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SIP Endpoint SDK for .NET

Release Notes 9.0.x

12/19/2024

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SIP Endpoint SDK for .NET 9.0.x Release Note

This Release Note applies to all 9.0.x releases of SIP Endpoint SDK for .NET. Links in the [Available Releases](#) section enable you to access information regarding a specific release.

Available Releases

[+] Note about release order

Releases are listed by version number rather than in date order. For this reason, a recent release may be listed after earlier releases, if the version number is lower. Except when otherwise noted in the information for a specific release, each release includes all of the features and corrections that were introduced for the applicable operating system at earlier dates, regardless of the version numbering.

Release 9.0.1:

| Release | Release Date | Release Type | Restrictions | AIX | Linux | Mac | Solaris | Windows | OS-Indep |
|----------------------------|--------------|--------------|--------------|-----|-------|-----|---------|---------|----------|
| 9.0.103.00 | 12/20/24 | General | | | | | | X | |
| 9.0.102.04 | 09/26/24 | General | | | | | | X | |
| 9.0.101.00 | 06/27/24 | General | | | | | | X | |
| 9.0.100.03 | 03/28/24 | General | | | | | | X | |

Release 9.0.0:

| Release | Release Date | Release Type | Restrictions | AIX | Linux | Solaris | Windows |
|----------------------------|--------------|--------------|--------------|-----|-------|---------|---------|
| 9.0.034.02 | 12/21/23 | General | | | | | X |
| 9.0.033.06 | 10/13/23 | Hot Fix | | | | | X |
| 9.0.033.04 | 09/29/23 | Update | | | | | X |
| 9.0.032.10 | 06/28/23 | General | | | | | X |
| 9.0.031.06 | 03/30/23 | General | | | | | X |
| 9.0.030.01 | 12/22/22 | General | | | | | X |
| 9.0.029.04 | 09/29/22 | General | | | | | X |

| Release | Release Date | Release Type | Restrictions | AIX | Linux | Solaris | Windows |
|------------|--------------|--------------|--------------|-----|-------|---------|---------|
| 9.0.028.07 | 07/01/22 | General | | | | | X |
| 9.0.027.05 | 03/31/22 | General | | | | | X |
| 9.0.026.01 | 12/16/21 | General | | | | | X |
| 9.0.025.03 | 10/29/21 | General | | | | | X |
| 9.0.024.03 | 06/25/21 | General | | | | | X |
| 9.0.023.03 | 04/27/21 | Hot Fix | | | | | X |
| 9.0.023.01 | 03/25/21 | General | | | | | X |
| 9.0.022.06 | 02/17/21 | Hot Fix | | | | | X |
| 9.0.022.05 | 12/17/20 | Update | | | | | X |
| 9.0.021.05 | 09/24/20 | General | | | | | X |
| 9.0.020.02 | 06/25/20 | General | | | | | X |
| 9.0.019.02 | 04/30/20 | General | | | | | X |
| 9.0.018.04 | 02/13/20 | General | | | | | X |
| 9.0.017.05 | 11/08/19 | General | | | | | X |
| 9.0.016.03 | 08/30/19 | General | | | | | X |
| 9.0.015.03 | 06/27/19 | General | | | | | X |
| 9.0.014.04 | 05/03/19 | General | | | | | X |
| 9.0.013.04 | 02/28/19 | General | | | | | X |
| 9.0.012.02 | 12/21/18 | General | | | | | X |
| 9.0.011.06 | 09/26/18 | General | | | | | X |
| 9.0.010.08 | 08/09/18 | Hot Fix | | | | | X |
| 9.0.009.02 | 05/09/18 | General | | | | | X |
| 9.0.008.04 | 03/09/18 | General | | | | | X |
| 9.0.006.10 | 12/15/17 | General | | | | | X |
| 9.0.005.06 | 10/13/17 | General | | | | | X |
| 9.0.004.07 | 08/31/17 | General | | | | | X |
| 9.0.003.05 | 07/07/17 | General | | | | | X |
| 9.0.002.02 | 05/12/17 | General | | | | | X |
| 9.0.001.05 | 03/24/17 | General | | | | | X |

The operating systems available for use with each component release are listed in the table at a high level only. For more detailed information about the supported operating environments, including requirements, supported versions, and any conditions or limitations, see the [SIP Endpoint SDK](#) page in the *Genesys Supported Operating Environment Reference Guide*.

For information about 8.5.x releases of SIP Endpoint SDK for .NET, see the [8.5 Release Note \(Cumulative\)](#).

Discontinued Support

[+] Note about discontinued items

This section documents features that are no longer supported in this software. This cumulative list is in release-number order with the most recently discontinued features at the top of the list. For more information on discontinued support for operating environments and databases, see [Discontinued Support](#) in the *Genesys Supported Operating Environment Reference Guide*.

There are no discontinued items for this product.

Known Issues

You can find a cumulative list of the Known Issues and Recommendations for all 9.0.x releases of SIP Endpoint SDK for .NET, including the issues that are specific to Localized (International) releases, at the following links:

- [Known Issues and Recommendations](#)
- [Internationalization Issues](#)

Related Resources

For additional information about SIP Endpoint SDK for .NET, see the following documentation:

- The documentation related to this software is available from the [product page](#).
- The *SIP Endpoint SDK for .NET Deployment Guide* provides details about installing and configuring SIP Endpoint SDK for .NET.
- The *SIP Endpoint SDK* page in the *Genesys Supported Operating Environment Reference Guide* provides detailed information about the supported operating environments, including requirements, supported versions, and any conditions or limitations for SIP Endpoint SDK for .NET components.

Release Notes for other Genesys components are available [here](#).

