Pexip Infinity v16.2
Release Notes

Contents

Introduction

This document contains the release notes for Pexip Infinity version 16.2.

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 16.2

Upgrading from version 13 or later to version 16.2

During the upgrade process, each Conferencing Node is selected, one at a time, and is automatically placed into maintenance mode. It then waits for up to 1 hour for calls to finish on that node before performing the upgrade and then putting that node back into active service. After each node is upgraded (or the hour time limit is reached), the next Conferencing Node is selected, placed into maintenance mode and upgraded, and so on until all Conferencing Nodes have been upgraded.

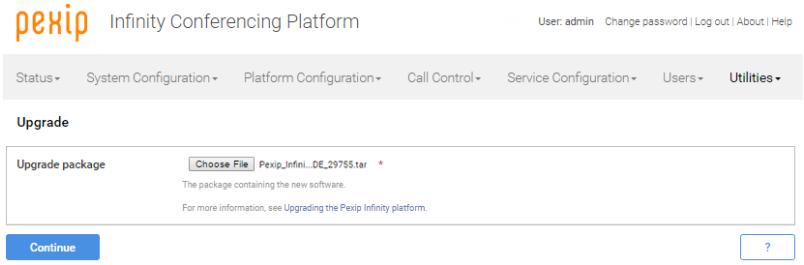
Alternatively, to avoid unpredictable system behavior due to Conferencing Nodes running conflicting software versions, you may want to manually put **all** of your Conferencing Nodes into maintenance mode before initiating the upgrade process. This will allow all existing calls to finish, but will not 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.

Upgrades to v16 may take slightly longer than upgrades to previous versions.

To upgrade Pexip Infinity software from v13 or later to v16.2:

1. Before upgrading an on-prem 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**).
2. Download the Pexip Infinity upgrade package for v16.2 from www.pexip.com/software-download.
3. From the Pexip Infinity Administrator interface, go to **Utilities > Upgrade**.
4. Select **Choose File** and browse to the location of the upgrade package.



5. 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.
6. 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.
7. When the upgrade completes, all systems 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 16.2

Upgrading from versions 8-12 to version 16.2

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 16.2. To do this:

1. Download the Pexip Infinity **v13** upgrade file.
2. Follow the steps outlined in Upgrading to version 16.2, 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 **v16.2** upgrade file.
5. Follow the steps outlined in Upgrading to version 16.2, and when asked to **Choose File** browse to the location of the **v16.2** 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 16.2

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 v16.2 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 16

Pexip Infinity platform

Feature	Description
Full support for Distributed Proxying Edge Nodes	You can deploy your Pexip Infinity system as either a mix of Proxying Edge Nodes and Transcoding Conferencing Nodes, or as a system that only contains Transcoding Conferencing Nodes. A typical deployment scenario is to use Proxying Edge Nodes as a front for many privately-addressed Transcoding Conferencing Nodes. Those outward-facing proxying nodes would receive all the signaling and media from endpoints and other external systems, and then forward that media onto other internally-located transcoding nodes to perform the standard Pexip Infinity transcoding, gatewaying and conferencing hosting functions. (Proxying Edge Nodes were previously available as technology preview in version 15.)
Google Cloud Platform support	Pexip Infinity can now be deployed on the Google Cloud Platform. Using a cloud service provides scalable computing capacity and eliminates your need to invest in hardware up front, so you can deploy Pexip Infinity even faster. (Note that Pexip Infinity can also be deployed on Amazon Web Services and Microsoft Azure cloud platforms.)
Break-in resistance security protection	Two new security features provide resistance to malicious attempts to break in to your Pexip Infinity system: • **PIN brute force resistance**: this temporarily blocks all access to a VMR that receives a significant number of incorrect PIN entry attempts. • **VOIP scanner resistance**: this temporarily blocks service access attempts from any source IP address that dials a significant number of incorrect aliases in a short period. These two options (**Platform Configuration > Global Settings**) are enabled by default on upgrade to version 16.
Rewind and replay the status graph for live view and historic conferences	The interactive live view graph showing the status of the Pexip Infinity platform can be rewound and replayed to show historical status for the last 7 days. Graphs for any current or historic conference can also be viewed and replayed. This allows you, for example, to see when participants and Conferencing Nodes joined or disconnected from the conference.
VMR Scheduling for Exchange maintenance and recovery	The VMR Scheduling for Exchange feature now includes two scripts that can be run from the Management Node to allow you to restore meetings and delete old calendar and mail items from the room resource's mailbox.
Support for multiple Exchange servers	The VMR Scheduling for Exchange feature now supports environments with more than one Exchange server. To do this, a new **Exchange domain** configuration option has been added; one **Exchange domain** must be configured for each Exchange server in your deployment. For customers upgrading to v16, the FQDN used in the **EWS URL** will automatically be added as the first **Exchange domain**.
Ability to prevent Guest participants from presenting content	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.

