Seventh Sense

API7 User Guide

v2.0

(on-premises edition)

Introduction

Thank you for downloading API7 FR Server. This guide will help you get started with using the API7 FR Server.

To install API7, you need a computer running Ubuntu 18.04/20.04 LTS.

This can either be a physical machine or a VM on AWS/Azure/GCP.

System Requirements

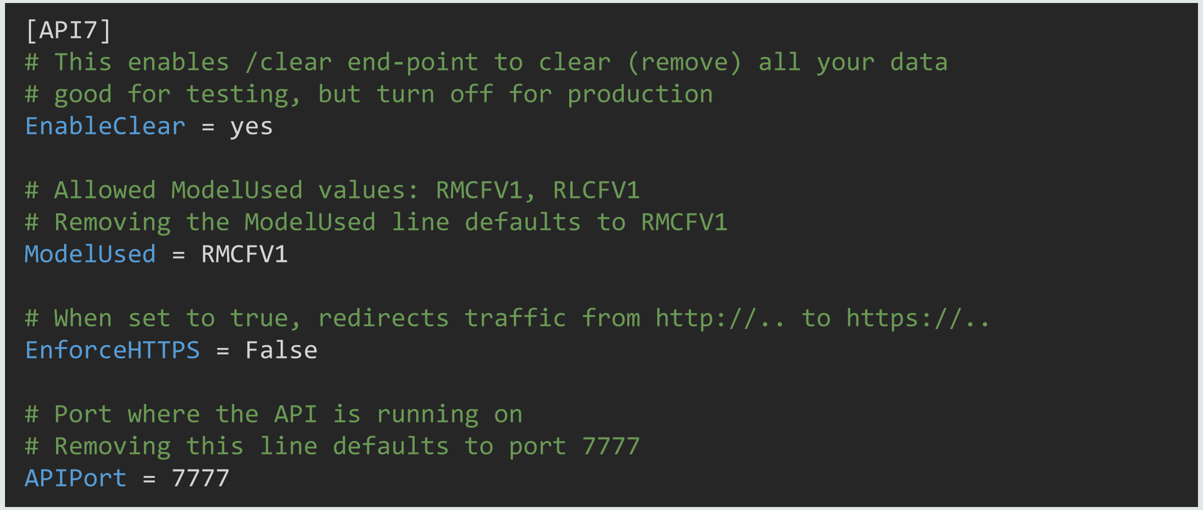
The following table lists the minimum and recommended specifications of machines running the software:

	Minimum	Recommended
OS	Ubuntu 18.04/20.04 LTS Desktop or Server	
CPU	Intel Core i5 5th gen or later	Intel Core i9 12th gen or later
Clock speed	2.2 GHz, 2 cores, 4 threads	3.2 GHz, 16 cores, 24 threads
RAM	8GB	8GB
Free Disk Space	600MB	1GB

Performance will vary with the clock speed and number of cores for the underlying hardware you are executing the server on.

Configuration

The setup package consists of an api7.ini file which can be used to configure certain parameters to suit your needs and compute:



```
[API7]
# This enables /clear end-point to clear (remove) all your data
# good for testing, but turn off for production
EnableClear = yes

# Allowed ModelUsed values: RMCFV1, RLCFV1
# Removing the ModelUsed line defaults to RMCFV1
ModelUsed = RMCFV1

# When set to true, redirects traffic from http://.. to https://..
EnforceHTTPS = False

# Port where the API is running on
# Removing this line defaults to port 7777
APIPort = 7777
```

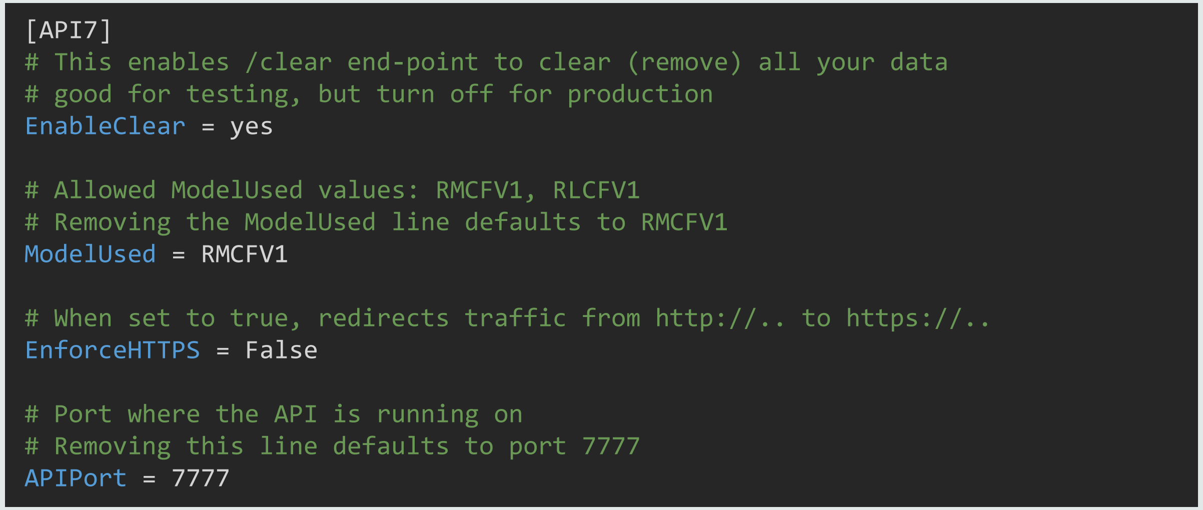
The following are the important parameters to adjust:

EnableClear: By default, this is set to yes and the API provides a /clear endpoint to remove all your data (good for testing, but turn off in production)

ModelUsed: This can be configured to either RMCFV1 or RLCFV1. It determines the algorithm used for Facial Recognition. RMCFV1 (default) presents a good trade-off between speed and accuracy and RLCFV1 is our best NIST validated model (#8 globally)

Configuration

Continued from last page:



```
[API7]
# This enables /clear end-point to clear (remove) all your data
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# Allowed ModelUsed values: RMCFV1, RLCFV1
# Removing the ModelUsed line defaults to RMCFV1
ModelUsed = RMCFV1

# When set to true, redirects traffic from http://.. to https://..
EnforceHTTPS = False

# Port where the API is running on
# Removing this line defaults to port 7777
APIPort = 7777
```

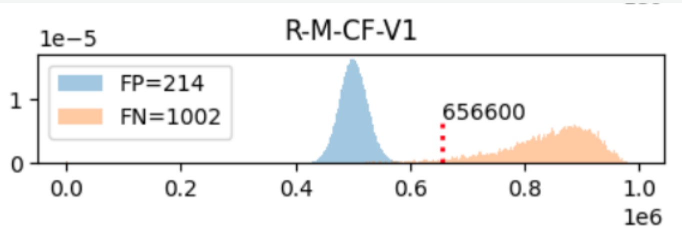
EnforceHTTPS: When enabled, this redirects all requests starting with http:// to https://

APIPort: This is the port that the API will run on. With 7777 (default), you can access the API at: http://localhost:7777

Accuracy

As mentioned previously, API7 can be configured to use one of two algorithms. In the **ModelUsed** configuration in the accompanying api7.ini file, you can set the algorithm to either RMCFV1 or RLCFV1, this algorithm should only be configured once during the setup of your deployment (do not change this after enrolling persons).

