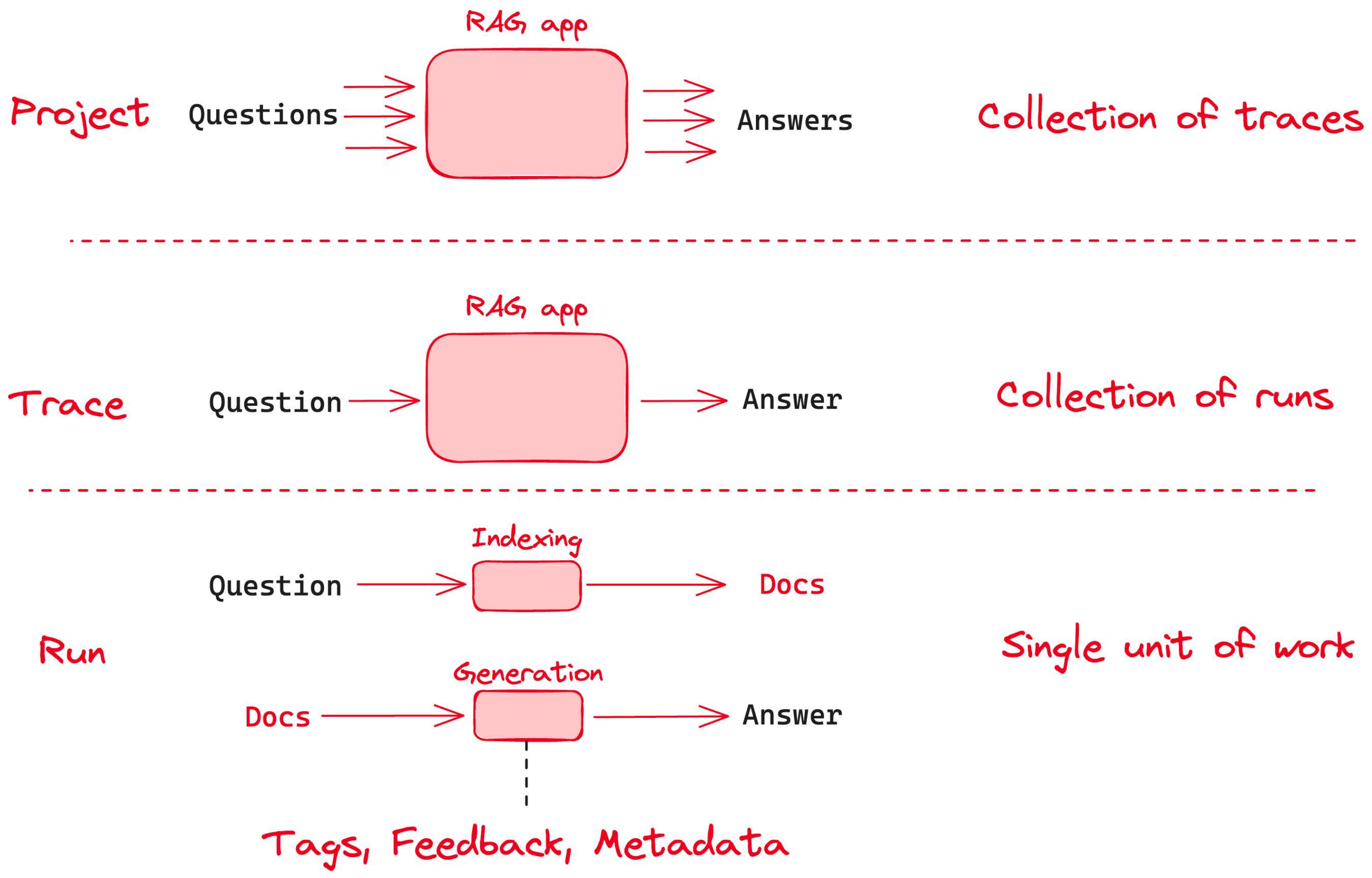
Concepts

This conceptual guide covers topics that are important to understand when logging traces to LangSmith. A `Trace` is essentially a series of steps that your application takes to go from input to output. Each of these individual steps is represented by a `Run`. A `Project` is simply a collection of traces. The following diagram displays these concepts in the context of a simple RAG app, which retrieves documents from an index and generates an answer.

