



Pexip Infinity v17.3

Release Notes

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Introduction

This document contains the release notes for Pexip Infinity version 17.3.

Complete information about how to install and operate Pexip Infinity is available from the Pexip technical documentation website at docs.pexip.com.

The website also contains comprehensive documentation on all aspects of deploying the Pexip Infinity platform. This includes how to use the Infinity Connect client suite, and how to integrate Pexip Infinity with other third-party systems and call control solutions including Microsoft Lync, Cisco Unified Communications Manager, Cisco VCS and Polycom DMA.

Management Node host server sizing information

You must ensure that the Management Node host server has 2 cores and 4 GB of RAM for any deployments with more than 10 Conferencing Nodes. We recommend 4 cores and 6 GB of RAM for any deployments with more than 30 Conferencing Nodes.

Upgrading to version 17.3

Upgrading from version 13 or later to version 17.3

When the upgrade process starts, the Management Node is upgraded first. Then up to 5 Conferencing Nodes are selected and are automatically placed into maintenance mode. When all calls have finished on a node that is in maintenance mode, that node is upgraded and then put back into active service. Another Conferencing Node is then selected, placed into maintenance mode and upgraded, and so on until all Conferencing Nodes have been upgraded.

If all of the calls on a Conferencing Node that is in maintenance mode have not cleared after 1 hour, the node is taken out of maintenance mode and put at the back of the queue of nodes to be upgraded. A further attempt to upgrade that node will be made after all other nodes have been upgraded (or had upgrade attempts made). Up to 5 Conferencing Nodes may simultaneously be in maintenance mode or in the process of being upgraded at any one time.

Alternatively, to avoid unpredictable system behavior due to Conferencing Nodes running conflicting software versions, you may want to manually put **all** of your Conferencing Nodes into maintenance mode before initiating the upgrade process. This will allow all existing calls to finish, but will not admit **any** new calls. You should then actively monitor your Conferencing Nodes' status and manually take each node out of maintenance mode after it has been upgraded to the new software version, so that the system can start taking new calls again on those upgraded nodes.

i Upgrades to v17.3 from versions prior to v16 may take slightly longer than previous upgrades that spanned multiple versions.

To upgrade Pexip Infinity software from v13 or later to v17.3:

- Before upgrading an on-premises deployment, we recommend that you use your hypervisor's snapshot functionality to take a full VMware/Hyper-V snapshot of the Management Node. You may also want to take a snapshot of each Conferencing Node, although depending on the size and complexity of your deployment it may be easier to simply redeploy these from the Management Node in the unlikely event that this is required.
Before upgrading a cloud-based deployment (Azure, AWS or GCP), you should backup the Management Node via Pexip Infinity's inbuilt mechanism (**Utilities > Backup/Restore**).
- Download the Pexip Infinity upgrade package for v17.3 from www.pexip.com/software-download.
- From the Pexip Infinity Administrator interface, go to **Utilities > Upgrade**.
- Select **Choose File** and browse to the location of the upgrade package.

The screenshot shows the Pexip Infinity Administrator interface. At the top, there's a header with the Pexip logo and 'Infinity Conferencing Platform'. Below this is a navigation bar with tabs: Status, System Configuration, Platform Configuration, Call Control, Service Configuration, Users, and Utilities (which is selected). The main content area is titled 'Upgrade'. It contains a section for 'Upgrade package' with a 'Choose File' button and a text box showing the selected file 'Pexip_Infini_DE_297551ar'. Below the text box, there's a message: 'The package containing the new software. For more information, see Upgrading the Pexip Infinity platform.' At the bottom of the section, there are two buttons: 'Continue' and a help icon (?)

- Select **Continue**. There will be a short delay while the upgrade package is uploaded.
After the upgrade package has been uploaded, you are presented with a confirmation page showing details of the existing software version and the upgrade version.
- To proceed, select **Start upgrade**.
You are taken to the **Upgrade Status** page, showing the current upgrade status of the Management Node and all Conferencing Nodes. This page automatically refreshes every 5 seconds.
- When the upgrade completes, all nodes will show a status of **No upgrade in progress** and have the new **Installed version**.
If a Conferencing Node fails to upgrade, for example if it remains on a **Waiting for calls to clear** status, it should be rebooted. The upgrade process will then continue as expected.

If you are using VMware snapshots for backup purposes, we recommend that you delete those snapshots after approximately two weeks, providing your upgraded system is operating as expected. This is because Virtual Machines, in general, should not run with snapshots over time.

For full details on upgrading Pexip Infinity, see [Upgrading the Pexip Infinity platform](#).