Algorithm – RMCFV1



The RMCFV1 algorithm offers a good trade-off between speed and accuracy and is the default.

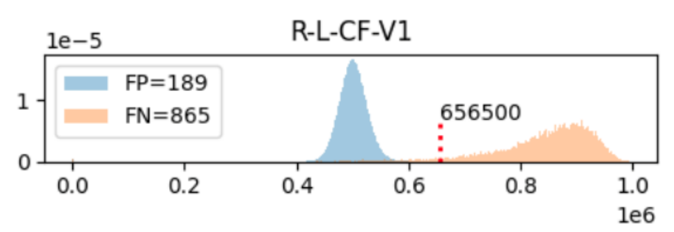
The results (on the left) show the algorithm evaluated on the challenging IJB-C dataset. The negative comparisons (different persons) are shown in blue, while the positive comparisons (same person) are shown in orange. There were 19,557 positive comparisons and 15,638,932 negative comparisons.

The graph shows the algorithm’s similarity scores between pairs of images. 0.66 when selected as a threshold separates the positive pairs from the negative pairs – any match that has a score of 0.66 or higher, can be considered to be the same person, while any match with a lower score can be considered a different person.

This is dataset specific, so if you are using an easier dataset (for example frontal images), you can use a higher score as the threshold for deciding if a person is a match or not.

There were 214 false positives and 1,002 false negatives for the algorithm (on the IJB-C dataset of 15,658,489 total comparisons).

Algorithm – RLCFV1

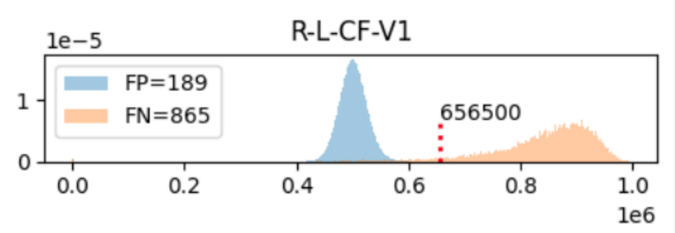


The RLCFV1 algorithm is our NIST #8 ranked model which is highly accurate, state of the art, but relatively slower than RMCFV1.

The RLCFV1 algorithm is our best algorithm which is highly accurate, NIST validated, and state of the art.

The results on the left show the model evaluated on the same challenging IJB-C dataset. As you can see from the results, both the number of false positives, and the number of false negatives is reduced.

Algorithm – RLCFV1



The RLCFV1 algorithm offers our NIST #8 ranked model which is highly accurate, state of the art, but relatively slower than RMCFV1.

The following table shows the NIST evaluation of the RLCFV1 algorithm over several difficult datasets:

VISA Photos FMR:1e-6	MUGSHOT Photos FMR:1e-5	MUGSHOT Photos >= 12 years FMR: 1e-5	VISABORDER Photos FMR: 1e-6	BORDER Photos FMR:1e-6	WILD Photos FMR: 1e-5	KIOSK Photos FMR: 1e-5
0.0047	0.0025	0.0031	0.0029	0.0338	0.0302	0.1014

At a specific False Match Rate (FMR), the table shows the False Non-Match Rate (FNMR).

What are the NIST evaluation datasets?

VISA

- The number of images is on the order of 10^5.
- The number of subjects is on the order of 10^5.
- The number of subjects with two images on the order of 10^4.
- The images have geometry in reasonable conformance with the ISO/IEC 19794-5 Full Frontal image type.
- Pose is generally excellent.
- The images are of size 252x300 pixels.
- The mean interocular distance (IOD) is 69 pixels.
- The images are of subjects from greater than 100 countries, with significant imbalance due to visa issuance patterns.
- The images are of subjects of all ages, including children, again with imbalance due to visa issuance demand.
- Many of the images are live capture.
- A substantial number of the images are photographs of paper photographs.
- When these images are input to the algorithm, they are labelled as being of type ”ISO”- see Table 4 of the FRVT API.

What are the NIST evaluation datasets?

VISA Images II

- The number of images is on the order of 10^6.
- The number of subjects is on the order of 10^6.
- The number of subjects with two images on the order of 10^6.
- The images have geometry in reasonable conformance with the ISO/IEC 19794-5 Full Frontal image type.
- The images are of size 300x300 pixels. The mean interocular distance (IOD) is 61 pixels.
- The images are of subjects from greater than 100 countries, with significant imbalance due to visa issuance patterns.
- The images are of subjects of all ages, including children, again with imbalance due to population and immigration patterns and demand.
- All the images are live capture.
- When these images are input to the algorithm, they are labelled as being of type ”ISO”- see Table 4 of the FRVT API.

What are the NIST evaluation datasets?

Mugshot Images

- The number of images is on the order of 10^6.
- The number of subjects is on the order of 10^6.
- The number of subjects with two images on the order of 10^6.
- The images have geometry in reasonable conformance with the ISO/IEC 19794-5 Full Frontal image type.
- The images are of variable sizes.
- The median IOD is 105 pixels.
- The mean IOD is 113 pixels.
- The 1-st, 5-th, 10-th, 25-th, 75-th, 90-th and 99-th percentiles are 34, 58, 70, 87, 121, 161 and 297 pixels.
- The images are of subjects from the United States.
- The images are of adults.
- The images are all live capture.
- When these images are input to the algorithm, they are labelled as being of type ”mugshot”- see Table 4 of the FRVTAPI.

What are the NIST evaluation datasets?

Webcam Images

- The number of images is on the order of 10^6.
- The number of subjects is on the order of 10^6.
- All subjects have a webcam image, and a portrait image.
- The portrait images are in poor conformance with the ISO/IEC 19794-5 Full Frontal image type.
- The webcam images are taken with at camera oriented by an attendant toward a cooperating subject.
- This is done under time constraints so there are roll, pitch and yaw angle variation.
- Also, background illumination is sometimes strong, so the face is under exposed.
- There is sometimes perspective distortion due to close range images.
- The images have mean IOD of 38 pixels.
- The images are all live capture.
- When these images are input to the algorithm, they are labelled as being of type ”WILD”- see Table 4 of the FRVT API.