Known Issues and Recommendations

SIP Endpoint SDK for .NET

The Known Issues and Recommendations section is a cumulative list for all 9.0.x releases of SIP Endpoint SDK for .NET. This section provides the latest information on known issues and recommendations associated with this product. It includes information on when individual items were found and, if applicable, corrected. The Resolved Issues section for each release describes the corrections and may list additional issues that were corrected without first being documented as Known Issues.

See also [Internationalization Issues](#).

Including the MAC address into the Contact header of outgoing SIP messages (when the **include_mac_address** setting is set to 1) does not work properly when the `policy.endpoint.public_address` setting is set to an explicit IP address, FQDN or special values: `$host` and `$fqdn`.

| | | |
|------------------------|-----------------------------|-----------------------------|
| ID: SEPSDK-2502 | Found In: 9.0.016.03 | Fixed In: 9.0.017.05 |
|------------------------|-----------------------------|-----------------------------|

Using Hold/Retrieve on a call established using the NAT traversal (ICE) feature might fail and result in the call being dropped when the DN performing the operation is configured in CME with **sip-hold-`rfc3264`=false**.

| | | |
|--------------------|-----------------------------|-----------------------------|
| ID: CB-1429 | Found In: 8.5.200.58 | Fixed In: 9.0.001.05 |
|--------------------|-----------------------------|-----------------------------|

Internationalization Issues

Information in this section is included for international customers. Release numbers in the **Found In** and **Fixed In** fields refer to the English (US) release of SIP Endpoint SDK for .NET unless otherwise noted in the issue description.

There are no internationalization issues for this product.

Release 9.0.1

SIP Endpoint SDK for .NET Release Notes

You can find links to Release Notes for particular 9.0.1 releases of SIP Endpoint SDK for .NET, if available, in the tree menu on the left or in the list of [Available Releases](#).

9.0.102.04

SIP Endpoint SDK for .NET Release Notes

9.x

| Release Date | Release Type | Restrictions | AIX | Linux | Mac | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|-----|---------|---------|
| 09/26/24 | General | | | | | | X |

What's New

This release includes only resolved issues.

Resolved Issues

This release contains the following resolved issues:

For better interoperability with other components, SIP Endpoint SDK now uses uppercase codec names VP8 and VP9 in the SDP. Previous versions used lowercase codec names such as vp8 and vp9, which was not a bug since the standard defines codec name in SDP to be case-insensitive, but was found to cause problems with some endpoints. (SEPSDK-3070)

Helpful Links

Releases Info

- [List of 9.0.x Releases](#)
- [9.0.x Known Issues](#)

Product Documentation

- [SIP Endpoint SDK for .NET](#)

Genesys Products

- [List of Release Notes](#)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.102.04.

9.0.101.00

SIP Endpoint SDK for .NET Release Notes

9.x

| Release Date | Release Type | Restrictions | AIX | Linux | Mac | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|-----|---------|---------|
| 06/27/24 | General | | | | | | X |

What's New

This release contains the following new features and enhancements:

- Minor improvements have been made for improved stability.

Resolved Issues

This release contains no resolved issues.

Upgrade Notes

No special procedure is required to upgrade to release 9.0.101.00.

Helpful Links

Releases Info

- [List of 9.0.x Releases](#)
- [9.0.x Known Issues](#)

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9.0.100.03

SIP Endpoint SDK for .NET Release Notes

9.x

| Release Date | Release Type | Restrictions | AIX | Linux | Mac | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|-----|---------|---------|
| 03/28/24 | General | | | | | | X |

What's New

This release contains the following new features and enhancements:

- Starting from this release, SIP Endpoint SDK is now built using Visual Studio C++ 2019 as the Visual Studio C++ 2013 compiler has reached end of life and Microsoft no longer supports VC++ Redistributable 2013. Using SDK now requires installation of the [latest VC++ redistributable](#). (SEPSDK-3017)
- SIP Endpoint SDK is now only available as a 64-bit build and the 32-bit SDK is deprecated and no longer available. (SEPSDK-3017)

Helpful Links

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- [List of 9.0.x Releases](#)
- [9.0.x Known Issues](#)

Product Documentation

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Resolved Issues

This release contains the following resolved issues:

TLSv1.3 is now supported in SDK-based applications running on Windows 11 and Windows Server 2022. (SEPSDK-3041)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.100.03.

Release 9.0.0

SIP Endpoint SDK for .NET Release Notes

You can find links to Release Notes for particular 9.0.0 releases of SIP Endpoint SDK for .NET, if available, in the tree menu on the left or in the list of [Available Releases](#).

9.0.034.02

SIP Endpoint SDK for .NET Release Notes

9.x

| Release Date | Release Type | Restrictions | AIX | Linux | Mac | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|-----|---------|---------|
| 12/21/23 | General | | | | | | X |

What's New

This release includes only resolved issues.

Resolved Issues

This release contains the following resolved issues:

Opening SIP port is improved to stop trying all SIP ports in the configured range, in case when network is not reachable. Previously, SIP Endpoint SDK might block the main thread for very long time in such cases, causing the application to become unresponsive. (SEPSDK-3033)

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Upgrade Notes

No special procedure is required to upgrade to release 9.0.034.02.

9.0.033.06

SIP Endpoint SDK for .NET Release Notes

9.x

| Release Date | Release Type | Restrictions | AIX | Linux | Mac | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|-----|---------|---------|
| 10/13/23 | Hot Fix | | | | | | X |

What's New

This release includes only resolved issues.