Upgrading from version 12 or earlier to version 17.3

Upgrading from versions 8-12 to version 17.3

If you are running a Pexip Infinity software version between v8 and v12 inclusive, you must first upgrade to version 13 and then upgrade again to version 17.3. To do this:

1. Download the Pexip Infinity **v13** [upgrade file](#).
2. Follow the steps outlined in [Upgrading to version 17.3](#), but when asked to **Choose File** browse to the location of the **v13** upgrade file.
3. Verify that the upgrade has completed successfully.
4. Download the Pexip Infinity **v17.3** upgrade file.
5. Follow the steps outlined in [Upgrading to version 17.3](#), and when asked to **Choose File** browse to the location of the **v17.3** upgrade file.

Note that if you are upgrading from v8, due to incompatibilities resolved in v8.1, ensure that you take a non-quiescing snapshot when backing up your Management Node prior to upgrade.

Upgrading from versions 3-7 to version 17.3

If you are running a Pexip Infinity software version between v3 and v7 inclusive, you must first upgrade to version 8 (contact your Pexip authorized support representative for the link to the v8 upgrade file), then upgrade to v13, and then finally upgrade again to v17.3 as described above.

New features and improvements in this release

You can go to https://docs.pexip.com/admin/whats_new.htm and follow the relevant links for more information about all of these features.

Version 17

Pexip Infinity platform

Feature	Description
Microsoft Skype for Business and Lync integration improvements	<p>There are several interoperability improvements when integrating Pexip Infinity with Microsoft Skype for Business and Lync:</p> <ul style="list-style-type: none">• Improved recording indicator support: when a Sfb/Lync client records a conference, an indicator is shown on the video conferencing systems, and if recording via Pexip Infinity, an indicator is shown to Sfb/Lync clients.• Improved call quality in Sfb/Lync meetings: Sfb/Lync clients that are connected to a Sfb/Lync meeting now receive smoother video streams from gatewayed VTC endpoints.• Improved audio and video FEC (Forward Error Correction): Pexip Infinity now supports audio FEC (RED) for audio content sent to and received from Skype for Business / Lync 2013 clients. Video FEC now supports Reed-Solomon encoding, which enables the recovery of lost video packets received by Pexip from Skype for Business / Lync 2013 clients.
Improved platform status dashboard	<p>The live view of the status of the Pexip Infinity platform has been substantially enhanced:</p> <ul style="list-style-type: none">• More participant and conference information: new charts and graphs showing participant information by location, protocol, license type and conference type.• Errors and warnings: any current errors or warnings are listed and the administrator can view further details about individual issues and view associated documentation for possible causes and suggested resolutions.• Call quality issues: identification of individual participants or conferences that are experiencing call quality issues.• Historic data for troubleshooting and platform analysis: when reviewing historic platform, conference and participant status information you now have access to historic call quality information and improved analysis tools and interactive charts where you can filter out or select specific elements such as participants using selected protocols or those accessing a conference from certain locations. <p>Note that some dashboard features (platform and issues summary statistics and the "Live" indicator) do not work in Internet Explorer browsers. We recommend using Chrome, Firefox or Edge browsers for the best experience.</p>
Large-scale deployments improvements	<p>Version 17 of Pexip Infinity includes several enhancements to support large-scale deployments:</p> <ul style="list-style-type: none">• Parallel upgrades of Conferencing Nodes: when upgrading to version 17 or later, the system will now upgrade up to 5 Conferencing Nodes simultaneously.• Reduced network traffic between nodes: optimized communication processes within the Pexip Infinity platform to decrease the amount of network traffic between Conferencing Nodes.

