Conversational Analytics API: Build data agents and chat with your data

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Important: The Data QnA API is deprecated. If you're migrating from the Data QnA API, see the migration guide (/gemini/docs/conversational-analytics-api/migration-guide) for an overview of key differences and required migration steps.

Developers can use the Conversational Analytics API, which is accessed through `geminidataanalytics.googleapis.com`, to build an artificial intelligence (AI)-powered chat interface, or data agent, that answers questions about structured data in BigQuery, Looker, and Looker Studio using natural language. With the Conversational Analytics API, you provide your data agent with business information and data ("context"), as well as access to tools such as SQL, Python, and visualization libraries. These agent responses are presented to the user and can be logged by the client application, creating a seamless and auditable data chat experience.

Learn how and when Gemini for Google Cloud uses your data (/gemini/docs/discover/data-governance).

As an early-stage technology, Gemini for Google Cloud products can generate output that seems plausible but is factually incorrect. We recommend that you validate all output from Gemini for Google Cloud products before you use it. For more information, see Gemini for Google Cloud and responsible AI (/gemini/docs/discover/responsible-ai).

Note: Pre-GA Preview offerings (1) are intended for use in test environments only and shouldn't be used in a production environment or to process personal data or other data subject to legal or regulatory compliance requirements, and (2) are subject to the Pre-GA Offerings Terms of the Service Specific Terms

(/terms/service-terms#1), and the Consent Addendum for Gemini for Google Cloud Trusted Tester Program (/trusted-tester/gemini-for-google-cloud-preview).

Get started with the Conversational Analytics API

To start using the Conversational Analytics API, you can first review the architecture and key concepts (/gemini/docs/conversational-analytics-api/key-concepts) documentation to understand how agents process requests, the workflows for agent creators and users, conversation modes, and Identity and Access Management (IAM) roles. Then, to start building data agents, you can choose between a guided experience with the Colaboratory notebooks (#interactive-colab-notebooks) or a self-driven approach by following the steps in Setup and prerequisites (#setup).

Interactive Colaboratory notebooks

For an interactive, step-by-step guide to setting up your environment, building a data agent, and making API calls, see the following Colaboratory notebooks:

- Conversational Analytics API HTTP Colaboratory notebook (https://colab.research.google.com/github/GoogleCloudPlatform/generative-ai/blob/main/agents/gemini_data_analytics/intro_gemini_data_analytics_http.ipynb)

- Conversational Analytics API SDK Colaboratory notebook (https://colab.research.google.com/github/GoogleCloudPlatform/generative-ai/blob/main/agents/gemini_data_analytics/intro_gemini_data_analytics_sdk.ipynb)

Setup and prerequisites

Before you use the API or the examples, complete the following steps:

- Enable the Conversational Analytics API (/gemini/docs/conversational-analytics-api/enable-the-api): Describes prerequisites to enable the Conversational Analytics API.

- Grant Conversational Analytics API IAM roles and permissions (/gemini/docs/conversational-analytics-api/access-control): Describes the predefined IAM roles for managing access to data agents.

- Authenticate and connect to a data source with the Conversational Analytics API
  (/gemini/docs/conversational-analytics-api/authentication): Provides instructions for authenticating to the API and configuring connections to your BigQuery, Looker, and Looker Studio data.

Build and interact with a data agent

After completing the previous steps, use the Conversational Analytics API to build and interact with a data agent by following these steps:

- Build a data agent using HTTP (/gemini/docs/conversational-analytics-api/build-agent-http): Provides a complete example of building and interacting with a data agent by using direct HTTP requests with Python.

- Build a data agent using the Python SDK
  (/gemini/docs/conversational-analytics-api/build-agent-sdk): Provides a complete example of building and interacting with a data agent by using the Python SDK.

