinity Connect desktop client.

Hardware requirements

The performance of the Infinity Connect desktop client can depend upon which other applications are currently running on the client system.

However, as a minimum we recommend that your client system has:

- 4 GB of RAM
- Intel Core i5 processor or equivalent

Installing the Infinity Connect desktop client

i No special privileges are required to install the Infinity Connect desktop client, as it is installed in a per-user context.

To install the Infinity Connect desktop client, go to the [Pexip support site](#) and download and install the appropriate file for your operating system as described below.

Note that 32-bit operating systems are not supported with the next-generation Infinity Connect desktop client.

Windows

(Supported on Windows 7 and later.)

Download the `pexip-infinity-connect_<release>_win-x64.msi` file for Windows.

Double-click on the `.msi` file to install the Infinity Connect desktop client and then follow the instructions in the installation wizard. During the installation process the Infinity Connect icon is added to the desktop, and entries are added to the Windows registry to allow links prefixed with `pexip:` and `pexip-provision:` to [open automatically](#) in the Infinity Connect desktop client.

macOS

(Supported on macOS 10.11 and later.)

Download the `pexip-infinity-connect_<release>_darwin-x64.dmg` file for macOS.

To install the macOS client, open this file and drag the `Pexip Infinity Connect.app` into the `Applications` folder.

Linux

Download the `pexip-infinity-connect_<release>_linux-x64.tgz` file for Linux.

To install the Linux client:

1. Create a new directory. For example, to install the client for a single user "alice":

```
mkdir /home/alice/pexapp
cd /home/alice/pexapp
```
2. Download the Infinity Connect desktop client `tgz` file to that directory and extract the archive. For example:

```
tar -xzf pexip-infinity-connect_<release>_linux-x64.tgz
```
3. Copy the `.desktop` file to the appropriate location for making the application available for this user as per [freedesktop.org-compliant desktop guidelines](https://developer.gnome.org/integration-guide/stable/desktop-files.html.en) (see <https://developer.gnome.org/integration-guide/stable/desktop-files.html.en> for more information). For example:

```
cp pexip-infinity-connect_linux-x64/pexip-infinity-connect.desktop /home/alice/.local/share/applications/pexip-infinity-connect.desktop
```
4. Using your preferred text editor, modify the `Exec` line to point to the location of the `pexip-infinity-connect` binary on your system. For example:

```
emacs /home/alice/.local/share/applications/pexip-infinity-connect.desktop
```

and make it look something like this:

```
[Desktop Entry]
Name=Pexip Infinity Connect
Exec=/home/alice/pexapp/pexip-infinity-connect_linux-x64/pexip-infinity-connect
Terminal=false
Type=Application
Icon=application-x-executable
```

Note that if you want to install the application for all users (rather than just a single user), follow the same instructions but instead copy the `.desktop` file into the `/usr/share/applications` directory (you may need root privileges to do this).

Registering the Infinity Connect desktop client

After the Infinity Connect desktop client has been installed, it can be registered to a Conferencing Node. The administrator can also provision individual users with their registration details and automatically apply those registration settings to their Infinity Connect desktop client.

See [Registering and provisioning the Infinity Connect client](#) for more information.

Accessing a conference or making a call

When users open the desktop client, they are presented with the home screen, from where they can check their setup and then select **Call** to enter the alias of the conference or person they want to call (for example `meet.alice@vc.example.com`).

System administrators and conference organizers can also [provide a preconfigured link](#) to a conference alias.

About the Infinity Connect mobile clients

i The Infinity Connect mobile clients are released separately to Pexip Infinity, and may have been updated since this Guide was released. For the most up-to-date Infinity Connect mobile client user documentation, see [Introduction to Infinity Connect](#).

The Infinity Connect mobile clients can be used by conference participants to control the conference and view presentations from their own personal Android or iOS device, even when they are using a separate telephone or video endpoint to participate in the conference.

Users also have the ability to join a conference from their Android or iOS device, as either an audio-only or a full audio and video participant, allowing them to participate in a conference from anywhere they have an internet connection.

Prerequisites

Infinity Connect mobile clients require deployments with HTTPS and valid, trusted certificates. For more information, see [Managing TLS and trusted CA certificates](#).

Infinity Connect mobile clients use the Pexip client API, so you must ensure access to this is enabled in your deployment (**Platform > Global Settings > Connectivity > Enable Support For Pexip Infinity Connect And Mobile App**).

Protocols

Infinity Connect mobile clients use the WebRTC protocol, so you must ensure this is enabled in your deployment (**Platform > Global Settings > Connectivity > Enable WebRTC**).

Installing the Infinity Connect mobile client for Android

The Infinity Connect mobile client for Android is available for free from the Google Play store at <https://play.google.com/store/apps/details?id=com.pexip.infinityconnect>. Follow the instructions to download and install the Infinity Connect mobile client on your device.

- i** If you search for "Pexip" in the Google Play store, you will see both the legacy and the next-generation versions of the app. The version labeled **Pexip Infinity Connect** with the  icon is the next-generation version and the one you should download. You will also see an app called **Pexip (My Meeting Video)**; this is for use by customers of the [Pexip Service](#) and **should not be used** in Pexip Infinity deployments.

The next-generation Infinity Connect mobile client for Android requires **Android 7.0** or later.

Installing the Infinity Connect mobile client for iOS

The Infinity Connect mobile client for iOS is available for free from the Apple Store at <https://itunes.apple.com/us/app/pexip/id1195088102>. Follow the instructions to download and install the client on your device.

- i** If you search for "Pexip" in the Apple Store, you will see both the legacy and the next-generation versions of the app. The version labeled **Pexip Infinity Connect** with the  icon is the next-generation version and the one you should download. You will also see an app called **Pexip (My Meeting Video)**; this is for use by customers of the [Pexip Service](#) and **should not be used** in Pexip Infinity deployments.

The next-generation Infinity Connect mobile client for iOS is compatible with any iOS device running **iOS 10.x** or later.

Accessing a conference or making a call

When users open the Infinity Connect mobile client, they are presented with the home screen, from where they can check their setup and then select **Call** to enter the alias of the conference or person they want to call (for example `meet.alice@vc.example.com`).

System administrators and conference organizers can also [provide a preconfigured link](#) to a conference alias.

Configuring Infinity Connect clients

There are various configuration settings available within the Infinity Connect clients. The table below provides information about each of these settings.

Note that administrators can change, disable or provide default text for many of these settings by [Customizing the Infinity Connect clients](#).

Administrators can also provision individual Infinity Connect desktop client users with their registration details and automatically apply those registration settings to their client. See [Registering and provisioning the Infinity Connect client](#) for more information.

Setting	Description
Home page	
Name	<p>The name that will appear to other conference participants.</p> <p>You'll be asked to enter your name the first time you use the client, but you can change your name from the home page by clicking on it.</p> <p>For desktop client users, your name may already have been pre-filled if your administrator has sent you a link that automatically applies your personalized settings to your client, but it can still be overwritten.</p>
Settings	
 (Camera)	<p>Shows the currently selected camera. Select this option to change the camera to use.</p> <p>When the selected camera is working properly, your self view will be shown in the main video window.</p> <p>i If you select <i>None</i>, you will join the meeting without a camera, but you will still be able to see everyone else's video.</p>

Setting	Description
 (Microphone)	<p>Shows the currently selected microphone. Select this option to change the microphone to use.</p> <p>When the selected microphone is working properly, a green bar will appear under the main video window when audio is detected. The length of the bar represents the level of audio volume being picked up by the microphone.</p> <p>i If you select <i>None</i>, you will join the meeting without a microphone, but you will still be able to hear everyone else's audio.</p>
 (Speakers)	<p>Shows the currently selected speakers or headset. Select this option to change the speakers to use.</p> <p>To check that the selected speakers are working properly, select the speaker icon from the bottom left of the main video window and then select the speaker to use. A tone will be played from that speaker.</p>
 Bandwidth *	<p>The maximum bandwidth for the call, and the bandwidth at which the initial call attempt will be made. Note that calls may be temporarily downspeeded due to network conditions.</p> <p>The default is <i>Medium (up to 576kbps)</i>, but if you are on a cellular connection or slow Wi-Fi connection you may wish to reduce this to <i>Low (up to 256kbps)</i>.</p> <p>You should also reconnect using a lower bandwidth if you experience slow or low-quality video.</p>
 Languages *	<p>(Only applies if additional languages have been enabled by your administrator.)</p> <p>Allows you to select from a drop-down menu the language to use in your Infinity Connect client.</p> <p>i If your browser or device's default language is supported by the Infinity Connect client, that language will be used automatically. Alternatively, your administrator may have specified a default language to use.</p>
 Registration (Infinity Connect desktop client only)	
Registration Host *	<p>The domain, FQDN or IP address of the server to which registration requests are sent. This should be the IP address or FQDN of a local Conferencing Node.</p> <p>For more information, see Setting up DNS records and firewalls for Infinity Connect client connectivity).</p>
Alias	<p>The alias that this client will register with. This is the alias that other users will dial when they want to call this client.</p> <p>This alias must match one of the entries on the Management Node under Services > Device Aliases.</p>
Username / Password	<p>The username and password to use when this device registers to Pexip Infinity and is not using Single Sign-On (SSO) services, such as AD FS.</p> <p>The username and password must match those configured for this alias on the Management Node under Services > Device Aliases.</p> <p>If the client is configured for SSO, you will be asked to sign in to an alternative authentication service.</p>
<p>i The registration fields are read-only when the client is successfully registered — you must Unregister if you want to change them. When a client has been configured (provisioned) with SSO registration information, the Username / Password fields are blank and the registration settings can only be modified by resetting the app.</p>	
 Advanced settings	
Confirm when disconnecting *	<p>When this option is selected, you must confirm each time you wish to disconnect from a meeting. This prevents you from accidentally disconnecting yourself. This is on by default.</p>

Setting	Description
View incoming presentation in full motion *	<p>This setting determines how presentations from other participants are initially received by you.</p> <p>Presentations can be received in two formats:</p> <ul style="list-style-type: none"> • A lower-bandwidth series of still images (suitable for documents and screens being shared). With this option, Pexip Infinity periodically takes a snapshot of the presentation and converts it to JPG format, and sends that to the Infinity Connect client at between 0.5 to 1 fps. For this reason, presentations that contain a lot of movement may appear jerky to clients using this option. • A higher-bandwidth full motion stream (suitable for presentations with a lot of movement). With this option, Pexip Infinity sends the presentation to the Infinity Connect client as a video stream at up to 30 fps, so movement will appear smooth. <p> The actual frame rate used will depend on the capabilities of the endpoint that is sending the presentation. Infinity Connect clients can send presentations at up to 15 fps; other clients may send at a higher frame rate.</p> <p>This setting is off by default: presentations are initially received as still images, and you can subsequently elect to view them in full motion by selecting the HD button at any time during the call. However, when View incoming presentation in full motion is selected, presentations received by you will always be shown in full motion by default, and you can then elect to view them as still images.</p>
Send anonymous statistics *	<p>When this option is selected, anonymous information about how the client is being used is sent to Pexip. This is on by default.</p>
Play ringtone on incoming calls *	<p>(Infinity Connect desktop client only)</p> <p>This is on by default; if you do not want to hear the default ringtone when you are receiving an incoming call, you can de-select this option.</p>
Start application in background *	<p>(Infinity Connect desktop client only)</p> <p>The client will always start automatically when the device it is installed on starts. This option allows you to select whether it starts minimized (in the background), or maximized (in the foreground).</p> <p>If you have previously entered your registration details the client will also register on startup. If you are configured for SSO, you may be asked to sign in to your alternative authentication service, such as AD FS.</p> <p>This is off by default.</p>
High contrast *	<p>When this option is enabled, there is a higher contrast between foreground and background elements of the user interface, making them more legible. This is off by default.</p>
Screen sharing quality	<p>This setting determines the frame rate used when you share your screen with other participants. A lower frame rate will result in images with more <i>Sharpness</i> and is best for static presentations; a higher frame rate will be less sharp and is best for content where there is more <i>Motion</i>. The default is 2 frames per second.</p>
 About this app	
Reset app	<p>The Reset option clears the app storage and any registration settings.</p>
Logs	<p>If you are having issues with your Infinity Connect client, your administrator may ask you to Download logs (web app), Open log folder (desktop client), or Copy to clipboard (mobile clients) to obtain logging information about the last call.</p>

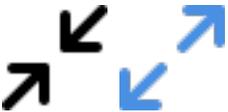
* The administrator can provide a first-time default for this option by [Customizing the Infinity Connect clients](#).

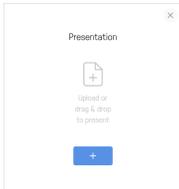
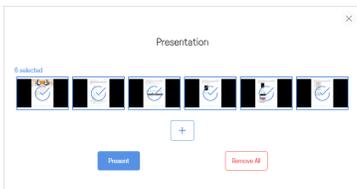
Using Infinity Connect in-call controls

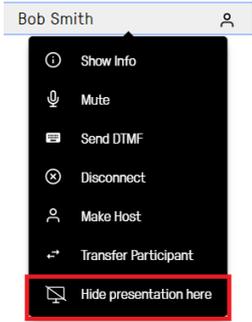
The tables below show the actions that can be performed while a call is in progress. The first table shows the actions available through the client's [buttons, menus and keyboard shortcuts](#); the second table shows the actions that can be performed using [text-based commands](#).

Note that these tables includes all features available to the Infinity Connect desktop client, the Infinity Connect web app and the Infinity Connect mobile clients for Android and iOS, although not all features are available to all clients.

Buttons, menus and keyboard shortcuts

What	How	Keyboard shortcut
Enter Host PIN (if joined as Guest) 	From the toolbar at the bottom of the screen, select Enter Host PIN .	
Change your camera, microphone or speakers during a call 	<ol style="list-style-type: none"> From the top of the side panel, select Control ●●●. Select Select media devices. Select the camera, microphone or speakers/headset, and then choose a new one from the list of available options. 	
Pin a minimized version of the client / video window to your screen 	<p>Desktop client</p> <p>From the toolbar at the bottom of the screen, select Open minimized view.</p> <p>The Infinity Connect application window will shrink and be pinned on top of all your other application windows, and you can drag it to a suitable location.</p> <p>To return the window to its previous size, select Open maximized view.</p> <p>Web app</p> <p>From the toolbar at the bottom of the screen, select Float video window.</p> <p>The main video window (including thumbnails) will shrink and be pinned on top of all your other application windows. You can drag it to a suitable location.</p> <p>To return to the Chrome tab with the video window resized within it, from the pinned window select Back to tab.</p> <p>To close the pinned video window, from the toolbar select Reset video window.</p>	
Share your screen with all other participants 	<p>(Available to Infinity Connect desktop client and Infinity Connect web app via Chrome, Firefox, or Opera users.)</p> <ol style="list-style-type: none"> From the toolbar at the bottom of the window, select Share my screen. Select the window, screen or tab you want to share. <p>When you are sharing, the icon changes to blue. To stop sharing, select the Stop presenting button.</p> <p>i The best way to share a PowerPoint presentation is to start the Slide Show from within PowerPoint first, and then tab to Infinity Connect, share your screen, and select the Slide Show window.</p> <p>Note that the ability to present into a conference may have been restricted to Hosts only.</p>	

What	How	Keyboard shortcut
<p>Share images or PDFs with all other participants</p> 	<ol style="list-style-type: none"> From the toolbar at the bottom of the screen, select Present files. The Presentation screen will appear:  Select +, or drag and drop the file(s) you want to share into the Presentation window. You can add multiple files, and they can be a combination of images (.JPEG, .BMP, .PNG, or .GIF) and PDFs (if supported by your device). Each image will be converted into an individual slide, as will each page of each PDF. By default, every slide will be selected for presenting, but you can click on individual slides to select and deselect them:  When you have selected all the slides you want to share, select Present. Use the left < and right > on-screen controls, or the arrow keys on your keyboard, to scroll through the slides. You also have the option to View presentation in a separate window. To stop sharing the slides, from the toolbar select Stop presenting. <p>Note that the ability to present into a conference may have been restricted to Hosts only.</p>	
<p>View a presentation being shown by another participant</p>	<p>When a participant starts a presentation, you will automatically see the content they are sharing as your main image, and the image of the participants will reduce to a small thumbnail at the top left corner.</p> <p>You can toggle between viewing the presentation and viewing the participants by clicking on the thumbnail.</p> <p>You can also click and drag this window to move it.</p>	p
<p>View a presentation in a separate window</p> 	<p>Whether you are the presenter or a participant, you can view the current presentation in a separate pop-out window.</p> <p>To do this, from the bottom right of the screen select View presentation in new window. To close the window, from the bottom right of the screen select Close separate presentation window.</p>	Shift + P
<p>View a presentation at a higher (or lower) refresh rate</p> 	<p>When a participant is showing a presentation, by default you receive it as a series of still images. This is suitable for documents and screens being shared, but if the presentation contains a lot of movement it may appear jerky. If this is the case, you can elect to receive the presentation in full motion as HD video.</p> <p>To do this, from the bottom right of the screen select View full motion presentation. To return to the default view, select View normal presentation.</p>	

What	How	Keyboard shortcut	
Stop/start sending presentation to a participant	<p>(Requires Host privileges)</p> <p>When a participant is sharing a presentation, other participants receive both the presentation and the main video. However, you may want to receive just the main video on a particular endpoint (for example, if you are using a meeting room system for audio and video, but you are already viewing the presentation on your Infinity Connect client, you could stop sending presentation to the meeting room system). To do this, from the Participant list, select the participant and then select Hide presentation here.</p>		
Start sending and receiving video	<p>(For users who have initially joined without audio and video)</p> <p>From the toolbar at the bottom of the window, select Start Video.</p>		
			
Start sending and receiving audio	<p>(For users who have initially joined without audio and video)</p> <p>From the toolbar at the bottom of the window, select Start audio.</p>		
			
Stop/start sending your video to other participants	<p>From the toolbar at the bottom of the window, select Turn my camera off or Turn my camera on.</p> <p>Other participants will no longer be able to see you, but you will be able to see them.</p>	c	
			
Stop/start sending your audio to other participants	<p>From the toolbar at the bottom of the window, select Turn my microphone off or Turn my microphone on.</p> <p>Other participants will no longer be able to hear you, but you will be able to hear them.</p> <p>i If your microphone detects sound while turned off in this way, you will see a message in selfview saying "You're muted".</p>	m	
			
Stop/start viewing the video of yourself	<p>The video of yourself that is being sent to other participants is shown in a thumbnail at the top right of the screen. To hide this, click on the image. It will be replaced by a small Show self view icon; select this to view your image again.</p>		
			
Show or hide the side panel	<p>To hide or show the side panel (containing the Participant list tab and the Events tab, and the Control menu), select the Hide side panel < and Show side panel > icons. These will be at the middle left or bottom of the screen, depending on your device and screen width.</p>	s	
			
View details of events	<p>For a complete list and details of each of the events represented in the timeline at the bottom of the screen, from the top of the side panel select the Events tab:</p>		Shift + S

What	How	Keyboard shortcut
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Timeline

The timeline shown at the bottom of the screen (except for mobile clients when used in landscape mode) gives a visual overview of the events during the course of the call:



You can click on any of the events for more information about it (note that this feature is not available if the desktop or web app window has been narrowed to the point where the control panel moves below the video window).