Feature	Description
Improved user experience in conferences	<ul style="list-style-type: none"> • High-resolution content sharing: improved high-resolution content sharing at lower bandwidths (1080p low framerate): <ul style="list-style-type: none"> ◦ 1080p is automatically used for sharing high-resolution content with HD-capable endpoints if there is sufficient available bandwidth. ◦ When sending presentation content to a conference participant, the resolution and framerate that is used adapts dynamically to match the presented content. • Sharper text in participant names overlays: when the showing of participants' names is enabled on a VMR, the size of the text overlay varies automatically according to the type of layout and the resolution being received by the endpoint or SfB/Lync client. Participant names are also shown on the thumbnails (PiPs). In low resolutions the text overlays are not shown.
Certificate management improvements	<p>This release contains several improvements to the certificate management processes:</p> <ul style="list-style-type: none"> • Modify CSR content when updating existing certificates: when generating a certificate signing request (CSR) for an existing certificate you can now change the certificate data to be included in the new request, such as adding extra subject alternative names (SANs) to those already present in the existing certificate. • Multiple certificates with the same subject name: you can now upload TLS certificates and trusted CA certificates with duplicate subject names. This provides increased flexibility when uploading and managing updates to existing certificates.
Administrative improvements	<p>This release contains the following administrative improvements:</p> <ul style="list-style-type: none"> • Enable/disable chat per VMR: conference chat messages support can now be configured on a per VMR basis. • Enable/disable break-in resistance per location: PIN brute force resistance and VOIP scanner resistance can now be configured on a per location basis. • VMR provisioning enhancements: the LDAP sync templates that are used to provision Virtual Meeting Rooms now let you specify/override the Guests can present, enable chat, and conference capabilities settings for the VMR. • RTMP streaming support in Call Routing Rules: you can now specify RTMP (streaming) as the outgoing protocol to use in a Call Routing Rule. • Virtual Machine information: configuration information about the Virtual Machine hosting a Conferencing Node is reported via Status > Conferencing Nodes. This includes system memory, the number of vCPUs, CPU model, instruction set and hypervisor. • Change participant role via API: there is a new management API command of participant/role that can change the role of a conference participant.
Client authentication via AD FS and Google *	<p>Support to allow client applications (such as the next-generation Infinity Connect clients) to authenticate against Microsoft Active Directory Federation Services (AD FS) and Google has been added to Pexip Infinity.</p> <p>This will enable "single sign-on" capabilities for those clients, allowing users to register using their AD or Google credentials, and complements the existing Pexip Infinity capability to provision users from Active Directory.</p> <p>This feature is "technology preview" until Infinity Connect clients that support this feature are released.</p>
* Technology preview only	

Infinity Connect Web App

The Infinity Connect Web App is embedded in the Infinity Connect software, so its features are updated with each release of Infinity Connect.

Following are the changes to the Infinity Connect Web App in Pexip Infinity version 17:

Feature	Description
Next generation Infinity Connect Web App *	Further changes have been made to the features and functionality of the "technology preview" version of the Infinity Connect Web App.
* Technology preview only	

Changes in functionality in this release

Feature	Description
Administrative modifications	<p>This release contains the following administrative modifications:</p> <ul style="list-style-type: none"> Replication of any configuration changes to Conferencing Nodes typically occurs after approximately one minute. Now, in very large deployments (more than 60 Conferencing Nodes), configuration replication intervals are extended, and it may take longer for configuration changes to be applied to all Conferencing Nodes (note that the administrator log shows when each node has been updated). The Status > Conferencing Node History page now shows when nodes were added or removed, and when a node was placed into or out of maintenance mode. A new "CPU instruction set is deprecated" alarm is raised when a Conferencing Node restarts, if it is deployed on a server that is not using the AVX/AVX2 CPU instruction set (e.g. if it uses SSE4.2). When using the management API, the bucketed_call_quality and historic_call_quality participant status fields are now a list of integers (previously a string). Conference status information reported via the management API includes an "is_started" field which indicates whether or not the conference has started due to a Host being present. On the Administrator interface, Exchange Servers have been renamed Pexip Exchange Integrations. On the Administrator interface, under the Users menu, User Authentication is now Administrator Authentication, Account Roles is now Administrator Roles, and LDAP Roles is now LDAP Role Mappings. Participant call quality information is now shown on the current and historic participants summary page on the Administrator interface. Registration alias requests sent to external policy now include the registration protocol. System location information (Location="...") has been added to administrator log messages for "Participant attempting to join conference" and for "Registration added" / "Registration deleted" messages. VMR and device sync administrator log messages are now logged to the administrator.ldap.sync module (previously administrator.vmr.sync). The Conference-ID is now included in administrator log messages for conference created/stopped and participant joined/disconnected events.

Issues fixed in version 17.3

Pexip

Ref #	Limitation
12238	Prior to version 17.3, Pexip Infinity would not retry the sending of VMR or device provisioning emails if the connection to the SMTP server dropped part way through the bulk-send operation associated with an AD sync operation. As of 17.3, Pexip Infinity now retries sending each individual email up to 3 times before moving onto the next email, and re-establishes dropped SMTP server connections up to 100 times per bulk-send operation.
12100	Resolved an occasional issue where calls into Pexip Infinity conferences that were disconnected due to issues such as lost network connectivity were still showing as conference participants from the conference's perspective.
12076	Occasional issues with corrupted WebRTC video sent from Pexip Infinity to Chrome have been resolved.
12066	"Call capacity limit reached" alarms are no longer raised when a conference has a participant limit applied and a new participant attempts to connect to that conference when it is at its participant limit, or when a client attempts to connect to the Test Call Service over RTMP.