What are the NIST evaluation datasets?

Wild Images

- The number of images is on the order of 10^5.
- The number of subjects is on the order of 10^3.
- The number of subjects with two images on the order of 10^3.
- The images include many photojournalism-style images.
- Images are given to the algorithm using a variable but generally tight crop of the head.
- Resolution varies very widely.
- The images are very unconstrained, with wide yaw and pitch pose variation.
- Faces can be occluded, including hair and hands.
- The images are of adults.
- All of the images are live capture, none are scanned.
- When these images are input to the algorithm, they are labelled as being of type ”WILD”- see Table 4 of the FRVT API.

What do the numbers mean?

(a) Visa (b) Mugshot (c) Wild

VISA – A comparison of VISA photos with other VISA photos. If we're allowed to misidentify 1 person in a million, we would correctly identify people 1 - 0.0047 = 99.53% of the time (TAR = 1 – FNMR).

MUGSHOT - A comparison of MUGSHOT photos with other MUGSHOT photos. If we're allowed to misidentify 1 person in a 100k, we would correctly identify people 1-0.0025 = 99.75% of the time.

MUGSHOT >= 12 years - A comparison of MUGSHOT photos with other MUGSHOT photos (with more than 12 years age difference between the two photos). If we're allowed to misidentify 1 person in a 100k, we would correctly identify people 1-0.0031 = 99.69% of the time.

VISABORDER (rank #8) – A comparison of VISA photos with webcam photos. If we're allowed to misidentify 1 person in a million, we would correctly identify people 1 – 0.0029 = 99.71% of the time.

Similarly for BORDER (BORDER vs BORDER), WILD (WILD vs WILD), and KIOSK (KIOSK vs KIOSK)

VISA Photos FMR:1e-6	MUGSHOT Photos FMR:1e-5	MUGSHOT Photos >= 12 years FMR: 1e-5	VISABORDER Photos FMR: 1e-6	BORDER Photos FMR:1e-6	WILD Photos FMR: 1e-5	KIOSK Photos FMR: 1e-5
0.0047	0.0025	0.0031	0.0029	0.0338	0.0302	0.1014

Accuracy

Apart from selecting between these two models, you can also select **FAST** as your search mode, which optimizes for fast search over accuracy or **ACCURATE** which prioritizes accuracy.

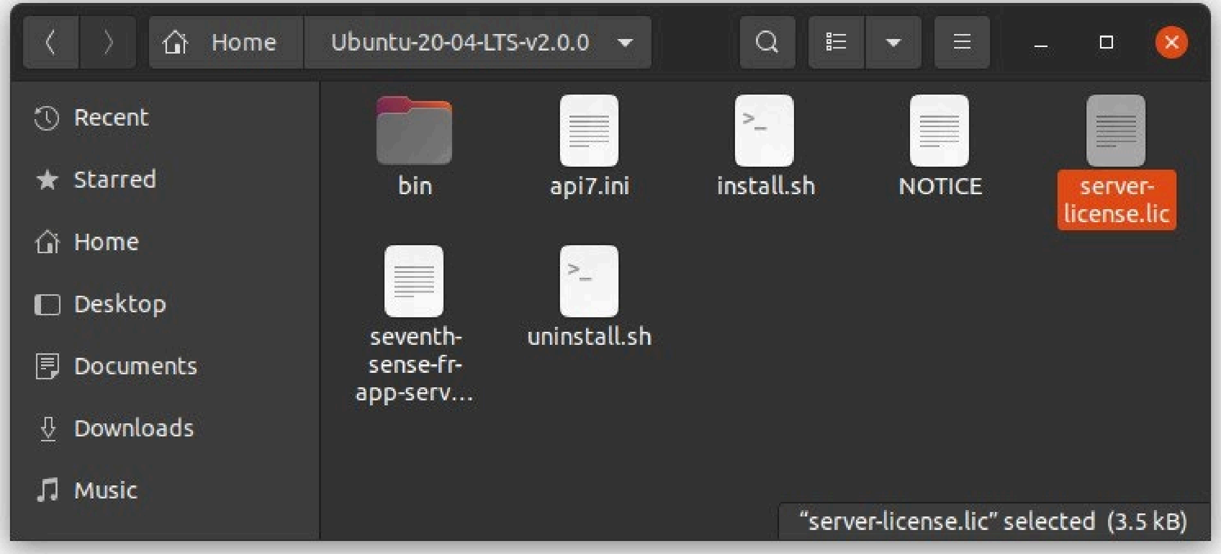
If you plan to use **ACCURATE** mode, and the **RLCFV1** model, we recommend that you choose a capable CPU (Xeon 3rd generation is recommended) or a bigger instance in the cloud.

However, if your planned search capacity is well under 5 RPS (Requests per second), you can search using **RLCFV1** model and **ACCURATE** mode on our recommended system specification as well.

Installation

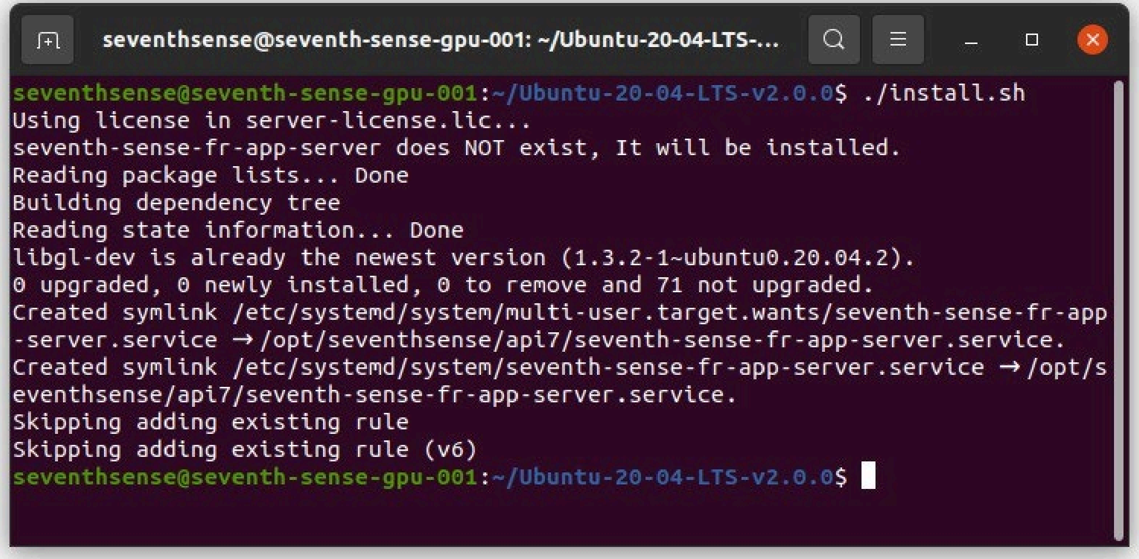
To install the software, please follow the steps below:

1. Go to our website – https://release.seventhsense.ai
2. Pick your OS and register your details.
3. Check your email for a download link, server license file and license key
4. Click the download link to download the file
5. Unzip the file on your physical machine or VM
6. Place the *server-license.lic* file attached to your email in the unzipped folder as shown on the following page:



“server-license.lic” selected (3.5 kB)

Installation



```
seventhsense@seventh-sense-gpu-001:~/Ubuntu-20-04-LTS-v2.0.0$ ./install.sh
Using license in server-license.lic...
seventh-sense-fr-app-server does NOT exist, It will be installed.
Reading package lists... Done
Building dependency tree
Reading state information... Done
libgl-dev is already the newest version (1.3.2-1~ubuntu0.20.04.2).
0 upgraded, 0 newly installed, 0 to remove and 71 not upgraded.
Created symlink /etc/systemd/system/multi-user.target.wants/seventh-sense-fr-app
-server.service → /opt/seventhsense/api7/seventh-sense-fr-app-server.service.
Created symlink /etc/systemd/system/seventh-sense-fr-app-server.service → /opt/s
eventhsense/api7/seventh-sense-fr-app-server.service.
Skipping adding existing rule
Skipping adding existing rule (v6)
seventhsense@seventh-sense-gpu-001:~/Ubuntu-20-04-LTS-v2.0.0$
```

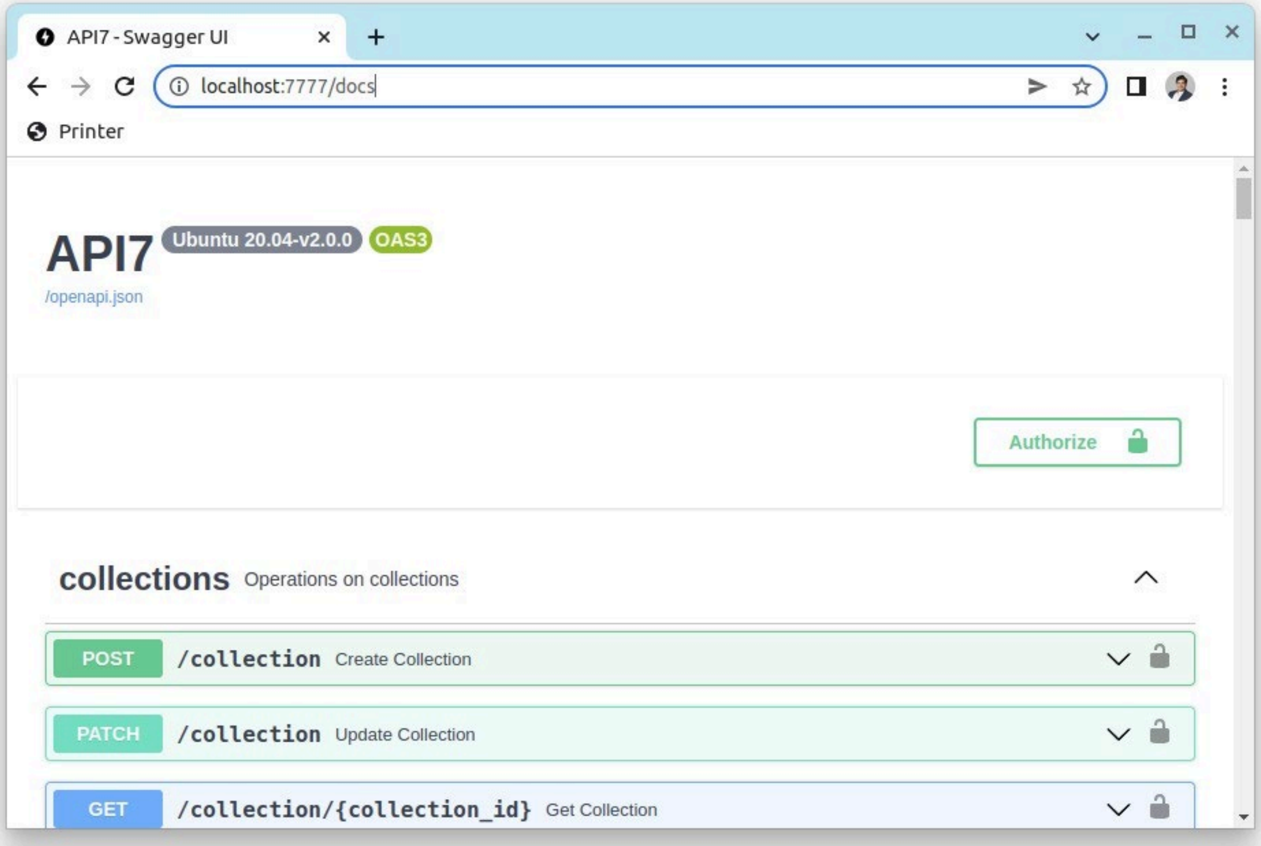
Installation

7. To install the product, open a command prompt and then run ./install.sh

Trying the API

If you installed the product on your own computer and didn't change the default port, the API documentation page is available at http://localhost:7777/docs

The following page shows the documentation page.


