# Workspace Desktop Edition Deployment Guide

## Workspace SIP Endpoint

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# Workspace SIP Endpoint

[**Modified:** WSEP 8.5.113.02]

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Workspace Desktop Edition supports two different SIP Endpoints: Interaction Workspace SIP Endpoint 8.0.2 and Workspace SIP Endpoint 8.5.0. If you want to continue to use SIP Endpoint 8.0.2, use the configuration options that are described in the *Interaction Workspace 8.1.4 Deployment Guide*.

> **Tip**
>
> Workspace also supports the Genesys Softphone in place of Workspace SIP Endpoint. To learn about Genesys Softphone, see Configuring Workspace Desktop Edition to use Genesys Softphone in the Genesys Softphone Deployment Guide.

Workspace provides three templates from which you can choose when you deploy, one for the application, and two optional ones for the Workspace SIP Endpoint. This means that there are three possible deployment configuration scenarios, depending on your environment, and whether you want to use the new Workspace SIP Endpoint video features.

1. `Workspace_Desktop_Edition_850.apd`: Deploy only this template if you want to use a different SIP Endpoint.
2. `Workspace_Desktop_Edition_SEP802_850.apd`: Deploy this template to use Workspace and the Workspace SIP Endpoint 8.0.2.
3. `Workspace_Desktop_Edition_SEP850_850.apd`: Deploy this template to use Workspace and the Workspace SIP Endpoint 8.5.0.

You can install an optional SIP Endpoint that can be added as a privilege to enable the agent workstation to handle SIP Voice-over-IP calls. The Workspace SIP Endpoint does not have an interface; instead, it adds interface elements to the Voice Interaction window, including muting and volume control for both the microphone channel and the speaker channel of the selected audio device(s) on the agent workstation.

> **Tip**
>
> Any USB headset that is supported by the Windows Operating System should work normally with Workspace SIP Endpoint.

Other SIP Voice features include: automatic gain control, beep tone, auto-answer, unavailable headset detection, log-level support, Real-time Transport Protocol (RTP) support, and speaking detection.

Workspace SIP Endpoint is started and stopped by Workspace. Both applications employ a keep-alive mechanism that allows each to detect when the other is no longer running. If the SIP Endpoint detects that Workspace is no longer running, it waits for any active calls to end, and then exits. If Workspace detects that the SIP Endpoint is no longer running, it starts a new instance of Workspace SIP Endpoint.

The Workspace SIP Endpoint can be configured at any level of the configuration-layer hierarchy, from Tenant to agent. Workspace employs the following privilege for activating the Interaction Workspace SIP Endpoint:

- Can Use Embedded SIP Endpoint

Refer to the *SIP Endpoint SDK for .NET Developer's Guide* for a list of supported codecs for the Workspace SIP Endpoint.

> **Important**
> QoS policies are managed by the operating system. To configure a QoS policy in Windows, refer to Quality of Service (QoS) Policy in the Microsoft documentation.

## USB headset configuration

You can use the following options to configure Workspace to use a headset:

- sipendpoint.policy.device.use_headset: Specifies whether a USB head set is used for voice calls.
- sipendpoint.policy.device.headset_name: Specifies what type of USB headsets are supported in your environment. Use the "|" character to separate the names of different headsets if more than one type is supported. For example: 'Plantro|Jabra'.

If these options are set, and the corresponding USB headset is connected to the agent workstation at start-up time, the headset is selected automatically.

If the configured USB headset is not connected to the agent workstation, then the behavior depends on the following configuration option in the `interaction-workspace` section of the Workspace Application object:

- sipendpoint.headset-enforce-configured-usage

This option specifies whether the agent must plug in the specified USB headset to complete logging in. By default, when it is set to `false`, and if the headset is not plugged in at start-up time, the default audio devices that are available on the workstation, if any, are selected. When it is set to `true`, and if the headset is not plugged in when the agent logs in, Workspace waits for the headset to be plugged in before finalizing the login of the voice channel. The behavior of other medias, such as email and chat, are not affected by this option.