Resolved Issues

This release contains the following resolved issues:

The handling of local IP address changes has been improved to ensure that the old and no longer valid IP address is never sent in the Contact header of REGISTER requests. Previously, it was possible for a REGISTER request with an old IP address to be incorrectly retransmitted if the IP change happened when a SIP transaction was in progress. (SEPSDK-3019)

SIP Endpoint SDK no longer has issues when SRV resolution is used for SIP server location and the SIP port cannot be opened (because of port unavailability or misconfiguration). (SEPSDK-3013)

Helpful Links

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- [List of 9.0.x Releases](#)
- [9.0.x Known Issues](#)

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Upgrade Notes

No special procedure is required to upgrade to release 9.0.033.06.

9.0.033.04

SIP Endpoint SDK for .NET Release Notes

9.x

| Release Date | Release Type | Restrictions | AIX | Linux | Mac | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|-----|---------|---------|
| 09/29/23 | Update | | | | | | X |

What's New

This release contains the following new features and enhancements:

- A new configuration setting, [policy.session.ringing_while_call_held](#) is added to optionally suppress the ringtone when another call is held. (SEPSDK-2996)

Resolved Issues

This release contains the following resolved issues:

For better interoperability with other components, SIP Endpoint SDK now uses uppercase "H264" in the SDP for H.264 video codec. Previous versions used the lowercase "h264" (which was not a bug since the standard defines the codec name in SDP to be case-insensitive), but was found to cause problems with some endpoints. (SEPSDK-3005)

SIP Endpoint SDK now allows configuring multiple profiles for H.264 video codec, by using #n suffix

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added to the codec/section name for additional parameter sets, for example:

```
<domain name="codecs">
  <section name="enabled">
    <setting name="audio" value="pcmu,pcma,g729"/>
    <setting name="video" value="h264,h264#2"/>
  </section>
  <section name="h264">
    <setting name="payload_type" value="108"/>
    <setting name="fmt" value="profile-level-id=420028"/>
  </section>
  <section name="h264#2">
    <setting name="payload_type" value="114"/>
    <setting name="fmt" value="profile-level-id=42e01e"/>
  </section>
</domain>
```

All configured 'fmt' values will be added (with corresponding payload type) to the offer SDP sent by SIP Endpoint SDK. Incoming video offer with multiple H.264 profiles is always accepted if offered parameters can be supported, even when they are not explicitly listed in the configuration. (SEPSDK-3004)

Processing of TLS exceptions for SIP connections is improved to ensure the previous SIP dialog is properly deleted. In previous versions, earlier dialogs might remain active and re-submit the registration renewal later potentially with wrong contact info. (SEPSDK-3003)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.033.04.

9.0.032.10

SIP Endpoint SDK for .NET Release Notes

9.x

| Release Date | Release Type | Restrictions | AIX | Linux | Mac | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|-----|---------|---------|
| 06/28/23 | General | | | | | | X |

What's New

This release contains the following new features and enhancements:

- SIP Endpoint SDK now supports 4-channel microphone array with the default Windows Core Audio system. Previously, such devices could only be used with legacy Wave Audio (which truncated device names for all audio devices in the system) (SEPSDK-2983)
- The `GetAudioStatistics` method now returns Voice Activity Detection (VAD) statistics in addition to all previously returned values, including the following:
 - *Active 10ms In* and *Active 10ms Out* - The number of 10-msec audio frames in the incoming and outgoing stream, for which voice activity was detected
 - "Last VAD In" and "Last VAD Out" - The timestamp of the last incoming and outgoing audio frame with voice activity detected, in number of milliseconds elapsed since 00:00:00 UTC on 1 January 1970 (the Unix epoch).
(SEPSDK-2980)

Helpful Links

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- [List of 9.0.x Releases](#)
- [9.0.x Known Issues](#)

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Resolved Issues

This release contains no resolved issues.

Upgrade Notes

No special procedure is required to upgrade to release 9.0.032.10.

9.0.031.06

SIP Endpoint SDK for .NET Release Notes

9.x

| Release Date | Release Type | Restrictions | AIX | Linux | Mac | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|-----|---------|---------|
| 03/30/23 | General | | | | | | X |

What's New

This release includes only resolved issues.

Resolved Issues

This release contains the following resolved issues:

Processing re-INVITEs for video call is improved to properly restart video stream when codec parameters are changed in the new offer SDP. In previous versions, outgoing video stream might be stopped and not restarted in this case. (SEPSDK-2960)

Processing of SRTP errors in SIP Endpoint SDK has been fixed to recreate the SRTP context in the following cases:

- call duration is long enough for RTP sequential number to roll over to zero
- SSRC in the incoming RTP stream changes multiple times after re-INVITE

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In previous versions, SIP Endpoint SDK reported SRTP-error(13) and discarded the undecoded packets causing call drops by inactivity timeout (SEPSDK-2947)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.031.06.

9.0.030.01

SIP Endpoint SDK for .NET Release Notes

9.x

| Release Date | Release Type | Restrictions | AIX | Linux | Mac | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|-----|---------|---------|
| 12/22/22 | General | | | | | | X |

What's New

This release contains the following new features and enhancements:

- Handling of TCP exceptions for TLS transport for SIP is improved. Now SIP Endpoint SDK tries reconnecting to the same SIP proxy immediately after getting an exception. In previous versions, the TCP exceptions were ignored, and the SDK would switch over to the next configured SIP proxy after an SIP transaction timeout. (SEPSDK-2940)

Helpful Links

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- [List of 9.0.x Releases](#)
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Resolved Issues

This release contains the following resolved issues:

SIP Endpoint SDK now adds `rtcp-fb` SDP attribute to video offers more consistently. In previous versions, this attribute was included in the initial INVITE but not in re-INVITE sent for the **Add video** feature. (SEPSDK-2949)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.030.01.

9.0.029.04

SIP Endpoint SDK for .NET Release Notes

9.x

| Release Date | Release Type | Restrictions | AIX | Linux | Mac | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|-----|---------|---------|
| 09/29/22 | General | | | | | | X |

What's New

This release includes only resolved issues.