API7 - Swagger UI

localhost:7777/docs

Printer

API7 Ubuntu 20.04-v2.0.0 OAS3

/openapi.json

Authorize

collections Operations on collections

POST /collection Create Collection

PATCH /collection Update Collection

GET /collection/{collection_id} Get Collection

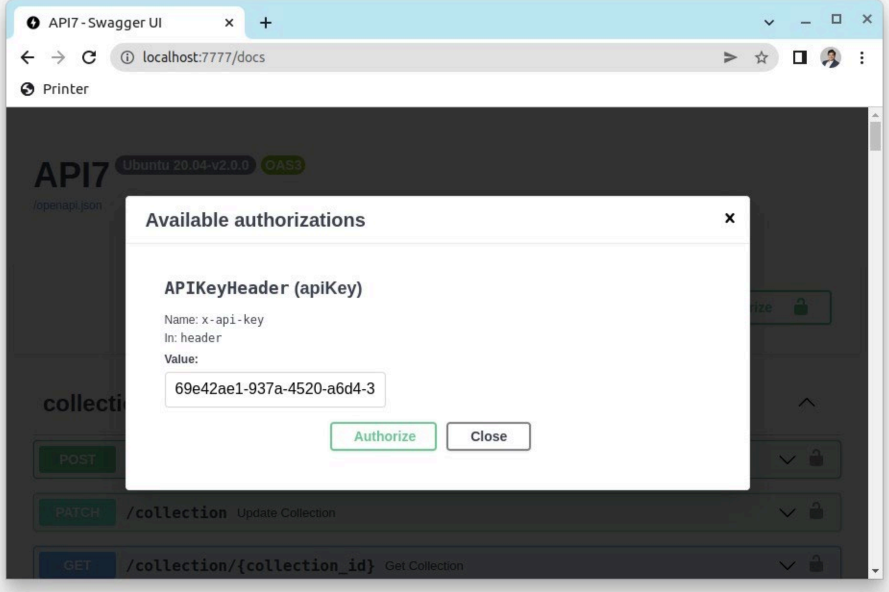
Documentation

Authorization

If you installed the product on a VM, you would need to open port 7777 to access the page from outside the VM (or configure SSL termination at a load balancer and then call into the API)

In the mail you received while downloading the product, you were also provided with a license key. This license key serves to authorize requests with the API.

Please click the *Authorize* button on the documentation page and enter your *license key* as shown:



Available authorizations

APIKeyHeader (apiKey)

Name: x-api-key
In: header
Value: 69e42ae1-937a-4520-a6d4-3

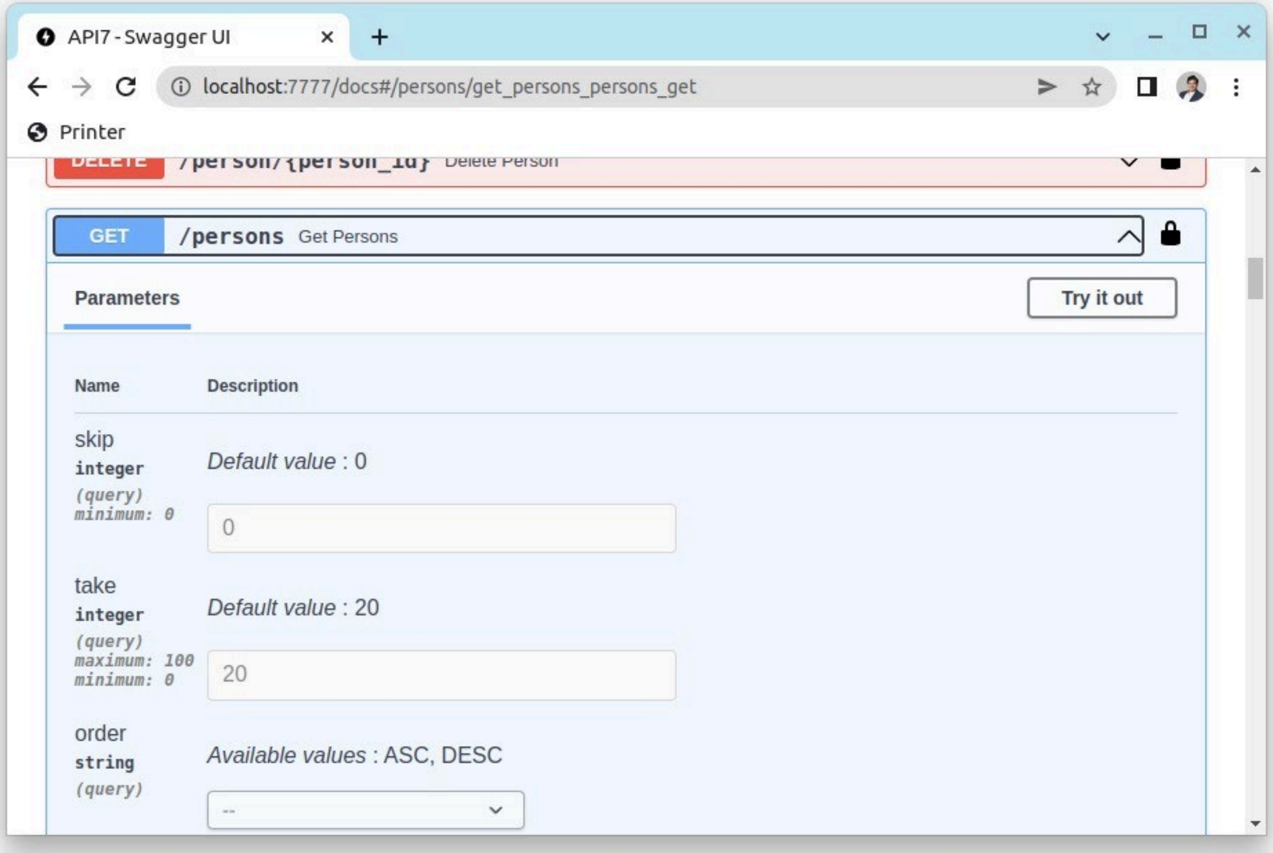
/collection Update Collection

/collection/{collection_id} Get Collection

Authorization

Authorized requests

Now we can make authorized requests to the API end-points. Let’s try to make a simple request to get a list of persons. To do so, please expand the GET /persons end-point as shown:

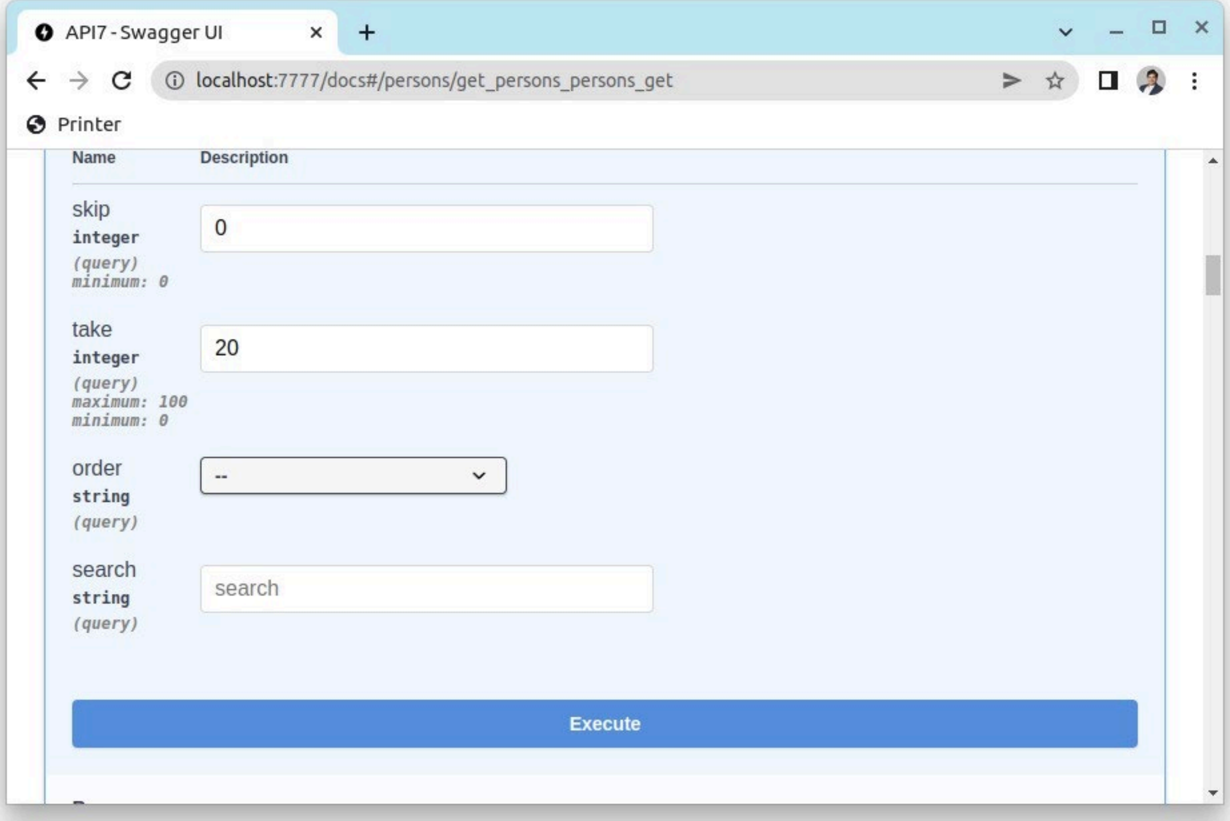


DELETE /person/{person_id} Delete Person

GET /persons Get Persons

Name	Description
skip integer *(query)* *minimum: 0*	*Default value* : 0 0
take integer *(query)* *maximum: 100* *minimum: 0*	*Default value* : 20 20
order string *(query)*	*Available values* : ASC, DESC --

GET /persons



Name Description

skip
integer
(query)
minimum: 0
0

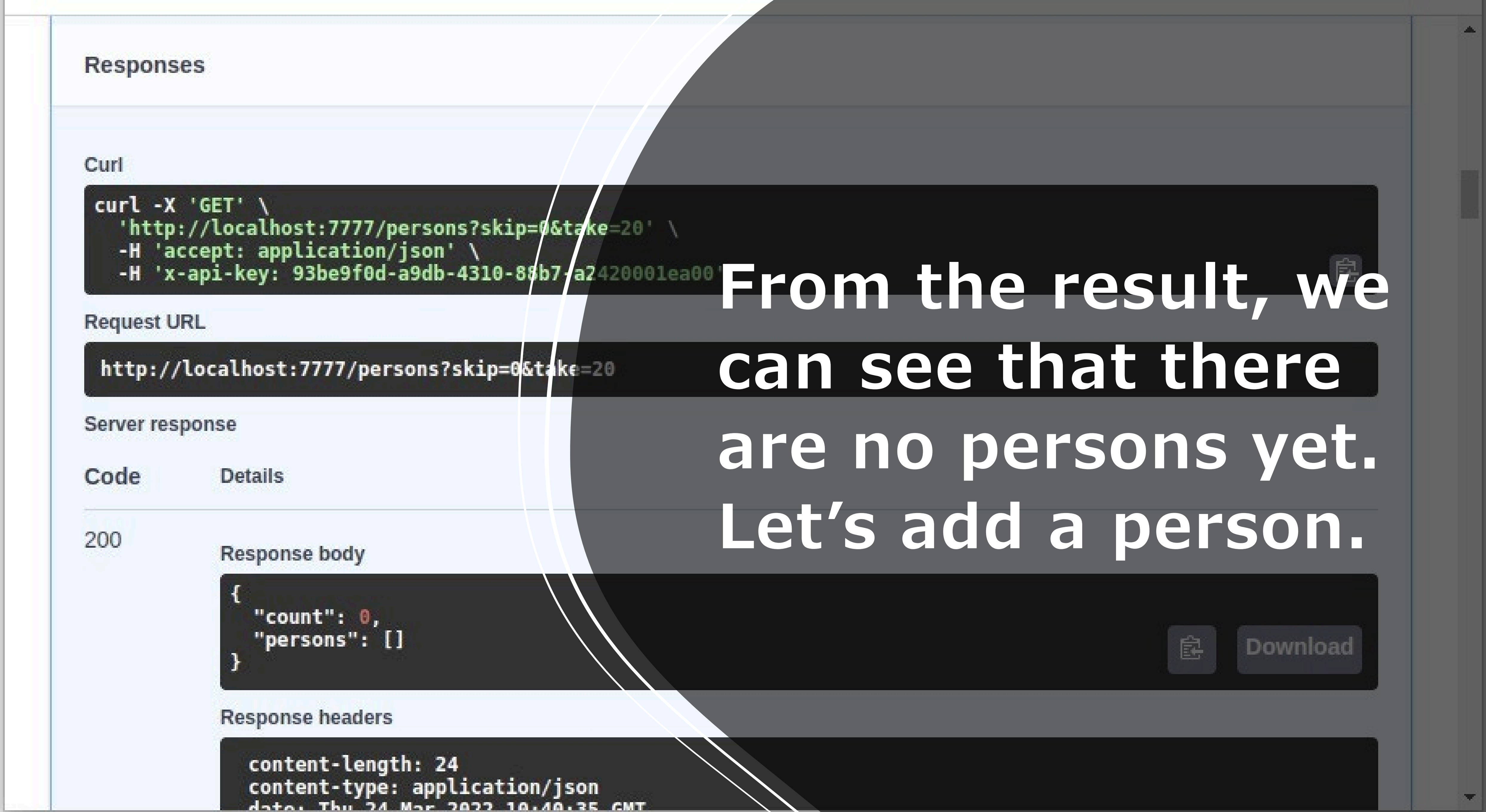
take
integer
(query)
maximum: 100
minimum: 0
20

order
string
(query)
--

search
string
(query)
search

GET /persons

Now click the Try it out button. This will show you an Execute button. When you click the **Execute** button, you will see a JSON response from the API:



Responses

Curl

```
curl -X 'GET' \
  'http://localhost:7777/persons?skip=0&take=20' \
  -H 'accept: application/json' \
  -H 'x-api-key: 93be9f0d-a9db-4310-88b7-a242000lea00'
```

Request URL

```
http://localhost:7777/persons?skip=0&take=20
```

Server response

Code	Details
200	Response body

```
{
  "count": 0,
  "persons": []
}
```

Response headers

```
 content-length: 24
 content-type: application/json
 date: Thu 24 Mar 2022 10:40:35 GMT
```

From the result, we can see that there are no persons yet. Let’s add a person.