Workspace SIP Endpoint enables agents to switch to a pre-configured Not Ready state if the USB headset becomes unplugged after the agent has logged in to the SIP Voice Media. The agent will remain logged in to other eServices media such as email and chat.

Use the following configuration options in the `interaction-workspace` section of the Workspace Application object to control the behavior of this feature:

- sipendpoint.headset-unplugged.not-ready-reason—Specifies the Not Ready reason to be set to the SIP DN if the USB headset that is used by the agent becomes unplugged.
- sipendpoint.headset-unplugged-set-not-ready—Specifies whether the SIP DN of the agent is set automatically to `Not` Ready if the USB Headset that is used by the agent becomes unplugged.
- sipendpoint.headset-replugged-set-ready—Specifies whether the SIP DN of the agent is set

automatically to Ready if the USB Headset that is used by the agent is plugged back in.

Workspace SIP Endpoint can be configured to retain volume setting of the USB headset between agent sessions.

Use the following configuration options in the `interaction-workspace` section of the Workspace Application object to control the behavior of this feature:

- sipendpoint.retain-volume-settings-between-sessions—Specifies whether the volume settings are saved for both microphone and speaker, when the agent logs out.

> **Important**
>
> When an agent logs in to Workspace, the application creates a list of headsets that are plugged in to the workstation. If an agent wants to use a different headset, he or she should exit Workspace, plug in the new headset, then relaunch Workspace.

## Session Border Controller

Interaction Workspace SIP Endpoint supports connecting to SIP Server through a Session Border Controller (SBC) (refer to *Server 8.1 Deployment Guide*). You must configure Interaction Workspace to connect to SIP Server through an SBC instead of directly to SIP Server.

If you do not configure Interaction Workspace to connect to SIP Server by using an SBC, Interaction Workspace SIP Endpoint connects directly to SIP Sever to register the agent SIP Endpoint by using the `TServer/sip-address` and `TServer/sip-port` options of the corresponding SIP Server application. When you configure Interaction Workspace to connect by using an SBC you decouple the address and port information that is sent to the SIP REGISTER from SIP Server and Interaction Workspace obtains the host address and port from the configuration.

Configure the following two options in the `interaction-workspace` section of the Application, Tenant, Agent Group, or User object.

- sipendpoint.sbc-register-address—Specifies the address of your SBC to which Interaction Workspace SIP Endpoint connects.
- sipendpoint.sbc-register-port—Specifies the port on your SBC to which Interaction Workspace SIP Endpoint connects.

To set the Domain/Realm of your contact center instead of an IP when Workspace SIP Endpoint tries to register through a session border controller (SBC) device, set the value of the following two options to represent valid SIP domain names to specify a 'request-uri' in the SIP REGISTER request that is decoupled from the SIP Proxy address that is contacted:

- sipendpoint.proxies.proxy0.domain
- sipendpoint.proxies.proxy1.domain

# Genesys SIP Proxy configuration

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Workspace Desktop Edition supports Genesys SIP Proxy. This feature enables SIP high availability (HA) without requiring a virtual IP address. Refer to the SIP Proxy 8.1 Deployment Guide for information about deploying and using SIP Proxy.

## DNS SRV

[**Added:** WSEP 8.5.113.02]

You can configure the Workspace SIP Endpoint with either:

- a standard DNS A-Records. Final URI form is: `sip:user@<host_fqdn>:<port>` where `<host_fqdn>` can be virtual and can represent multiple physical addresses behind the scenes, but the `:<port>` is mandatory, or
- a DNS SRV (Service record) as specified in the Genesys SIP Proxy Architecture. Final URI form is: `sip:user@<host_fqdn>`

## Limitations

- Genesys SIP Proxy currently does not support scenarios with switchover mid-transaction; therefore, call ANSWER and CANCEL probably will not work, but BYE is fully supported.