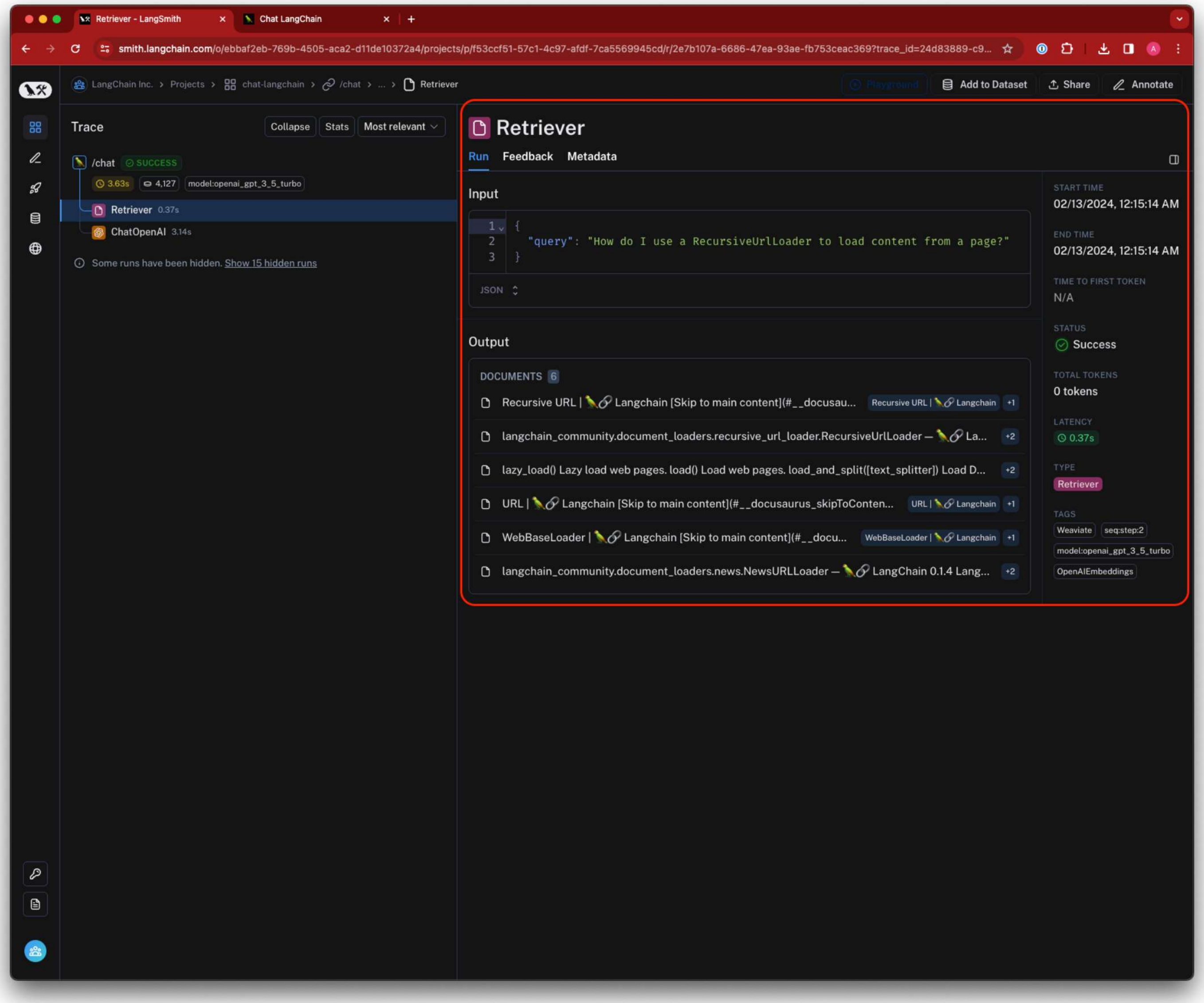


Primitive datatypes in LangSmith

Runs

A `Run` is a span representing a single unit of work or operation within your LLM application. This could be anything from single call to an LLM or chain, to a prompt formatting call, to a runnable lambda invocation. If you are familiar with OpenTelemetry, you can think of a run as a span.

To learn more about how runs are stored in the application, see this reference guide.


Retriever - LangSmith
Chat LangChain
smith.langchain.com/o/ebbaf2eb-769b-4505-aca2-d11de10372a4/projects/p/f53ccf51-57c1-4c97-afdf-7ca5569945cd/r/2e7b107a-6686-47ea-93ae-fb753ceac369?trace_id=24d83889-c9...
LangChain Inc. > Projects > chat-langchain > /chat > ... > Retriever
Playground
Add to Dataset
Share
Annotate
Trace
Collapse
Stats
Most relevant
/chat SUCCESS
3.63s
4,127
model:openai_gpt_3_5_turbo
Retriever 0.37s
ChatOpenAI 3.14s
Some runs have been hidden. Show 15 hidden runs
Retriever
Run
Feedback
Metadata

Input

```
{
  "query": "How do I use a RecursiveUrlLoader to load content from a page?"
}
```

