

Secure Voicemail Transcription with Cisco Unity Connection





This solution overview explains how the Cisco SpeechView (speech-to-text) feature of the Cisco Unity Connection unified messaging solution handles security for voice message transcriptions. You will learn about:

- Security during message transport
- Security measures in effect with the Cisco Webex in-house transcription service

You do not need any prior knowledge of SpeechView or Cisco Unity Connection to understand the security discussion in this overview.

Cisco SpeechView introduction

SpeechView converts voice messages to text and delivers the text version of the voice message to your email inbox, enabling you to read your voice messages and take immediate action. The application is a feature of Cisco Unity Connection, so the original audio version of each voice message remains available to you anywhere, anytime. SpeechView automatically transcribes and sends voice messages within

minutes of being left in your Cisco Unity Connection voice mailbox – you need not learn any commands or take special action to receive text versions of your voice messages.

SpeechView Standard provides a fully automated (no human intervention) transcription of the first 120 seconds (approximately 1000 characters) of the voice message.

Business benefits

Cisco SpeechView overcomes the challenges and eliminates the trade-offs associated with typical voicemail transcription services by relying on its in-house service instead of third-party providers.

Cisco has developed Cisco Webex in-house transcription service, to provide accurate, secure transcriptions of voice messages left in Cisco Unity Connection voice mailboxes, which are then delivered to your email inbox. The application uses HTTPS (Hyper Text Transfer Protocol Secure), reducing administrative overhead.

Business benefits include:

- Easy to use
- Secure
- Enhances business processes and responsiveness
- Fully automated service

SpeechView benefits

- You can know the caller and get a glimpse of the message while in meetings or out of the office, speeding up decision making.
- You need not dial in to retrieve messages or take notes on the message content.
- Your experience remains consistent with that of regular email messages.
- Messages are delivered in both audio and text formats, allowing you to choose the best way to manage them.
- You can prioritize and sort both voice and email messages from a single email inbox.
- Save time and work hands-free by sending voice messages instead of typing an email message.

SpeechView security features

- All data that is transmitted is encrypted.
- Your data is kept anonymous.

The remaining sections provide details about how Cisco Unity Connection, Cisco Webex Cloud-Connected UC and Cisco Webex in-house transcription service ensure security throughout the entire message transcription process.

SpeechView security considerations

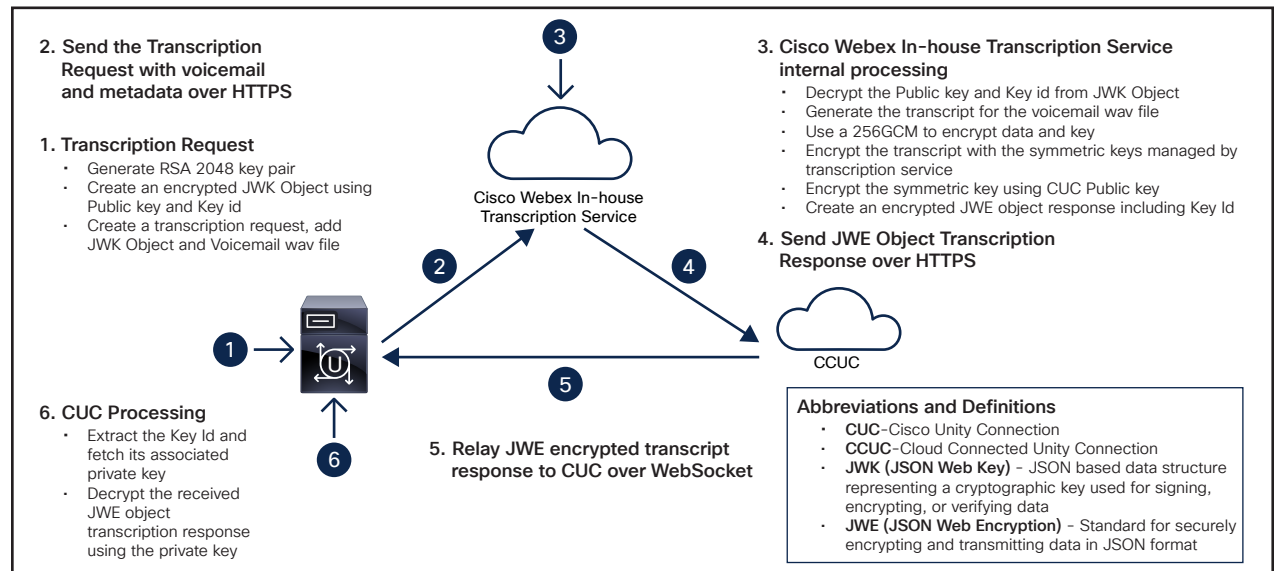


Figure 1. End to End Encryption of Voice mail

Cisco Unity Connection sends the Transcription request over HTTPS protocol to Cisco Webex in-house transcription service. Cisco Unity Connection generates RSA-2048 public and private key pair which are used for encryption and decryption of the data. The generated public key is sent securely over HTTPS protocol to Cisco Webex in-house transcription service as JWK object while sending the transcription request from Cisco Unity Connection.

Cisco Webex in-house transcription service sends the encrypted transcription response to Cisco Unity Connection via Cisco Webex

Cloud-Connected UC. Cisco Unity Connection decrypts the transcription response using private key stored internally at Cisco Unity Connection.

The pair of private and public keys ensures that each time voice messages are sent to the transcription service, your information is not passed along with the message. Therefore, the transcription service is unaware of the specific user to whom the voice message belongs to.