After you have been in the call for more than 10 minutes, you will see a clock icon at the far left of the timeline. To zoom in on any 10-minute period within the timeline, click on the clock icon. You'll see a shaded selector:



Drag the selector to the period you wish to zoom in on:

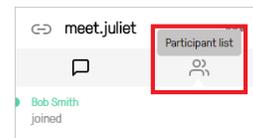


When you are zoomed in, you can again click on any of the events to view more information about them.

To return to the full timeline, click on the clock icon again.

View a list of other conference participants

When using Infinity Connect, a list of all other conference participants will be shown in the  Participant list tab of the control panel (which is to the left of or at the bottom of the screen, depending on the screen width). You can scroll through this list to view the names of other participants. You can also search for a particular participant using the Filter by name box at the bottom of the list.



 The `/filter` command lets you filter the participant list based on certain criteria such as the participants' role.

You can show and hide the side panel by clicking on the Hide side panel < and Show side panel > icons.

View an individual participant's role

Each person in the Participant list has an icon next to their name, representing their role:



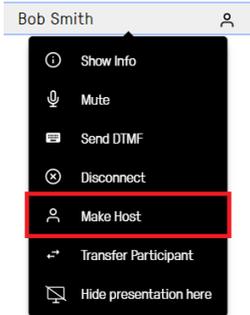
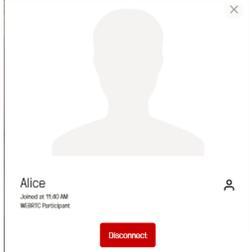
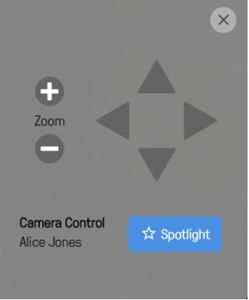
Hosts, who can control the meeting and other participants

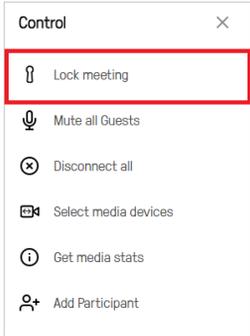
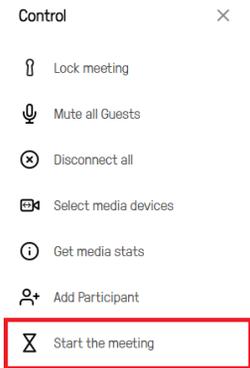
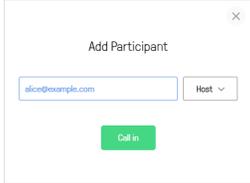


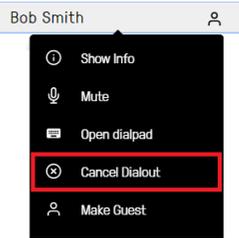
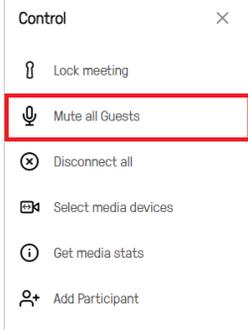
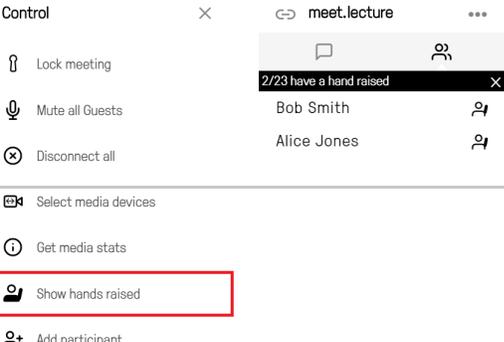
Guests

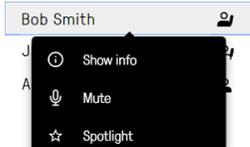
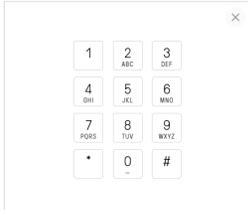
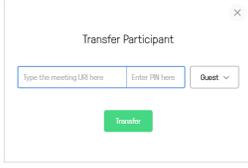
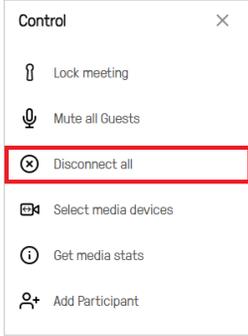


External Guests, who connected directly to an externally-hosted conference, such as a Microsoft Teams or Skype for Business meeting, or Google Hangouts Meet.

What	How	Keyboard shortcut
<p>Change a participant's role</p>	<p>(Requires Host privileges; you cannot change your own role to Guest.)</p> <p>From the Participant list, select the participant and then select Make Host or Make Guest.</p> <p>You cannot change the role of External Guest participants (those who are connected directly to an externally-hosted conference, such as a Microsoft Teams or Skype for Business meeting, or Google Hangouts Meet).</p>	
<p>View individual participant's details</p>	<p>From the Participant list, select the participant and then select Show Info. This brings up an overlay dialog containing details of the participant, including their avatar or image if available (otherwise a placeholder image is shown).</p>	
<p>Control another participant's camera</p> 	<p>(Requires Host privileges. This feature must be enabled by an Administrator; not all endpoints can be controlled remotely.)</p> <p>From the participant list, select the participant whose camera you want to control, and then select Camera control (for person-to-person calls, this option is also available via the Camera control button on the toolbar).</p> <p>The Camera Control overlay will appear. Use the buttons to pan, tilt and zoom the camera at the far end. For calls in a Virtual Meeting Room or Virtual Auditorium you can also select Spotlight to bring the participant into the main video window for as long as the Camera Control overlay is open.</p>	
<p>Send and receive chat messages, and share online videos and images</p>	<p>(Available when chat has been enabled by the administrator)</p> <p>All events, including chat messages, are shown in the Events tab of the side panel (which is to the left of or at the bottom of the screen, depending on the screen width).</p> <p>To send a message, type it in the text box at the bottom of the panel:</p> <div data-bbox="480 1419 1032 1495" style="border: 1px solid #ccc; padding: 5px; margin: 10px 0;"> <p>Write a message</p> </div> <p>Messages are visible to everyone else in the conference with a chat-capable client (such as Skype for Business / Lync or Infinity Connect).</p> <p>You can also share videos and images by pasting their URL into the text box.</p>	

What	How	Keyboard shortcut
Prevent/allow others from joining the meeting	<p>(Requires Host privileges)</p> <p>From the top of the side panel, select Control ● ● ● and then select Lock meeting or Unlock meeting:</p> <p>The impact of locking depends on whether or not the meeting has a Host PIN. For more information, see Locking a conference and allowing participants to join a locked conference.</p>	
Allow a participant to join a locked conference	<p>(Requires Host privileges)</p> <p>Participants who are waiting to join a locked conference are shown in the Participant list with a tick and cross next to their names. To allow these participants to join the conference, select the green tick. If you do not want them to join, select the red cross.</p>	
Allow waiting Guests to join a new meeting without a Host	<p>(Requires Host privileges)</p> <p>If a Guest joins a meeting without a Host, they will be kept waiting to join until the first Host joins, at which point all waiting Guests will automatically be allowed in to the meeting. However, this only applies if the Host has joined with audio or video; presentation and control-only Hosts will not automatically trigger Guests to join.</p> <p>If you have joined a meeting as a presentation and control-only Host and want Guests to join, from the top of the side panel, select Control ● ● ● and then select Start the meeting.</p>	
Add a participant to the conference 	<p>(Requires Host privileges)</p> <ol style="list-style-type: none"> From the toolbar at the bottom of the screen, select Add participant. At the prompt, enter the address of the person you want to dial. Select whether you want the participant to have Host or Guest privileges. Select Call in. <p>The call is placed from the VMR to the participant and they will appear in the participant list with a green line under their name while their endpoint is ringing. If and when the participant answers the call they will join the conference; if they do not answer, or do not accept the call, they will disappear from the participant list.</p> <p>i Automatic routing is used when a next-generation Infinity Connect client adds a new participant to a conference. This means that the dialed alias must match an appropriate Call Routing Rule that applies to Outgoing calls from a conference for the call to be placed (using the protocols and call control systems etc. as configured for that rule). However, the user can force a specific dial out protocol by prefixing the destination address with sip: or mssip: or h323: or rtmp: (which can be used to support dial out to streaming services) — in these cases a Call Routing Rule is not required.</p>	

What	How	Keyboard shortcut
<p>Cancel a call to a participant</p>	<p>(Requires Host privileges)</p> <p>Outbound calls are placed from a Virtual Meeting Room to a participant when a Host uses the Add participant option, or if the Virtual Meeting Room has an automatically dialed participant configured.</p> <p>To cancel an outbound call, from the Participant list, select the participant and then select Cancel Dialout.</p>	
<p>Share a link to the meeting</p>	<p>If you want to send a link to the meeting to someone so that they can join you, select the Share icon at the top left of the screen and then select Copy meeting link.</p> <p>You can then send this link to other participants who can paste it into their browser to join the meeting.</p>	
<p>Mute/unmute another participant</p> 	<p>(Requires Host privileges)</p> <p>From the Participant list, select the participant and then select Mute or Unmute.</p> <p>When muted, a  icon is shown next to the participant's name.</p>	
<p>Mute all Guest participants</p>	<p>(Requires Host privileges)</p> <p>From the top of the side panel, select Control ●●● and then select Mute all Guests.</p>	
<p>Keep a participant in the main video</p>	<p>(Requires Host privileges)</p> <p>From the Participant list, select the participant and then select Spotlight.</p> <p>For more information, see Spotlighting a participant.</p>	
<p>Indicate that you wish to speak</p> 	<p>(Virtual Auditoriums only)</p> <p>From the toolbar at the bottom of the screen, select Raise my hand. The meeting Host will be alerted that your hand is raised. If you no longer wish to speak, you can select the button again to Lower my hand.</p> <p>The meeting Host can also lower your hand.</p>	
<p>View all participants with raised hands</p>	<p>(Virtual Auditoriums only; requires Host privileges)</p> <p>From the top of the side panel, select Control ●●● and then select Show hands raised.</p> <p>Participants will be listed in the order that they raised their hand.</p>	

What	How	Keyboard shortcut
Lower a participant's raised hand	<p>(Virtual Auditoriums only; requires Host privileges)</p> <p>From the Participant list, select the participant and then select Hand down.</p> <p>A participant can also lower their own hand.</p>	
Send DTMF tones to another participant (when in a VMR)	<p>(Requires Host privileges; you must be joined over audio, or video and audio)</p> <p>From the Participant list, select the participant and then select Open dialpad. This will open a keypad:</p>	
<p>Send DTMF tones to the other participant (when in a person-to-person call)</p> 	<p>From the toolbar at the bottom of the window, select Open dialpad. This will open a keypad.</p>	
Transfer a participant to another VMR	<p>(Requires Host privileges)</p> <p>From the Participant list, select the participant and then select Transfer Participant.</p> <p>Enter the alias of the conference you wish to transfer the participant to, the PIN (if applicable) and whether they should join as a Guest or Host, and then select Transfer.</p> <p>You can transfer any participant, including yourself.</p>	
Disconnect another participant	<p>(Requires Host privileges)</p> <p>From the participant list, select the participant's name and then select Disconnect.</p>	
Disconnect all participants (including yourself)	<p>(Requires Host privileges)</p> <p>From the top of the side panel, select Control ●●● and then select Disconnect all.</p>	

What	How	Keyboard shortcut																																																						
Disconnect yourself from the conference	From the toolbar at the bottom of the screen, select Disconnect .																																																							
																																																								
Mute/unmute the audio coming from the conference	From the toolbar at the bottom of the screen, select Mute/Unmute incoming audio .																																																							
																																																								
Change the volume of the audio coming from the conference	<p>Desktop client and web app:</p> <p>From the toolbar at the bottom of the screen, use the slider to adjust the volume level (which is indicated by the green bar under the toolbar).</p>  <p>Mobile app:</p> <p>Use your device's volume controls.</p>																																																							
View diagnostic information about your call and client	<p>(Available when connected with audio or video)</p> <p>From the top of the side panel, select Control ● ● ● and then select Get media stats.</p> <p>This brings up an overlay dialog that displays statistics such as the codec being used, incoming and outgoing audio and video bitrates, and how many data packets have been lost and received.</p> <p>It also shows the software version of the client and the Pexip Infinity deployment it is connected to.</p>	 <table border="1"> <caption>Media Statistics</caption> <thead> <tr> <th></th> <th>In</th> <th>Out</th> </tr> </thead> <tbody> <tr> <td>Audio</td> <td></td> <td></td> </tr> <tr> <td>Packets Transmitted</td> <td>95283</td> <td>95281</td> </tr> <tr> <td>Packets Lost</td> <td>0</td> <td>0</td> </tr> <tr> <td>Total Percentage Lost</td> <td>0.0%</td> <td>0.0%</td> </tr> <tr> <td>Recent Percentage Lost</td> <td>0.0%</td> <td>0.0%</td> </tr> <tr> <td>Bitrate</td> <td>69Kbps</td> <td>18Kbps</td> </tr> <tr> <td>Codec</td> <td>opus</td> <td>opus</td> </tr> <tr> <td>Video</td> <td></td> <td></td> </tr> <tr> <td>Packets Transmitted</td> <td>9274</td> <td>9190</td> </tr> <tr> <td>Packets Lost</td> <td>35</td> <td>0</td> </tr> <tr> <td>Total Percentage Lost</td> <td>0.0%</td> <td>0.0%</td> </tr> <tr> <td>Recent Percentage Lost</td> <td>0.0%</td> <td>0.0%</td> </tr> <tr> <td>Bitrate</td> <td>170Kbps</td> <td>430Kbps</td> </tr> <tr> <td>Codec</td> <td>VP9</td> <td>VP9</td> </tr> <tr> <td>Resolution</td> <td>1080x720</td> <td>1080x720</td> </tr> <tr> <td>Configured Bitrate</td> <td>N/A</td> <td>1/3 Bitrate</td> </tr> <tr> <td>Decoder Delay</td> <td>5ms</td> <td>N/A</td> </tr> </tbody> </table> <p>Software version Client version: 13.1 (chrome v69 on Win10) Server version: v20 (95158.012)</p>		In	Out	Audio			Packets Transmitted	95283	95281	Packets Lost	0	0	Total Percentage Lost	0.0%	0.0%	Recent Percentage Lost	0.0%	0.0%	Bitrate	69Kbps	18Kbps	Codec	opus	opus	Video			Packets Transmitted	9274	9190	Packets Lost	35	0	Total Percentage Lost	0.0%	0.0%	Recent Percentage Lost	0.0%	0.0%	Bitrate	170Kbps	430Kbps	Codec	VP9	VP9	Resolution	1080x720	1080x720	Configured Bitrate	N/A	1/3 Bitrate	Decoder Delay	5ms	N/A
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Configured Bitrate	N/A	1/3 Bitrate																																																						
Decoder Delay	5ms	N/A																																																						
Use a text-based interface to filter participants and control the conference	<p>Some tasks can be performed using a command-line-style text input from within the Filter by name box at the bottom of the Participant list.</p> <p>Hosts and Guests can filter the list of participants based on criteria such as their role or who is currently speaking. Hosts can also perform other conference control functions such as muting and unmuting participants, spotlighting a participant, and turning the text overlay on and off.</p> <p>To view a full list of available commands, type <code>/</code> into the Filter by name box.</p>																																																							

Text-based controls

The following actions can be performed by typing the relevant commands into the **Filter by name box** at the bottom of the **Participant list**:

Command	Description
Host-only commands	

Command	Description
/lock	Lock and unlock the meeting.
/unlock	
/mute [participant]†	Mute and unmute another participant.
/unmute [participant]†	
/muteall	Mute and unmute all Guest participants.
/unmuteall	
/handsdown [participant]* †	Lower a participant's raised hand .
/handsdownall*	Lower all participants' raised hands .
/disconnect [participant]†	Disconnect a participant.
/disconnectall	Disconnect all participants (including yourself).
/spotlight on [participant]†	Put a participant into the main video window. For more information, see Spotlighting a participant .
/spotlight off [participant]†	
/overlay on	Turn text overlay of participant names on and off.
/overlay off	
/layout 1:0	Change the layout of the main video window and thumbnails.
/layout 1:7	In a Virtual Meeting Room, this will affect the view seen by all participants. In a Virtual Auditorium, this will affect the view seen by Host participants.
/layout 1:21	
/layout 2:21	
/layout 4:0	
Host and Guest commands	
/shortcuts	View a list of keyboard shortcuts.
/hand up*	Raise or lower your hand.
/hand down*	
/filter host	Filter the list of participants by the given criteria.
/filter guest	
/filter handraised*	
/filter spotlight	
/filter speaking	
/filter streaming	
/filter external	
/filter waiting	
/filter audio-only	
/filter control-only	

* Available in Virtual Auditoriums only.