Feature	Description
Configurable timeouts for participants	You can now configure the length of time that: • participants can remain at the PIN entry stage • guest participants can remain in the waiting room. Participants will be disconnected automatically after the configured time.

VMR and device provisioning enhancements	The following improvements and modifications have been made to VMR and device provisioning:
	• When performing an LDAP sync of devices, you can now optionally sync any disabled AD items. This allows you to create device aliases for conference rooms/resources which typically have disabled AD accounts/mailboxes in Microsoft Exchange.
	• There is more flexible alias handling when provisioning VMRs via LDAP:
	  ○ VMR aliases can now be tagged as overridable. This allows you to manually add further aliases to a provisioned VMR.
	  ○ You can now provision up to 8 aliases per VMR (previously 4).

Enable maintenance mode simultaneously	You can now simultaneously enable or disable maintenance mode for multiple Conferencing Nodes.
Enable and disable SSH on individual nodes	You can now override the global SSH setting in order to enable or disable SSH access on the Management Node and individual Conferencing Nodes.
Select which logs are sent to syslog	In previous versions, syslog servers received both support log and Linux audit log entries. In version 16, you can control which of the following logs are sent to a particular syslog server: • support log • audit log • web server log.
TLS certificate management enhancements	There are new TLS certificate management features: • Ability to download individual TLS certificates. Note that if you are using LDAP authentication, there is a new permission "May download TLS private key" that must be assigned to the account role to enable the administrator to download a certificate's private key. • You can create a certificate signing request (CSR) for existing installed certificates, for example if you need to replace a certificate that is due to expire.

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 16:

Feature	Description
Next generation Infinity Connect Web App *	Version 16 of Pexip Infinity includes an option to preview the next generation of the Infinity Connect Web App.
Support for Safari version 11	Version 16 of Pexip Infinity supports Safari version 11 (WebRTC). Note that Safari version 11 will not work with Pexip Infinity version 15 or earlier.
* Technology preview only	

