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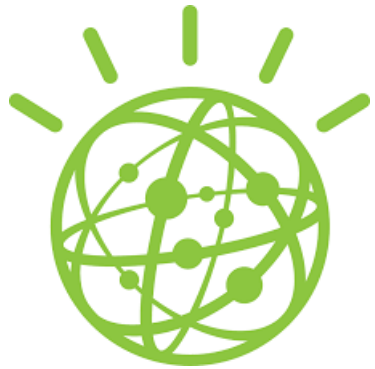
Watson API Summary for Developers



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Watson APIs – General Info

The basics

- All APIs are REST based w/public endpoints
  - For authentication services use either
    - An api key that is a param to each request

    or
    - Basic authentication with an HTTPS endpoint
      - Username/password in request header
- Each service instance is created in Bluemix and has it's own credentials
  - Credentials are available in the Bluemix console
  - For Bluemix apps bound to a service instance
    - Credentials available as JSON in the VCAP_SERVICES env var
- Each service has a deployed demo app that can be run and then cloned from GitHub

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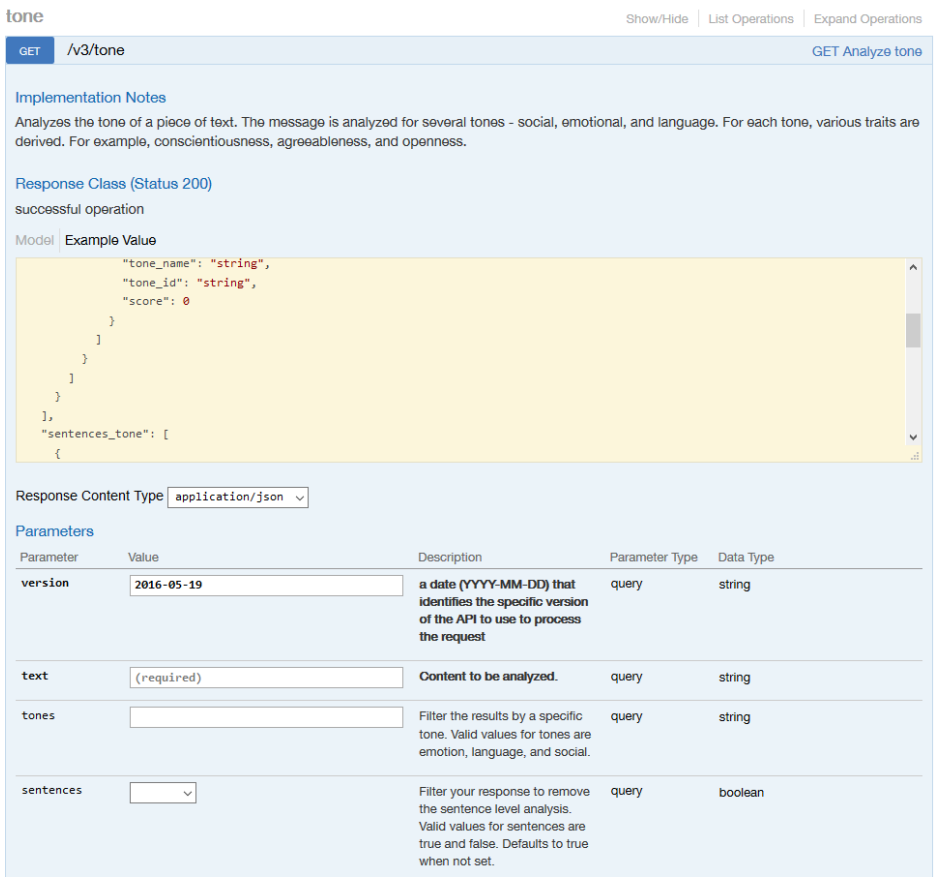
Watson API Explorer



- A collection of Swagger documentation for the Watson APIs
  - Test APIs calls for various services as long as you have the credentials