† When you start entering a participant's name, the participant list will be filtered to show only those participants with those characters in their name.

Registering and provisioning the Infinity Connect clients

The Infinity Connect desktop client can register to a Pexip Infinity Conferencing Node. Infinity Connect clients that are registered to Pexip Infinity can:

- receive calls (as well as place them)
- use directory services to filter and lookup the contact details (phone book) of other devices or VMRs that are set up on the Pexip Infinity platform, making it easier to call those addresses.

i Registration is optional. You do not need to register your device in order to make calls.

The Infinity Connect desktop client can also be provisioned with branding details, allowing it to use the same branding that has been uploaded to Pexip Infinity (and which is being used automatically by the web app).

Infinity Connect mobile client registrations are not currently supported, but the mobile clients can be provisioned with branding details.

This topic covers the client [authentication options](#), the [DNS requirements](#), how to [provision the clients](#), some [example provisioning email template content](#), and a description of the associated [user experience](#).

Client authentication options

When registering an Infinity Connect client to Pexip Infinity, the alias being registered by the client must match one of the entries on the Management Node under **Users & Devices > Device Aliases**. When configuring a device alias, you can specify whether and how an Infinity Connect client that is attempting to register with that alias should authenticate itself (authentication is optional but recommended):

- **SSO**: the client uses Single Sign-On (SSO) services such as AD FS to authenticate the registration.
- **Non-SSO**: the username and password credentials associated with the alias to authenticate the registration.

For any given alias, we recommend that you enable Infinity Connect registrations for either SSO or non-SSO authentication, not both.

Setting up appropriate DNS records

The Infinity Connect desktop client uses its configured **Registration Host** and performs a DNS SRV lookup on **_pexapp._tcp.<registration host address>** to locate a Conferencing Node to which it can send its registration request.

You must therefore ensure that appropriate DNS records have been set up — for more information, see [Setting up DNS records for mobile and desktop client use](#).

Provisioning the Infinity Connect clients with registration and/or branding details

Users can manually enter their registration details (alias, credentials, registration host address) into their Infinity Connect desktop client. However, as an administrator you can simplify this process by provisioning individual users with their registration details and automatically applying those registration settings to their Infinity Connect desktop client.

You can also provision the Infinity Connect desktop and mobile clients with instructions to use the same app branding that has been uploaded to Pexip Infinity (and which is being used automatically by the web app). Note that the Infinity Connect mobile clients do not currently support registration to Conferencing Nodes.

You perform these provisioning tasks by supplying each user with a provisioning URI in the format:

```
https://<node_address>/api/client/v2/provision?data=<Base64 encoded name-value pairs>&message=<Base64 encoded message>
```

where:

- **<node_address>** is the address of a Conferencing Node.
- **<Base64 encoded name-value pairs>** are the data values used to provision the client, and are described below.
- **<Base64-encoded message>** is the provisioning message that is displayed to the user. The **message** parameter is optional and by default is "Your Pexip App should have opened and asked to be provisioned. You can now close this window."

Base64 encoding is used to ensure that the data does not get modified by email clients. Note that Base64-encoded data is not encrypted.

For example, the provisioning URI might look like this:

```
https://px01.vc.example.com/api/client/v2/provision?data=ZzUmVkaXJl...etc...D%3D&message=bkgY3VzdG9tIG1lc3Nh
```

This provisioning URI can be inserted into email messages without the risk of the link being disabled (unlike the [alternative pexip-provision://](#) URI scheme). This means users will have a directly clickable link without needing to copy and paste the link into their web browser.

Provisioning name-value pairs

The name-value pairs that can be provisioned in the **data** query string parameter are described in the following table. If you use Pexip Infinity to bulk provision device aliases and generate emails to each user, you can use the provided template variables and custom Pexip filters to obtain the values for some of the data items and generate the relevant URIs for each user/client.

Each name-value pair must be separated by an &. For example (prior to Base-64 encoding):

```
name=Alice&registrationHost=px01.vc.example.com&registrationAlias=alice@example.com&registrationUsername=alice&registrationPassword=password123
```

The table shows the common data items, and the additional data items that are used for AD FS SSO authentication:

Name	Value	Suggested template variable
name	The name of the user as it will appear to other conference participants.	device_username
registrationHost	The domain, IP address or FQDN of the Conferencing Node to which the client should register, for example <code>px01.vc.example.com</code> . For more information, see Setting up DNS records for mobile and desktop client use .	There is no suitable variable for this, as it is not a user specific value.
registrationAlias	The alias of the device to register to Pexip Infinity.	device_alias
registrationUsername	The username associated with the device alias (registrationAlias). This does not apply if you are using SSO services.	device_username

Name	Value	Suggested template variable
registrationPassword	The password associated with the device alias (registrationAlias). This does not apply if you are using SSO services.	device_password
brandingURL	A reference to a directory that contains customized branding configuration. In most cases this will be: <code>https://<node_address>/webapp2/custom_configuration/</code> where <node_address> is the FQDN of a Conferencing Node. You typically use this to instruct the Infinity Connect client to use the same branding that has been uploaded to Pexip Infinity (and which is being used automatically by the web app). In advanced customization scenarios you can refer to a specific branding package hosted on a different server. This parameter is supported on Infinity Connect clients version 1.3 or later. See Customizing the Infinity Connect clients for more information.	There is no suitable variable for this, as it is not a user specific value.

Additional data items when using AD FS SSO authentication

adfsFederationServiceName †	The Federation Service name e.g. adfs.example.com.	There are no suitable variables for these items, as they are not user specific values.
adfsResource †	The Resource Identifier e.g. https://pexipappsso.local.	
adfsClientID †	The Client ID e.g. a2a07b42-66d7-41e4-9461-9d343c25b7f3.	
adfsRedirectURI	This is the URI you want the user to be redirected back to after they sign into AD FS. It does not correspond with a value configured on the Management Node but it must be one of the redirect URIs you set up when configuring AD FS on your Windows Server. We recommend you use: <code>https://<address>/api/client/v2/oauth2_redirect</code> where <address> is the FQDN of a Conferencing Node or reverse proxy, for example <code>https://px01.vc.example.com/api/client/v2/oauth2_redirect</code> . When the <code>oauth2_redirect</code> page loads it opens the Infinity Connect client to complete the sign-in process. The <code>oauth2_redirect</code> page will remain open but it displays a message which by default is "You have successfully signed in. You can now close this window." You can change this message by including the optional base64-encoded <code>message</code> parameter on the <code>oauth2_redirect</code> page URL. For example, the message "my custom message" is "bXkgY3VzdG9tIG1lc3NhZ2U=" when base64-encoded. You would then specify the <code>adfsRedirectURI</code> as follows: <code>https://confnode.example.com/api/client/v2/oauth2_redirect?message=bXkgY3VzdG9tIG1lc3NhZ2U=</code>	

† These AD FS related data values should correspond to what you have configured in Pexip Infinity (Users & Devices > AD FS Authentication Clients) for the OAuth 2.0 Client.

Notes:

- You do not have to provision all of the common name-value data items — if you supply a subset of the data, the user can manually enter the additional data if required.
- When using AD FS SSO provisioning, all of the AD FS data items must be included in the provisioning data.
- Only the **name** and **brandingURL** parameters should be supplied when provisioning the Infinity Connect mobile clients (as registering to Conferencing Nodes is not currently supported).

Example device email template content

The following example content for a device provisioning email template shows how you can build the relevant URI with base64-encoded provisioning data (using device provisioning variables populated from LDAP) and provide a clickable link for the recipient of the email that will provision their client. The first line in this example defines and sets various variables and the second line incorporates those variables in the paragraph text and link that is displayed to the recipient.

```
{%set provisiondata = "name=" + device_username|capitalize +
"&registrationHost=confnode.example.com&registrationAlias=" + device_alias +
"&registrationUsername=" + device_username + "&registrationPassword=" + device_
password %}

<p>You can open <a href="https://confnode.example.com/api/client/v2/provision?{{pex_
url_encode(('data', provisiondata|pex_base64))}}">this link</a> to automatically
configure your client.</p>
```

Remember to substitute **confnode.example.com** with the address of your Conferencing Node.

You can extend the previous example and include the **message** URL parameter (set to 'Provision your app' in this example) in the provisioning link (the `%set` statement is identical to the previous example):

```
{%set provisiondata = "name=" + device_username|capitalize +
"&registrationHost=confnode.example.com&registrationAlias=" + device_alias +
"&registrationUsername=" + device_username + "&registrationPassword=" + device_
password %}

<p>You can open <a href="https://confnode.example.com/api/client/v2/provision?{{pex_
url_encode(('data', provisiondata|pex_base64), ('message', 'Provision your app'|pex_
base64))}}">this link</a> to automatically configure your client.</p>
```

AD FS SSO examples

This is an example of a provisioning link which can be used to set up Single Sign-On via AD FS:

```
{%set provisiondata = "name=" + device_username|capitalize +
"&registrationHost=confnode.example.com&registrationAlias=" + device_alias +
"&adfsFederationServiceName=adfs.example.com&adfsResource=https://pexipappsso.local&a
dfsClientID=a2a07b42-66d7-41e4-9461-
9d343c25b7f3&adfsRedirectURI=https://confnode.example.com/api/client/v2/oauth2_
redirect" %}

<p>Simply open <a href="https://confnode.example.com/api/client/v2/provision?{{pex_
url_encode(('data', provisiondata|pex_base64))}}">this link</a> to configure your
client automatically.</p>
```

Remember to substitute **confnode.example.com** with the address of your Conferencing Node, and to set the **adfsFederationServiceName**, **adfsResource** and **adfsClientID** variables with the appropriate values for your AD FS service.

This next example shows how to include the "successfully signed in" **message** URL parameter (set to 'Successfully signed-in message' in this example) in the **oauth2_redirect** link:

```
{%set provisiondata = "name=" + device_username|capitalize +
"&registrationHost=confnode.example.com&registrationAlias=" + device_alias +
"&adfsFederationServiceName=adfs.example.com&adfsResource=https://pexipappsso.local&a
dfsClientID=a2a07b42-66d7-41e4-9461-
9d343c25b7f3&adfsRedirectURI=https://confnode.example.com/api/client/v2/oauth2_
redirect?" + pex_url_encode(('message', 'Successfully signed-in message'|pex_base64))
%}
```

```
<p>Simply open <a href="https://confnode.example.com/api/client/v2/provision?{{pex_url_encode(('data', provisiondata|pex_base64)}}}">this link</a> to configure your client automatically.</p>
```

This final example shows how the "successfully signed in" message (on the `oauth2_redirect` URL) and the "provision your app" message (on the `provision` URL) can be customized:

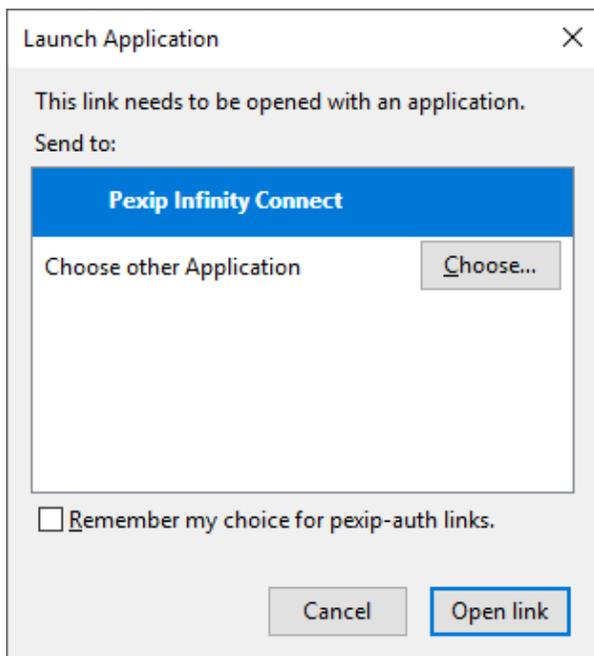
```
{%set provisiondata = "name=" + device_username|capitalize +
"&registrationHost=confnode.example.com&registrationAlias=" + device_alias +
"&adfsFederationServiceName=adfs.example.com&adfsResource=https://pexipappsso.local&adfsClientID=a2a07b42-66d7-41e4-9461-9d343c25b7f3&adfsRedirectURI=https://confnode.example.com/api/client/v2/oauth2_redirect?" + pex_url_encode(('message', 'Successfully signed-in message'|pex_base64))%}
```

```
<p>You can open <a href="https://confnode.example.com/api/client/v2/provision?{{pex_url_encode(('data', provisiondata|pex_base64), ('message', 'Provision your app'|pex_base64)}}}">this link</a> to automatically configure your client.</p>
```

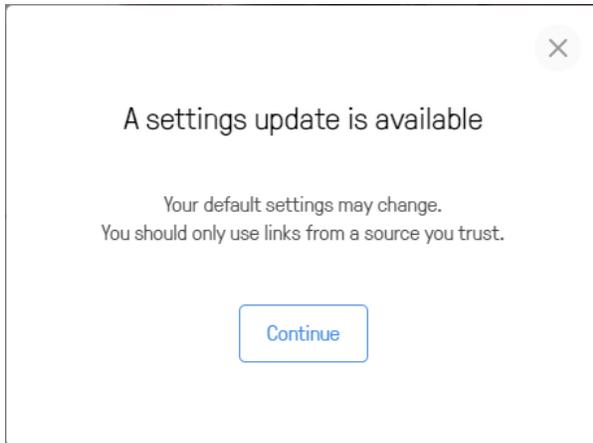
User experience when using the provisioning link

Non-SSO provisioning

When the user clicks on the provisioning link, they are typically asked to confirm or authorize the launch of the Infinity Connect application (the exact nature of the request varies according to the platform and the method of launching the link) and then the Infinity Connect client will launch and present the user with a confirmation screen:



1. Select **Open Link** to launch Infinity Connect.

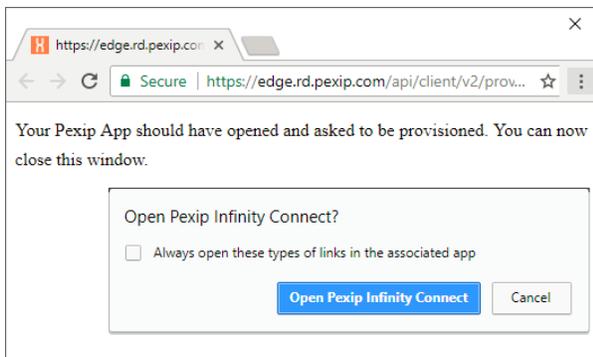


2. Select **Continue** to apply and save the settings contained in the provisioning link.

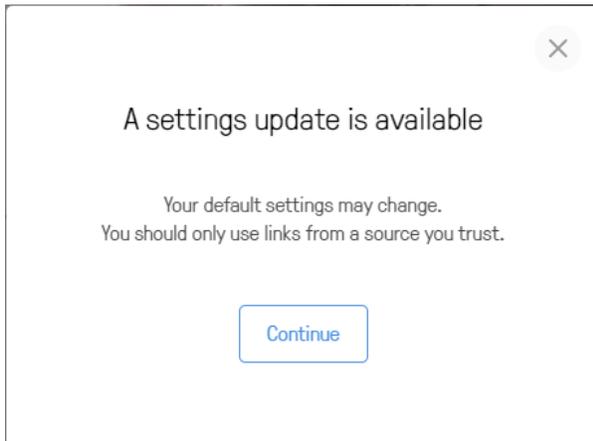
The registration settings in the client are read-only when the client is successfully registered — you must **Unregister** if you want to change them.