JSON

Output

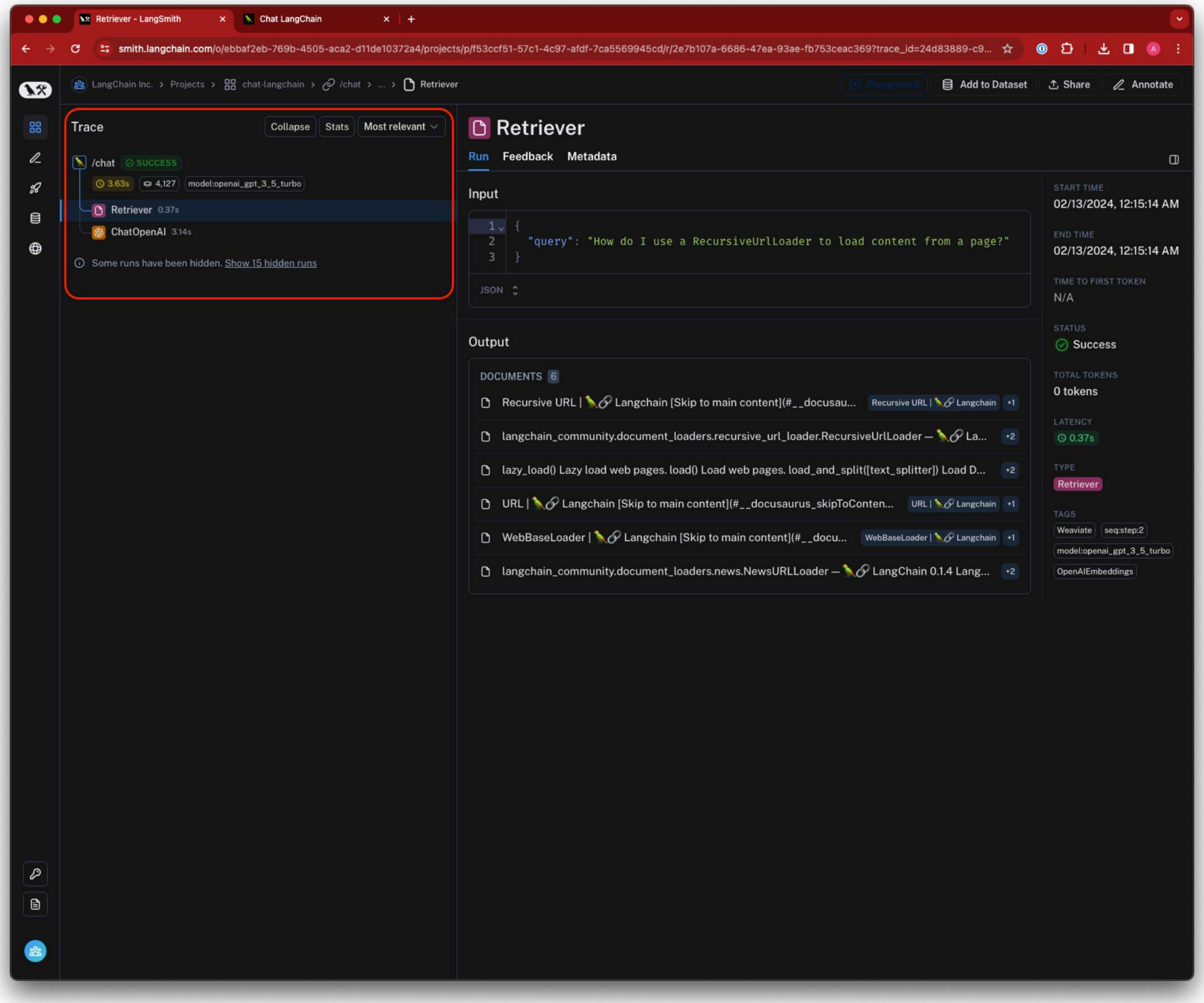
DOCUMENTS 6

- Recursive URL | 🦜🔗 Langchain [Skip to main content](#__docusau... Recursive URL | 🦜🔗 Langchain +1
- langchain_community.document_loaders.recursive_url_loader.RecursiveUrlLoader — 🦜🔗 La... +2
- lazy_load() Lazy load web pages. load() Load web pages. load_and_split([text_splitter]) Load D... +2
- URL | 🦜🔗 Langchain [Skip to main content](#__docusaurus_skipToConten... URL | 🦜🔗 Langchain +1
- WebBaseLoader | 🦜🔗 Langchain [Skip to main content](#__docu... WebBaseLoader | 🦜🔗 Langchain +1
- langchain_community.document_loaders.news.NewsURLLoader — 🦜🔗 LangChain 0.1.4 Lang... +2

START TIME 02/13/2024, 12:15:14 AM
END TIME 02/13/2024, 12:15:14 AM
TIME TO FIRST TOKEN N/A
STATUS Success
TOTAL TOKENS 0 tokens
LATENCY 0.37s
TYPE Retriever
TAGS Weaviate seq:step:2 model:openai_gpt_3_5_turbo OpenAIEmbeddings

Traces

A `Trace` is a collection of runs that are related to a single operation. For example, if you have a user request that triggers a chain, and that chain makes a call to an LLM, then to an output parser, and so on, all of these runs would be part of the same trace. If you are familiar with OpenTelemetry, you can think of a LangSmith trace as a collection of spans. Runs are bound to a trace by a unique trace ID.