Resolved Issues

This release contains the following resolved issues:

The performance of the H.264 video codec has been improved significantly reducing the CPU utilization on video calls with that codec. (SEPSDK-2903)

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Releases Info

- [List of 9.0.x Releases](#)
- [9.0.x Known Issues](#)

Product Documentation

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Upgrade Notes

No special procedure is required to upgrade to release 9.0.029.04.

9.0.028.07

SIP Endpoint SDK for .NET Release Notes

9.x

| Release Date | Release Type | Restrictions | AIX | Linux | Mac | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|-----|---------|---------|
| 07/01/22 | General | | | | | | X |

What's New

This release contains the following new features and enhancements:

- A new option, `include_headset`, has been added to improve auto headset selection. (SEPSDK-2875)

Resolved Issues

This release contains no resolved issues.

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- [List of 9.0.x Releases](#)
- [9.0.x Known Issues](#)

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Upgrade Notes

No special procedure is required to upgrade to release 9.0.028.07.

9.0.027.05

SIP Endpoint SDK for .NET Release Notes

9.x

| Release Date | Release Type | Restrictions | AIX | Linux | Mac | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|-----|---------|---------|
| 03/31/22 | General | | | | | | X |

What's New

This release includes only resolved issues.

Resolved Issues

This release contains the following resolved issues:

DNS resolution for SRV records now uses Windows standard DNS resolver instead of sending a request to DNS server. As a result, SIP Endpoint SDK now properly reacts to DNS config changes and also supports Windows-specific features, such as Name Resolution Policy Table (NRPT). In previous releases, changes caused by a VPN start were not picked up and required an application restart for the changes to take effect. (SEPSDK-2858)

The `on_wm_devicechange` method (currently deprecated) is updated to process events accurately. In previous releases, this method stopped responding when receiving some unexpected Windows events. (SEPSDK-2856)

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Interactive Connectivity Establishment (ICE) support is improved to include the default destination of the media stream (specified in c-line and m-line of the SDP) into the list of ICE candidates as required by RFC 5245. (SEPSDK-2850)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.027.05.

9.0.026.01

SIP Endpoint SDK for .NET Release Notes

9.x

| Release Date | Release Type | Restrictions | AIX | Linux | Mac | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|-----|---------|---------|
| 12/16/21 | General | | | | | | X |

What's New

This release contains the following new features and enhancements:

- SIP Endpoint SDK now plays local feedback when sending DTMF using the INFO method. The feedback can be silenced by using the new configuration setting, `policy.session.dtmf_feedback` to zero (also applicable to other DTMF methods). (SEPSDK-2826)
- A new setting `policy.device.exclude_headset` is added to exclude matching devices from being considered a valid headset. This setting prevents built-in audio to be recognized as a headset or excludes specific headsets from being automatically selected. (SEPSDK-2822)

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Resolved Issues

This release contains the following resolved issues:

The length of the `ice-pwd` attribute in Session Description Protocol (SDP) has been increased to

comply with RFC 5245. (SEPSDK-2834)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.026.01.

9.0.025.03

SIP Endpoint SDK for .NET Release Notes

9.x

| Release Date | Release Type | Restrictions | AIX | Linux | Mac | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|-----|---------|---------|
| 10/29/21 | General | | | | | | X |

What's New

This release contains the following new features and enhancements:

- A new optional parameter is added to **codecs.enabled.video** setting to control the generation of Remote Estimate Maximum Bitrate (REMB) data for VP8 and VP9 video codecs: remb=N where N is one of the following values:
 - 0 - To disable REMB generation and congestion detection (default for VP9 codec)
 - 1 - To enable regular REMB and congestion detection (default for VP8 codec)
 - 2 - To enable fast-recovery mode, update the generated REMB values to the average of the locally calculated value and the value received from the far end of video call
(SEPSDK-2766)

Resolved Issues

This release contains the following resolved issues:

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SIP Endpoint SDK now correctly initializes the Windows Core Audio system when non-supported microphone devices (for example, 4-channel microphone array) are present in the system. Earlier, SDK fell back to the legacy Wave Audio, even if the device in question was not actually used, resulting in truncated device names for all audio devices in the system. (SEPSDK-2793)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.025.03.

9.0.024.03

SIP Endpoint SDK for .NET Release Notes

9.x

| Release Date | Release Type | Restrictions | AIX | Linux | Mac | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|-----|---------|---------|
| 06/25/21 | General | | | | | | X |

What's New

This release contains the following new features and enhancements:

- The handling of codec changes on an active call (triggered by re-INVITE from remote side) is improved:
 - Changing the G.279 annexb parameter no longer restarts the audio stream and the modified value is applied to the existing stream.
 - Non-compatible codec changes now force the SSRC reset correctly and resolves the 20 second delay when communication with the Microsoft RTC stack.

(SEPSDK-2767)

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Resolved Issues

This release contains the following resolved issues:

SIP Endpoint SDK now increments the SDP version in the new offer correctly. Previously, when a bare re-INVITE was received on a call with SRTP enabled and the remote side responded with the same Answer SDP to the Endpoint's new offer, the new SRTP key would not be properly applied, resulting in one-way audio. (SEPSDK-2775)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.024.03.

9.0.023.03

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| Release Date | Release Type | Restrictions | AIX | Linux | Mac | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|-----|---------|---------|
| 04/27/21 | Hot Fix | | | | | | X |

What's New

This release includes only resolved issues.

Resolved Issues

This release contains the following resolved issues:

SIP Endpoint now plays local DTMF feedback tones correctly for calls established using Opus codecs. When a stereo output device is used for playback, the feedback tones are played only on the left channel, to differentiate them from an incoming audio stream. (SEPSDK-2753)

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Upgrade Notes

No special procedure is required to upgrade to release 9.0.023.03.