AD FS SSO provisioning

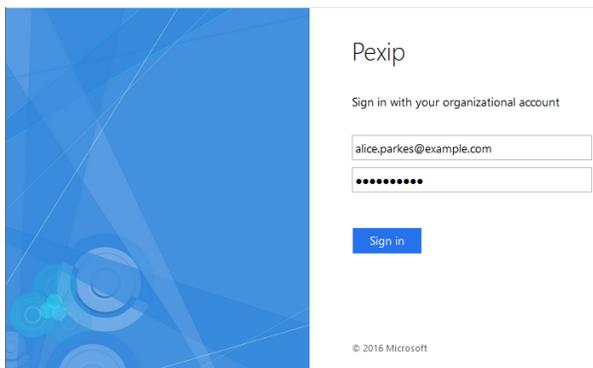
When AD FS SSO provisioning is used, the user is also prompted to sign to AD FS with their AD credentials. Here are some examples of the screens that are displayed during the provisioning process (the exact nature varies according to the platform, browser and whether the messages have been customized):



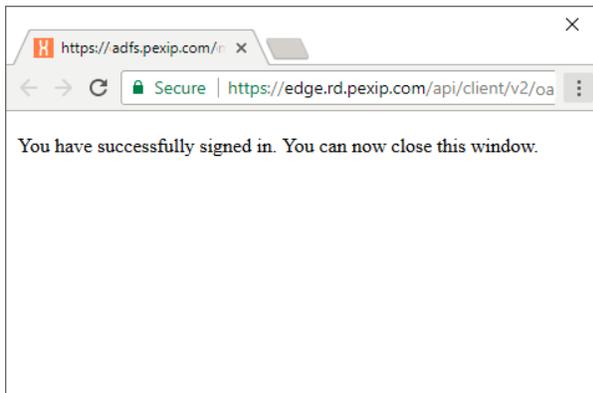
1. Confirm to open the Infinity Connect client.



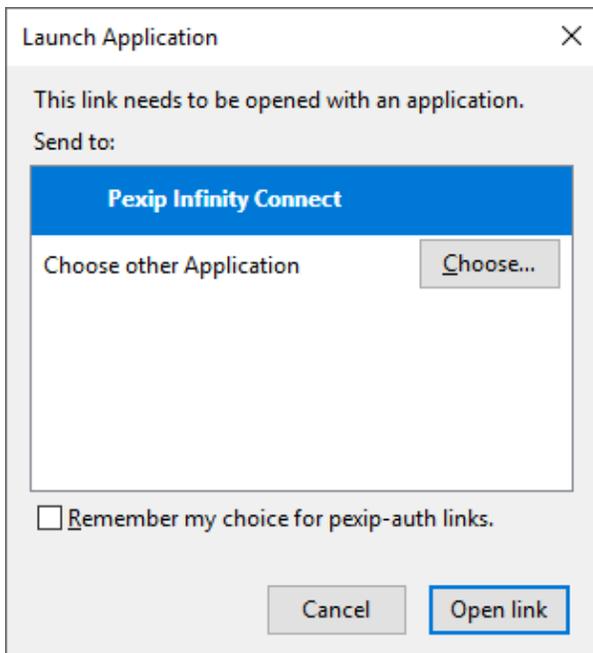
2. Select **Continue** to proceed with provisioning the client.



3. Sign in to AD FS.



4a. AD FS sign-in successful.



4b. Select **Open Link** to launch Infinity Connect and complete the sign-in process.

When a client has been configured (provisioned) with SSO registration information, the user name / password fields are blank and the registration settings can only be modified by resetting the app.

Alternative pexip-provision:// URI provisioning scheme

When the Infinity Connect client installs, it registers itself to the **pexip-provision://** URI scheme. This provides an alternative provisioning URI that can be used to configure the client with personalized settings for each user. This URI takes the following format:

pexip-provision://settings/?data=<Base64 encoded name-value pairs>

where **data** is set to the same set of [name-value pairs](#) as described above.

i We recommend using the https://<node_address>/api/client/v2/provision style links instead of the **pexip-provision://** style links, as some mail clients (such as gmail) disable embedded **pexip-provision://** style links and other mail clients (such as Outlook) may present users with a security notice warning that the hyperlink may be unsafe and users must choose to continue in order to launch the application.

The following example content for a device provisioning email template shows how you can build the relevant pexip-provision:// URI with base64-encoded provisioning data (using device provisioning variables populated from LDAP) and provide a clickable link for the recipient of the email that will provision their client.

```
{%set provisiondata = "name=" + device_username|capitalize +
"&registrationHost=px01.vc.example.com&registrationAlias=" + device_alias +
"&registrationUsername=" + device_username + "&registrationPassword=" + device_
password %}

<p>You can open <a href="pexip-provision://settings?data={{provisiondata|pex_
base64}}"> this link</a> to automatically configure your client.</p>
```

The generated URI for "this link" will take the form **pexip-provision://settings?data=bmFtZT1...etc...HVhcA==**

Using Infinity Connect to share content

You can use Infinity Connect to share content such as [images and PDFs](#), or [what's on your screen](#), with other participants. What you can share depends on which Infinity Connect client you are using.

If you are already in the call using another video endpoint, you can open and [use Infinity Connect just to share content](#) — for example, if you have joined the conference from a meeting room with a dedicated endpoint, and you want to show a presentation from your laptop without worrying about finding and connecting the correct cables.

You can also share videos and images with other Infinity Connect users by pasting their URL into the text/chat box (content may be blocked if you are using a reverse proxy with HTTP Content Security Policy (CSP) enabled).

Note that:

- An administrator can configure individual Virtual Meeting Rooms and Virtual Auditoriums so that Guest participants are not allowed to present into the conference (they can still receive presentation content from other Host participants). By default, Guests are allowed to present content.
- When a user is **sharing their screen**, content is sent to other participants at 2 fps by default. However, users can change this rate prior to sharing their screen by selecting **Settings > Advanced Settings > Screen sharing quality**. Note that this setting does not influence the frame rate used when **sharing files and images**, which are only updated each time the file or image changes.

Sharing your screen

Screen sharing is available when using the:

- Infinity Connect web app via Chrome (versions prior to Chrome v72 require the [installation of a Chrome extension](#))
- Infinity Connect web app via Opera (requires Opera version 60 or later)
- Infinity Connect web app via Firefox (requires Firefox version 52 or later)
- Infinity Connect desktop client.

You can set the frame rate to use when sharing your screen. A lower frame rate will result in *sharper* images and is best for static presentations; a higher frame rate will be less sharp and is best for content where there is more *motion*. You must set the framerate to use before you join the conference via **Settings > Advanced Settings > Screen sharing quality**.

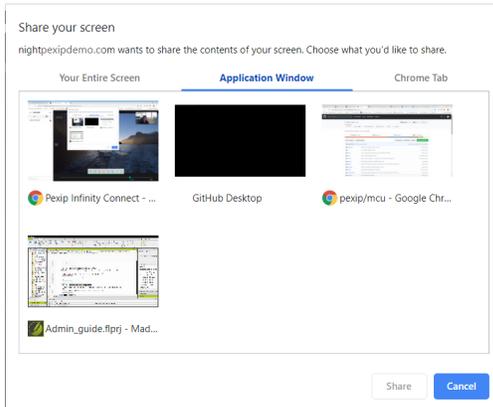
Infinity Connect web app via Chrome or Opera

You can choose to share the whole screen, an individual application, or an individual tab. To share your screen:

1. From the toolbar at the bottom of the screen, select **Share my screen**:



2. From the **Your Entire Screen, Application Window, or Chrome Tab / Opera Tab** options, select what you want to share (any applications that are currently minimized won't appear on the list):



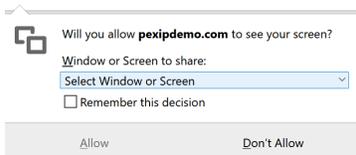
Infinity Connect web app via Firefox

You can choose to share the whole screen, or you can select an individual application window to share. To share your screen:

1. From the toolbar at the bottom of the screen, select **Share my screen**:



2. Select the window or screen you want to share (any applications that are currently minimized won't appear in the list):



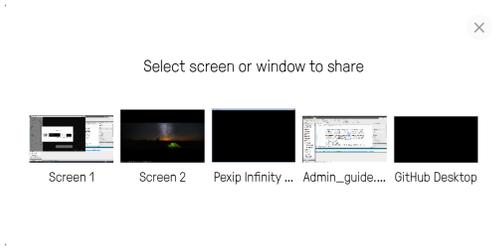
Infinity Connect desktop client

You can choose to share the whole screen, or you can select an individual application window to share. To share your screen:

1. From the toolbar at the bottom of the screen, select **Share my screen**:



- From the **Your Entire Screen** or **Application Window** options, select what you want to share (any applications that are currently minimized won't appear on the list):



Sharing images and PDFs

Supported formats and clients

Images

You can share images from any Infinity Connect client. Infinity Connect supports the following image formats:

- JPEG
- BMP
- PNG
- GIF

PDFs

You can share PDFs directly from:

- the Infinity Connect desktop client
- the Infinity Connect web app
- Infinity Connect mobile client for Android

PowerPoint presentations

You can't share PowerPoint presentations directly using this method. To share PowerPoint presentations, either

- Save the presentation as a PDF, and share that.
- If you are using Infinity Connect via the Desktop client or Chrome, Opera or Firefox browsers, from PowerPoint, open the presentation as a slide show, and then [share your screen](#).

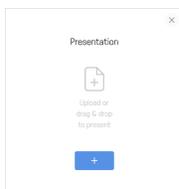
Selecting the images or PDFs to share

To share images or PDFs:

- From the toolbar at the bottom of the screen, select **Present files**:



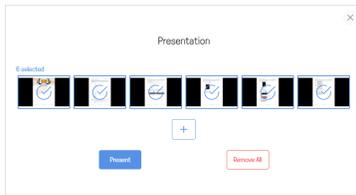
The **Presentation** screen will appear:



- Select +, or drag and drop the file(s) you want to share into the **Presentation** window. You can add multiple files, and they can be a combination of images (.JPEG, .BMP, .PNG, or .GIF) and PDFs (if supported by your device). Each image will be converted

into an individual slide, as will each page of each PDF.

- By default, every slide will be selected for presenting, but you can click on individual slides to select and deselect them:



- When you have selected all the slides you want to share, select **Present**. Use the left < and right > on-screen controls, or the arrow keys on your keyboard, to scroll through the slides. You also have the option to [View presentation in a separate window](#).
- To stop sharing the slides, from the toolbar select **Stop presenting**:



- i** Any files you share remain yours - they are not available for other participants to download during or after the conference.

Using Infinity Connect for presentation, chat and conference control only

If you are already in a conference using an endpoint other than Infinity Connect (for example, a dedicated meeting room system), you can still access the additional features available to Infinity Connect users (such as conference control, chat, content sharing and viewing, and viewing the participants list) by using Infinity Connect to join the conference without sending or receiving audio or video - in other words, as a presentation and control-only participant. To do this:

- Open the Infinity Connect client on your computer or mobile device.



- Select [content](#).

- In the box at the top right of the window, enter the address of the meeting you wish to join:



- Either click on the icon to the right of the box, or press enter.

You will join the conference as a presentation and control-only participant - you will not be sending any audio or video, and you will not receive any audio or video from other participants.

You can now [share your screen](#) or [share images and PDFs](#), and view content being shared by other participants. You can also send and receive chat messages, view the participant list, and (if you are a Host) control aspects of the conference such as adding participants, muting participants, disconnecting participants, and locking the conference.

At any point in the call you can also start sending and receiving audio or video. To do this, select **Start video** or **Start audio** from the toolbar at the bottom of the screen:



Locking a conference and allowing participants to join a locked conference

You can lock a conference if you want to prevent any further participants from joining a conference after it has started. A conference can be locked and unlocked by conference participants [using Infinity Connect](#) or [using DTMF-enabled endpoints](#), or by [using the Administrator interface](#).

When a conference is locked, any new participants who attempt to join the conference are held at a waiting screen. They can be [allowed in individually](#) by Infinity Connect participants (Hosts only) already in the conference.

The exact locking behavior depends on whether or not the Virtual Meeting Room or Virtual Auditorium being used has a Host PIN.

If the service **does not have a Host PIN**:

- Participants are able to join the conference until it is locked.
- When the conference is locked:
 - A conference locked indicator  is displayed.
 - Any further participants who attempt to join the conference (including any Automatically Dialed Participants and manually-invited participants who have been given a role of Guest) are held at the **Waiting for the host** screen. However, any ADPs and manually-invited participants with a role of Host will join the conference immediately.
 - All participants who are already in the conference are notified of any participants who are attempting to join the locked conference, and can [allow the waiting participants to join](#). Notifications take the form of an on-screen message and an audio message/alert for each participant attempting to join.
- If the conference is unlocked, any participants who are still waiting will automatically join the conference.

If the service **has a Host PIN**:

- Host and Guest participants are able to join the conference until it is locked.
- When the conference is locked:
 - A conference locked indicator  is displayed to Host participants.
 - New participants who enter the Host PIN will join the conference immediately — locking does not apply to them.
 - Any new Guest participants (including any Automatically Dialed Participants and manually-invited participants who have been given a role of Guest) are held at the **Waiting for the host** screen.
 - All Host participants who are already in the conference are notified of any Guest participants who are attempting to join the locked conference, and can [allow the waiting Guest participants to join](#). Notifications take the form of an on-screen message and an audio message/alert for each participant attempting to join.
- If the conference is unlocked, any Guest participants who are still waiting will automatically join the conference.

All of the on-screen indicators, messages and the **Waiting for the host** screen can be fully customized via the theme associated with your services.

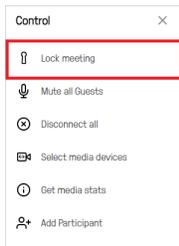
Locking using the Administrator interface

To lock or unlock a conference from the Administrator interface:

1. Log into the Pexip Infinity Administrator interface.
2. Go to **Status > Conferences**.
3. From the **Service name** column, select the conference you want to lock or unlock.
4. At the bottom left of the page, select **Lock conference** or **Unlock conference** as appropriate.

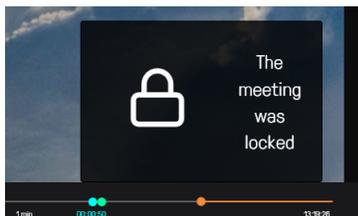
Locking using Infinity Connect

Host participants using Infinity Connect can lock and unlock the conference they are in by going to the side panel, selecting **Control** ●●● and then selecting **Lock meeting** or **Unlock meeting** as appropriate:



i Host participants using Infinity Connect can also use the [commands](#) `/lock` and `/unlock`.

When a conference has been locked, the timeline at the bottom of the Infinity Connect application will turn orange:

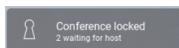


Locking using DTMF

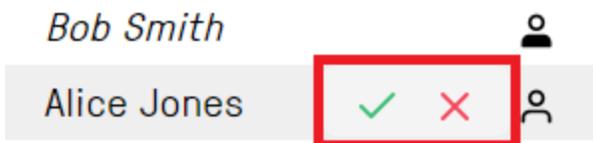
If DTMF controls have been enabled, Host participants using telephones or SIP/H.323 endpoints can lock and unlock the conference using DTMF. The default DTMF entry to do this is `*7` but this may have been customized.

Allowing waiting participants to join a locked conference

When a new participant attempts to join a locked conference, all Host participants (on any endpoint) in the conference are notified that a participant is waiting to join. However, only Host participants who are using Infinity Connect can admit individual participants into the conference.



Participants who are waiting to join a locked conference are shown in the **Participant list** with a tick and cross next to their names. To allow these participants to join the conference, select the green tick. If you do not want them to join, select the red cross.



Note that if the Host has joined as presentation and control-only (and there are no other Host participants), the Host is not offered the telephone icons. However, they can use the **Start the meeting** menu option, which will let in all Guest participants.

If a conference is unlocked, all participants who are still waiting will automatically join the conference.

Rejecting a request to join a locked conference

If a Host (who is using Infinity Connect) does not want a waiting participant to join the conference immediately, they have two options:

- To reject the request completely, the Host participant must click on the red cross icon next to the waiting participant's name. The waiting participant's call will be disconnected.
- To leave the participant at the waiting for Host screen, the Host participant should do nothing. The waiting participant will remain at the waiting screen until:
 - a Host participant chooses to let the waiting participant join the conference, or
 - the conference is unlocked (after which the waiting participant will automatically join the conference), or
 - the participant has been waiting for longer than the specified waiting time (after which the participant will be disconnected)
 - the conference finishes (after which the waiting participant's call will be disconnected).

Administering Infinity Connect

Customizing the Infinity Connect clients

The branding and styling of the Infinity Connect clients (web app, mobile and desktop) can be customized. This changes the look and feel of the Infinity Connect client regardless of which service is being accessed. (However, the theme-based elements of each individual service may also have been customized.)