Changes in functionality in this release

Feature	Description
Selecting a Conferencing Node's role (transcoding or proxying)	When deploying a new Conferencing Node you must now assign it a **Role** of either ***Transcoding Conferencing Node*** or ***Proxying Edge Node***. Previously an **Enable transcoding** checkbox was used to determine a node's role.
Calls (signaling) received in one location can have their media transcoded by a Conferencing Node in a different location	When configuring a system location you can now specify a **Transcoding location**. This lets you define the system location to handle media transcoding for calls (signaling) received in, or sent from, that location. On upgrade to version 16, the **Transcoding location** defaults to ***This location*** for any existing locations — this default means that transcoding is performed by a Transcoding Conferencing Node in the same location as where the call signaling is being handled, as per previous behavior. This new setting is intended for use in locations that contain Proxying Edge Nodes so that you can specify the location (and thus the Transcoding Conferencing Nodes) to where media will be proxied for transcoding purposes.
New **Scheduled Conferences** page	Scheduled conferences are now listed on a separate page, rather than on the Virtual Meeting Room page.
Additional customizations for VMR Scheduling for Exchange	For meetings and VMRs created using the VMR Scheduling for Exchange feature, you can now use jinja2 templates to configure the **Conference name**, **Conference description**, and **Conference subject**. You can also customize the date-time format to be used.
Conference "comfort noise"	Low-level, almost imperceptible background noise has been added to the audio mix in conferences. This creates a similar effect to an open mic and gives reassurance that the conference is alive, even if all participants are muted.
Administrative improvements and modifications	This release contains the following administrative improvements and modifications: • The ability to mute all Guests in a VMR (via **Status > Conferences**). • New **Status > Alarm History** page shows all historic alarms including the severity level, and the time the alarm was raised and lowered. This information is also available via the management history API. • New **Status > Conferencing Node History** page shows all events (stop, start or running) that have been applied to overflow Conferencing Nodes. This information is also available via the management history API. • The ability to disable the management web interface session timeout for inactive users (**Platform Configuration > Global Settings > Enable Management Web Interface Session Timeout**). • When configuring a Virtual Reception, the Lync / Skype for Business fields used for configuring IVR gateway routing to Lync/SfB meetings are now in the main settings (previously they were in the Advanced options). • When configuring a Call Routing Rule's **Call target**, the ***Lync / Skype for Business meeting direct (not via Virtual Reception)*** option is now called ***Lync / Skype for Business meeting direct (Conference ID in dialed alias)***. • Searching / filtering is now supported on the Conferencing Node status and Conferencing Node configuration pages. • The service count on the **Themes** page now includes any Call Routing Rules that use that theme (in addition to VMRs). • When using the management API, configured services and Call Routing Rules can be filtered by theme (using a filter criteria of `ivr_theme`).

Feature	Description
External and local policy improvements and modifications	The following improvements and modifications have been made to external and local policy: • The response for service configuration policy for Virtual Meeting Rooms and Virtual Auditoriums supports new **guests_can_present** and **primary_owner_email_address** elements. • There is a new request parameter / call_info variable of **trigger** which indicates the trigger for the policy request, for example "invite", "options" and so on. • Local policy scripts can use a new **pex_in_subnet** filter to test whether a participant's address is within one or more subnets. • The **call_direction** request parameter / call_info variable now reports a value of "non_dial" instead of "None" (when policy is triggered by requests that are not related to incoming or outgoing call setup). • External policy requests now support Basic Authentication and basic ASCII-encoded username and password credentials. Previously Pexip Infinity encoded the credentials to UTF-8. There should be no impact on any existing policy server configuration after upgrading to version 16 providing basic ASCII characters were used for the credentials.

Issues fixed in version 16.2

Pexip

Ref #	Limitation
10883	Resolves an issue in v16 and v16.1 where Pexip Infinity would not operate correctly when FIPS 140-2 compliance mode is enabled.

Issues fixed in version 16.1

Pexip

Ref #	Limitation
10738	A Proxying Edge Node with dual network interfaces can now proxy media onto a Transcoding Conferencing Node that is also configured with dual network interfaces.
10690	Video from RTMP-based Infinity Connect Web App clients now successfully resumes after video mute/unmute.
10639	Pexip Infinity now operates correctly if is configured with a TURN server on an IPv4 address and that TURN server allocates relays on an IPv6 address.
10613	The Pexip Infinity platform includes optimizations that result in decreased network bandwidth usage for presentation streams in a distributed conference.
10355	The Infinity Connect Web App on Internet Explorer now correctly handles gateway calls that are rejected by the callee.
10329	The Pexip Infinity platform now has increased tolerance for drift in NTP time synchronization.
9553	There is improved packet loss resilience in media connections from a Conferencing Node to an Infinity Connect Web App Chrome client and to the Infinity Connect desktop client.