See https://watson-api-explorer.mybluemix.net/

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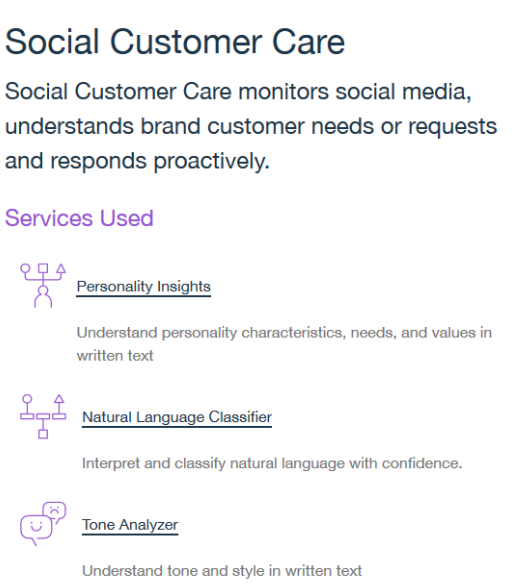
SDKs and starter kits

- ***SDKs*** are wrappers around the REST API and are available for various programming languages/platforms
  - Node, Java, Python, iOS and Unity SDKs available
- ***Starter Kits*** are complete code examples that combine multiple services for common use cases



They are both available here
https://www.ibm.com/watson/developercloud/developer-tools.html

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Watson Accelerators

Watson Accelerators are live examples of Watson at work. Gain access to over 20+ instances of ways Watson can be used to solve business problems, complete with code that you can configure on your own.

Each Accelerator comes pre-packaged with the following:

- **Overview:** Solution overview & Explanation of business problem solved with benefits statements
- **Live Demo:** Demo instructions & link to live demo
- **Demo Video:** Demo how-to video with voiceover of key talking points
- **Solution Components:** Explanation of how APIs are used to create Accelerator with architecture picture
- **Set up & Configuration:** Technical video how to & link to enterprise Github to fork the code
- **References:** Examples of how other clients have leveraged the Accelerators in their business

Available here
https://www.ibm.com/watson/developercloud/developer-tools.html

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API Summaries

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Watson API Summary

Build cognitive apps that help enhance, scale, and accelerate human expertise.

Conversation

Add a natural language interface to your application to automate interactions with y

Lite IBM

Discovery

Add a cognitive search and content analytics engine to applications.

Lite IBM

Document Conversion

Converts a HTML, PDF, or Microsoft Word™ document into a normalized HTML, plain t

IBM Deprecated

Language Translator

Translate text from one language to another for specific domains.

Lite IBM

Natural Language Classifier

Natural Language Classifier performs natural language classification on question texts.

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Natural Language Understanding

Analyze text to extract meta-data from content such as concepts, entities, emotio

Lite IBM

Personality Insights

The Watson Personality Insights derives insights from transactional and social me

Lite IBM

Retrieve and Rank

Add machine learning enhanced search capabilities to your application

IBM Deprecated

Speech to Text

Low-latency, streaming transcription

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Text to Speech

Synthesizes natural-sounding speech from text.

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Tone Analyzer

Tone Analyzer uses linguistic analysis to detect three types of tones from

Lite IBM

Visual Recognition

Find meaning in visual content! Analyze images for scenes, objects, faces, and oth

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Vision: Visual Recognition

Understand image content

Features:

- understands the contents of images
- find human faces, approximate age and gender, and find text in images.
- detect a dress type in retail, identify spoiled fruit in inventory, and more.

- **Input:** JPEG or PNG images to train model or to classify
- **Output:** a set of labels and likelihood scores
- **Dataset:** large number of classified pictures

https://www.ibm.com/watson/developercloud/text-to-speech.html

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Language: Natural Language Understanding

Natural language processing for advanced text analysis.

Features:

- Extract meta-data from content such as concepts, entities, keywords, categories, sentiment, emotion, relations, semantic roles
- Develop custom annotation models using Watson Knowledge Studio
- Identify industry/domain specific entities and relations
- Languages: Arabic, English, French, German, Italian, Japanese, Portuguese, Russian, Spanish, or Swedish
- **Input:** Text or URL to be analyzed
- **Output:** Categories, concepts, emotion, entities, keywords, metadata, relations, semantic roles, and sentiment.

https://www.ibm.com/watson/developercloud/natural-language-understanding.html

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Speech: Speech to Text

Convert human voice into written word

Features:

- Use to transcribe calls to identify what is being discussed, when to escalate calls, and to understand content from multiple speakers.
- Create voice-controlled applications
- Customizable model to improve accuracy such as product names, sensitive subjects, or names of individuals.