Infinity Connect customization can be used to control:

- default settings such as bandwidth, screen sharing frame rate and so on
- the ability to display an image/logo and accompanying welcome text on a landing page, and to use a custom favicon
- language translations and the default language
- the color scheme for buttons, icons and other graphic indicators; elements can be customized individually or a general color scheme can be applied to all similar items.

To customize the clients you typically create and then upload a branding package to the Management Node. That branding package is then automatically applied to all users of the web app. To apply the same customized branding to the next-generation desktop and mobile clients you can use Pexip Infinity's provisioning features to instruct those clients to override their built-in branding and use the customized branding instead. Note that the clients do not need to be registered in order to use the branding provisioning feature.

Branding customizations that are applied via the Management Node will persist over upgrades to subsequent versions of Pexip Infinity software (although you may need to adapt the customization to cater for any new features when upgrading to a new major release).

The instructions in this topic describe how to [create and upload](#), [edit](#) and [remove](#) a branding package, and how to [apply the branding to the mobile and desktop clients](#).

Note that the procedures described here apply a generic customization for all Infinity Connect users. If you have specific customization requirements, such as hosting multiple different branding customizations for web app users under different URLs on external web servers or reverse proxies, or need to customize the legacy clients, see [Advanced Infinity Connect customization](#).

Creating and uploading a branding package

You must create a branding package before you can upload it to the Management Node. The recommended method to create a branding package for the Infinity Connect clients is to use the Pexip branding portal (<https://brandingportal.pexip.com>).

The Pexip branding portal also provides a Custom Builds feature. This lets you build your own installable Infinity Connect desktop client package with your customizations pre-applied, without any need to customize/provision the desktop client via the Management Node. You must contact your Pexip authorized support representative to obtain access to the custom builds option.

Creating a branding package via the Pexip branding portal

You can use the Pexip branding portal to customize the Infinity Connect web, desktop and mobile clients. This web-based tool guides you through the selection of your image files and colors without having to edit individual CSS files etc, and then generates the customized branding package for you.

To use the Pexip branding portal to generate your branding package for the Infinity Connect clients:

1. Go to the Pexip branding portal (<https://brandingportal.pexip.com>), select the **Next-generation** platform and sign in. First time users need to register before they can use the portal. You can also use the portal to create customizations for the legacy web app if required.
2. Select which version of Pexip Infinity you have installed, so that the relevant branding and customization features can be offered.
3. From here you can choose to create new customizations, or edit an existing customization that you have previously created. Configure your customization as required, selecting the relevant image files, colors and settings:

- The **App Editor** changes the look and feel of the Infinity Connect clients, including enabling an image/logo on the landing page.
 - The **Customizations** section controls the client's configuration settings, including default options and plugins.
 - The **Splash Screens** section doesn't directly affect the Infinity Connect clients. It is used to customize the Pexip Infinity themes (which are used when you join a VMR or other service either via an Infinity Connect client or other endpoint) and generates a separate ZIP package when built.
 - The **Languages** section allows you to set up additional languages for the Infinity Connect clients (currently, English is the only language that is available by default). If you set up a new language then you must use the **Customizations** section to select the languages you want to include.
 - A **Custom Builds** section allows you to create your own stand-alone desktop packages for Windows, macOS and Linux. It will build a package for you with your selected customizations and associated language packs, and you can then download an installer image from the portal for local distribution. Note that the downloaded apps are unsigned.
4. When you have finished configuring your branding, go to the Dashboard, select the relevant **App Edits** and **Customizations** and then **Build** your customization package. If you have added new languages they are automatically included in your build depending upon which languages are selected in the **Customization**.
This creates and downloads a **branding.zip** file containing your client customizations.
 5. Upload the branding package to your Management Node:
 - a. Go to **Services > Web App Customization**.
 - b. In the **Upload Web App branding** section, select **Choose File** and select the ZIP file containing your customizations.
 - c. Select **Upload branding**.
The branding package will be uploaded. The upload process automatically detects whether you are uploading legacy or next-generation files, or a package containing both legacy and next-generation files, and processes the ZIP file accordingly.
Wait for the new branding to be replicated out to all Conferencing Nodes (typically after approximately one minute).
- i** This branding package is used to customize the web app by default, but you can also automatically [apply the same branding to the mobile and desktop clients](#). Alternatively, you can use the **Custom Builds** option to build your own installable desktop package with your customizations pre-applied.

Manually configuring the branding files

Manual configuration is useful if you have plugins or very specific modifications that you want to apply to the branding files. Note that manual configuration requires knowledge of core web-design technologies such as HTML, JavaScript and CSS.

To manually configure the branding files:

1. Download the default web app branding files from the Management Node:
 - a. Go to **Services > Web App Customization**.
 - b. Select **Download** (next to the **Download default branding** label). This downloads a **branding_nextgen_and_legacy_default.zip** file to your local file system.

Note that if you have existing branding files uploaded, you can choose to download those instead of the default files. You can also use files that were originally created by the Pexip branding portal — both methods use the same set of configuration files — you can use the branding portal to apply your basic customization requirements and then make further manual amendments to the configuration files if necessary.
2. Unpack the downloaded file and apply your modifications to the relevant files.
3. Repackage your branding files into a single ZIP file (<name>.zip).
 - i** The ZIP file does not have to contain the complete set of branding files. You can upload a subset of the branding files, but you must retain the original file/folder structure in the rebuilt ZIP file. For example, if you are only customizing the next-generation web app files you only need to zip up the **webapp2** folder.

If you are customizing the next-generation clients, you must include the **manifest.json** file in the **webapp2** folder.

If you are customizing the legacy web app and want to change the **background.jpg** or **logo.png** graphics files, you must also include a **brand.css** file that at least includes the references (**brand-logo** and **brand-background** classes) to those customized images.

4. Upload the branding package to your Management Node:
 - a. Go to **Services > Web App Customization**.
 - b. In the **Upload Web App branding** section, select **Choose File** and select the ZIP file containing your customizations.
 - c. Select **Upload branding**.

The branding package will be uploaded. The upload process automatically detects whether you are uploading legacy or next-generation files, or a package containing both legacy and next-generation files, and processes the ZIP file accordingly.

Wait for the new branding to be replicated out to all Conferencing Nodes (typically after approximately one minute).

You can now test the branding by dialing in to one of your Pexip Infinity services via the Infinity Connect web app.

Editing an existing branding package

You can modify an existing branding package by either returning to the Pexip branding portal, or manually editing the branding files that were uploaded previously to the Management Node.

Note that when you upload to the Management Node a new package that contains branding for the legacy web app, all of the previously uploaded legacy web app branding files are deleted and replaced with the new set of files. Similarly, when uploading a package that contains next-generation client branding, it replaces all of the previously uploaded next-generation client branding files.

Using the branding portal

If you initially created your branding package via the Pexip branding portal, you can return to the portal and change those files:

1. Go to the Pexip branding portal (<https://brandingportal.pexip.com>) and sign in.
2. Make your changes, previewing them if necessary, and then download a new ZIP file.
3. On the Management Node, go to **Services > Web App Customization** and upload your new branding ZIP file.

Wait for the new branding to be replicated out to all Conferencing Nodes (typically after approximately one minute).

Manually changing your existing branding on the Management Node

You can manually edit the existing branding files that have been uploaded to the Management Node (even if those files were originally created via the Pexip branding portal):

1. On the Management Node, go to **Services > Web App Customization**.
2. Download the existing branding files:
 - Select the **Download** option next to the **Download default branding** label to download the system default branding files.
 - If customized branding has been uploaded for the legacy clients you can download it by selecting the **Download** option next to the **Download current branding** label.
 - If customized branding has been uploaded for the next-generation clients you can download it by selecting the **Download** option next to the **Download next gen branding** label.

3. Unpack the downloaded file and apply your modifications to the relevant files.

4. Repackage your modified branding files into a new ZIP file.

If you are modifying both legacy and next-generation files, you can package them as two separate ZIP files i.e. one ZIP containing legacy branding and one ZIP containing next-generation branding, thus matching the ZIP packages you downloaded. You can also combine them into one ZIP package, but it must match the file structure that is produced when downloading the default branding files.

5. Upload the new ZIP file back onto the Management Node (**Services > Web App Customization** then **Choose File** followed by **Upload branding**).

The upload process automatically detects whether you are uploading legacy or next-generation files, or a package containing both legacy and next-generation files, and processes the ZIP file accordingly.

Wait for the new branding to be replicated out to all Conferencing Nodes (typically after approximately one minute).

Removing a branding package (revert to default branding)

If you want to revert to the default branding, you need to remove your customized branding from the Management Node. To do this:

1. On the Management Node, go to **Services > Web App Customization**.
2. From the bottom-right corner of the page:
 - Select **Remove branding** to remove any legacy web app branding.
 - Select **Remove next gen branding** to remove any next-generation branding.

Wait for the customized branding to be removed from all Conferencing Nodes and for the web app to revert to the default branding (typically after approximately one minute).

Applying the branding package to the mobile and desktop clients

Any branding package that is uploaded to the Management Node is automatically applied to the Infinity Connect web app.

To apply the same customized branding to the next-generation desktop and mobile clients you can use Pexip Infinity's provisioning features to instruct those clients to override their built-in branding and use the customized branding instead. Note that the clients do not need to be registered in order to use the branding provisioning feature. This is achieved by specifying the **brandingURL** provisioning parameter when you construct each individual mobile/desktop client user's provisioning URI.

The **brandingURL** parameter must refer to a directory that contains customized branding configuration. In most cases this will be:

```
https://<node_address>/webapp2/custom_configuration/
```

where **<node_address>** is the FQDN of a Conferencing Node.

When a branding package is uploaded to the Management Node it is automatically replicated by Pexip Infinity into the **webapp2/custom_configuration** directory of all of the Conferencing Nodes.

After an Infinity Connect client has been provisioned with a **brandingURL** provisioning parameter, every time it launches it checks the contents of the branding files at the brandingURL location to see if the branding has changed (it checks to see if the **brandingID** in the **manifest.json** file has changed). If the branding has been updated, the client fetches and caches the relevant files.

Note that the desktop client's favicon, taskbar/tray icons and app name cannot be updated via the **brandingURL** provisioning parameter as these elements are fixed during the installation of the client software. To customize these items you must use the Custom Builds feature on the Pexip branding portal and then install your customized version of the client (you must contact your Pexip authorized support representative to obtain access to the custom builds option).

The **manifest.json** is automatically generated by the Pexip branding portal and includes the **brandingID** timestamp and also indicates which parts of the app are customized.

See [Registering and provisioning the Infinity Connect clients](#) for full instructions about how to set up provisioning URIs.

Advanced branding scenarios

In advanced configuration scenarios, such as when hosting the web app on an external web server or reverse proxy, or when you need to use multiple different brandings, you can set the **brandingURL** parameter to refer to a directory on another server.

The directory must have the correct structure and contain:

- **manifest.json** (mandatory)
- **settings.json** (optional)
- **watermark_icon.png** (optional)
- **favicon** files (optional but recommended)
- **site.webmanifest** (optional)
- **themes** directory containing **styles.css** (both optional)

as shown below:

Name

-  themes
-  favicon.ico
-  manifest.json
-  settings.json
-  android-chrome-192x192.png
-  android-chrome-256x256.png
-  apple-touch-icon.png
-  favicon-16x16.png
-  favicon-32x32.png
-  mstile-150x150.png
-  watermark_icon.png
-  safari-pinned-tab.svg
-  site.webmanifest

Full details of the structure of the `manifest.json` file and the other application files are contained in [Advanced Infinity Connect customization](#).

Obtaining diagnostic information from Infinity Connect

Users of Infinity Connect clients can obtain information about their client's incoming and outgoing audio and video streams, which may be helpful in diagnosing issues with call quality.

To obtain this information, from the top right of the side panel, select **Control** ●●● and then select **Get media stats**.

Creating preconfigured links to launch conferences via Infinity Connect

You can construct URLs or hyperlinks that may be used to automatically launch the Infinity Connect client and take the user directly into a specific conference. If required it can also pass in any necessary information such as the caller's name or the PIN needed to enter the meeting.

The URLs are in two formats: one that can be used to launch the [next-generation web app](#), and one for use with the [next-generation desktop and mobile clients](#). The parameters that can included in the link are the same for both link types (with the exception of `address/domain` and `callType`).

Links to the legacy Infinity Connect clients

This topic describes how to create preconfigured URLs for use by next-generation Infinity Connect clients.

 For information on creating links to legacy clients, see the [v17 documentation](#).

Links to the next-generation web app

To open an instance of the Infinity Connect web app in the user's default browser and take them to the home screen (not into a specific conference), use the following link:

```
https://<address>/webapp/home
```

where `<address>` is the IP address or domain name of the Conferencing Node (or reverse proxy if, for example, it is being used to host a customized version of the web app).

To provide users with a URL that, when clicked, takes them straight into a specific conference, construct a URL in the format:

```
https://<address>/webapp/conference/<alias>?name=<name>&pin=<PIN>&role=<role>
&muteMicrophone=<muteMicrophone>&muteCamera=<muteCamera>&callType=<callType>
&extension=<extension>&bandwidth=<bandwidth>
```

where:

- **<address>** is the IP address or domain name of the Conferencing Node (or reverse proxy if, for example, it is being used to host a customized version of the web app).
- **<alias>** is one of the aliases for the conference or service the user will join.
- **<name>** is the name of the user who is joining the conference.
- **<PIN>** is either the Host PIN or Guest PIN, if required.
- **<role>** is **guest** if you want to allow Guests to automatically join a conference that allows Guests but has no Guest PIN. In all other cases, participants are asked to enter a PIN to join the conference (unless there is no Host PIN, or the URL already specifies a **<PIN>**); the PIN determines the participant's role and the **<role>** is ignored. Note that if **role=host**, participants are still prompted to enter the Host PIN to join the conference; this parameter cannot be used to bypass PIN entry requirements.
- **<muteMicrophone>** is **true** to join without sending audio (the user will still receive audio, and send and receive video).
- **<muteCamera>** is **true** to join without sending video (the user will still receive video, and send and receive audio).
- **<callType>** is one of:
 - **none** to join as a **presentation and control-only participant**, i.e. the user will not send or receive any audio or video. They can still access the conference controls and send and receive presentations.
 - **audioonly** to join as an audio-only participant, i.e. the user will send and receive audio but will not send or receive video.
 - **video** (the default) to join as a full (send and receive) audio and video participant.
- **<extension>** is the Virtual Reception extension, or the Microsoft Skype for Business / Lync Conference ID.
- **<bandwidth>** is the maximum bandwidth for the call, and the bandwidth at which the initial call attempt will be made, in kbps. It can be any number between 256 and 2464.

The URL must always include **https://<address>/webapp/conference/<alias>**; the remainder of the fields are optional. If a field is not specified in the URL but is required when joining (i.e. **name**, and **PIN** if the conference uses PINs, or **extension** if one is requested), the participant will have to provide the information themselves before they can join the conference.

Examples

Assuming the domain name of your Conferencing Node is **vc.example.com**, and there is a Virtual Meeting Room with the alias **meet.alice**, which has no PIN:

- the URL for Bob to join it directly would be:
https://vc.example.com/webapp/conference/meet.alice?name=Bob

If we then gave the same Virtual Meeting Room a Host PIN of **1234**, and allowed Guests to join without a PIN:

- the URL for Bob to join it directly as a **Host** would be:
https://vc.example.com/webapp/conference/meet.alice?name=Bob&pin=1234
- the URL for Bob to join it directly as a **Guest** would be:
https://vc.example.com/webapp/conference/meet.alice?name=Bob&role=guest
- the URL for Bob to join it directly as an **audio-only Guest** would be:
https://vc.example.com/webapp/conference/meet.alice?name=Bob&role=guest&callType=audioonly

Links to the next-generation desktop and mobile clients

You can create a URL that, when clicked, opens the Infinity Connect client on that device, and takes the participant into the nominated conference. The same URL can be used for the desktop client and mobile clients for Android and iOS. This URL can be included in web pages, instant messages or emails (but note that some email clients such as Gmail will strip them out for security reasons).

 The Infinity Connect desktop or mobile client must already be installed on the device.

The URL is in the format:

pexip://<alias>?host=<domain>&name=<name>&pin=<PIN>&role=<role>&muteMicrophone=<muteMicrophone>&muteCamera=<muteCamera>&extension=<extension>&bandwidth=<bandwidth>

where:

- **<alias>** is one of the aliases for the conference or service the user will join.
- **<domain>** is the IP address or domain name of the Conferencing Node (or reverse proxy if, for example, it is being used to host a customized version of the web app) the client should connect to in order to place the call. Note that this will be ignored if the client is registered and [Route calls via registrar](#) has been enabled.
- **<name>** is the name of the user who is joining the conference.
- **<PIN>** is either the Host PIN or Guest PIN, if required.
- **<role>** is **guest** if you want to allow Guests to automatically join a conference that allows Guests but has no Guest PIN. In all other cases, participants are asked to enter a PIN to join the conference (unless there is no Host PIN, or the URL already specifies a **<PIN>**); the PIN determines the participant's role and the **<role>** is ignored. Note that if **role=host**, participants are still prompted to enter the Host PIN to join the conference; this parameter cannot be used to bypass PIN entry requirements.
- **<muteMicrophone>** is **true** to join without sending audio (the user will still receive audio, and send and receive video).
- **<muteCamera>** is **true** to join without sending video (the user will still receive video, and send and receive audio).
- **<extension>** is the Virtual Reception extension, or the Microsoft Skype for Business / Lync Conference ID.
- **<bandwidth>** is the maximum bandwidth for the call, and the bandwidth at which the initial call attempt will be made, in kbps. It can be any number between 256 and 2464.

