AI & Machine Learning Products (https://cloud.google.com/products/machine-learning/)
Cloud Speech-to-Text (https://cloud.google.com/speech-to-text/)
Documentation (https://cloud.google.com/speech-to-text/docs/) Guides

Enabling word-level confidence

Beta

This feature is in a pre-release state and might change or have limited support. For more information, see the
product launch stages (https://cloud.google.com/products/#product-launch-stages).

You can specify that Speech-to-Text indicate a value of accuracy, or confidence level
 (https://cloud.google.com/speech-to-text/docs/basics#confidence-values), for individual words in a
transcription.

Word-level confidence

When the Speech-to-Text transcribes an audio clip, it also measures the degree of accuracy for
the response. The response sent from Cloud Speech-to-Text states the confidence level for the
entire transcription request as a number between 0.0 and 1.0. The following code sample
shows an example of the confidence level value returned by Cloud Speech-to-Text.

```
{
  "results": [
    {
      "alternatives": [
        {
          "transcript": "how old is the Brooklyn Bridge",
          "confidence": 0.96748614
        }
      ]
    }
  ]
}
```
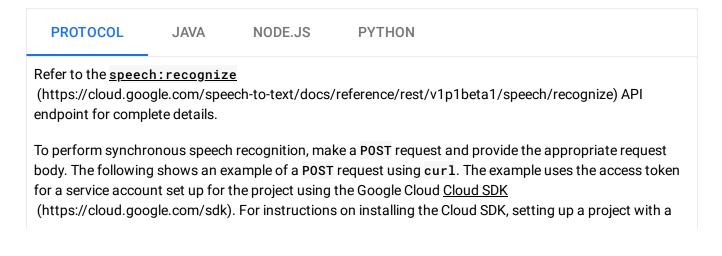
In addition to the confidence level of the entire transcription, Cloud Speech-to-Text can also
provide the confidence level of individual words within the transcription. The response then
includes `WordInfo`

(https://cloud.google.com/speech-to-text/docs/reference/rest/v1p1beta1/speech/recognize#WordInfo) details in the transcription, indicating the confidence level for individual words as shown in the following example.

```
{
  "results": [
    {
      "alternatives": [
        {
          "transcript": "how old is the Brooklyn Bridge",
          "confidence": 0.98360395,
          "words": [
            {
              "startTime": "0s",
              "endTime": "0.300s",
              "word": "how",
              "confidence": SOME NUMBER
            },
            ...
          ]
        }
      ]
    }
  ]
}
```

Enabling word-level confidence in a request

The following code snippet demonstrates how to enable word-level confidence in a transcription request to Speech-to-Text.

PROTOCOL	JAVA	NODE.JS	PYTHON

Refer to the `speech:recognize` (https://cloud.google.com/speech-to-text/docs/reference/rest/v1p1beta1/speech/recognize) API endpoint for complete details.

To perform synchronous speech recognition, make a `POST` request and provide the appropriate request body. The following shows an example of a `POST` request using `curl`. The example uses the access token for a service account set up for the project using the Google Cloud Cloud SDK (https://cloud.google.com/sdk). For instructions on installing the Cloud SDK, setting up a project with a

service account, and obtaining an access token, see the quickstart
(https://cloud.google.com/speech-to-text/docs/quickstart-protocol).

The following example show how to send a `POST` request using `curl`, where the body of the request
enables word-level confidence.

```
curl -s -H "Content-Type: application/json" \
    -H "Authorization: Bearer $(gcloud auth application-default print-access-token)
    https://speech.googleapis.com/v1p1beta1/speech:recognize \
    --data '{
    "config": {
        "encoding":"FLAC",
        "sampleRateHertz": 16000,
        "languageCode": "en-US",
        "enableWordTimeOffsets": true,
        "enableWordConfidence": true
    },
    "audio": {
        "uri":"gs://cloud-samples-tests/speech/brooklyn.flac"
    }
}' > word-level-confidence.txt
```

If the request is successful, the server returns a `200 OK` HTTP status code and the response in JSON
format, saved to a file named `word-level-confidence.txt`.

```
{
  "results": [
    {
      "alternatives": [
        {
          "transcript": "how old is the Brooklyn Bridge",
          "confidence": 0.98360395,
          "words": [
            {
              "startTime": "0s",
              "endTime": "0.300s",
              "word": "how",
              "confidence": 0.98762906
            },
            {
              "startTime": "0.300s",
              "endTime": "0.600s",
              "word": "old",
              "confidence": 0.96929157
            },
            {
```

```
            "startTime": "0.600s",
            "endTime": "0.800s",
            "word": "is",
            "confidence": 0.98271006
          },
          {
            "startTime": "0.800s",
            "endTime": "0.900s",
            "word": "the",
            "confidence": 0.98271006
          },
          {
            "startTime": "0.900s",
            "endTime": "1.100s",
            "word": "Brooklyn",
            "confidence": 0.98762906
          },
          {
            "startTime": "1.100s",
            "endTime": "1.500s",
            "word": "Bridge",
            "confidence": 0.98762906
          }
        ]
      }
    ],
    "languageCode": "en-us"
  }
 ]
}
```