- **Input:** streamed or recorded audio
- **Output:** text transcriptions of the recognized words
- **Dataset:** intelligible English, Spanish, French, Arabic, Chinese, Japanese, or Portuguese speech

https://www.ibm.com/watson/developercloud/speech-to-text.html

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Speech: Text to Speech

Enable computers to speak like humans

Features:

- converts written text into natural sounding audio in a variety of languages and voices.
- Customize and control the pronunciation of specific words
- Develop interactive toys for children, automate call center interactions, and communicate directions hands-free.

- **Input:** Text to be converted to audio
- **Output:** synthesized audio based on the input text
- **Dataset:** English, Spanish, French, Italian, Portuguese, German or Japanese text

https://www.ibm.com/watson/developercloud/text-to-speech.html

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Language: Language Translator

Translate content into multiple languages

Features:

- Translates from one language to another or identifies the language of the input text
- Offers multiple customizable domain-specific models
- Languages:

Conversational	News	Patent
English <--> **Arabic**, **French**, **Portuguese**, and **Spanish**	English <--> **Arabic**, **French**, **German**, **Italian**, **Portuguese**, and **Spanish**; **Spanish** <--> **French**	**Chinese**, **Spanish** and **Portuguese** ---> English

- **Input:** Text to be translated or identified
- **Output:** Translated text or language code

https://www.ibm.com/watson/developercloud/language-translator.html

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Data Insights: Discovery

Rapidly build a cognitive search and content analytics engine.

Features:

- Convert, normalize and enrich unstructured data
- Use a simplified query language to explore that data
- Train by mapping natural language queries to specific documents
- Tap into pre-enriched datasets like the Discovery News collection - 300,000 new articles and blogs added daily, sourced from more than 100,000 sources.

- **Input:** Cognitive Query
- **Output:** Query results

https://www.ibm.com/watson/developercloud/discovery.html

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Language: Personality Insights

Understand personality characteristics, needs, and values in written text

Features:

- extracts personality characteristics based on how a person writes
- match individuals to other individuals, opportunities, and products
- Characteristics include the Big 5 Personality Traits, Values, and Needs.
- Needs at least 1200 words of input text

- **Input:** text from an individual
- **Output:** tree of social characteristcs in JSON and visualizations using HTML and SVG

https://www.ibm.com/watson/developercloud/personality-insights.html

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Language: Natural Language Classifier

Interpret and classify natural language with confidence.

Features:

- Understands the intent behind text and returns a classification and confidence score
- Answer questions in contact centers, chatbots etc
- Categorize written content

- Languages: English, Arabic, Brazilian Portuguese, French, German, Japanese, Italian, and Spanish.

- **Input:** Trained with data mapping phrases to intents. After training phrases are input
- **Output:** Intent of input phrase and confidence

https://www.ibm.com/watson/developercloud/language-translator.html

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Language: Conversation

Build chatbots that understand natural language and deploy them on messaging platforms and websites, on any device

Features:

- Quickly build, test and deploy a bot or virtual agent
- Mobile devices, messaging platforms like Slack or even on a physical robot.
- A visual dialog builder to use without any coding experience required.
- Languages: Brazilian Portuguese, English, French, Italian, Spanish, German, Traditional Chinese, Simplified Chinese, Dutch and Arabic.

- **Input:** Input phrases for a specific workspace
- **Output:** Workspace defined response based on current state

https://www.ibm.com/watson/developercloud/conversation.html

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Language: Tone Analyzer

Understand tone and style in written text

Features:

- Uses linguistic analysis to detect three types of tones in written text: emotions, social tendencies, and writing style.
- Used to understand emotional context of conversations and communications.
- Use this insight to respond in an appropriate manner.
- Languages: English, French
- **Input:** Text to be analyzed in JSON
- **Output:** Analysis of input text in JSON

https://www.ibm.com/watson/developercloud/tone-analyzer.html

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Quick Reference

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- Watson Services in Bluemix Catalog
  - https://console.ng.bluemix.net/catalog/?category=watson
- Watson API Explorer
  - https://watson-api-explorer.mybluemix.net/
- Watson SDKs and Starter Kits
  - https://www.ibm.com/watson/developercloud/developer-tools.html
- Watson Accelerators
  - https://watsonaccelerators.mybluemix.net/ibm
- Watson Developer Cloud (API Docs, demo apps and tutorials)
  - https://www.ibm.com/watson/developercloud/

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