Header Parameter Models

If you have a group of related **header parameters**, you can create a **Pydantic model** to declare them.

This would allow you to **re-use the model** in **multiple places** and also to declare validations and metadata for all the parameters at once. 😎

Note

This is supported since FastAPI version `0.115.0`. 🤓

Header Parameters with a Pydantic Model

Declare the **header parameters** that you need in a **Pydantic model**, and then declare the parameter as `Header`:

Python 3.10+

```
from typing import Annotated

from fastapi import FastAPI, Header
from pydantic import BaseModel

app = FastAPI()


class CommonHeaders(BaseModel):
    host: str
    save_data: bool
    if_modified_since: str | None = None
    traceparent: str | None = None
    x_tag: list[str] = []


@app.get("/items/")
async def read_items(headers: Annotated[CommonHeaders, Header()]):
    return headers
```

▸ 🤓 Other versions and variants

Python 3.9+

```
from typing import Annotated, Union

from fastapi import FastAPI, Header
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class CommonHeaders(BaseModel):
    host: str
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@app.get("/items/")
async def read_items(headers: Annotated[CommonHeaders, Header()]):
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```

Python 3.8+

```
from typing import List, Union

from fastapi import FastAPI, Header
from pydantic import BaseModel
from typing_extensions import Annotated

app = FastAPI()


class CommonHeaders(BaseModel):
    host: str
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```

Python 3.10+ - non-Annotated

Tip

Prefer to use the `Annotated` version if possible.

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from fastapi import FastAPI, Header
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    host: str
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@app.get("/items/")
async def read_items(headers: CommonHeaders = Header()):
    return headers
```

Python 3.9+ - non-Annotated

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```
from typing import Union

from fastapi import FastAPI, Header
from pydantic import BaseModel

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class CommonHeaders(BaseModel):
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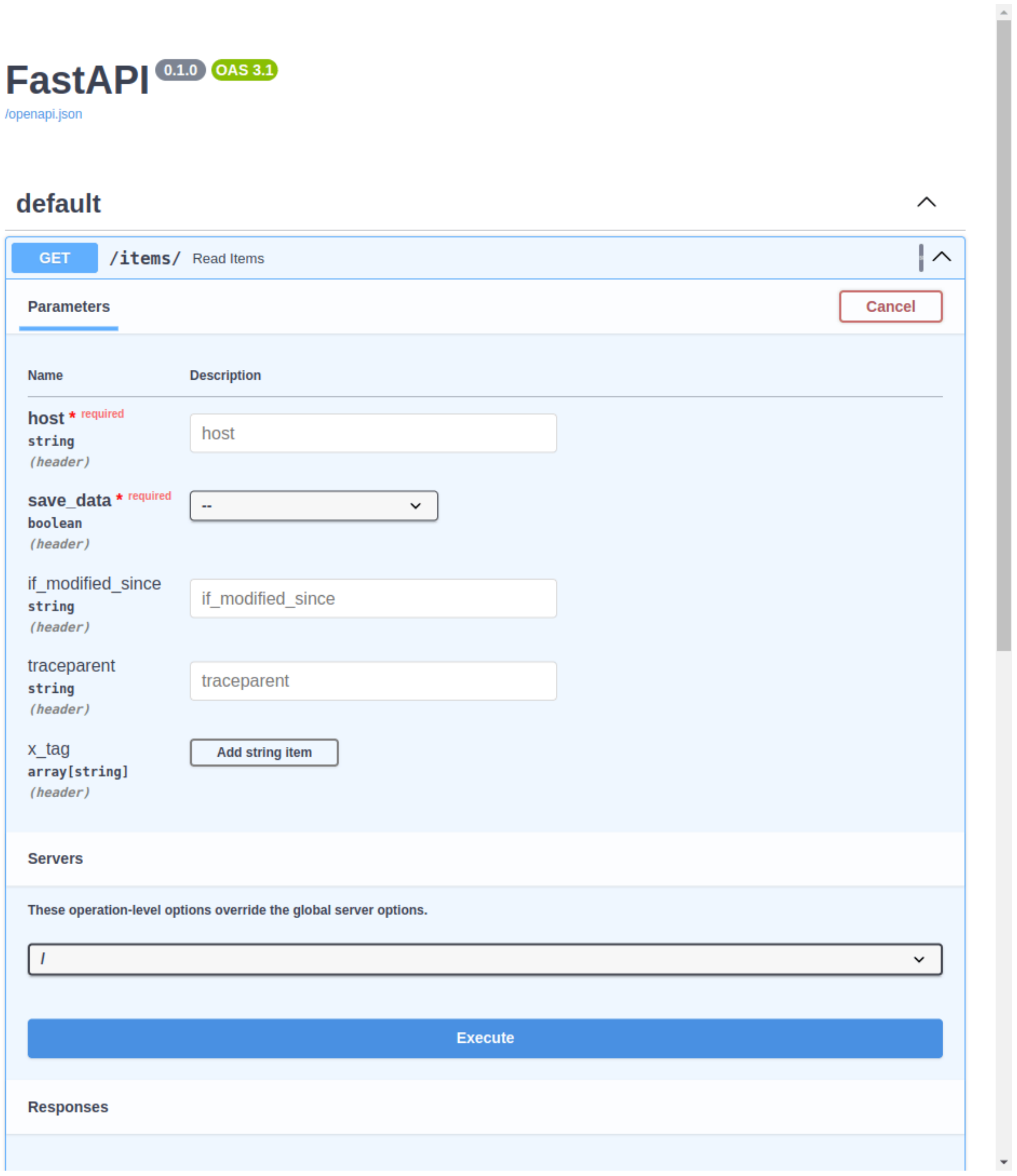
```

FastAPI will **extract** the data for **each field** from the **headers** in the request and give you the Pydantic model you defined.

Check the Docs

You can see the required headers in the docs UI at `/docs`:



Forbid Extra Headers

In some special use cases (probably not very common), you might want to **restrict** the headers that you want to receive.

You can use Pydantic's model configuration to `forbid` any `extra` fields:

Python 3.10+

```python
from typing import Annotated

from fastapi import FastAPI, Header
from pydantic import BaseModel

app = FastAPI()


class CommonHeaders(BaseModel):
    model_config = {"extra": "forbid"}

    host: str
    save_data: bool
    if_modified_since: str | None = None
    traceparent: str | None = None
    x_tag: list[str] = []


@app.get("/items/")
async def read_items(headers: Annotated[CommonHeaders, Header()]):
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```
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@app.get("/items/")
async def read_items(headers: Annotated[CommonHeaders, Header()]):
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```

Python 3.8+

```
from typing import List, Union

from fastapi import FastAPI, Header
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from typing_extensions import Annotated

app = FastAPI()


class CommonHeaders(BaseModel):
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from typing import Union
```

```python
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from pydantic import BaseModel

app = FastAPI()


class CommonHeaders(BaseModel):
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@app.get("/items/")
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```

If a client tries to send some **extra headers**, they will receive an **error** response.

For example, if the client tries to send a `tool` header with a value of `plumbus`, they will receive an **error** response telling them that the header parameter `tool` is not allowed:

```json
{
    "detail": [
        {
            "type": "extra_forbidden",
            "loc": ["header", "tool"],
            "msg": "Extra inputs are not permitted",
            "input": "plumbus",
        }
    ]
}
```

Summary

You can use **Pydantic models** to declare **headers** in **FastAPI**. 😎