9.0.023.01

9.x

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|--------------|--------------|--------------|-----|-------|-----|---------|---------|
| 03/25/21 | General | | | | | | X |

What's New

This release includes only resolved issues.

Resolved Issues

This release contains the following resolved issues:

To improve recovery time for videos over bad networks with high packet losses, SIP Endpoint SDK now sends the Picture Lost Indication (PLI) feedback message when a packet loss is detected and the other party in the video call does not send enough keyframes. SIP Endpoint SDK sends keyframes every 3 seconds; other video endpoints may use a different interval for sending keyframes. (SEPSDK-2742)

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Upgrade Notes

No special procedure is required to upgrade to release 9.0.023.01.

9.0.022.06

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|--------------|--------------|--------------|-----|-------|-----|---------|---------|
| 02/17/21 | Hot Fix | | | | | | X |

What's New

This release includes only resolved issues.

Resolved Issues

This release contains the following resolved issues:

A new optional parameter, **maxpkt** is added to the **codecs.enabled.video** option to specify the maximum RTP packet size for video codecs (including the RTP header but not counting the UDP and IP overheads).

```
<domain name="codecs">  
  <section name="enabled">  
    <setting name="video" value="vp8,maxpkt=1342"/>  
  </section>  
</domain>
```

The valid values for this parameter are integers from 1024 to 1472, and the default value is 1442. (Any number outside the valid range would be adjusted to the closest allowable value.) (SEPSDK-2724)

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Upgrade Notes

No special procedure is required to upgrade to release 9.0.022.06.

9.0.022.05

9.x

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|--------------|--------------|--------------|-----|-------|---------|---------|
| 12/17/20 | Update | | | | | X |

What's New

This release contains the following new features and enhancements:

- If `req_interval` is configured as a non-zero value and if there is a DNS failure in resolving the SIP Server name on startup, SIP Endpoint SDK now retries registration attempts. Earlier, the connection was marked as *failed* and required the user to re-register the connection. (SEPSDK-2717)
- SIP Endpoint now includes an `a=ptime` parameter for outgoing SDP, when configured with a `ptime` key-value pair in `codecs.enabled.audio` setting, for example:

```
<domain name="codecs">
  <section name="enabled">
    <setting name="audio" value="g729,pcmu,ptime=40"/>
  </section>
</domain>
```

The valid values for this parameter depending on enabled codecs are:

- `ptime=20` (default) and `ptime=40` are allowed for all currently supported audio codecs
- `ptime=60` is allowed for G.711, G.722, G.729 and Opus (but not for iLBC and iSAC)

If specified, SIP Endpoint would add the `a='ptime'` parameter to both Offer SDP (always with configured value) and Answer SDP (with negotiated value, which may be different based on the remote Offer SDP).

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Important

As in previous releases, the size of outgoing RTP packets depends only on the `ptime` value in the remote SDP (The endpoint must send packets that the other side is willing to accept).

(SEPSDK-2709)

Resolved Issues

This release contains the following resolved issues:

SDP processing no longer makes the endpoint unstable after adding or removing video on an active call repeatedly. (SEPSDK-2719)

SIP Endpoint SDK now correctly ignores the media section with port 0 (indicating a rejected stream) in the incoming SDP. Earlier, the media attributes were applied incorrectly resulting in an incorrect processing of the SDP offer. (SEPSDK-2700)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.022.05.

9.0.021.05

9.x

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|--------------|--------------|--------------|-----|-------|---------|---------|
| 09/24/20 | General | | | | | X |

What's New

This release contains the following new features and enhancements:

- SIP Endpoint SDK recovery from audio device failures, has been improved by adding additional attempts to restart audio stream in case of errors. (SEPSDK-2676)

Resolved Issues

This release contains the following resolved issues:

Handling of TCP client-side ports for TCP and TLS connections has been improved. If the first selected port is not available (for example, because of a TIME_WAIT state caused by a recently closed port), then the other ports in the range are tried for connecting. (SEPSDK-2684)

SIP Endpoint SDK now correctly handles G.729 codec with packet size of 60 milliseconds (SDP parameterptime=60). Previously, such packets were processed incorrectly, only taking first 40 milliseconds of audio, resulting in poor audio quality. (SEPSDK-2683)

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Upgrade Notes

No special procedure is required to upgrade to release 9.0.021.05.

9.0.020.02

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| Release Date | Release Type | Restrictions | AIX | Linux | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|---------|---------|
| 06/25/20 | General | | | | | X |

What's New

This release includes only resolved issues.

Resolved Issues

This release contains the following resolved issues:

SIP Endpoint SDK now correctly accepts the *best-effort SRTP* offer (RFC 5939) when configured with `system.security.use_srtp = "force"`. (SEPSDK-2653)

The maximum size of the RTP packet for VP8 codec is reduced and now will not exceed 1442 bytes. This allows the packet to fit into a standard Ethernet frame even after SRTP and IPv6 headers are added by SBC. (SEPSDK-2606)

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Upgrade Notes

No special procedure is required to upgrade to release 9.0.020.02.

9.0.019.02

9.x

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| Release Date | Release Type | Restrictions | AIX | Linux | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|---------|---------|
| 04/30/20 | General | | | | | X |

What's New

This release contains the following new features and enhancements:

- The DNS resolution for A-records is improved to keep the cache of resolved addresses. This prevents the application from being blocked when the system DNS resolver is slow to resolve addresses (because of a temporary DNS server failure or other reasons). (SEPSDK-2607)
- SIP Endpoint SDK now stops playing the ring tone for incoming calls immediately on receiving the request to answer, instead of waiting for the SIP transaction to complete (which might be delayed for a few seconds). (SEPSDK-2598)
- SIP Endpoint SDK for .NET now correctly handles device names that contain non-ASCII characters. In earlier releases, devices with non-ASCII characters, like Korean characters, in their names were displayed incorrectly. (SEPSDK-2622)

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Resolved Issues

This release contains no resolved issues.

