Pexip Infinity

Upgrading to version 27.3

Upgrading from version 22 or later to version 27.3

When the upgrade process starts, the Management Node is upgraded first. Then up to 10 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.

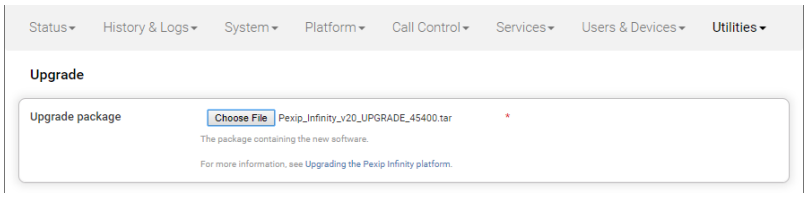
If all of the calls on a Conferencing Node that is in maintenance mode have not cleared after 1 hour, the node is taken out of maintenance mode and put at the back of the queue of nodes to be upgraded. A further attempt to upgrade that node will be made after all other nodes have been upgraded (or had upgrade attempts made). Up to 10 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.

To upgrade Pexip Infinity software from v22 or later to v27.3:

1. 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 (after it has been rolled back) in the unlikely event that this is required.

   Before upgrading a cloud-based deployment (Azure, AWS, GCP or Oracle), you should backup the Management Node via Pexip Infinity's inbuilt mechanism (**Utilities > Backup/Restore**).
2. Download the Pexip Infinity upgrade package for v27.3 from the Pexip download page.
3. Before upgrading, ensure that all "always-on" Conferencing Nodes are powered on and are reachable (i.e. no Connectivity Loss errors), and are all running the same version from which you are upgrading. You do not need to power on any cloud bursting nodes.
4. From the Pexip Infinity Administrator interface, go to **Utilities > Upgrade**.
5. Select **Choose File** and browse to the location of the upgrade package.



6. 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.
7. 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.
8. 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 the upgrade process completes and there are some nodes that have failed to upgrade, you can restart the upgrade process by uploading the upgrade package to the Management Node again via **Utilities > Upgrade**. This will skip over any nodes that have already been upgraded.
- If you are upgrading from v25.0 or v25.1, due to a known issue it is possible that the upgrade will complete on the Management Node but not automatically proceed to the Conferencing Nodes. To resolve this issue, simply upload the upgrade package again via **Utilities > Upgrade**.

9. If you have Pexip CVI for Microsoft Teams you must also upgrade your associated Teams Connector deployment in Azure to the same version as your Pexip Infinity deployment (including minor/"dot" releases).

   There are some important steps to be taken when upgrading your Teams Connector to version 27.

   - Version 27 has some specific upgrade procedures that must be completed before you redeploy your Teams Connector:
     i. **New Teams Connector API app**: you must create a new Azure app (in addition to the existing Pexip CVI app) that is used to secure requests to the Teams Connector APIs. To do this:
        i. Run the following PowerShell command to connect to Azure AD:
        ```
        Connect-AzureAD
        ```
        Then follow the prompts to sign in to Azure AD.
        ii. Run your variable initialization script to set the required prefix and region name variables.
        iii. Run the following command to create the Teams Connector API app.
        ```
        $teamsConnectorApiApp = New-AzureADMSApplication -DisplayName "${PxBaseConnName}-TeamsConn-${PxVmssRegion} Pexip Teams Connector API" -SignInAudience "AzureADMyOrg"
        ```
        Please allow one minute for this command to complete and propagate within Azure.
        iv. Run the following commands to obtain the Teams Connector API app ID.
        Note that if the **New-AzureADServicePrincipal** command fails, this means that you have not waited long enough for the previous command to complete.
        ```
        $teamsConnectorApiSp = New-AzureADServicePrincipal -AppId $teamsConnectorApiApp.AppId
        $TeamsConnectorApiApplicationId = $teamsConnectorApiApp.AppId