The URL must always include **pexip://<alias>**; the remainder of the fields are optional. If a field is not specified in the URL but is required when joining (i.e. **name**, and **PIN** if the conference uses PINs, or **extension** if one is requested), the participant will have to provide the information themselves before they can join the conference.

Example - email footer

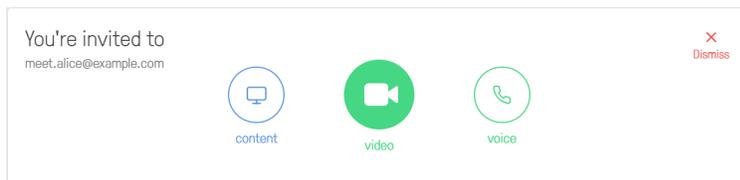
For example, Alice's personal meeting room has the alias **meet.alice@example.com** so she includes the following text in her email footer:

- Video: `meet.alice@example.com`

which displays as:

- Video: [meet.alice@example.com](#)

Now, when someone who has an Infinity Connect client installed on their device clicks on the link in Alice's email, their client will open automatically with an invitation to join **meet.alice@example.com**, and all they need to do is select whether they want to join with **video**, **voice**, or **content** and control only:



Example - Guest PIN

Alice's personal meeting room has a Guest PIN of **1234**. When Alice is chatting with a colleague using an instant messaging client and she wants to move the conversation to video, she sends them the message **pexip://meet.alice@example.com?pin=1234**, which automatically appears as a hyperlink. Her colleague clicks on the link and instantly joins Alice's personal meeting room as a Guest.

Example - always join with microphone muted

If you want the participant to join a meeting with a PIN of 1234, and you want their microphone to be muted on joining, the URL would be: **pexip://meet.alice@example.com?pin=1234&muteMicrophone=true**

Setting up DNS records and firewalls for Infinity Connect client connectivity

DNS records

You must set up DNS records so that the Infinity Connect clients know which host to contact when placing calls or registering to Pexip Infinity.

The host will typically be a public-facing Conferencing Node (for on-premises deployments where your Transcoding Conferencing Nodes are located within a private network we recommend that you deploy public-facing Proxying Edge Nodes).

To enable access from the Infinity Connect desktop clients and Infinity Connect mobile clients, each domain used in aliases in your deployment must either have a DNS SRV record for `_pexapp._tcp.<domain>`, or resolve directly to the IP address of a public-facing Conferencing Node.

The SRV records for `_pexapp._tcp.<domain>` should always:

- point to an FQDN which **must** be valid for the TLS certificate on the target Conferencing Nodes
- reference port 443 on the host.

Note that SRV records are not required for the Infinity Connect web app — the web app clients connect to Conferencing Nodes directly via DNS A-records, so no SRV lookup is required.

Ultimately it is the responsibility of your network administrator to set up SRV records correctly so that the Infinity Connect desktop client and Infinity Connect mobile client know which system to connect to.

You can use the tool at <http://dns.pexip.com> to lookup and check SRV records for a domain.

Firewall configuration

Infinity Connect clients connect to a Conferencing Node, so you must ensure that any firewalls between the two permit the following connections:

- Infinity Connect mobile client > Conferencing Node port 443 TCP
- Infinity Connect (all clients) > Conferencing Node ports 40000–49999 TCP/UDP
- Conferencing Node ports 40000–49999 TCP/UDP > Infinity Connect (all clients)

For more information, see https://docs.pexip.com/admin/port_usage.htm.

Using Infinity Connect from outside your network

In many cases, your Pexip Infinity deployment will be located inside a private network. If this is the case and you want to allow Infinity Connect users who are located outside your network (for example on another organization's network, from their home network, or the public internet) to connect to your deployment, you need to provide a way for those users to access those private nodes.

Since version 16 of Pexip Infinity, we recommend that you deploy Proxying Edge Nodes instead of a reverse proxy and TURN server if you want to allow externally-located clients to communicate with internally-located Conferencing Nodes. A Proxying Edge Node handles all media and signaling connections with an endpoint or external device, but does not host any conferences — instead it forwards the media on to a Transcoding Conferencing Node for processing.

If you do not want to deploy Proxying Edge Nodes, and thus want to route all signaling and media from external clients via a reverse proxy and a TURN server to your internal/on-premises nodes, you should note that only Pexip's Infinity Connect WebRTC clients (web app for Chrome, Firefox, Opera and Safari (version 11 onwards), the mobile clients for iOS and Android, and the desktop client) will be able to establish media connectivity. Microsoft Edge browsers and any RTMP-based browsers (Internet Explorer and Safari (versions 6-10)) cannot use a TURN server and thus will not be able to send or receive media. For more information, see [Pexip Reverse Proxy and TURN Server Deployment Guide](#).

Further information and connectivity examples

Information on how each of the Infinity Connect clients attempts to locate a Conferencing Node when placing a call is described in the following sections. Within each section is an example of the lookup process for that client. The example uses the following records:

Assume that the following **_pexapp._tcp.vc.example.com** DNS SRV records have been created:

```
_pexapp._tcp.vc.example.com. 86400 IN SRV 10 100 443 px01.vc.example.com.  
_pexapp._tcp.vc.example.com. 86400 IN SRV 20 100 443 px02.vc.example.com.
```

These point to the DNS A-records **px01.vc.example.com**, port 443 (HTTPS), with a priority of 10 and a weight of 100, and **px02.vc.example.com**, port 443, with a relatively lower priority of 20 and a weight of 100.

This tells the Infinity Connect desktop client and Infinity Connect mobile client to initially send their HTTP requests to host **px01.vc.example.com** (our primary node) on TCP port 443. The clients will also try to use host **px02.vc.example.com** (our fallback node) if they cannot contact px01.

Infinity Connect desktop client - next-generation version

Registering

The Infinity Connect desktop client uses its configured **Registration Host** and performs a DNS SRV lookup on **_pexapp._tcp.<registration host address>** to locate a Conferencing Node to which it can send its registration request.

In all cases, when performing an SRV lookup on **_pexapp._tcp.<registration host address>**:

- If multiple records are returned, the client attempts to contact each host in turn according to the priority and weight of each returned record.
- If the SRV lookup fails (because either the SRV lookup does not return any records, or the client cannot contact any of the hosts (i.e. Conferencing Nodes) on the list that is returned in the SRV lookup), the client performs a DNS A-record lookup for **<registration host address>**. If that A-record lookup is successful, it attempts to connect to port 443 on the IP address returned from the lookup.

Making calls

The way in which next-generation Infinity Connect desktop clients decide which Conferencing Node to use when attempting to place a call depends on whether the client is registered, and on the global [Route calls via registrar](#) setting at the time of registration.

When placing a call, the Infinity Connect desktop client will attempt to locate a Conferencing Node by doing **one** of the following, in order of precedence:

- If the client is registered to Pexip Infinity and the global [Route via registrar](#) setting is enabled, the client will route all calls directly to the IP address of the Conferencing Node to which it is registered, regardless of the domain being dialed. From there, the call is treated as an incoming call and processed according to the call routing logic described in [Service precedence](#).
- If the client is not registered or [Route calls via registrar](#) is disabled, and the call has been placed [via a URL](#) that specifies a **host domain**, then the client performs an SRV lookup on **_pexapp._tcp.<host domain>**.
- If a **serverAddress** has been specified in the client's application settings file (**settings.json**), the client performs an SRV lookup on **_pexapp._tcp.<serverAddress>**. Note that the **serverAddress** is not configured in the default desktop client provided by Pexip, but an address could have been configured during customization and provisioned to the client.
- If a **serverAddress** was not specified, the client performs an SRV lookup on the domain portion of the address that was dialed, i.e. **_pexapp._tcp.<address domain>**.

In all the above cases, when performing an SRV lookup:

- If multiple records are returned, the client attempts to contact each host in turn according to the priority and weight of each returned record.
- If the SRV lookup fails (because either the SRV lookup does not return any records, or the client cannot contact any of the hosts (i.e. Conferencing Nodes) on the list that is returned in the SRV lookup), the client performs a DNS A-record lookup for the domain in the SRV lookup. If that A-record lookup is successful, it attempts to connect to port 443 on the IP address returned from the lookup.
- If the client successfully contacts a host but that Conferencing Node is in maintenance mode, the client will not make any further attempts to contact any other hosts.

- When the client successfully contacts a host, the host will then check to see if the alias that has been dialed exists in its configuration. This means that the alias does not need to include a domain if, for example, the host has been found via a lookup on the `serverAddress`. It also means that the domain in the alias being dialed does not necessarily need to be the same as the domain of the host.

Example

In this example, when a user attempts to place a call to `meet.alice@vc.example.com`, the client does **one** of the following:

- If the client is registered to Pexip Infinity and the global [Route via registrar](#) setting is enabled, the client will route all calls directly to the IP address of the Conferencing Node to which it is registered, regardless of the domain being dialed.
For example, if the client is configured with a Registration Host of `registration.example.com`, then the client will perform an SRV lookup on `_pexapp._tcp.registration.example.com`.
If the SRV lookup fails, or none of the returned hosts in the lookup can be contacted, the client will also attempt to connect directly to that domain, i.e. to `http://registration.example.com:443` (via DNS A-records for `registration.example.com`).
- If the call is being placed via a [preconfigured link](#) that specifies a host domain, then the client will perform an SRV lookup on that domain, and attempt to contact one of the hosts returned in that lookup.
For example, if the URL is `pexip://meet.alice@vc.example.com?host=localserver.example.com` then the client will perform an SRV lookup on `_pexapp._tcp.localserver.example.com`.
If the SRV lookup fails, or none of the returned hosts in the lookup can be contacted, the client will also attempt to connect directly to that domain, i.e. to `http://localserver.example.com:443` (via DNS A-records for `localserver.example.com`).
If that also fails, no further lookups are performed, and the client will report that it could not join the host domain.
- If a `serverAddress` has been configured, the client performs an SRV lookup on that domain, and attempts to contact the host(s) returned in that lookup.
For example, if the `serverAddress` is `localserver.example.com` then the client performs an SRV lookup on `_pexapp._tcp.localserver.example.com`.
If the SRV lookup fails, or none of the returned hosts in the lookup can be contacted, the client also attempts to connect directly to that domain, i.e. to `http://localserver.example.com:443` (via DNS A-records for `localserver.example.com`).
If that also fails, no further lookups are performed, and the client will report that it could not join the host domain.
- In all other cases, the client attempts an SRV lookup on the domain portion of the address that was dialed, i.e. on `_pexapp._tcp.vc.example.com`.
If the SRV lookup succeeds, it returns the records shown above, and the client will attempt to contact `px01.vc.example.com` (the record with the highest priority) on TCP port 443.
If it cannot contact `px01.vc.example.com` it next tries to contact `px02.vc.example.com`.
If it fails to contact either host, the client also attempts to connect directly to the domain, i.e. to `http://vc.example.com:443` (via DNS A-records for `vc.example.com`).
If that also fails, the client will report that it has failed to contact a server.

Infinity Connect mobile client - next-generation version

Making calls

When placing a call, the Infinity Connect mobile client will attempt to locate a Conferencing Node by doing **one** of the following, in order of precedence:

- If the call has been placed [via a URL](#) that specifies a host domain, then the client performs an SRV lookup on `_pexapp._tcp.<host domain>`.
- If a `serverAddress` has been specified in the client's application settings file (`settings.json`), the client performs an SRV lookup on `_pexapp._tcp.<serverAddress>`. Note that the `serverAddress` is not configured in the default mobile client provided by Pexip, but an address could have been configured during customization and provisioned to the client.
- If a `serverAddress` was not specified, the client performs an SRV lookup on the domain portion of the address that was dialed, i.e. `_pexapp._tcp.<address domain>`.

In all the above cases, when performing an SRV lookup:

- If multiple records are returned, the client attempts to contact each host in turn according to the priority and weight of each returned record.
- If the SRV lookup fails (because either the SRV lookup does not return any records, or the client cannot contact any of the hosts (i.e. Conferencing Nodes) on the list that is returned in the SRV lookup), the client performs a DNS A-record lookup for the domain in the SRV lookup. If that A-record lookup is successful, it attempts to connect to port 443 on the IP address returned from the lookup.
- If the client successfully contacts a host but that Conferencing Node is in maintenance mode, the client will not make any further attempts to contact any other hosts.
- When the client successfully contacts a host, the host will then check to see if the alias that has been dialed exists in its configuration. This means that the alias does not need to include a domain if, for example, the host has been found via a lookup on the `serverAddress`. It also means that the domain in the alias being dialed does not necessarily need to be the same as the domain of the host.

Example

In this example, when a user attempts to place a call to `meet.alice@vc.example.com`, the client does **one** of the following:

- If the call is being placed via a [preconfigured link](#) that specifies a `host` domain, then the client will perform an SRV lookup on that domain, and attempt to contact one of the hosts returned in that lookup.

For example, if the URL is `pexip://meet.alice@vc.example.com?host=localserver.example.com` then the client will perform an SRV lookup on `_pexapp_tcp.localserver.example.com`.

If the SRV lookup fails, or none of the returned hosts in the lookup can be contacted, the client will also attempt to connect directly to that domain, i.e. to `http://localserver.example.com:443` (via DNS A-records for `localserver.example.com`).

If that also fails, no further lookups are performed, and the client will report that it could not join the host domain.

- If a `serverAddress` has been configured, the client performs an SRV lookup on that domain, and attempts to contact the host(s) returned in that lookup.

For example, if the `serverAddress` is `localserver.example.com` then the client performs an SRV lookup on `_pexapp_tcp.localserver.example.com`.

If the SRV lookup fails, or none of the returned hosts in the lookup can be contacted, the client also attempts to connect directly to that domain, i.e. to `http://localserver.example.com:443` (via DNS A-records for `localserver.example.com`).

If that also fails, no further lookups are performed, and the client will report that it could not join the host domain.

- In all other cases, the client attempts an SRV lookup on the domain portion of the address that was dialed, i.e. on `_pexapp_tcp.vc.example.com`.

If the SRV lookup succeeds, it returns the records shown above, and the client will attempt to contact `px01.vc.example.com` (the record with the highest priority) on TCP port 443.

If it cannot contact `px01.vc.example.com` it next tries to contact `px02.vc.example.com`.

If it fails to contact either host, the client also attempts to connect directly to the domain, i.e. to `http://vc.example.com:443` (via DNS A-records for `vc.example.com`).

If that also fails, the client will report that it has failed to contact a server.

Switching between next-generation and legacy Infinity Connect web app

The next-generation Infinity Connect web app was introduced in version 18 of Pexip Infinity and is enabled by default for new deployments. Existing deployments that have been upgraded to v18 or later will continue to use the [legacy version](#) and will need to have the next-generation enabled manually.

-  For a comparison between the legacy and next-generation versions of the clients, see [Comparison of legacy and next-generation Infinity Connect clients](#).

The next-generation web app requires a WebRTC-compatible browser (e.g. Chrome, Firefox, Opera, Microsoft Edge, and Safari). RTMP-based browsers (e.g. Internet Explorer) are not supported. These browsers will be redirected to the legacy version of the Infinity Connect web app.

To enable or disable use of the next-generation web app in your deployment, go to **Platform > Global Settings** and in the **Connectivity** section, select **Default to next-generation Web App**.

When this option is enabled, WebRTC-compatible browser users who:

- enter just the IP address or FQDN of a Conferencing Node will view the next-generation version of the web app.
- append **/webapp** to the end of the Conferencing Node's address will view the next-generation version of the web app.
- wish to view the legacy version of the web app, can do so by appending **/webapp1** to the end of the Conferencing Node's address.

When this option is disabled, WebRTC-compatible browser users:

- will view the legacy version of the web app.
- who append **/webapp** to the end of the Conferencing Node's address will view the legacy version of the web app.
- who wish to view the next-generation version web app, can do so by appending **/webapp2** to the end of the Conferencing Node's address.

In all cases, RTMP browser users will continue to view the legacy version of the web app.

For a guide on using the next-generation web app, see [Using the web app](#).

Troubleshooting Infinity Connect error messages

The table below lists the specific messages that may be presented to Infinity Connect users, along with their meaning and suggested resolution (where appropriate). To assist administrators with troubleshooting, the associated admin-facing message (which appears in the admin log, and when viewing historical information about a participant) is also given.

For help with general issues that may occur when using Infinity Connect clients within your deployment, see [Troubleshooting the Pexip Infinity platform](#).