Upgrade Notes

No special procedure is required to upgrade to release 9.0.019.02.

9.0.018.04

9.x

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| Release Date | Release Type | Restrictions | AIX | Linux | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|---------|---------|
| 02/13/20 | General | | | | | X |

What's New

This release includes only resolved issues.

Resolved Issues

This release contains the following resolved issues:

In Business Continuity environments, when the active SIP Server HA Pair goes down, SIP Endpoint SDK now correctly closes the RTP stream of calls still in progress on the active site before switching to the recovery SIP Server HA Pair. Previously, when agents confirmed that they were ready to clear pending calls, the RTP stream sometimes remained open. (SEPSDK-2560)

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Upgrade Notes

No special procedure is required to upgrade to release 9.0.018.04.

9.0.017.05

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|--------------|--------------|--------------|-----|-------|---------|---------|
| 11/08/19 | General | | | | | X |

What's New

This release contains the following new features and enhancements:

- With TLS connections to a SIP registrar, SIP Endpoint SDK tries to reconnect immediately after the connection fails without waiting for the registration to expire. This improves the reaction time to a SIP Server or Proxy failure. Genesys recommends using small `reg_expire` values when using external connections as the client-side of the SIP registrar failure. (SEPSDK-2528)
- DNS resolution of SRV records has been improved to ensure SIP Endpoint maps to one datacenter (SRV target) until all nodes in that DC fails. (SEPSDK-2311)

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Resolved Issues

This release contains the following resolved issues:

SIP Endpoint now properly publishes Voice Quality reports, when configured to do so, and no RTCP packets are received from remote side or call was dropped because of inactivity timeout. In previous versions both these conditions incorrectly blocked VQ reports. (SEPSDK-2521, SEPSDK-2498)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.016.03.

9.0.016.03

9.x

SIP Endpoint SDK for .NET Release Notes

| Release Date | Release Type | Restrictions | AIX | Linux | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|---------|---------|
| 08/30/19 | General | | | | | X |

What's New

This release contains the following new features and enhancements:

- Dynamic reconfiguration of SIP Endpoint SDK has been improved and no longer requires a full SDK restart for most settings, refer to [Support for Dynamic Reconfiguration](#) supplementary documentation page for details. (SEPSDK-2491)
- SIP Endpoint SDK can be now configured to play the ringtone once for the full duration to ensure that the agent always has an audio notification for incoming calls in auto-answer scenarios. (SEPSDK-2484)

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Resolved Issues

This release contains the following resolved issues:

Support for Secure RTP has been improved and no longer stops processing incoming audio when receiving a re-INVITE with a new SDP offer containing an old cryptographic key, if that happens 30 minutes after the call was started. (SEPSDK-2490)

SIP Endpoint SDK no longer shuts down unexpectedly after a restart when the ringtone playback stops 480 milliseconds before that. (SEPSDK-2487)

SIP Endpoint SDK now properly accounts for Packet Loss Concealment when calculating the voice quality MOS metric for G.711 and wide-band codecs. (SEPSDK-2465)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.016.03.

9.0.015.03

9.x

SIP Endpoint SDK for .NET Release Notes

| Release Date | Release Type | Restrictions | AIX | Linux | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|---------|---------|
| 06/27/19 | General | | | | | X |

What's New

This release contains the following new features and enhancements:

- SIP Endpoint SDK now provides 64-bit libraries for building 64-bit applications for Windows 10. (SEPSDK-2397)

Resolved Issues

This release contains the following resolved issues:

SIP Endpoint SDK now changes the SSRC(Synchronization sources) value of the outgoing RTP stream after Hold/Retrieve operations to improve interoperability with other SIP clients (like Microsoft Skype for Business). (SEPSDK-2448)

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Upgrade Notes

No special procedure is required to upgrade to release 9.0.015.03.

9.0.014.04

9.x

SIP Endpoint SDK for .NET Release Notes

| Release Date | Release Type | Restrictions | AIX | Linux | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|---------|---------|
| 05/03/19 | General | | | | | X |

What's New

This release includes only resolved issues.

Resolved Issues

This release contains the following resolved issues:

SIP Endpoint SDK no longer updates the IP address in the Contact header of the REGISTER message based on the **received** parameter, in case when the **public_address** option is configured with specific network interface name or when the **sip_port_binding** option is set to *1*. (SEPSDK-2396)

Video calls using H.264 codec do not fail anymore when the RTP payload type 100 is configured for that codec. In previous versions, this number could only be used for VP8 codec. (SEPSDK-2375)

A new setting, **policy.endpoint.defer_device_release** is added to control the delay period for releasing audio devices after the audio stream is stopped. (SEPSDK-2361)

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Upgrade Notes

No special procedure is required to upgrade to release 9.0.014.04.

9.0.013.04

9.x

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|--------------|--------------|--------------|-----|-------|---------|---------|
| 02/28/19 | General | | | | | X |

What's New

This release includes only resolved issues.

Resolved Issues

This release contains the following resolved issues:

Audio device support is improved to avoid a full device restart during the call by delaying the device release for a short interval. This eliminates potential service delays when stopping or restarting the audio device takes longer than usual. (SEPSDK-2358)

Memory handling issues that resulted in a corrupted User-Agent header are fixed. (SEPSDK-2330)

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Upgrade Notes

No special procedure is required to upgrade to release 9.0.013.04.