        Write-Host
        Write-Host
        Write-Host "`n----------------------------------------`n"
        Write-Host
        Write-Host "### Teams Connector API App ID MUST be saved in the variables initialization script ###"
        Write-Host
        Write-Host "`$TeamsConnectorApiApplicationId = `"$($TeamsConnectorApiApplicationId)`""
        Write-Host
        Write-Host "`n----------------------------------------`n"
        Write-Host
        Write-Host
        ```
        v. When the command runs, it generates some output that lists the Teams Connector API App ID, similar to this:
        ```
        ### Teams Connector API App ID MUST be saved in the variables initialization script ###

        $TeamsConnectorApiApplicationId = "36ee4c6c-0812-40a2-b820-b22ebd02bce4"
        ```
        vi. Copy the output line that defines the API App ID (`$TeamsConnectorApiApplicationId = "<your value>"`) and add it to the bottom of your variable initialization script (the one you ran in step 2). Thus the end of your variables script will then look similar to this:
        ```
        # Optional tags (name-value pairs) to apply to Azure resources and resource groups
        # For example $tags= @{"ResourceOwner"="user@domain"; "CostCenter"="Video Services";}
        $tags= @{}

        $TeamsConnectorApiApplicationId = "36ee4c6c-0812-40a2-b820-b22ebd02bce4"
        ```

Note that your script may have values specified for the `$tags` variable. If required you may also want to add comment lines (beginning with `#`) to describe the purpose of the new $TeamsConnectorApiApplicationId variable.

(If you will be performing the rest of the deployment, in the same PowerShell session, there is no need to re-run the variable initialization script as the new $TeamsConnectorApiApplicationId variable has been set in the steps above.)

vii. If somebody else will be completing the upgrade (redeployment), ensure that the person who will perform all of the remaining installation steps has **Owner** permissions for the new API app.

Note that:

- This app does not have to be granted any permissions. It does not have access to any resources in the Azure AD tenant. It has no associated credentials.
- It is different from your existing Pexip CVI App which was created when your originally installed the Teams Connector, and the App ID (with its associated credentials) for that CVI app should already be recorded in your redeploy script.
- If you have Teams Connectors in multiple Azure regions, you must repeat this process and create an API app in each region, using and then storing the app ID ($TeamsConnectorApiApplicationId) in the relevant variable initialization script for that region.

ii. **Variable initialization script**: there are two new variables to be added to the variable initialization script:

i. Add a new **$PxBotResourceGroupName** variable that defines the name of the resource group for the Azure Bot. We recommend placing it after the existing $PxTeamsConnStaticResourceGroupName variable for consistency. It should be defined as follows, to match the name of your existing Azure Bot resource group:

```
$PxBotResourceGroupName = "$($PxBaseConnName)-TeamsBotChan-RG"
```

(Note that for new deployments, the value assigned to this variable uses a different naming convention.)

ii. You must define a new **$TeamsConnectorApiApplicationId** variable as described in the previous step for the API app.

iii. **Scheduled scaling**: this version introduces a new scaling feature to manage the capacity of your Teams Connector instances.

If you currently use the Azure Event Hub for advanced status reporting, when upgrading your Pexip Infinity platform and Teams Connector to version 27 you should:

i. Upgrade your Pexip Infinity platform as normal.

ii. Before redeploying your Teams Connector, within the Pexip Infinity Administrator interface, go to **Call Control > Microsoft Teams Connectors** and configure the new **Minimum number of instances** field.

iii. Redeploy your Teams Connector as normal.

iv. After redeploying the Teams Connector you must update the connection details for the Azure Event Hub in the Pexip Infinity Administrator interface: go to **Call Control > Microsoft Teams Connectors** and change the connection string to the **Connection string–primary key** associated with the **pexip_teams_connector_access** shared access policy.