Issues fixed in version 16

Pexip

Ref #	Limitation
9966	Pexip Infinity is no longer case-sensitive when completing Certificate Signing Requests.
9961	Resolves issues where: • in some cases participants were not able to join meetings that were rescheduled after a failed join attempt, and • participants were not able to join the third occurrence of a recurring meeting.
9949	Calls to a service with a name that is between 190 and 255 characters long no longer causes dropped calls. Calls to a service with a name over 255 characters long (e.g. if generated by external or local policy) are now rejected.
9940	Fixes an issue where in some cases, when VMR Scheduling for Exchange joining instructions had been customized, the add-in would not be able to finish adding the joining instructions.
9762	Pexip Infinity no longer drops calls when attempting to route calls to Automatically Dialed Participants when the Call Routing Rule which matched and was being used to route the call to the ADP had "Call capability" set to "Same as incoming call".
9747	Pexip Infinity no longer adds quotes around the SNMP **sysName** and **sysDescr** fields.
9668	VMR Scheduling for Exchange now supports environments with more than one Exchange server.
9596	Pexip Infinity now has improved error handling when trying to upload a replacement certificate that is associated with a different private key to that used by the previous certificate.
9413	When using Proxying Edge Nodes, if an RTMP streaming participant is added to a conference, the RTMP media is now sent to the streaming server from a Proxying Edge Node (providing the location specified for the dial out contains proxying nodes, or the client that is adding the streaming participant is connected via a proxying node).
8987	The VMR Scheduling for Exchange service no longer requires there to be at least one VMR license available at the point at which Pexip Infinity attempts to create the scheduled VMR.
8905	Proxying Edge Nodes are no longer a technology preview feature and are now optimized for scale and efficiency.

Microsoft

Microsoft Lync and Skype for Business

Ref #	Limitation
10000	Resolves an issue whereby on rare occasions if two Lync / Skype for Business clients in a Lync / Skype for Business meeting requested video at the same resolution but different bitrates from any VTC endpoints gatewayed into the meeting, then only one of the Lync/SfB clients would receive the video stream or a VTC endpoint would see a frozen grayscale image.
9036	Presentations are now sent in the content channel to Lync/SfB Mac clients, using RDP (or VbSS if available).
9002	When an endpoint is gatewayed into a Lync/SfB meeting via a Proxying Edge Node, participant thumbnails from the Lync/SfB meeting no longer show as a broken camera.

Known limitations

Pexip

Ref #	Limitation
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.
10311	When using the scheduling recovery script, spaces in the **--update-message** flag are not parsed correctly. To resolve this, either use the default message, or run the script directly, for example: `sudo python /opt/pexip/lib/python2.7/site-packages/si/apps/management/schedulingservice/tools/scheduling_recovery.pyc --update-message "Hello there"`
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 Lync and Skype for Business

Ref #	Limitation
10792	Participants may be dropped from a Lync/SfB meeting if multiple gateway participants join the meeting at the same time and an RDP presentation is in progress.
9712	In rare circumstances, participants connected to a Conferencing Node may get disconnected from their conference if another participant on that node is attempting to reconnect to a Lync/SfB meeting and other Lync/SfB participants are simultaneously joining or leaving that Lync/SfB meeting.
9390	If a Skype for Business client running on Windows 7 attempts to record a Lync / Skype for Business meeting, the recording will not include any content from Pexip participants calling into the meeting through the Pexip Distributed Gateway.
8607	If a Surface Hub or Skype Room System takes over as presenter, participants who have joined the conference via Pexip Infinity will only see the first slide to be presented, even if subsequent slides are then sent.
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 Lync/SfB meeting is near processor capacity and another endpoint in the Lync/SfB 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 Lync / Skype for Business 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 Lync/SfB 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 Lync/SfB meeting may not receive presentation content from Lync/SfB participants. This occurs if the Lync/SfB 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
8133	When viewing the live platform status and conference status graphs in a Microsoft Edge browser, if there are any labels that contain a hyphen or dash the graph will not render correctly, and zooming or panning within the graph will leave traces of the label.
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.

Polycom

Ref #	Limitation
11194	Polycom HDX and GroupSeries on firmware before v6, that are behind NATs, cannot receive presentation from Pexip Infinity without sending presentation first.

Google Chrome browser

Ref #	Limitation
9996	Rarely, Chrome v58 and higher will cause a valid incoming VP8 stream to become corrupt. The Infinity Connect desktop client is not affected by this issue.