Retriever - LangSmith
Chat LangChain
smith.langchain.com/o/ebbaf2eb-769b-4505-aca2-d11de10372a4/projects/p/f53ccf51-57c1-4c97-afdf-7ca5569945cd/r/2e7b107a-6686-47ea-93ae-fb753ceac369?trace_id=24d83889-c9...
LangChain Inc. > Projects > chat-langchain > /chat > ... > Retriever
Playground
Add to Dataset
Share
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Stats
Most relevant
Run
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JSON

/chat SUCCESS
3.63s 4,127 model:openai_gpt_3_5_turbo
Retriever 0.37s
ChatOpenAI 3.14s
Some runs have been hidden. Show 15 hidden runs

Retriever

Input

```
{
  "query": "How do I use a RecursiveUrlLoader to load content from a page?"
}
```

Output

DOCUMENTS 6

- Recursive URL | 🦜🔗 Langchain [Skip to main content](#__docusau... Recursive URL | 🦜🔗 Langchain +1
- langchain_community.document_loaders.recursive_url_loader.RecursiveUrlLoader — 🦜🔗 La... +2
- lazy_load() Lazy load web pages. load() Load web pages. load_and_split([text_splitter]) Load D... +2
- URL | 🦜🔗 Langchain [Skip to main content](#__docusaurus_skipToConten... URL | 🦜🔗 Langchain +1
- WebBaseLoader | 🦜🔗 Langchain [Skip to main content](#__docu... WebBaseLoader | 🦜🔗 Langchain +1
- langchain_community.document_loaders.news.NewsURLLoader — 🦜🔗 LangChain 0.1.4 Lang... +2

START TIME
02/13/2024, 12:15:14 AM

END TIME
02/13/2024, 12:15:14 AM

TIME TO FIRST TOKEN
N/A

STATUS
Success

TOTAL TOKENS
0 tokens

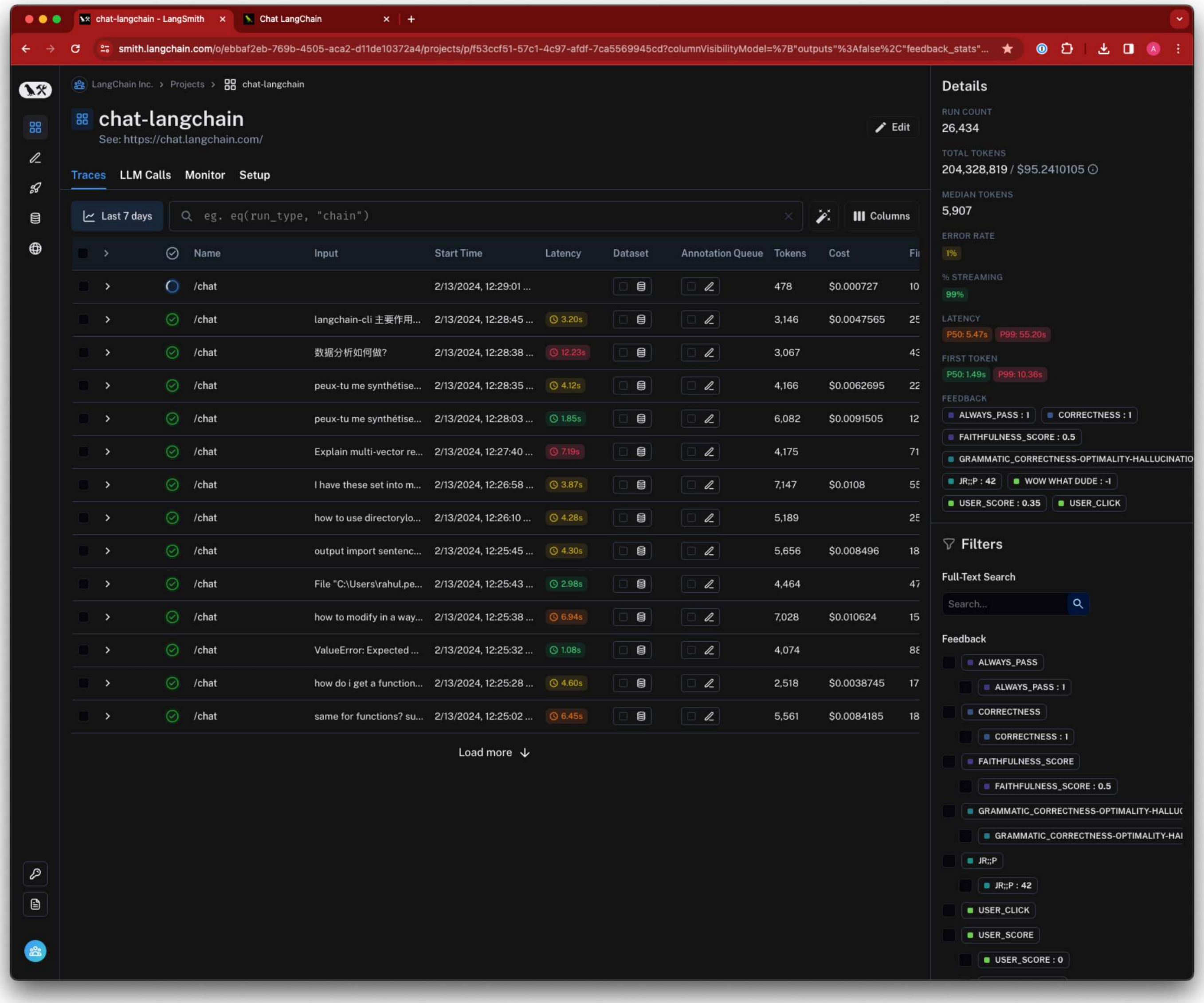
LATENCY
0.37s

TYPE
Retriever

TAGS
Weaviate seq:step:2 model:openai_gpt_3_5_turbo OpenAIEmbeddings

Projects

A `Project` is a collection of traces. You can think of a project as a container for all the traces that are related to a single application or service. You can have multiple projects, and each project can have multiple traces.