9.0.012.02

9.x

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|--------------|--------------|--------------|-----|-------|---------|---------|
| 12/21/18 | General | | | | | X |

What's New

This release contains the following new features and enhancements:

- For security reasons, TURN credentials are removed from the configuration file. The recommended way to specify these values is from the application, but if that is not possible, then the environment variables, GCTI_TURN_USERNAME and GCTI_TURN_PASSWORD may be used as a more secure alternative to a plain-text file. (SEPSDK-2295)

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Resolved Issues

This release contains the following resolved issues:

SIP Endpoint SDK now properly maintains sticky registration sessions with one data center, when DNS resolution for SRV contact is significantly delayed. (SEPSDK-2303)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.012.02.

9.0.011.06

9.x

SIP Endpoint SDK for .NET Release Notes

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|--------------|--------------|--------------|-----|-------|---------|---------|
| 09/26/18 | General | | | | | X |

What's New

This release contains the following new features and enhancements:

- SIP Endpoint SDK now supports changing the ringer volume without changing the device volume.

Resolved Issues

This release contains the following resolved issues:

A new value of 4 has been added to the **sipendpoint.policy.session.ringback_enabled** option to play ring-back from Media Gateway even if the provisional response with SDP is not reliable. (SEPSDK-2201)

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Upgrade Notes

No special procedure is required to upgrade to release 9.0.011.06.

9.0.010.08

SIP Endpoint SDK for .NET Release Notes

| Release Date | Release Type | Restrictions | AIX | Linux | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|---------|---------|
| 08/09/18 | Hot Fix | | | | | X |

What's New

This release includes only resolved issues.

Resolved Issues

This release contains the following resolved issues:

TLS transport now works correctly when the SIP Server location is specified with the URL resolved using the SRV record. (SEPSDK-2184)

SIP Endpoint SDK now generates new SSRC and SRTP keys when the audio codec is changed to fix a potential loss of audio during the call using SRTP. This occurs when the call is connected through SBC or the media gateway. (SEPSDK-2121)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.010.08.

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9.0.009.02

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|--------------|--------------|--------------|-----|-------|---------|---------|
| 05/09/18 | General | | | | | X |

What's New

This release contains the following new features and enhancements:

- SIP Endpoint SDK now supports UNENCRYPTED_SRTP parameter per RFC 4568, and also understands "best-effort SRTP" (optional SRTP offer) per RFC 5939, accepting or rejecting SRTP based on the configured security policy.
- Audio statistics provided by SIP Endpoint SDK are enhanced with additional audio decoding stats, including the number of frames decoded normally, affected by Packet Loss Concealment (PLC) or Comfort Noise Generator (CNG), or with complete silence. In addition, Voice Quality alarm is raised when no RTP packets are received for a long period.

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Resolved Issues

This release contains the following resolved issues.

- The `public_address` setting now supports using subnet addresses for networks.
 - `$net:subnet` (where `subnet` is a full CIDR name per RFC 4632, for example, "`$net:192.168.0.0/16`")
 - The SDK selects the first valid IP address that belongs to specified subnet.
 - In addition, to support dynamic VPN connection, SIP Endpoint SDK does not start registration attempts until the interface (configured by adapter name or subnet) is available.
- SIP Endpoint SDK now supports receiving-side (Rx) Automatic Gain Control.

Upgrade Notes

No special procedure is required to upgrade to release 9.0.009.02.

9.0.008.04

SIP Endpoint SDK for .NET Release Notes

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|--------------|--------------|--------------|-----|-------|---------|---------|
| 03/09/18 | General | | | | | X |

What's New

This release contains the following new features and enhancements:

- SIP Endpoint SDK now provides an API for getting SIP messages, SDP content, and negotiated codec name for the currently active session.
- SIP Endpoint SDK now provides access to incoming and outgoing audio streams for the host application.

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Resolved Issues

This release contains the following resolved issues:

Disaster recovery in SIP Endpoint SDK has been improved to switch to another registrar for the following scenarios involving SBC:

- SIP registration times out,
- Any of the 408/480/486/500/503/504 error codes are returned from SBC indicating a temporary failure. (SEPSDK-1960)

SIP Endpoint SDK now switches from rfc2833 to InbandRTP DTMF method automatically when an RTP payload for telephone-event was not negotiated for a particular call. (SEPSDK-1956)

SIP Endpoint SDK now sends DTMF using rfc2833 method when the RTP payload for telephone-event was changed by re-INVITE during the call. (SEPSDK-1954)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.008.04.

9.0.006.10

SIP Endpoint SDK for .NET Release Notes

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|--------------|--------------|--------------|-----|-------|---------|---------|
| 12/15/17 | General | | | | | X |

What's New

This release contains the following new features and enhancements:

- Resilience to network events, such as IP address changes caused by PC Sleep/Wake, has been further enhanced, to ignore the configured `reg_interval` value when re-registering the DN with a new IP address.
- Improved detection and handling of cases when an existing device is removed/unplugged and/or a new device is added/plugged-in.
- The following options have been added to SIP Endpoint SDK:
 - Updated the `audio_in_device`, `audio_out_device`, `capture_device`, `ringer_device`, and `headset_name` options to support regex matching for device selection.
 - New options, `audio` and `video` to specify codec priorities.
- For improved security, the local IP address is no longer included in the Call-ID header of SIP messages sent by the SIP Endpoint.

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Resolved Issues

This release contains the following resolved issue:

DNS SRV resolution has been improved to ignore temporary DNS failures. Previously, such failures resulted in SIP Endpoint failing to renew registration in time and causing the agent to be logged out.

(SEPSDK-1873)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.006.10.