After sending the transcribed message to the Cisco Unity Connection server, the copy of voice message in the transcription service is purged.

Message flow

After successfully configuring Cisco Unity Connection server for SpeechView feature you will begin to receive voice message transcriptions. The process is as follows:

1. Cisco Unity Connection user receives a voice message.
2. Cisco Unity Connection processes the voice message and sends the audio file along with meta data¹ for transcription as HTTPS request to Cisco Webex in-house transcription service.

Below is an example of such a Transcription request that is encrypted before being sent:

```
{  
  MessageId = d77b6cec-71d5-4145-a0f9-a3dc1cd870ee,  
  OrgId = 8e0203c5-dc22-4cf3-9362-6f41365c5793,  
  UserId = 7726933a-54f3-4b73-b52c-6eee5320f8be,  
  Languages = ["en"],  
  Countries = ["US"],  
  Service = on-prem,  
  CallbackUrl = https://gw.telemetry-eu.ucmgmt.cisco.com/v1/uc/organizations/8e0203c5-dc22-4cf3-9362-6f41365c5793/clusters/  
    a3963204-477f-4df5-8988-8f8b8bacb281/voicemail/transcription-response  
  TrackingID = CUC_94a9d79b-11af-4ebe-bf16-ealedede4f39de,  
  Public key = JWK Object with Public key.  
  Audio File = In form of byte array.  
}
```

¹ In this context, the metadata consists of details like MessageObjectId, OrgId, UserObjectId, Languages, Countries, Service, CallbackURL, TrackingID and Public key.

- The voice message is transcribed and returned to the Cisco Unity Connection server in encrypted format with the Client-Public key and signed with the Cisco Webex in-house transcription service - Private key.

Below is an example of the encrypted response:

```
{
  "userId": "7726933a-54f3-4b73-b52c-6eee5320f8be",
  "statusCode": "SUCCESS",
  "transcript": {
    "content": "eyJraWQioiIxiwiY3R5IjoieXBwbGljYXRpb24vanNvbiIsImVuYyI6IkEyNTZHQ00iLCJhbGciOiJSU0EtT0FFUC0yNTYifQ.
dMXW3yBLRlztq_Yd2aH7L9LD0U-0kWyJZbp6ex6ZA0EMuR4ISGP_3mDjfn_7dkAvdHGL03RS3k8VV0iyKUHxAblnAhHJHRzDFYq9wbyZkNhKbbZE2f
JWInv0SEtFc8T7lR6Eo9yzCQ7409H6YoA_8uewiMBWiqGZBFK6SGd7-vwjrNwiGOgwk5JLvvgS2gZp5iU8zMpq_GXlyibqay9fbhKDwvyzqml56-zW-
SRDjUZ8Nz8_z8U9yJCFJIPFpOkZEh8SLSPqP08rSqTgl8ghM5rPuwDxBkBaRnCsv59miSdRtu8-ZvmPvZRfsaAObZhB_Y-hJihIEYv2Nt3bidaEmA.10
SZ7zQc12FaA5Zi.XFKWCBfq1ZhNm1Un429JHKAo9Ezq7nlfDUYOaWmvDivBjLa4dff2vxAJ03khAFU7PiNwj1xpEmOSOA4HGyZJsqrAUFSy9FeClSX_Q--
vIOUacflz-Vq-RFgxX2Mdjuj8FXTvbF43gTp-486Z8kvNO_Xk5ldWXziLcZoL93qTEW5UFwEC9g0_5afyCNJG57m7DaVtghUWJnchC8o5AVjmIacHqO6ED
nh9tsqfw0Lmxj3GxORzTM9ewi4a-rZeV5f2p_5b3lHMvjuTdc9PY27dddUkhI6AmHJmR8RkZUNivEA_oYT3G7rHWgxm9tfeAcdyPYiRWFltRvQH7IA6oo
I1lBURkR0XY5MEnuKHeK2lKFMoA2Ib59vBna-agx6akS1FAi7SfvtXzlinxFHWQXh6JsErbq3rwcrlfIzJFWYhvsqztwsjBMwvReBo5TftgCV7_hGVAZh1-
5s1_5BUVpjhCP-4CwPCiBbDk1KihLdAls9r2t4S5iwAhBB1sbh0PAXma5LZQ0-Qh9G4_e_K_zdYYVQ_h9FeiQ1_bQnqmFNKXK6RmnU9eOk2Bzv-
Ik0cTlGUqr2Rvjadw1H-uQ.EGh2dojXXRUAXSWsnrxEUw",
    "encrypted": true,
    "confidence": 0.8794755,
    "lang": "en",
    "audioDuration": 25
  },
  "trackingID": "CUC_6ebba7f4-98db-4644-9345-d1431c84d233",
  "messageId": "9c0a0c04-3454-4404-ba19-145363111780"
}
```

- Cisco Unity Connection processes this response, decrypts the transcribed content, and sends the transcript to you.



Message processing

A message arriving at Cisco Webex in-house transcription service is flagged for automated transcription, and the following steps occur in the transcription:

1. Audio is processed and transcription is performed by the Cisco Webex in-house transcription service.
2. The transcription is written to the Cisco Webex in-house transcription service database.
3. The message is returned to the Cisco Unity Connection server.

Data Retention

When the transcription is returned to the Cisco Unity Connection server, voice message and transcript are purged from the Cisco Webex in-house transcription service.

Note: In an ideal situation, where processing is successful, both the voice message and transcript are deleted immediately. However, in the event of any corner case scenarios if the data could not be deleted immediately, it will be auto purged after every 24 hours.

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