chat-langchain - LangSmith
Chat LangChain
smith.langchain.com/o/ebbaf2eb-769b-4505-aca2-d11de10372a4/projects/p/f53ccf51-57c1-4c97-afdf-7ca5569945cd?columnVisibilityModel=%7B"outputs"%3Afalse%2C"feedback_stats"...
LangChain Inc. › Projects › chat-langchain
chat-langchain
See: https://chat.langchain.com/
Edit
Traces
LLM Calls
Monitor
Setup
Last 7 days
eg. eq(run_type, "chain")
Columns
Load more
Details
Filters
Full-Text Search
Search...

Name	Input	Start Time	Latency	Dataset	Annotation Queue	Tokens	Cost	Fi
/chat		2/13/2024, 12:29:01 ...				478	$0.000727	10
/chat	langchain-cli 主要作用...	2/13/2024, 12:28:45 ...	3.20s			3,146	$0.0047565	25
/chat	数据分析如何做?	2/13/2024, 12:28:38 ...	12.23s			3,067		43
/chat	peux-tu me synthétise...	2/13/2024, 12:28:35 ...	4.12s			4,166	$0.0062695	22
/chat	peux-tu me synthétise...	2/13/2024, 12:28:03 ...	1.85s			6,082	$0.0091505	12
/chat	Explain multi-vector re...	2/13/2024, 12:27:40 ...	7.19s			4,175		71
/chat	I have these set into m...	2/13/2024, 12:26:58 ...	3.87s			7,147	$0.0108	55
/chat	how to use directorylo...	2/13/2024, 12:26:10 ...	4.28s			5,189		25
/chat	output import sentenc...	2/13/2024, 12:25:45 ...	4.30s			5,656	$0.008496	18
/chat	File "C:\Users\rahul.pe...	2/13/2024, 12:25:43 ...	2.98s			4,464		47
/chat	how to modify in a way...	2/13/2024, 12:25:38 ...	6.94s			7,028	$0.010624	15
/chat	ValueError: Expected ...	2/13/2024, 12:25:32 ...	1.08s			4,074		88
/chat	how do i get a function...	2/13/2024, 12:25:28 ...	4.60s			2,518	$0.0038745	17
/chat	same for functions? su...	2/13/2024, 12:25:02 ...	6.45s			5,561	$0.0084185	18

RUN COUNT	26,434
TOTAL TOKENS	204,328,819 / $95.2410105
MEDIAN TOKENS	5,907
ERROR RATE	1%
% STREAMING	99%
LATENCY	P50: 5.47s P99: 55.20s
FIRST TOKEN	P50: 1.49s P99: 10.36s
FEEDBACK	ALWAYS_PASS : 1, CORRECTNESS : 1, FAITHFULNESS_SCORE : 0.5, GRAMMATIC_CORRECTNESS-OPTIMALITY-HALLUCINATIO, JR;;P : 42, WOW WHAT DUDE : -1, USER_SCORE : 0.35, USER_CLICK

Feedback
- ALWAYS_PASS
  - ALWAYS_PASS : 1
- CORRECTNESS
  - CORRECTNESS : 1
- FAITHFULNESS_SCORE
  - FAITHFULNESS_SCORE : 0.5
- GRAMMATIC_CORRECTNESS-OPTIMALITY-HALLU(
  - GRAMMATIC_CORRECTNESS-OPTIMALITY-HAI
- JR;;P
  - JR;;P : 42
- USER_CLICK
- USER_SCORE
  - USER_SCORE : 0