Admin-facing message	User-facing message - legacy clients	User-facing message - next-generation clients	Message code	Meaning/resolution
Call Failed: Invalid role	Invalid pin	The PIN you entered is invalid - please try again.	#pex100	
Call Failed: Invalid PIN	Invalid pin	The PIN you entered is invalid - please try again.	#pex101	The PIN that was entered did not match the Host (or Guest, if configured) PIN.
Call failed: Out of proxying resource		Error connecting to the meeting	#pex109	All Proxying Edge Nodes in the location are out of capacity.
Call Failed: System in maintenance mode		The system you are trying to reach is temporarily unavailable. Please try again shortly.	#pex110	The Conferencing Node is in maintenance mode. Note that if the client encounters a node in maintenance mode while performing an , it will not attempt to contact any other nodes.
Call Failed: 502 Bad Gateway	Unable to connect to the server	There is no connection. Please try again.	#pex111	
Call Failed: 503 Service Unavailable	Unable to connect to the server	There is no connection available.	#pex112	
Call Failed: Invalid token	Lost connection to the server	Your connection was lost. Please try again.	#pex113	

Admin-facing message	User-facing message - legacy clients	User-facing message - next-generation clients	Message code	Meaning/resolution
Call Failed: Out of resource	Cannot connect your call: the system you are trying to connect to is currently at full capacity	The system you are trying to reach is over capacity.	#pex114	See Participants cannot join a conference due to insufficient capacity
transfer failed	transfer failed	Transfer failed.	#pex115	A Host participant attempted to transfer another participant from the current meeting to another meeting, but failed.
Call Failed: Unexpected Response: 503	Call Failed: Unexpected Response: 503	Call failed - please contact your administrator	#pex116	Pexip Infinity received an Unexpected Response (503) when trying to place the call. If this issue persists, you may wish to send a snapshot to your Pexip authorized support representative.
Call failed: <code>		The call failed. Please try again.	#pex117	Generic failure code.
Could not join localhost:8080		The server cannot be reached.	#pex118	The host server (obtained either as the result of the DNS lookup, or by using the domain part of the dialed alias) could not be found.
Call Failed: Failed to forward request		Call failed: Failed to forward request	#pex119	
Conference host ended the conference with a DTMF command	The conference was ended by a Host	A Host ended the meeting.	#pex120	A Host participant ended the call using a DTMF command. (For more information, see Using DTMF to control a conference.)
Conference terminated by a Host participant	The conference was ended by a Host	A Host ended the meeting.	#pex121	An Infinity Connect Host participant has selected "disconnect all", or a client API command was used to terminate the conference.
Conference terminated by an administrator	The conference was ended by an administrator	An administrator ended the meeting.	#pex122	An administrator using the Pexip Infinity Administrator interface has selected "disconnect all", or a management API command was used to end the conference.
Disconnected by an administrator	Disconnected by an administrator	An administrator disconnected you from the meeting.	#pex123	An administrator using the Pexip Infinity Administrator interface has disconnected this particular participant.
Disconnected by another participant	Another participant has disconnected you	Another participant in the meeting disconnected you.	#pex124	A Host using an Infinity Connect client has disconnected a specific participant.
Conference terminated by another participant		A Host ended the meeting.	#pex125	An Infinity Connect Host participant has selected "disconnect all", or a client API command was used to terminate the conference.

Admin-facing message	User-facing message - legacy clients	User-facing message - next-generation clients	Message code	Meaning/resolution
Timeout waiting for conference host to join or permit access to locked conference	Timeout waiting for conference host to join or permit access to locked conference	The meeting Host has not joined or unlocked the meeting.	#pex126	The participant timed out because the conference Host either did not join the conference, or did not permit the participant to join a locked conference. For more information, see Limiting how long Guests can wait for a Host.
	Call failed: Disabled	This feature has been disabled.	#pex127	The setting to Enable support for Pexip Infinity Connect and Mobile App has been disabled by an administrator.
Call failed: failed to establish media to server. Ensure required firewall ports are permitted.		Call failed: a firewall may be blocking access.	#pex128	An ICE failure has occurred.
Signaling node disconnected	Something went wrong with the conference. Please try to connect again	Something went wrong with the meeting. Please try to connect again.	#pex129	The media node lost connectivity to the signaling node.
Media process disconnected	Something went wrong with the conference. Please try to connect again	Something went wrong with the meeting. Please try to connect again.	#pex130	The Conferencing Node hosting the media has encountered an unexpected behavior.
Media node disconnected	Something went wrong with the conference. Please try to connect again	Something went wrong with the meeting. Please try to connect again.	#pex131	The signaling node lost connectivity to the media node.
Proxied participant disconnected	Something went wrong with the conference. Please try to connect again	Something went wrong with the meeting. Please try to connect again.	#pex132	The proxying node lost connectivity to the transcoding node.
No participants can keep conference alive	The conference has ended	The meeting has ended.	#pex140	This was the only remaining participant, and they were an ADP that was not configured to keep the conference alive. (For more information, see Automatically ending a conference.)
All conference hosts departed hosted conference	The conference has ended because all Hosts have disconnected.	The meeting ended because the Host(s) left.	#pex141	There are no Host participants remaining in the conference. (For more information, see Automatically ending a conference.)
Last remaining participant removed from conference after timeout	Last remaining participant removed from conference after timeout	You were the only participant left in the meeting.	#pex142	This was the only participant remaining, and they were disconnected after the configured amount of time. (For more information, see When there is only one participant remaining in the conference.)
Test call finished	Test call finished	The test call has finished.	#pex143	This was a call to the Test Call Service which was automatically disconnected after the specified time.

Admin-facing message	User-facing message - legacy clients	User-facing message - next-generation clients	Message code	Meaning/resolution
Call rejected	The person you are trying to call did not answer or could not be reached	The person you are trying to call did not answer or could not be reached.	#pex150	The person being called did not answer or could not be reached.
Call disconnected	The other participant has disconnected	The other participant has disconnected.	#pex151	An Infinity Connect client has been disconnected by themselves or another system other than Pexip Infinity.
Gateway dial out failed	The call could not be placed	The call could not be placed.	#pex152	The alias matched a Call Routing Rule but the call could not be placed.
invalid gateway routing rule transform	The call could not be placed. Please contact your administrator	The call could not be placed. Please contact your administrator.	#pex153	The alias matched a Call Routing Rule but the resulting alias was not valid.
Call Failed: Neither conference nor gateway found	Invalid conference <alias>	"Cannot connect to <alias>. Check this address and try again.	#pex154	The alias that was dialed did not match any aliases or Call Routing Rules.
Could not join <domain part of dialed alias>		Could not join <domain>	#pex155	The domain is not part of a Pexip Infinity deployment. This error can occur if an incorrect <code>serverAddress</code> has been specified during customization. It can also occur if a SSL error is preventing a secure connection to the server.
Participant failed to join conference Reason="No direct route between Edge and Transcoding"		The call could not be placed.	#pex156	There is an issue with media location policy. For more information, see Configuring policy profiles
Not Found: The requested URL <address> was not found on this server		Could not join <domain>	#pex157	Check that the URL is structured correctly.
Failed to gather IP addresses.	Failed to gather IP addresses.	Call failed: Please disable any privacy extensions on your browser.	#pex170	The browser cannot find the local IP address. This may be due to ad blockers. An Infinity Connect WebRTC client could not determine its IP address. This may be because there are privacy extensions installed.
Call Failed: Error: Could not get access to camera/microphone. Have you allowed access? Has any other application locked the camera?	Your camera and/or microphone are not available. Ensure they are not being used by another application.	Your camera and/or microphone are not available. Please make sure they are not being actively used by another app.	#pex171	An Infinity Connect WebRTC participant has not allowed their camera or microphone to be shared, or has no camera or microphone available.
Presentation ended	Presentation ended	The presentation ended.	#pex180	
Presentation stream remotely disconnected	Presentation stream remotely disconnected	The presentation stream was disconnected.	#pex181	

Admin-facing message	User-facing message - legacy clients	User-facing message - next-generation clients	Message code	Meaning/resolution
Presentation stream unavailable	Presentation stream unavailable	The presentation stream is unavailable.	#pex182	
Screenshare cancelled	Screenshare cancelled	The screenshare was cancelled.	#pex183	
Screenshare error	Screenshare error	Something went wrong with screenshare. Please try again.	#pex184	
Screenshare remotely disconnected	Screenshare remotely disconnected	The screenshare was disconnected.	#pex185	
Timer expired awaiting token refresh	Timer expired awaiting token refresh	Error connecting to the meeting	#pex190	An Infinity Connect WebRTC client was unable to refresh its token after 2 minutes. This is likely due to network issues.
Resource unavailable	Call failed: Resource unavailable	Error connecting to the meeting	#pex191	There was insufficient transcoding or proxying capacity on the Transcoding Conferencing Node or the Proxying Edge Node on which the call landed.
Participant exceeded PIN entry retries	Participant exceeded PIN entry retries	Too many PIN entry attempts	#pex192	The participant exceeded the allowed number of PIN entry attempts (3).
	Invalid license	Error connecting to the meeting. Please contact your administrator	#pex193	
Participant failed to join conference... Reason="Participant limit reached"	Call Failed: Participant limit reached	This meeting has reached the maximum number of participants.	#pex194	A user has attempted to join a conference that has exceeded its configured number of participants. For more information, see Limiting the number of participants .
	Insufficient licenses	Error connecting to the meeting. Please contact your administrator.	#pex195	All the existing licenses are currently in use. For more information, see Insufficient licenses .

Infinity Connect release notes

For information about the new features and fixed issues in each of the current and previous releases of the next-generation Infinity Connect clients see:

- [What's new in Infinity Connect clients?](#)
- [Infinity Connect fixed issues](#)
- [Features and changes in previous Infinity Connect versions](#)
- [Infinity Connect issues fixed in previous versions](#)

For release notes for the Pexip Infinity platform, see [Pexip Infinity release notes](#).

What's new in Infinity Connect clients?

This section lists the new features and changes in functionality in the current releases of the Infinity Connect next-generation clients:

- [What's new in v22 web app?](#)
- [What's new in v1.5 desktop and mobile clients?](#)

What's new in v22 web app?

Following are the new features and changes in the Infinity Connect web app in Pexip Infinity version 22:

Feature	Description	More information
New features		
Branding and customization improvements	<p>This release contains the following branding and customization improvements:</p> <ul style="list-style-type: none"> • Ability to control whether the user's microphone is locally muted on the home page when the app is first launched. When performing manual customization this is configurable by defining <code>defaultToMuted</code> in the <code>settings.json</code> file. • Ability to specify a URL to redirect the user to when a call is completed (instead of returning to the app home page). This can only be configured via manual customization by defining a <code>disconnectDestination</code> in the <code>settings.json</code> file. 	
Far End Camera Control (FECC)	Host participants can now control the camera of other participant endpoints that support FECC.	Using Infinity Connect in-call controls
Spotlighting a participant	Hosts can make a participant appear in the main video window where they will stay regardless of who is speaking.	Spotlighting a participant
"Raised hand" feature	<p>Participants in a Virtual Auditorium can indicate to the meeting Host that they wish to speak by raising their hand; Hosts can lower a raised hand after they have let the participant speak.</p> <p>This feature can be used when a Host has elected to Mute all Guests — Guests indicate when they wish to speak, the Host unmutes the individual Guest, and when the Guest has finished speaking the Host mutes them again and lowers their hand.</p>	Using Infinity Connect in-call controls
Text-based controls	Participants now have the ability to filter the list of participants (available to Hosts and Guests) and perform other conference control functions (available to Hosts only) using a command-line-style text input from within the Filter by name box at the bottom of the Participant list .	Using Infinity Connect in-call controls

Feature	Description	More information
Join without camera and/or microphone	<p>Participants now have the option to join without a camera or microphone, and still receive video and audio. When a participant joins without their camera, other participants will see a broken camera icon in place of their video stream.</p> <p>Participants who join without a camera or microphone and subsequently wish to send video or audio must disconnect and re-join the meeting with a camera or microphone selected.</p>	Configuring Infinity Connect clients
Indicator when speaking while muted	Participants who have turned off their microphone will now see a "You're muted" message in their self view whenever their microphone detects audio.	
Changes in functionality		
New dialog syntax for Plugin API	There is a new syntax for calling dialogs (via <code>openTemplateDialog</code>) which supports floating dialogs. It also replaces <code>openTemplateDialog(...).subscribe()</code> (which returned an observable) with <code>openTemplateDialog(...)</code> (which returns a promise). However, any plugins created in v21 that use the previous syntax will be supported in v22 although we recommend that you update your plugins to use promises as soon as practicable.	Creating and deploying Infinity Connect plugins
Full motion presentation on MS Edge	Full motion presentation is now supported on Infinity Connect web app via Microsoft Edge.	

What's new in v1.5 desktop and mobile clients?

Version 1.5 of the Infinity Connect desktop client and Infinity Connect mobile client were released in October 2019. This was the latest version at the time of publishing; to check for updates, see [What's new in Infinity Connect?](#) Below are the new features and changes in v1.5:

Feature	Description	More information
New features		
Far End Camera Control (FECC)	Host participants can now control the camera of other participant endpoints that support FECC.	Control another participant's camera
Spotlighting a participant	Hosts can make a participant appear in the main video window where they will stay regardless of who is speaking.	Keep a participant in the main video
"Raised hand" feature	<p>Participants in a Virtual Auditorium can indicate to the meeting Host that they wish to speak by raising their hand; Hosts can lower a raised hand after they have let the participant speak.</p> <p>This feature can be used when a Host has elected to Mute all Guests — Guests indicate when they wish to speak, the Host unmutes the individual Guest, and when the Guest has finished speaking the Host mutes them again and lowers their hand.</p>	Indicate that you wish to speak
Text-based controls	Participants now have the ability to filter the list of participants (available to Hosts and Guests) and perform other conference control functions (available to Hosts only) using a command-line-style text input from within the Filter by name box at the bottom of the Participant list .	Use a text-based interface to filter participants and control the conference

Feature	Description	More information
Join without camera and/or microphone	<p>Participants now have the option to join without a camera or microphone, and still receive video and audio. When a participant joins without their camera, other participants will see a broken camera icon in place of their video stream.</p> <p>Participants who join without a camera or microphone and subsequently wish to send video or audio must disconnect and re-join the meeting with a camera or microphone selected.</p>	Configuring Infinity Connect clients
Indicator when speaking while muted	Participants who have turned off their microphone will now see a "You're muted" message in their self view whenever their microphone detects audio.	
Changes in functionality		
New dialog syntax for Plugin API	There is a new syntax for calling dialogs (via <code>openTemplateDialog</code>) which supports floating dialogs. It also replaces <code>openTemplateDialog(...).subscribe()</code> (which returned an observable) with <code>openTemplateDialog(...)</code> (which returns a promise). However, any plugins created in v21 that use the previous syntax will be supported in v22 although we recommend that you update your plugins to use promises as soon as practicable.	Creating and deploying Infinity Connect plugins
DNS SRV lookups	Weight is no longer ignored in DNS SRV record lookups.	Setting up DNS records and firewalls for Infinity Connect client connectivity

Infinity Connect fixed issues

This section lists the fixed issues and known limitations in each of the current releases of the next-generation Infinity Connect clients:

- [Infinity Connect web app](#)
- [Infinity Connect desktop client](#)
- [Infinity Connect mobile client](#)

Infinity Connect web app

Fixed in v22

Ref #	Resolution
17289	Resolved an issue where in some circumstances the participant list was cached between conferences.
17275	Resolved an issue where in some circumstances, the <code>serverAddress</code> setting applied via branding was cached.
17172	Removed the ability to use the "a" keyboard shortcut multiple times.
17171	Resolved an issue where in some circumstances the "p" keyboard shortcut was not working.
17090	A floating video window will now close automatically when the call is terminated.
17075	Resolved an issue where a participant who switched from viewing a presentation in HD to viewing it at a normal resolution would see the previous presentation frame momentarily.
17004	When viewing the information about a participant who has a custom profile picture, the default image no longer appears momentarily.
17003	Using CMD+C on a Mac when the video window has focus no longer toggles the camera on and off.
16959	Resolved an issue with the WebApp in Firefox where dragging the participant info window did not always behave as expected.
16921	Improved the user experience when a computer had no audio devices connected.
16038	Resolved an issue where Infinity Connect web app users on Safari on iOS, and Infinity Connect mobile client users on iOS, would stop transmitting video after being transferred multiple times.
16199	Guest participants using Microsoft Edge no longer see an empty Control menu.
15994	Resolved an issue where video width/height constraints caused issues with some cameras.

Infinity Connect desktop client

Known limitations

Ref #	Limitation
11854	In some cases when sharing Office apps, the client does not capture all portions of the application window. The workaround is to share the entire desktop rather than those specific applications.

Fixed in v1.5

Ref #	Resolution
Fixed in v1.5.1	
17813	Resolved an issue where customized watermarks were not appearing on the home page self view.
Fixed in v1.5	
17340	Resolved an issue where the desktop client attempted to connect over an insecure connection.
17289	Resolved an issue where in some circumstances the participant list was cached between conferences.
17275	Resolved an issue where in some circumstances, the <code>serverAddress</code> setting applied via branding was cached.
17172	Removed the ability to use the "a" keyboard shortcut multiple times.
17171	Resolved an issue where in some circumstances the "p" keyboard shortcut was not working.
17003	Using CMD+C on a Mac when the video window has focus no longer toggles the camera on and off.
16921	Improved the user experience when a computer had no audio devices connected.
16606	When registered users of the desktop client receive an incoming call from a device with no display name configured, the device's alias is no longer shown twice.
15994	Resolved an issue where video width/height constraints caused issues with some cameras.