Microsoft

Microsoft Skype for Business and Lync

Ref #	Limitation
12205	Resolved an issue where video from a Skype for Business meeting could temporarily freeze when sent at certain resolutions.
12068	The VMR-level "enable chat" override setting now works as expected for Skype for Business participants connected to that VMR.
9712	Resolved an issue where in rare circumstances, participants connected to a Conferencing Node may have been disconnected from their conference if another participant on that node was attempting to reconnect to a Sfb/Lync meeting and other Sfb/Lync participants were simultaneously joining or leaving that Sfb/Lync meeting.

Issues fixed in version 17.2

Pexip

Ref #	Limitation
12036, 12037, 12038	Software mitigations for Meltdown (CVE-2017-5754), Spectre variant 1 (CVE-2017-5753) and Spectre variant 2 (CVE-2017-5715) are available in Pexip Infinity 17.2. See the Pexip Security Bulletin for more information.
12082	Calls are no longer dropped from a Conferencing Node if Pexip Infinity dials out directly to an H.323 device alias that has an associated DNS SRV record (applied to version 17.1 software only).
12028	Resolves an issue where responses to Management API requests would become delayed.
11741	Resolved an issue where the Pexip Infinity Administrator interface would occasionally report an "Internal server error" and create an associated administrator log entry containing "OperationalError in get_response: unable to open database file". These errors could also have occurred when using the Management API.

Microsoft

Microsoft Skype for Business and Lync

Ref #	Limitation
12116	Pexip Infinity now spreads the signaling load across all suitable Conferencing Nodes within the selected location when initiating outbound Fusion calls to Skype for Business / Lync meetings.
11546	Pexip Infinity now requests Forward Error Correction (FEC) packets from Skype for Business clients in a Sfb meeting when there is packet loss between a Sfb client and the Sfb AVMCU.
11441	Resolves an issue where an audio-only gateway call into a Sfb meeting would repeatedly attempt to retrieve the presentation from the Sfb meeting, thus generating unnecessary signaling traffic and administrator log messages.

Issues fixed in version 17.1

Pexip

Ref #	Limitation
11855	Resolves an issue with Pexip Infinity not handling H.323 requestInProgress messages appropriately, causing it to timeout too early and disconnect H.323 call requests.
11806	When "Show names of participants" is enabled, the name of the main speaker is no longer shown when the main speaker image is at a low resolution (i.e. when the text is not readable).
11782	When using the Infinity Connect Web App you can now select a microphone even if there are no cameras available for selection.
10916	Resolve an issue where calls could be dropped when an H.323 call was not properly set up.

Microsoft

Microsoft Skype for Business and Lync

Ref #	Limitation
11908	Resolves an issue where VTC endpoints connected to a Skype for Business meeting would sometimes receive a "broken camera" image instead of video.

Issues fixed in version 17

Pexip

Ref #	Limitation
10644	Fixed an issue where in gateway calls, the outbound leg of a call could sometimes remain connected if the calling party disconnected before the called party answered, and the outbound call was made from a different location to the inbound call.

Ref #	Limitation
10560	Resolves occasional issues with "Licenses expiring" warning alarms still being displayed after the expiration date has passed and a new license has been added.
10533	Resolves occasional issues with audio levels fading out when conference participants speak quietly or turn away from a room microphone.
10527	Image quality (perceived packet loss) has been improved when Pexip Infinity receives a stream containing reordered packets.
10483	Resolves an issue where provisioning emails were not sent if an LDAP sync template attempted to create two device aliases which differed only by case. This scenario is now logged as "Detected alias clash with another device created by this template".
10311	When using the scheduling recovery script, spaces in the --update-message flag are now parsed correctly.

Microsoft

Microsoft Skype for Business and Lync

Ref #	Limitation
10844	Skype for Business Mac users now receive VbSS content correctly.
10792	Resolved an issue where participants may have been dropped from a Sfb/Lync meeting if multiple gateway participants joined the meeting at the same time and an RDP presentation was in progress.
10084	Resolved an issue with freezing video in some environments from VTC towards Skype Meetings (despite good network conditions).
8607	When a Surface Hub or Skype Room System takes over as presenter, participants who have joined the conference via Pexip Infinity now see all of the slides that are presented.

Polycom

Ref #	Limitation
11194	Resolves an issues where Polycom HDX and Group Series on firmware before v6, that are behind NATs, could not receive presentation from Pexip Infinity without sending presentation first.