Feedback

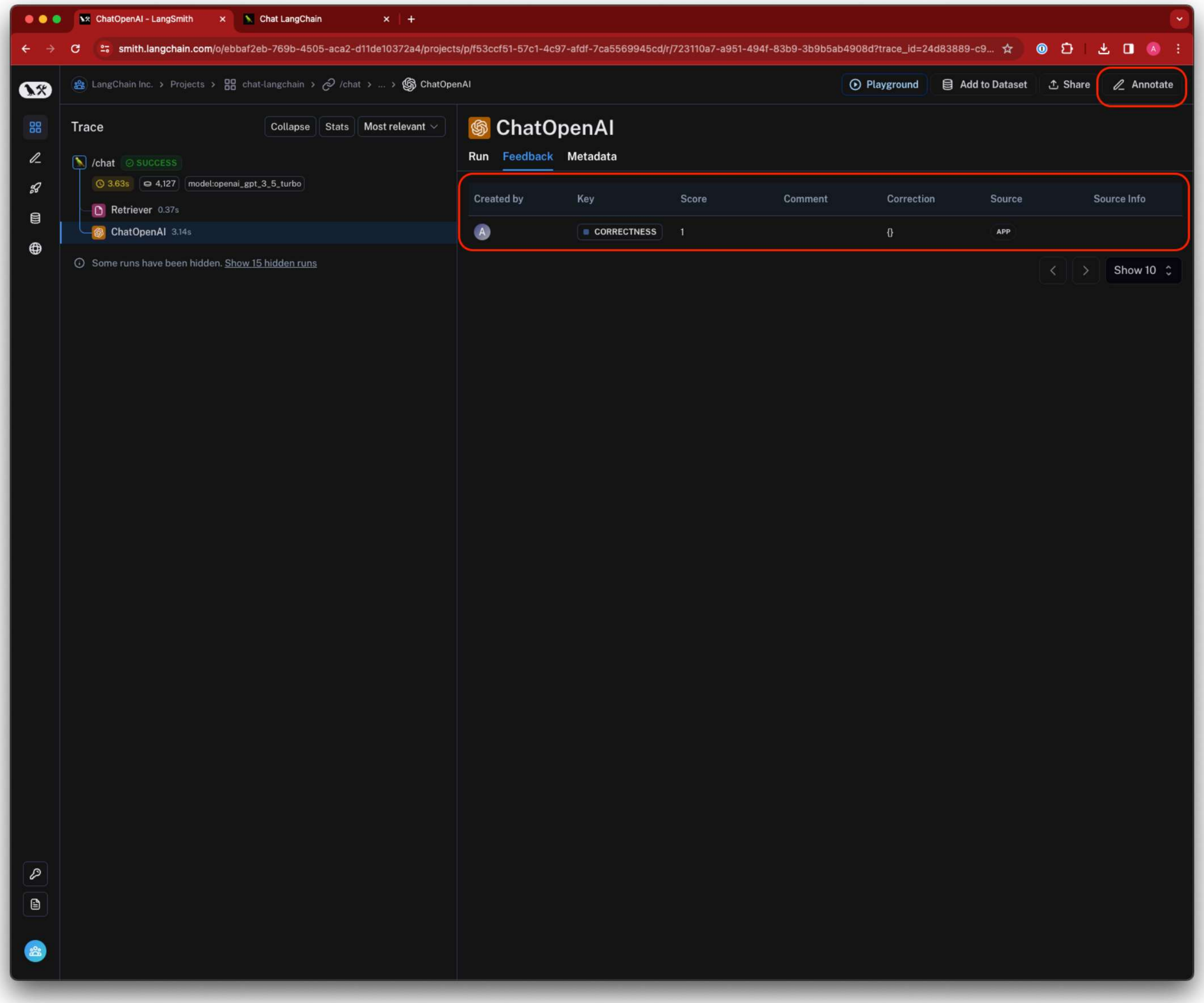
`Feedback` allows you to score an individual run based on certain criteria. Each feedback entry consists of a feedback tag and feedback score, and is bound to a run by a unique run ID. Feedback can currently be continuous or discrete (categorical), and you can reuse feedback tags across different runs within an organization.

Collecting feedback on runs can be done in a number of ways:

1. Sent up along with a trace from the LLM application
2. Generated by a user in the app inline or in an annotation queue
3. Generated by an automatic evaluator during offline evaluation

4. Generated by an online evaluator

To learn more about how feedback is stored in the application, see this reference guide.


