

# How to add custom REST endpoints to your Agent

## Introduction

uAgents now support custom REST endpoints using `@on_rest_get()` and `@on_rest_post()` decorators, enabling them to handle HTTP GET and POST requests directly. With this addition, agents can define specific routes, create request and response models, and interact seamlessly with REST clients. This feature enhances the flexibility of agents, allowing them to communicate with external systems using standard web protocols while ensuring that all responses conform to predefined models.

Let's get started!

## Prerequisites

Make sure you have read the following resources before going on with this guide:

- [Quick Start Guide for uAgents Framework](#)
- [Creating your first agent](#)
- [Agent Handlers](#)
- [Almanac contract](#)
- [Register in Almanac](#)
- [Agents protocols](#)
- [Exchange protocol](#)
- [Options for running your Agents](#)

⚠ Please note that this feature is only available at the 'agent level', meaning that you cannot add REST endpoints to uAgents protocols.

## Usage

To use the new REST API feature in your agent, follow these steps to define custom GET and POST routes, run the agent, and query the endpoints.

### Define Custom GET and POST Routes

#### GET Endpoint

Use the `@on_rest_get()` decorator to define a custom GET endpoint. You will need to specify the endpoint route and the response model.

```
@agent.on_rest_get ( "/custom_get_route" , Response) async
```

```
def
```

```
handle_get ( ctx : Context) -> Dict [ str , Any ] : return
```

```
{ "field" :
```

```
< value
```

```
, }
```

#### POST Endpoint

Use the `@on_rest_post()` decorator to define a custom POST endpoint. You need to provide both a request model (for input) and a response model (for output).

```
@agent.on_rest_post ( "/custom_post_route" , Request, Response) async
```

```
def
```

```
handle_post ( ctx : Context ,
```

```
req : Request) -> Response: ctx . logger . info (req) return
```

Response (...) **!** For querying the agent you have to make sure that:

- You use the correct REST method ("GET" or "POST")

- You address the agent endpoint together with its route e.g. `http://localhost:8000/custom_route`

## Example of custom GET and POST Routes

Self hosted agent.py import time from typing import Any , Dict

from uagents import Agent , Context , Model

class

Request ( Model ): text :

str

class

Response ( Model ): timestamp :

int text :

str agent\_address :

str

## You can also use empty models to represent empty request/response bodies

class

EmptyMessage ( Model ): pass

## agent

Agent (name = "Rest API" )

@agent . on\_rest\_get ( "/rest/get" , Response) async

def

handle\_get ( ctx : Context) -> Dict [ str , Any ] : ctx . logger . info ( "Received GET request" ) return

{ "timestamp" :

int (time. time ()), "text" :

"Hello from the GET handler!" , "agent\_address" : ctx . agent . address , }

@agent . on\_rest\_post ( "/rest/post" , Request, Response) async

def

handle\_post ( ctx : Context ,

req : Request) -> Response: ctx . logger . info ( "Received POST request" ) return

Response ( text = f "Received: { req.text } " , agent\_address = ctx.agent.address, timestamp = int (time. time ()), )

if

**name**

==

**"main"** : agent . run ()

## Run the example

1. Run the agent: `python agent.py`

2. Query the agent directly through your predefined interfaces:
3. curl
4. -d
5. '{"text": "test"}'
6. -H
7. "Content-Type: application/json"
8. -X
9. POST
10. http://localhost:8000/rest/post

## Expected output

- Curl Response:
- {"timestamp": 1725610956, "text": "Received: test", "agent\_address": "agent1q2qavahvzm2yw237g2cq40pe8p590ppysclaffp2dd0gtk9evtxag7c8djd"}
- Agent Logs:
- WARNING: [Rest API]: No endpoints provided. Skipping registration: Agent won't be reachable.
- INFO: [Rest API]: Starting server on http://0.0.0.0:8000 (Press CTRL+C to quit)
- INFO: [Rest API]: Received POST request

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