Infinity Connect mobile client

Known limitations

Ref #	Limitation
17072	(Android client only) Clicking on a <code>pexip://</code> link in the chat window causes the client to crash.

Fixed in 1.5

Ref #	Resolution
Fixed in v1.5.1	
17813	Resolved an issue where customized watermarks were not appearing on the home page self view.
Fixed in v1.5	
17739	(Android client only) Resolved an issue where upcoming calendar meetings were not listed in the call section.
17289	Resolved an issue where in some circumstances the participant list was cached between conferences.
17275	Resolved an issue where in some circumstances, the <code>serverAddress</code> setting applied via branding was cached.
17172	Removed the ability to use the "a" keyboard shortcut multiple times.
17171	Resolved an issue where in some circumstances the "p" keyboard shortcut was not working.
17070	(Android client only) Resolved an issue where clicking on a link in the chat window opened the link in the background but ended the conference and returned the user to the home screen.
16038	Resolved an issue where Infinity Connect web app users on Safari on iOS, and Infinity Connect mobile client users on iOS, would stop transmitting video after being transferred multiple times.

Features and changes in previous Infinity Connect versions

This section lists the features and changes in functionality that were added in previous releases of the Infinity Connect next-generation clients:

- [Infinity Connect web app](#)
- [Infinity Connect desktop and mobile clients](#)

Infinity Connect web app

New in v21 web app

Following are the new features and changes in the Infinity Connect web app in Pexip Infinity version 21:

Feature	Description	More information
New features		
Custom builds, resources panel and version control via the Pexip branding portal	<p>The Pexip branding portal contains several new features:</p> <ul style="list-style-type: none"> • A new Custom Builds section that allows you to create your own stand-alone next-generation desktop client packages for Windows, macOS and Linux. It will build a package for you with your selected customizations and associated language packs, and you can then download an installer image from the portal for local distribution. • A new resources panel in the Splash Screens editor allows you to manage background screens and icons. You can now apply the same background for all splash screens, or apply different backgrounds to individual screens. • You can select which version of Pexip Infinity you have installed, so that the relevant branding and customization features can be offered. 	https://brandingportal.pexip.com
Customizable landing page and favicon	<p>New customization features are available. You can:</p> <ul style="list-style-type: none"> • Enable a landing page that displays a customizable image/logo and welcome text. • Customize the favicon used by the web app. <p>i If you currently use customized branding in your web app, then after upgrading to version 21 you will lose the default Pexip favicon (📄). To resolve this you must either manually add the necessary favicons to your branding package and re-upload it, or if you use the Pexip branding portal you can create and upload a new version 21 branding package which will automatically include the relevant favicon files.</p>	Customizing the Infinity Connect clients
Keyboard shortcuts	Certain in-call controls can be activated using keyboard shortcuts.	https://docs.pexip.com/clients/connect_controls_generic.htm#keyboard
Minimize and pin video window	Chrome users can now minimize the video window (including thumbnails) and pin it on top of all other application windows.	https://docs.pexip.com/clients/using_webapp.htm#minimize
Changes in functionality		

Feature	Description	More information
Changes to screensharing for Chrome v72 users	The Infinity Connect web app v21 supports the extension-free screensharing feature available in Chrome v72 and later, meaning users no longer need to install an extension before they can share their screen. Additionally, when sharing their screen, users can now select an individual Chrome Tab to share, in addition to the existing choices of Application Window or Your Entire Screen .	https://docs.pexip.com/clients/screen_sharing_generic.htm#Sharing_screen
Clickable #pex codes in termination dialog	The #pex<nnn> message code that appears in dialogs presented by the Infinity Connect clients when a conference is terminated can now be clicked to take the user to the relevant documentation to explain more about the possible cause of the termination.	https://docs.pexip.com/clients/error_messages.htm

New in v20 web app

Following are the new features and changes in the Infinity Connect web app in Pexip Infinity version 20:

Feature	Description	More information
New features		
New join flow	The way in which users place a call as video, audio or presentation and control-only has changed.	Making a call
Pairing with an alternative video/audio device	Users now have the option to pair their Infinity Connect client with another audio/video device. When paired, the Infinity Connect client will be in presentation and control-only mode and the other device will be used for audio and video.	Pairing with an additional video device
Stop sending presentation to endpoint	An option to stop and start sending presentation to a particular participant is now available.	Using Infinity Connect in-call controls
Recents and Favorites in call panel	The Recents call list now includes failed and missed calls, and the ability to edit the address before placing a call. Users can also add addresses to their Favorites list.	Recents Favorites
Additional language support	Administrators can now enable additional languages. If a browser or device's default language is supported by the Infinity Connect client, that language will be used automatically. Alternatively, administrators can specify a default language to use.	Customizing the Infinity Connect clients
Timeline zoom	Users can now use the timeline to select and zoom in on the events during a specific 10-minute period.	Timeline
Software version information	Information about the software version of the client and the Pexip Infinity deployment it is connected to is now available during a call.	Media statistics
Changes in functionality		
Disabling camera prior to placing a video call	Users are no longer able to disable their camera prior to placing a video call. If users wish to receive but not send video, they must place a video call first and then disable their camera. However, the <code>muteCamera=true</code> parameter can be added to a meeting URL to disable the camera prior to placing a call.	
Presentation-only Hosts starting conference	In v19, a presentation and control-only Host joining a conference would automatically trigger Guests to join. Now, when a presentation and control-only Host joins a conference they must manually start the conference before any Guests can join.	Using Infinity Connect in-call controls

New in v19 web app

Following are the new features and changes in the Infinity Connect web app in Pexip Infinity version 19:

Feature	Description	More information
Ability to force a call protocol when adding a participant to a conference	<p>When adding a participant to a conference, you have the option to force a specific dial out protocol by prefixing the destination address with sip: or mssip: or h323: or rtmp: (which can be used to support dial out to streaming services).</p> <p>When a protocol has been explicitly added to the address, a Call Routing Rule is not required for the call to be placed.</p>	
Diagnostics	The About this app menu now has an option to copy logs to the clipboard.	

Infinity Connect desktop and mobile clients

New in v1.4 desktop and mobile clients

Version 1.4 of the Infinity Connect desktop client and Infinity Connect mobile client were released in May 2019. Below are the new features and changes in v1.4:

Feature	Description	More information
New features		
Keyboard shortcuts	<p>(Desktop client only)</p> <p>Certain in-call controls can be activated using keyboard shortcuts.</p>	https://docs.pexip.com/clients/connect_controls_generic.htm#keyboard
Plugin support	The clients now support the addition of plugins.	Creating and deploying Infinity Connect plugins
Changes in functionality		
Selfview reflects aspect ratio	Pexip Infinity now supports sending of video in portrait mode without cropping. To reflect this change, when an Infinity Connect client is used on a device held in portrait mode, the user's selfview will also be shown in portrait mode.	
Clickable #pex codes in termination dialog	The #pex<nnn> message code that appears in dialogs presented by the Infinity Connect clients when a conference is terminated can now be clicked to take the user to the relevant documentation to explain more about the possible cause of the termination.	https://docs.pexip.com/clients/error_messages.htm

New in v1.3 desktop and mobile clients

Version 1.3 of the Infinity Connect desktop client and Infinity Connect mobile client were released in October 2018. Below are the new features and changes in v1.3:

Feature	Description	More information
New features		

Feature	Description	More information
Consistent branding across all Infinity Connect clients	Branding customizations that have been applied to the Infinity Connect web app can now also be applied to the Infinity Connect desktop and mobile clients. The administrator can use Pexip Infinity's provisioning features to instruct the Infinity Connect client to use the same branding that has been uploaded to Pexip Infinity (and which is being used automatically by the web app).	Customizing the Infinity Connect clients
New join flow	The way in which users place a call as video, audio or presentation and control-only has changed.	Making a call
Pairing with an additional device	Users now have the option to pair their Infinity Connect client with another audio/video device. When paired, the Infinity Connect client will be in presentation and control-only mode and the other device will be used for audio and video.	Pairing with an additional video device
Minimizing and pinning window	Users now have the option to minimize the client window and pin it to the top of their desktop.	Using Infinity Connect in-call controls
Recents and Favorites in call panel	The Recents call list now includes failed and missed calls, and the ability to edit the address before placing a call. Users can also add addresses to their Favorites list.	Recents Favorites
Additional language support	Administrators can now enable additional languages. If a browser or device's default language is supported by the Infinity Connect client, that language will be used automatically. Alternatively, administrators can specify a default language to use.	Customizing the Infinity Connect clients
Timeline zoom	Users can now use the timeline to select and zoom in on the events during a specific 10-minute period.	Timeline
Software version information	Information about the software version of the client and the Pexip Infinity deployment it is connected to is now available during a call.	Media statistics
Changes in functionality		
Disabling camera prior to placing a video call	Users are no longer able to disable their camera prior to placing a video call. If users wish to receive but not send video, they must place a video call first and then disable their camera. However, the <code>muteCamera=true</code> parameter can be added to a meeting URL to disable the camera prior to placing a call.	
<code>callType</code> parameter no longer supported	The <code>callType</code> parameter is no longer supported in preconfigured links to the Infinity Connect desktop client. Instead, users will be presented with the new invitation card and they can choose whether to respond with video, audio-only, or content.	Creating preconfigured links to launch conferences via Infinity Connect

New in v1.2 desktop and mobile clients

Version 1.2 of the Infinity Connect desktop client and Infinity Connect mobile client were released in July 2018. Below are the new features and changes in v1.2:

Feature	Description	More information
Presentation-only Hosts starting conference	In v1.1, a presentation and control-only Host joining a conference would automatically trigger Guests to join. Now, when a presentation and control-only Host joins a conference they must manually start the conference before any Guests can join.	Allow waiting Guests to join a new meeting without a Host
View presentation on endpoint	An option to stop sending presentation to a particular participant is now available.	Stop/start sending presentation to a participant

Infinity Connect issues fixed in previous versions

This section lists the issues fixed in each of the previous releases of the next-generation Infinity Connect clients:

- [Infinity Connect web app](#)
- [Infinity Connect desktop client](#)
- [Infinity Connect mobile client](#)

Infinity Connect web app

Fixed in v21.1

Ref #	Limitation
16350	Clients on browsers that do not support full motion presentation no longer offer users the setting to enable "view incoming presentation in full motion".
16321	Fixes an issue where in some circumstances and at narrow widths, the time on the timeline was not displaying correctly.
16263	When viewing a presentation in full motion, the corresponding JPEG presentation frames are no longer downloaded.
16205	Safari users can now switch cameras during a call.
16174	Viewing a presentation in a separate window now works correctly in Safari.

Fixed in v21

Ref #	Resolution
16222	Adds support for Firefox v68 and later.
16136	Media in the Infinity Connect web app now works in Safari on iOS 12.2.
16129	Resolved an issue where switching camera on Desktop Safari v12.1 may have led to blank video being sent.
16041	The Infinity Connect clients can now send 1080p / Full HD in environments where Full HD is enabled.
15972	The next-generation Infinity Connect clients no longer display participant-control options such as disconnect, mute and transfer, when that participant is an external guest i.e. a participant who is connected directly to an externally-hosted conference, such as a Microsoft Teams or Skype for Business meeting, or Google Hangouts Meet
15174	Fixes an issue where audio and video were lost after changing the microphone during a call.

Fixed in v20.1

Ref #	Resolution
15744	Fixes an issue where switching camera on Chrome version 72 may lead to blank video being sent and received.
15482	Fixes an issue where the next-generation Infinity Connect web app may send anonymous usage statistics before connecting to a conference even if this setting was disabled.
15476	Fixes an issue where a WebRTC call may erroneously be rejected for firewall connectivity reasons when using Chrome version 73.
15309	Fixes an issue where calls could drop when using DTMF tones in the Waiting for Host screen when using the Infinity Connect web app on Internet Explorer.
15074	Fixes an issue where screensharing is not available in Chrome version 71 or later with the legacy web app.

Fixed in v20

Ref #	Resolution
14812	Resolves an issue with Safari version 12 whereby the microphone and camera mute did not work.
14736	The join parameter now works as expected for legacy links to the web app.
14660	Logging now works as expected.
14525	Users disconnecting a participant via the timeline are now shown a confirmation dialog.
14524	Fixes an issue with the sidebar not expanding properly in Microsoft Edge.
13885	Fixes an issue where in some circumstances the VMR name and the Control button overlapped.
13780	Fixes an issue where in some circumstances the client crashed when calling an empty string.
13649	Fixes an issue with recent calls not appearing in the Recents list.
13638	Fixes an issue where users would see an error message followed by a blank page on first use of the web app for a particular domain.

Fixed in v19

Ref #	Resolution
13065	Fixes an issue that occurred when new branding/customization had been applied to the web app, but users were still seeing the previous branding. This occurred when users had already used the web app (in that browser) when the previous branding was in use, or they had used the web app's Reset button.

Infinity Connect desktop client

Fixed in v1.4

Ref #	Resolution
Fixed in v1.4.1	
16440	When Route calls via registrar is enabled, a registered client now routes calls to the IP address of the Conferencing Node to which it is registered, rather than performing a DNS SRV lookup of the registration server address each time a call is placed.
16391	When manually creating a next-generation client branding package that is to be applied (provisioned) to the mobile and desktop clients, it is no longer mandatory to include a settings.json file that includes a languages list.
16389	The client no longer appends a "/" to the address being dialed when joining a meeting by clicking on a pexip:// URL.
16347	Fixes an issue on the Registration page where in some circumstances users were not being notified when required fields were blank.
16321	Fixes an issue where in some circumstances the time on the timeline was not displaying correctly.
Fixed in v1.4	
15174	Fixes an issue where audio and video were lost after changing the microphone during a call.
14919	A ringtone is now played when an incoming call is received.

Fixed in v1.3

Ref #	Resolution
14660	Logging now works as expected.
14589	The incoming call invitation now appears regardless of which page the client was previously showing.
14546	Fixes a potential memory leak.
14525	Users disconnecting a participant via the timeline are now shown a confirmation dialog.
13885	Fixes an issue where in some circumstances the VMR name and the Control button overlapped.
13780	Fixes an issue where in some circumstances the client crashed when calling an empty string.
13649	Fixes an issue with recent calls not appearing in the Recents list.
13439	Dragging an image file from Windows Explorer into the chat field no longer causes an issue.

Fixed in v1.2

Ref #	Resolution
13418	Fixes an issue where changes to the <code>turnServer</code> setting in the <code>settings.json</code> file had no effect.
13261	The Search to call text box now takes focus on page open.
13234	When a Host has allowed a Guest to join a locked conference, feedback is now provided to show that the call is being connected.
13119	When placing a presentation and control-only gateway call, users are now automatically shown the Presentation window.
12871	Users are now shown a dialog if a lack of resources means that a presentation can't be started, or can't be switched to HD.
12525	Fixes an issue where provisioning a client did not appear to update the registration settings (even though the new settings had been updated).

Infinity Connect mobile client

Fixed in v1.4

Ref #	Resolution
Fixed in v1.4.2	
17068	Fixes an issue in v1.4.1 of the Infinity Connect mobile client for iOS where <code>pexip://</code> links did not work.
Fixed in v1.4.1	
16439	Mobile clients that have been provisioned with registration details will no longer attempt to register.
16391	When manually creating a next-generation client branding package that is to be applied (provisioned) to the mobile and desktop clients, it is no longer mandatory to include a <code>settings.json</code> file that includes a <code>languages</code> list.
16350	The mobile clients no longer offer users the setting to enable "view incoming presentation in full motion", since the mobile clients do not support this.
16321	Fixes an issue where in some circumstances the time on the timeline was not displaying correctly.
15174	Fixes an issue where audio and video were lost after changing the microphone during a call.

Fixed in v1.3

Ref #	Resolution
14660	Logging now works as expected.
14546	Fixes a potential memory leak.
14525	Users disconnecting a participant via the timeline are now shown a confirmation dialog.
13885	Fixes an issue where in some circumstances the VMR name and the Control button overlapped.
13780	Fixes an issue where in some circumstances the client crashed when calling an empty string.
13649	Fixes an issue with recent calls not appearing in the Recents list.
13581	The client is now compatible with iOS 10.3.3.
13526	The spinner no longer remains for iOS users who join as audio-only and escalate to video.

Fixed in v1.2

Ref #	Resolution
13418	Fixes an issue where changes to the <code>turnServer</code> setting in the <code>settings.json</code> file had no effect.
13344	Improves the response time when entering addresses or incorrect PINs on the Android client.
13261	The Search to call text box now takes focus on page open.
13234	When a Host has allowed a Guest to join a locked conference, feedback is now provided to show that the call is being connected.
13233	Fixes an issue where Safari users on iOS needed to tap twice on an icon or button in order to trigger the action.
13119	When placing a presentation and control-only gateway call, users are now automatically shown the Presentation window.
12871	Users are now shown a dialog if a lack of resources means that a presentation can't be started, or can't be switched to HD.
12786	URI handling on iOS devices now works correctly.