ChatOpenAI - LangSmith
Chat LangChain
smith.langchain.com/o/ebbaf2eb-769b-4505-aca2-d11de10372a4/projects/p/f53ccf51-57c1-4c97-afdf-7ca5569945cd/r/723110a7-a951-494f-83b9-3b9b5ab4908d?trace_id=24d83889-c9...
LangChain Inc. > Projects > chat-langchain > /chat > ... > ChatOpenAI
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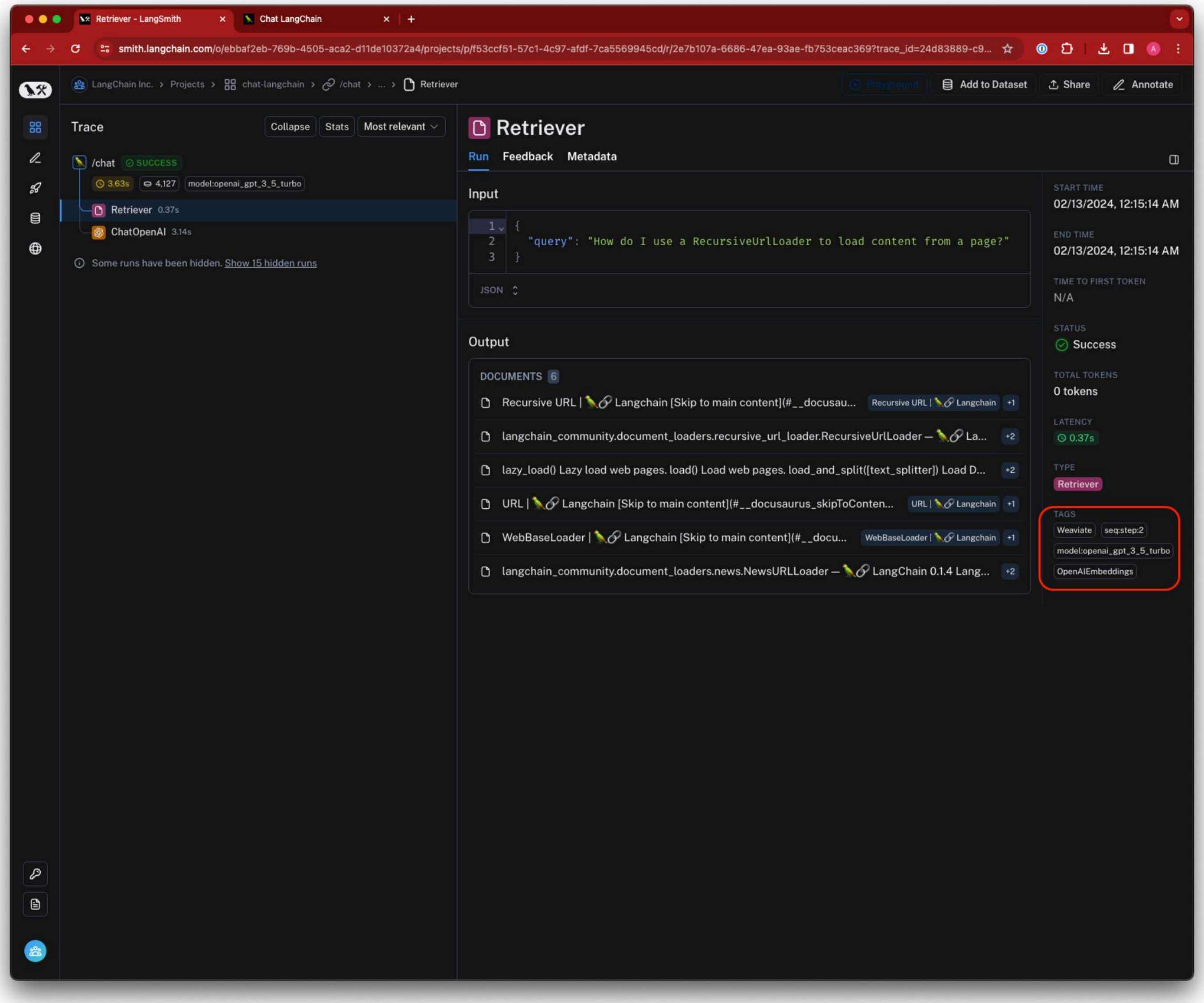
ChatOpenAI 3.14s
Some runs have been hidden. Show 15 hidden runs
ChatOpenAI
Run
Feedback
Metadata
Show 10

Created by	Key	Score	Comment	Correction	Source	Source Info
A	CORRECTNESS	1		{}	APP	

Tags

`Tags` are collections of strings that can be attached to runs. They are used to categorize runs and make it easier to search for them in the LangSmith UI. Tags can be used to filter runs in the LangSmith UI, and can be used to group runs together for analysis. Learn how to attach tags to your traces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Chat LangChain
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DOCUMENTS 6

```
{
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}
```