9.0.005.06

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|--------------|--------------|--------------|-----|-------|---------|---------|
| 10/13/17 | General | | | | | X |

What's New

This release contains the following new features and enhancements:

- SIP Endpoint SDK now calculates MOS during the call duration to estimate current voice quality, and can generate an alarm when the MOS falls below the configured threshold, which notifies the user about this condition.
- SIP Endpoint SDK now supports additional optimization for the Opus codec.

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Resolved Issues

This release contains the following resolved issues:

Changes to the headset connectivity status are now updated correctly in the `HeadsetStatusChanged` event and the `isHeadsetAvailable` property of the **IExtendedService** interface. Previously, in some scenarios, the changes were not notified correctly. (SEPSDK-1763)

Incoming zero-length UDP packets are now processed correctly. Previously, the SDK crashed or printed erroneous values when processing zero-length UDP packets. (SEPSDK-1758)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.005.06.

9.0.004.07

SIP Endpoint SDK for .NET Release Notes

| Release Date | Release Type | Restrictions | AIX | Linux | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|---------|---------|
| 08/31/17 | General | | | | | X |

What's New

This release contains the following new features and enhancements:

- SIP Endpoint SDK for .NET no longer requires Microsoft Visual C++ 2005 Service Pack 1 Redistributable Package.
- A new log filter was added to hide DTMF data from logs.
- Outgoing calls now support ringback tones.

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Resolved Issues

This release contains the following resolved issues:

SIP Endpoint now handles transfers to the recorder correctly when an ACK message to the initial INVITE is lost. Previously, the SDP value received in a re-transmitted ACK message was applied incorrectly. As a result, the media stream was diverted to the old location (bypassing the recorder) (SEPSDK-1703)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.004.07.

9.0.003.05

SIP Endpoint SDK for .NET Release Notes

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|--------------|--------------|--------------|-----|-------|---------|---------|
| 07/07/17 | General | | | | | X |

What's New

This release contains the following new features and enhancements:

- Resilience to network events, such as IP address changes caused by PC Sleep/Wake, VPN Connect/Disconnect and so on, has been enhanced.
- SIP message headers now include the MAC address of the host.
- TCP port ranges can be specified for client-originated connections.

Helpful Links

Releases Info

- [List of 9.0.x Releases](#)
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Product Documentation

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Resolved Issues

This release contains no resolved issues.

Upgrade Notes

No special procedure is required to upgrade to release 9.0.003.05.

9.0.002.02

SIP Endpoint SDK for .NET Release Notes

| Release Date | Release Type | Restrictions | AIX | Linux | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|---------|---------|
| 05/12/17 | General | | | | | X |

What's New

This release contains the following new features and enhancements:

- SIP Endpoint SDK now supports DNS SRV resolution for the URI specified in the **server** parameter of the **Connectivity** tag. You do not need additional configuration to enable this feature, but as described in RFC 3263, you should not include the port number in the server URI.

Resolved Issues

This release contains the following resolved issues:

Fixed an issue with Secure RTP which occasionally made the endpoint crash when receiving a re-INVITE message for a call using SRTP. (SEPSDK-1560)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.002.02.

Helpful Links

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9.0.001.05

SIP Endpoint SDK for .NET Release Notes

| Release Date | Release Type | Restrictions | AIX | Linux | Solaris | Windows |
|--------------|--------------|--------------|-----|-------|---------|---------|
| 03/24/17 | General | | | | | X |

What's New

This release contains the following new features and enhancements:

- SIP Endpoint SDK for .NET now uses the PJNATH library for improved ICE, STUN, and TURN support.
- Updated settings for the **security Section**. These settings now match the naming convention of the Genesys Security Guide. For backwards compatibility, the SDK also accepts previous setting names. Note that the SDK no longer uses the **tls_enabled** setting.

Previous settings:

```
<section name="security">
  <setting name="cert_file"
value="ValueOfCertificateThumbprint"/>
  <setting name="tls_enabled" value="0"/>
  <setting name="use_srtp" value="disabled"/>
</section>
```

Updated settings:

```
<section name="security">
  <setting name="certificate" value=""/>
  <setting name="tls-target-name-check" value="host"/>
  <setting name="use_srtp" value="allowed"/>
</section>
```

Resolved Issues

This release contains the following resolved issues:

Fixed an issue affecting 3pcc MakeCall operations with NAT traversal (ICE) and authentication

Helpful Links

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both enabled and **refer-enabled** set to true on the originating DN. (SEPSDK-1546)

SIP Endpoint SDK now automatically places an active call on hold when receiving a SIP request to answer or retrieve another call (NOTIFY with "talk" event). Previously, auto-hold worked for 1pcc operations but not for 3pcc. (SEPSDK-1483)

Fixed how the SDK handles a failure to connect to a TURN server with NAT traversal (ICE) for cases where the **turn_server** setting resolves to a valid host, but the host does not have a TURN server running at the specified port. (SEPSDK-1459)

Fixed an issue with 3pcc MakeCall in cases with NAT traversal (ICE) where the originating DN uses make-call-rtc3725-flow=1, refer-enabled=false, and the destination does not immediately answer the call. (SEPSDK-1441)

Fixed an issue where a Hold/Retrieve on a call established using NAT traversal (ICE) could result in the call dropping in cases where the DN performing the operation is configured with sip-hold-rtc3264=false. (SEPSDK-1429)

The Complete Transfer with NAT Traversal (ICE) feature now works correctly when the **sip-replaces-mode** options is set to 1 or 2 on a transferred party DN or on the application level. (SEPSDK-754)

Fixed an issue with turn_relay_type = 0 (UDP), which worked unreliably in previous versions. (SEPSDK-753)

Upgrade Notes

No special procedure is required to upgrade to release 9.0.001.05.