Chrome browsers

Ref #	Limitation
9996	Rarely, Chrome v58-60 could cause a valid incoming VP8 stream to become corrupt. This issue is resolved in Chrome v61 (see https://bugs.chromium.org/p/chromium/issues/detail?id=752886 for more information). Note that the Infinity Connect desktop client is not affected by this issue.

Known limitations

Pexip

Ref #	Limitation
11891	When Pexip Infinity is handling main video and presentation on different nodes for a WebRTC gateway call, a second dial-out may very occasionally occur when the WebRTC client starts presenting.
11548	An Automatically Dialed Participant that is set up to automatically send DTMF tones after the call is connected will not send those DTMF tones until a Host joins a call.
11351	When a cloud bursting Conferencing Node starts or stops, the other nodes might temporarily show a warning that they cannot communicate to the node that is starting/stopping. This will be addressed in a future release.
10337	Pexip Infinity will only latch for incoming media once, unless there has been a re-INVITE. This means that in some cases, when the NAT binding at the client has timed out and the source port has changed, Pexip Infinity will continue to send presentation media to the old port.
7906	If a caller dials into a Virtual Reception and enters the number of the conference they want to join, but there are insufficient hardware resources available to join the caller to that conference, the caller is disconnected from the Virtual Reception.
6739	Any changes made to VMR configuration — such as updating the participant limit — while the conference is ongoing do not take immediate effect, and may result in conference separation (i.e. new participants will join a separate VMR from those that are currently connected). All participants must disconnect from the conference for the change to take effect.
5601	When changing the certificates in a chain, a reboot of the associated Conferencing Nodes may be required if the changes do not produce the desired effect.
4312	Occasionally, group chat messages may not be displayed to Infinity Connect Web App participants who are using Internet Explorer.

Cisco

Ref #	Limitation
4142	If the presentation channel already active from an MXP is taken by another connected participant, the MXP may not properly receive presentation content.

Microsoft

Microsoft Exchange

Ref #	Limitation
8825	With Microsoft's OWA for Android, when the Add-ins option is activated, any text already entered in the Notes section is deleted. To resolve this, VMR Scheduling for Exchange users should activate the Pexip scheduling add-in prior to adding any additional text.
8288	When Microsoft's OWA is used to connect to an Office 365 account and an add-in is activated, the absence of a horizontal scroll bar in the add-in panel may mean that not all text is visible. To view all text, VMR Scheduling for Exchange users should either widen the window or pop-out the meeting request.

Microsoft Skype for Business and Lync

Ref #	Limitation
11817	Pexip Infinity sends QCIF or 360p resolution video to mobile Skype For Business clients (iOS and Android) when those clients request a low resolution from Pexip.
9390	If a Skype for Business client running on Windows 7 attempts to record a Skype for Business / Lync meeting, the recording will not include any content from Pexip participants calling into the meeting through the Pexip Distributed Gateway.
8171	If a Lync 2010 client in a call with Pexip Infinity puts the call on hold, video does not properly resume when the call is resumed.
7709	A Skype for Business Mac client that is dialed into a Pexip Infinity VMR will never request anything higher than 360p. This means that although Pexip Infinity receives 1280x720 resolution video from the Mac client, it will only send up to a maximum of 640x360 to the Mac client.
5100	If a Conferencing Node being used as a gateway into a SfB/Lync meeting is near processor capacity and another endpoint in the SfB/Lync meeting starts sending content, a participant may be inadvertently disconnected from the conference. To resolve this, the endpoint can dial back into the conference.
4926	Participants calling into Skype for Business / Lync through the Pexip Distributed Gateway may experience inconsistent call rejection messages if a Conferencing Node is placed into maintenance mode.
4812	In some instances, one of two messages sent to a VMR from two SfB/Lync clients not previously connected may not be properly retained by the VMR. To resolve, re-send the message.
4195	Participants connected via the Pexip Distributed Gateway into a SfB/Lync meeting may not receive presentation content from SfB/Lync participants. This occurs if the SfB/Lync user has a screen resolution where the width is an odd number of pixels, such as a resolution of 1437x758. If this occurs, one workaround is for the user to share an application rather than their full desktop.

Microsoft Edge browsers

Ref #	Limitation
6411	Microsoft Edge browsers (which are WebRTC-compatible) cannot currently use STUN and thus cannot send media to Pexip Infinity via a TURN server. This means that Microsoft Edge users connecting to a conference from outside your network (via a reverse proxy) will not be able to send or receive audio/video.

Chrome browsers

Ref #	Limitation
10545	Network connection interruptions of longer than 10 seconds may require Chrome participants to manually reconnect to a conference.