Recursive URL | 🦜🔗 Langchain [Skip to main content](#__docusau... Recursive URL | 🦜🔗 Langchain +1
langchain_community.document_loaders.recursive_url_loader.RecursiveUrlLoader — 🦜🔗 La... +2
lazy_load() Lazy load web pages. load() Load web pages. load_and_split([text_splitter]) Load D... +2
URL | 🦜🔗 Langchain [Skip to main content](#__docusaurus_skipToConten... URL | 🦜🔗 Langchain +1
WebBaseLoader | 🦜🔗 Langchain [Skip to main content](#__docu... WebBaseLoader | 🦜🔗 Langchain +1
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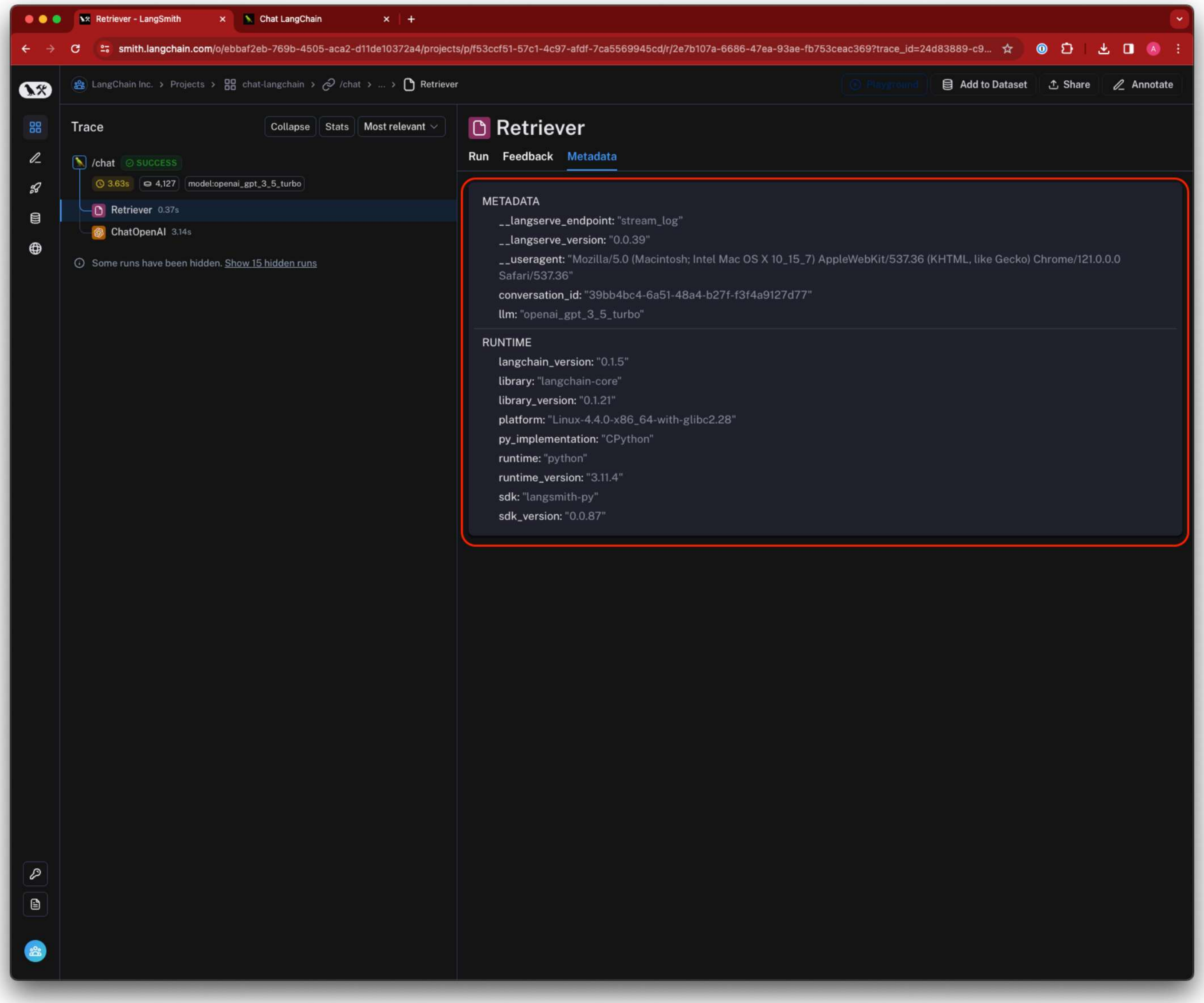
Metadata

`Metadata` is a collection of key-value pairs that can be attached to runs. Metadata can be used to store additional information about a run, such as the version of the application that generated the run, the environment in which the run was generated, or any other information that you want to associate with a run. Similar to tags, you can use metadata to filter runs in the LangSmith UI, and can be used to group runs together for analysis. Learn how to add metadata to your traces


Retriever - LangSmith
Chat LangChain
smith.langchain.com/o/ebbaf2eb-769b-4505-aca2-d11de10372a4/projects/p/f53ccf51-57c1-4c97-afdf-7ca5569945cd/r/2e7b107a-6686-47ea-93ae-fb753ceac369?trace_id=24d83889-c9...
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Retriever 0.37s
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Some runs have been hidden. Show 15 hidden runs
Retriever
Run
Feedback
Metadata

```
METADATA
    __langserve_endpoint: "stream_log"
    __langserve_version: "0.0.39"
    __useragent: "Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/121.0.0.0
    Safari/537.36"
    conversation_id: "39bb4bc4-6a51-48a4-b27f-f3f4a9127d77"
    llm: "openai_gpt_3_5_turbo"

RUNTIME
    langchain_version: "0.1.5"
    library: "langchain-core"
    library_version: "0.1.21"
    platform: "Linux-4.4.0-x86_64-with-glibc2.28"
    py_implementation: "CPython"
    runtime: "python"
    runtime_version: "3.11.4"
    sdk: "langsmith-py"
    sdk_version: "0.0.87"
```

Data storage and retention

For traces ingested on or after Wednesday, May 22, 2024, LangSmith (SaaS) retains trace data for a maximum of 400 days past the date and time the trace was inserted into the LangSmith trace database.

After 400 days, the traces are permanently deleted from LangSmith, with a limited amount of metadata be retained for the purpose of showing accurate statistics such as historic usage and cost.

> **NOTE**
>
> If you wish to keep tracing data longer than the data retention period, you can add it to a dataset. A dataset allows you to store the trace inputs and outputs (e.g., as a key-value

> dataset), and will persist indefinitely, even after the trace gets deleted.

Deleting traces from LangSmith

If you wish to remove a trace from LangSmith sooner than the expiration date, LangSmith supports deleting traces via deleting a project.

This can be accomplished:

- in the LangSmith UI via the "Delete" option on the Project's overflow menu
- via the Delete Tracer Sessions API endpoint
- via `delete_project()` (Python) or `deleteProject()` (JS/TS) in the LangSmith SDK

LangSmith does not support self-service deletion of individual traces at this time.

If you have a need to delete a single trace (or set of traces) from LangSmith project before its expiration date, please have your account owner reach out to LangSmith Support with your organization ID and trace IDs.

Was this page helpful?

👍 👎

You can leave detailed feedback on GitHub.