## Provisioning

The connection to the SIP Proxy is configured by using the following Workspace configuration options:

- sipendpoint.sbc-register-address—Specifies the IP Address, Host Name of the SIP Proxy or the FQDN of the SIP Proxy farm.
- sipendpoint.sbc-register-port—Specifies the port of the SIP Proxy. In case of a SIP Proxy farm, all SIP Proxy instances must have the same SIP Port. In case of DNS SRV, set this option to '0'.
- sipendpoint.sbc-register-address.peer— Specifies the IP Address, Host Name of the DR peer SIP Proxy or the FQDN of the DR peer SIP Proxy farm.
- sipendpoint.sbc-register-port.peer—Specifies the port of the DR peer SIP Proxy. In case of DNS SRV, set this option to '0'.

### Tip

- These options were introduced in Interaction Workspace 8.1 to support Session Border Controller; therefore, they are not specific to SIP Proxy.
- Genesys recommends that you set the value of the sipendpoint.policy.endpoint.rtp_inactivity_timeout option to the default value of 30.

## Video configuration

Use the procedure: Enable an agent to use the SIP video interactions to set up agents to receive inbound video interactions. The following configuration options support this feature:

- sipendpoint.policy.session.auto_accept_video
- sipendpoint.video.auto-activate
- sipendpoint.video.always-on-top
- sipendpoint.video.thumbnail-ratio
- sipendpoint.video.camera-frame-rate
- sipendpoint.video.camera-frame-size
- sipendpoint.video.camera-render-format

## Changes to Workspace SIP Endpoint configuration options in Workspace 8.5.x

The **Workspace SIP Endpoint 8.0.2 versus Interaction Workspace SIP Endpoint 8.5.x options** table lists the changes that have been made to the Workspace SIP Endpoint configuration options with the introduction of Workspace SIP Endpoint 8.5.x. If you want to continue to use Interaction Workspace SIP Endpoint 8.0.2, use the configuration options that are described in the *Interaction Workspace 8.1.4 Deployment Guide*.

**Interaction Workspace SIP Endpoint 8.0.2 versus Workspace SIP Endpoint 8.5.x options**

| Interaction Workspace SIP Endpoint 8.0.2 Option Name | Workspace SIP Endpoint 8.5.x Option Name |
|---|---|
| sipendpoint.audio.headset.audio_in_agc_enabled | sipendpoint.policy.session.agc_mode |
| sipendpoint.audio.incoming.use_agc | N/A |
| sipendpoint.genesys.beeptone.beeptone_timeout | N/A |
| sipendpoint.genesys.beeptone.enable_beeptone | N/A |
| sipendpoint.genesys.beeptone.play_locally | N/A |
| sipendpoint.genesys.control.auto_answer | sipendpoint.policy.session.auto_answer |
| sipendpoint.genesys.device.audio_in_device | sipendpoint.policy.device.audio_in_device |
| sipendpoint.genesys.device.audio_out_device | sipendpoint.policy.device.audio_out_device |
| sipendpoint.genesys.device.error_code_when_headset_na | sipendpoint.policy.session.sip_code_when_headset_na |
| sipendpoint.genesys.device.headset_name | sipendpoint.policy.device.headset_name |
| sipendpoint.genesys.device.manual_audio_devices_configure | N/A |
| sipendpoint.genesys.device.reject_call_when_headset_na | sipendpoint.policy.session.reject_session_when_headset_na |
| sipendpoint.genesys.device.use_headset | sipendpoint.policy.device.use_headset |
| sipendpoint.genesys.dtmf.pause_start_stop_dtmf | N/A |