The connection string is in the format **Endpoint=sb://examplevmss-lltsgzoqun-ehn.servicebus.windows.net/;SharedAccessKeyName=pexip_teams_connector_access;SharedAccessKey=[string]**

To find this string in the Azure portal:

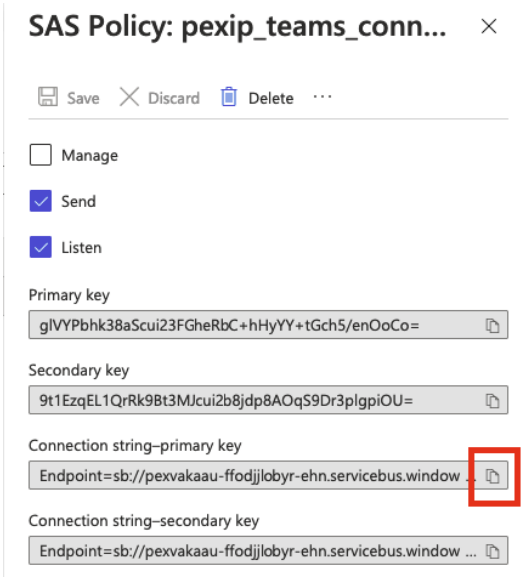
i. Go to the static resource group for the Teams Connector (this has a name in the format **<prefix>-TeamsConn-<region>-static-RG**).

ii. Select the **Event Hubs Namespace** component (**<name>-EHN**).

iii. From the left-hand navigation menu, under **Settings** select **Shared access policies**.

iv. Select the **pexip_teams_connector_access** policy.

v. Copy the **Connection string–primary key**.



Note that:

- If **Minimum number of instances** is not configured, the Teams Connector will redeploy with just 1 instance (the default) and you may therefore have less capacity than you had before upgrading, although you can adjust the setting later to reinstate that capacity.
- If you currently do not use the Azure Event Hub for advanced status reporting then you can ignore the new **Minimum number of instances** field and upgrade your Teams Connector as normal, and you will retain your existing capacity / number of instances.
- If you do not update the **Azure Event Hub connection string** field then advanced status reporting will continue to work but scheduled scaling will not work.

- The redeployment process has changed in version 27. There are some new steps to perform prior to running the redeploy script:
  - To delete the existing dynamic resource group and then recreate it for the redeployed Teams Connector. Previously these steps were contained within the redeploy script.
  - To ensure that the person performing the redeploy/upgrade has the Azure **Owner** role for the static and dynamic resource groups, and **Contributor** role for the Azure Bot resource group.
- When upgrading from a previous major release (e.g. from v26.n to v27.3), you must use the latest version of the redeploy script as contained within the v27 documentation. You can use your existing redeploy script if you are upgrading to a new minor/ "dot" release for the same major version (e.g. from 27.0 to 27.3).
- You must be using Az module version 5.1.0 or later.
  - To check your installed version you can run:
    ```
    Get-InstalledModule -Name Az -AllVersions
    ```
  - To install the latest Az version you can run:
    ```
    Install-Module -Name Az -MinimumVersion 5.1.0 -AllowClobber -Scope AllUsers
    ```
- If you have deployed multiple Teams Connectors, you must follow the same redeploy process (with the appropriate variable initialization script) for each Teams Connector.
- As with all upgrades, you can continue to use the Pexip CVI app from your existing deployment.

Full instructions are available at https://docs.pexip.com/admin/teams_managing.htm#upgrading.

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 versions 16-21 to version 27.3

If you are running a Pexip Infinity software version between v16 and v21 inclusive, you must first upgrade to version 22 and then upgrade again to version 27.3. To do this:

1. Before upgrading, ensure that all "always-on" Conferencing Nodes are powered on and are reachable (i.e. no Connectivity Loss errors), and are all running the same version from which you are upgrading. You do not need to power on any cloud bursting nodes (unless you are upgrading from version 21.0, in which case they must also be powered on at least 15 minutes prior to upgrading from v21.0).
2. Download the Pexip Infinity **v22** upgrade file.
3. Follow the steps outlined in Upgrading from version 22 or later to version 27.3, but when asked to **Choose File** browse to the location of the **v22** upgrade file.
4. Verify that the upgrade has completed successfully.
5. Download the Pexip Infinity **v27.3** upgrade file.
6. Follow the steps outlined in Upgrading from version 22 or later to version 27.3, and when asked to **Choose File** browse to the location of the **v27.3** upgrade file.