- Write effective system instructions
  (/gemini/docs/conversational-analytics-api/data-agent-system-instructions): Learn how to structure the YAML content for the `system_instruction` parameter to guide agent behavior and improve response accuracy. You can also view examples of system instructions in BigQuery data sources
  (/gemini/docs/conversational-analytics-api/data-agent-authored-context-bq) and in Looker data sources (/gemini/docs/conversational-analytics-api/data-agent-authored-context-looker).

- Render a Conversational Analytics API agent response as a visualization
  (/gemini/docs/conversational-analytics-api/render-visualization): Provides an example of processing chart specifications from API responses and rendering them as visualizations by using the Python SDK and the Vega-Altair library.

Best practices

- Manage BigQuery costs for your agents
  (/gemini/docs/conversational-analytics-api/manage-costs): Learn how to monitor and manage BigQuery costs for your Conversational Analytics API agents by setting project-level, user-level, and query-level spending limits.

Key API operations

The API provides the following core endpoints for managing data agents and conversations:

Operation	HTTP method	Endpoint	Descriptio
Create an agent	POST	`/v1beta/projects/*/locations/*/dataAgents`	Creates a
Get an agent	GET	`/v1beta/projects/*/locations/*/dataAgents/*`	Retrieves t specific da
Get Identity and Access Management policy	POST	`/v1beta/projects/*/locations/*/dataAgents/*:getIamPolicy`	Gets the Ic Managem are assign specific da a Data Age (/gemini/ analytics-a control#da can call th the data a Access M before usi `setIAMpc` share a da users.
Set Identity and Access Management policy	POST	`/v1beta/projects/*/locations/*/dataAgents/*:setIamPolicy`	Sets the Ic Managem specific da a Data Age (/gemini/ analytics-a control#da should cal share a da users, whi updates th and Acces permissiοι

Operation	HTTP method	Endpoint	Descriptio
Update an agent	PATCH	`/v1beta/projects/*/locations/*/dataAgents/*`	Modifies a agent.
List agents	GET	`/v1beta/projects/*/locations/*/dataAgents`	Lists availa project.
List accessible agents	GET	`/v1beta/projects/*/locations/*/dataAgents:listaccessible`	Lists acce a project. considered user that i the `get` pe agent. You `creator_` manage w method re • **NONE** (data ag access regardl the age • **CREAT** only th are acc and tha that us • **NOT_C** Returns agents to the u created
Delete an agent	DELETE	`/v1beta/projects/*/locations/*/dataAgents/*`	Removes a
Create a conversation	POST	`/v1beta/projects/*/locations/*/conversations`	Starts a ne conversati
Chat by using a conversation reference	POST	`/v1beta/projects/*/locations/*:chat`	Continues conversati message t existing co

Operation	HTTP method	Endpoint	Descriptio
			associated multi-turn Google Cl manages history.
Chat by using a data agent reference	POST	`/v1beta/projects/*/locations/*:chat`	Sends a st message saved dat; For multi-t your appli; and provid; history wit
Chat by using inline context	POST	`/v1beta/projects/*/locations/*:chat`	Sends a st message context di without us agent. For conversati must man conversati request.
Get a conversation	GET	`/v1beta/projects/*/locations/*/conversations/*`	Retrieves specific cc
List conversations	GET	`/v1beta/projects/*/locations/*/conversations`	Lists the c specific pr
List messages in a conversation	GET	`/v1beta/projects/*/locations/*/conversations/*/messages`	Lists mess specific cc

Send feedback

Use the following links to file a bug or request a feature.

- File a bug report
  (https://issuetracker.google.com/issues/new?component=1747873&template=2128893)

- File a feature request
  (https://issuetracker.google.com/issues/new?component=1747873&template=2131795)

Additional resources

- Conversational Analytics API reference documentation
  (/gemini/docs/conversational-analytics-api/reference/rest): Provides detailed descriptions of
  methods, endpoints, and type definitions for request and response structures.

- Troubleshoot Conversation Analytics API errors
  (/gemini/docs/conversational-analytics-api/troubleshoot-ca-errors): Troubleshoot common
  Conversation Analytics API errors.