| Interaction Workspace SIP Endpoint 8.0.2 Option Name | Workspace SIP Endpoint 8.5.x Option Name |
|---|---|
| sipendpoint.genesys.dtmf.play_locally | N/A |
| sipendpoint.genesys.system.log_level_AbstractPhone | N/A |
| sipendpoint.genesys.system.log_level_Audio | N/A |
| sipendpoint.genesys.system.log_level_Auto Configuration | N/A |
| sipendpoint.genesys.system.log_level_CCM | N/A |
| sipendpoint.genesys.system.log_level_Conferencing | N/A |
| sipendpoint.genesys.system.log_level_Contacts | N/A |
| sipendpoint.genesys.system.log_level_DNS | N/A |
| sipendpoint.genesys.system.log_level_Endpoint | N/A |
| sipendpoint.genesys.system.log_level_Jitter | N/A |
| sipendpoint.genesys.system.log_level_Licensing | N/A |
| sipendpoint.genesys.system.log_level_Media | N/A |
| sipendpoint.genesys.system.log_level_Privacy | N/A |
| sipendpoint.genesys.system.log_level_RTP | N/A |
| sipendpoint.genesys.system.log_level_Security | N/A |
| sipendpoint.genesys.system.log_level_Storage | N/A |
| sipendpoint.genesys.system.log_level_STUN | N/A |
| sipendpoint.genesys.system.log_level_Transport | N/A |
| sipendpoint.genesys.system.log_level_USB Devices | N/A |
| sipendpoint.genesys.system.log_level_Utilities | N/A |
| sipendpoint.genesys.system.log_level_Voice Quality | N/A |
| sipendpoint.genesys.system.log_level_XMPP | N/A |
| sipendpoint.proxies.proxy0.reregister_in_seconds | sipendpoint.proxies.proxy0.reg_timeout |
| sipendpoint.rtp.2833.enabled | sipendpoint.policy.session.dtmf_method |
| sipendpoint.rtp.2833.hold_over_time_in_ms | N/A |
| sipendpoint.rtp.2833.packet_time_in_ms | N/A |
| sipendpoint.rtp.2833.payload_number | N/A |
| sipendpoint.rtp.inactivity.timer_enabled | sipendpoint.policy.endpoint.rtp_inactivity_timeout |
| sipendpoint.system.diagnostics.enable_logging | sipendpoint.system.diagnostics.enable_logging (Unchanged) |
| sipendpoint.system.diagnostics.log_level | sipendpoint.system.diagnostics.log_level (key unchanged; Warning: value format has been changed) |
| sipendpoint.system.dtmf.force_send_in_band | sipendpoint.policy.session.dtmf_method |
| sipendpoint.system.dtmf.minimum_rfc2833_play_time | N/A |
| sipendpoint.system.indialog_notify.enable_indialognotify | N/A |
| sipendpoint.system.network.dtx_enabled | sipendpoint.policy.session.dtx_mode |

| Interaction Workspace SIP Endpoint 8.0.2 Option Name | Workspace SIP Endpoint 8.5.x Option Name |
|---|---|
| sipendpoint.system.qos.audio | N/A |
| sipendpoint.tuning.mixer.allow_master_volume_change | N/A |

# Provisioning procedures

## 1. Enabling an agent to use the Workspace SIP Endpoint

**Purpose:** To enable an agent to use the Workspace SIP Endpoint to send and receive SIP-based interactions.
**Prerequisites**

- Genesys Administrator 8.0.2 or higher, configured to show Advanced View, or Genesys Administrator Extension.
- A working knowledge of Genesys Administrator Extension.
- A Workspace `Application` object exists in the Configuration Database.

**Start**

1. Allow the SIP Endpoint privileges (see SIP Endpoint Privileges) for the role to which the agent is assigned (refer to the Procedure: Creating a Role and allowing a Workspace privilege and assigning a Role to an agent or agent group).
2. If required, configure the SIP Endpoint options in the `interaction-workspace` section of the Workspace `Application` object (refer to the SIP Endpoint configuration option reference for a list of SIP Endpoint options and a description of how to configure them).
3. If required, configure SIP Endpoint for SIP Proxy support.
4. Set the following `TServer` section options for the DNs of the Place to which the agent is logging in:
   - `sip-cti-control = talk,hold`
   - voice = `true`
5. Install Workspace SIP Endpoint (refer to Procedure: Installing the Workspace SIP Endpoint).

**End**

## 2. Enabling an agent to use the SIP Preview feature

**Purpose:**

To enable an agent to view a display that contains a preview of an inbound SIP interaction.
**Prerequisites**

- Target agents are using an internal or external SIP endpoint.

- Genesys Administrator 8.0.2 or higher, configured to show Advanced View, or Genesys Administrator Extension.
- A working knowledge of Genesys Administrator Extension.
- A Workspace `Application` object exists in the Configuration Database.

**Start**

1. Configure a SIP DN for an agent with the preview feature by setting the value of the `preview-interaction` option to `true` in the `TServer` section of the annex of the DN.
2. To test the configuration, log the agent in to Workspace on the place that contains the DN that you configured in Step 1.
3. Use a SipEndpoint sample application to connect to a different SIP DN.
4. Make a call to a queue (Call to `sip:<QueueNumber>@<SIPServerHost>`) that routes interactions to the agent's Place Group that contains the agent.
5. The SIP Preview Interactive Notification is displayed on the agent's desktop.

**End**

## 3. Enabling an agent to use the SIP Video interactions

**Purpose:**

To enable an agent to receive inbound SIP video interactions.
**Prerequisites**

- Target agents are using Workspace SIP Endpoint 8.5.0.
- Genesys Administrator 8.0.2 or higher, configured to show Advanced View, or Genesys Administrator Extension.
- A working knowledge of Genesys Administrator Extension.
- A Workspace `Application` object exists in the Configuration Database.
- A webcam connected to the agent workstation.

> ### Important
> Workspace SIP Endpoint 8.5.0 supports only the VP8 and `H.264` video codecs.

**Start**

1. Configure the values of the following SIP Server options:
   - `TServer\default-music`: Specify the path to an audio or video file to be played when the video call is on hold. The path is relative to the **MCP** root directory (for example: `video/on_hold.avi`). Video files must be `.AVI` file format with VP8 encoding. The frame rate must be `8000/16000 Hz` for audio. `30 fps` is recommended for video.
   - `TServer\info-pass-through` Specify the value `true`.

2. Configure the values of the Media Control Platform (MCP) 8.1.7+ options:
   - `mcp\codec`: Specify the list of codecs known by MCP and presented to SIP Endpoints. This list must include the vp8 codec to enable video hold, transfer, and conference.
   - `mcp\transcoders`: Specify the list of transcoders used by MCP. This list must include the vp8 codec to enable video hold, transfer, and conference.
   - `conference\video_output_type`: Specify the type of video output for conferences to be `single` (`mixed` mode is not supported).
3. Allow the following SIP Endpoint privilege (see SIP Endpoint Privileges) for the role to which the agent is assigned (refer to the Procedure: Creating a Role and allowing a Workspace privilege and assigning a Role to an agent or agent group).
4. Activate the Workspace video capability by specifying 1 for the sipendpoint.policy.session.auto_accept_video configuration option.
5. For the sipendpoint.video.auto-activate configuration option, specify `true` to automatically connect to the video stream or `false` to require agents to manually connect to the video stream.
6. To control the size of the thumbnail of the local video stream specify a value for the sipendpoint.video.thumbnail-ratio configuration option.
7. For the sipendpoint.video.always-on-top configuration option, specify `true` to display the Video window always on top of all the other windows of the agent workstation or `false` to allow other windows to be on top of the Video window when they are made the active window.
8. If you are using H.264 codec, use the following configuration option to specify additional advanced parameters: sipendpoint.codecs.h264.fmtp

**End**

## High definition video requirements

> ### Important
> If you plan on supporting High Definition (HD) video, please take the following requirements into account.

Due to the complex processing required for High Definition video, all of the endpoints that are involved in a video conversation must run on computers that meet a certain minimum hardware performance level. As the actual CPU performance can no longer be accurately measured in MHz and since video processing performance depends on a wide variety of factors, Genesys recommends that you use the free benchmarking tool NovaBench to assess whether your hardware meets the requirements for successful HD video processing.

For 720p HD video, the **minimum** requirements are (in addition to what the camera manufacturer requires):

- A total NovaBench score of at least 500 (with a Graphic Test sub-score of at least 12), with recommended scores of at least 800 and 20, respectively
- 2 GB RAM
- 1 Mbps upload and download speed (for a total bandwidth of 2 Mpbs)

Workspace SIP Endpoint does not currently support video resolutions higher than 720p.