Base64 images

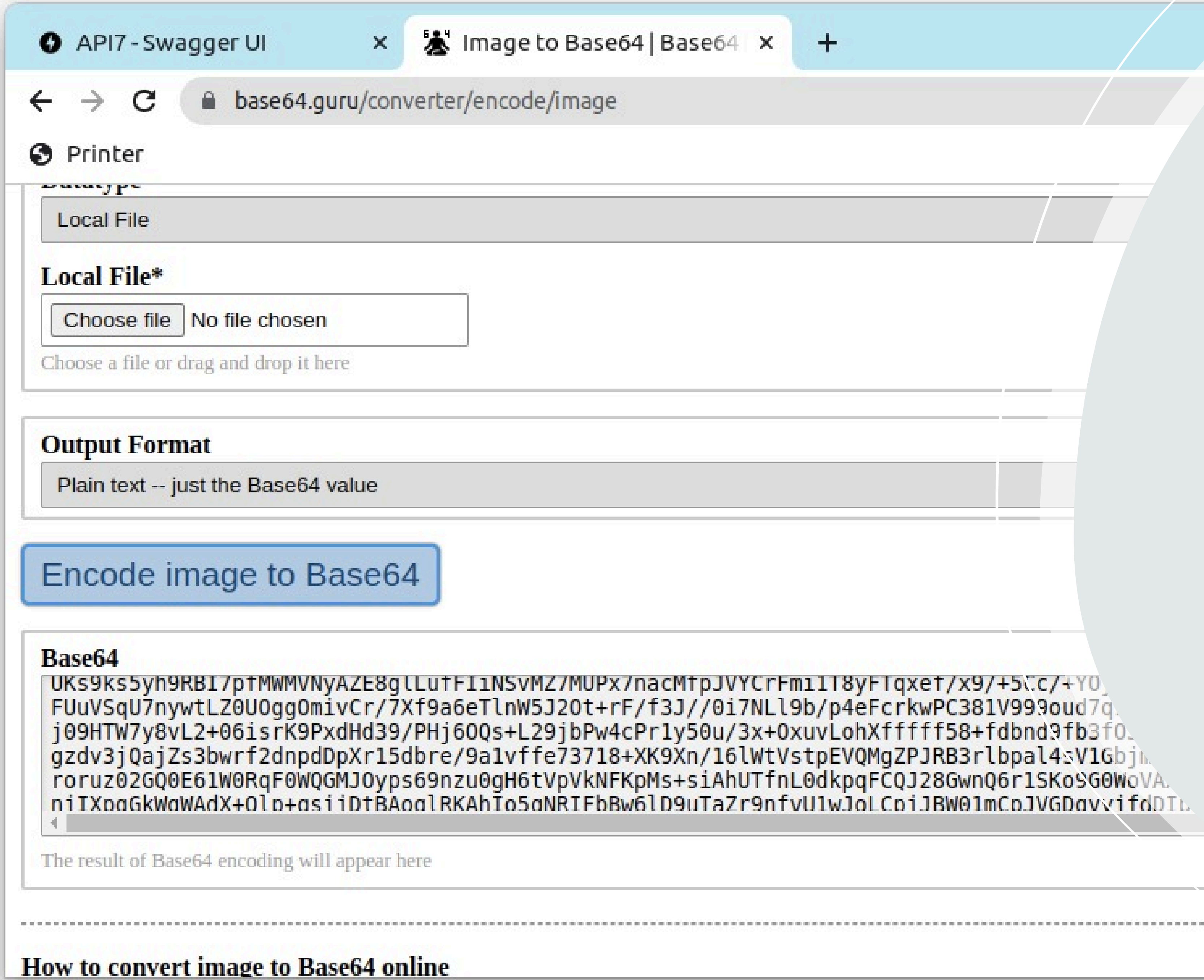
The API accepts and returns JSON. Since JSON is a text-based protocol, images (which are binary) must be converted to a text-based representation.

Base64 is one such representation.

Thus, to upload an image of a person, we must first convert the image to Base64. Most programming languages have libraries available to convert images to Base64.

For the purpose of this guide, we will use the following website to convert an image to Base64:

https://base64.guru/converter/encode/image



Datatype

Local File

Local File*

Choose file No file chosen

Choose a file or drag and drop it here

Output Format

Plain text -- just the Base64 value

Base64

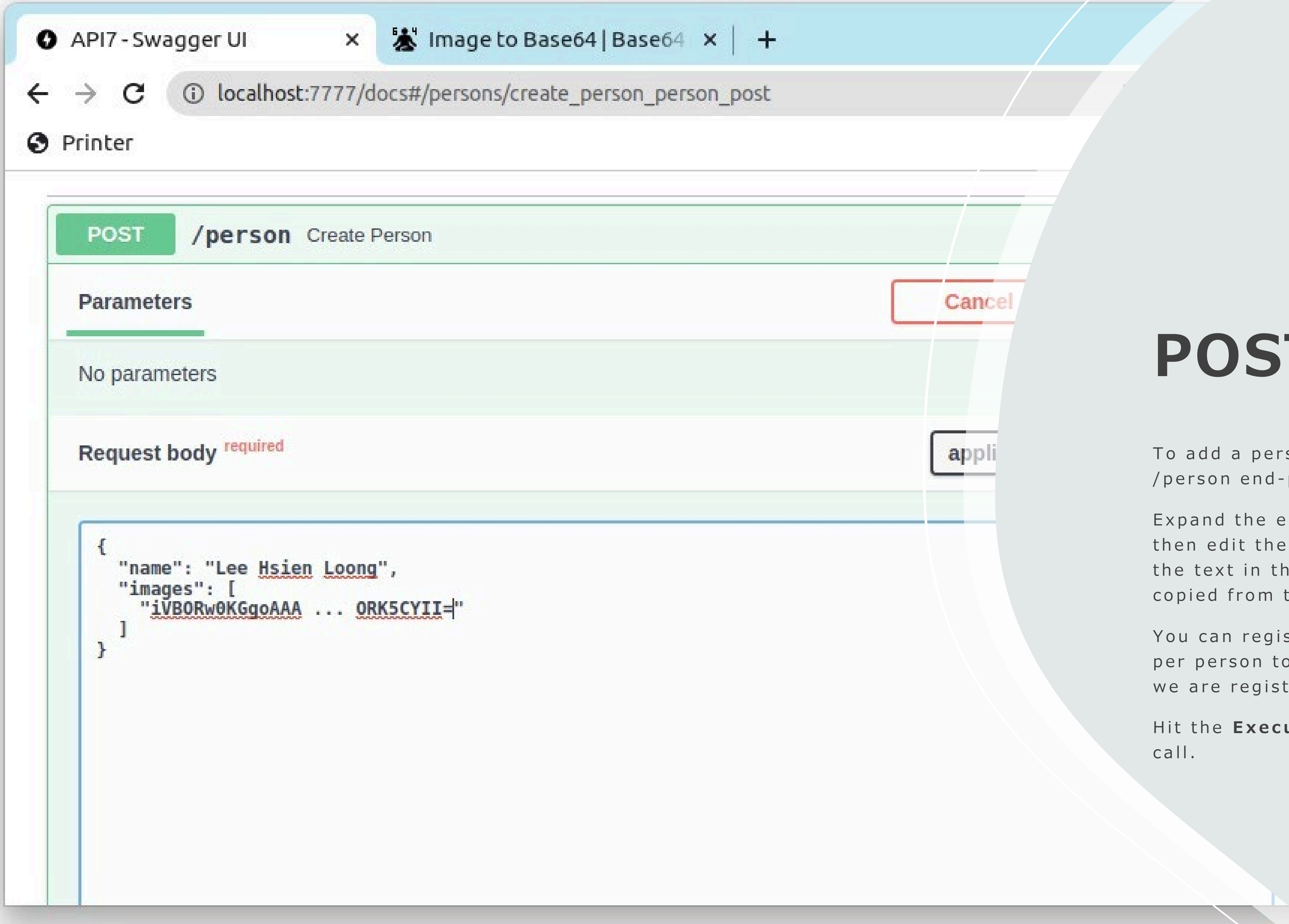
```
UKs9ks5yh9RBI7pfMWMVNyAZE8glLufFI1NSvMZ7MUPx7nacMfpJVYCrFmiIT8yFTqxef/x9/+5Cc/+YO
FUuVSqU7nywtLZ0UOggOmivCr/7Xf9a6eTlnW5J2Ot+rF/f3J//0i7NLl9b/p4eFcrkwPC381V999oud7q
j09HTW7y8vL2+06isrK9PxdHd39/PHj6OQs+L29jbPw4cPr1y50u/3x+OxuvLohXfffff58+fdbnd9fb3f0
gzdv3jQajZs3bwrf2dnpdDpXr15dbre/9a1vffe73718+XK9Xn/16lWtVstpEVQMgZPJRB3rlbpal4sV1Gbj
roruz02GQ0E61W0RqF0WQGMJOyps69nzu0gH6tVpVkNFKpMs+siAhUTfnL0dkpqFCQJ28GwnQ6r1SKo9G0WoVA
niIXpqGkWqWAdX+Olp+qsijDtBAoglRKAhIo5qNRIFbBw6lD9uTaZr9nfyU1wJoLCpiJBW01mCpJVGDqvvifdDI
```

The result of Base64 encoding will appear here

How to convert image to Base64 online

Base64 images

We will need the Base64 text shown on the screen to register a person in the database. You can copy this text so that we can paste it in the API call.



```
{
  "name": "Lee Hsien Loong",
  "images": [
    "iVBORw0KGgoAAA ... ORK5CYII="
  ]
}
```

POST /person

To add a person, we need to call the **POST** /person end-point.

Expand the end-point, click **Try it out**, and then edit the post body as shown. Note that the text in the images array is the one we copied from the Base64 website.

You can register a maximum of three images per person to improve accuracy. In this case we are registering only one.

Hit the **Execute** button to complete the API call.

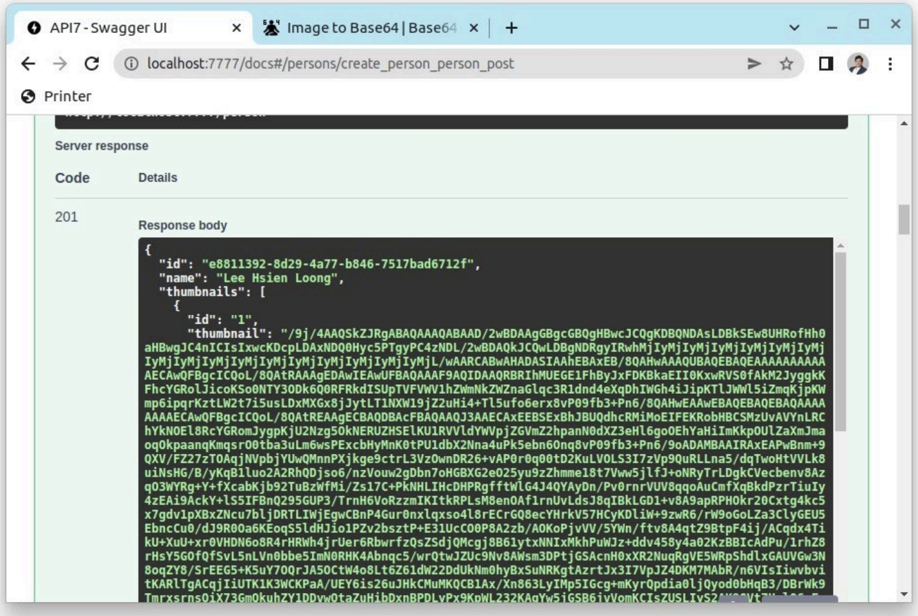
POST /person

The API returns a thumbnail array which includes registered images. Again, here the images are Base64 encoded.

You can copy the text for a thumbnail and see the image by visiting:

https://base64.guru/converter/decode

Now that we have a registered person, we can search for the person by using a different image of the same person.



Server response

Code	Details
201	Response body

```
{
  "id": "e8811392-8d29-4a77-b846-7517bad6712f",
  "name": "Lee Hsien Loong",
  "thumbnails": [
    {
      "id": "1",
      "thumbnail": "/9j/4AAQSkZJRgABAQAAAQABAAD/2wBDAAgGBgcGBQgHBwcJCQgKDBQNDAsLDBkSEw8UHRofHh0
aHBwgJC4nICIsIxwcKDcpLDAxNDQ0Hyc5PTgyPC4zNDL/2wBDAQkJCQwLDBgNDRgyIRwhMjIyMjIyMjIyMjIyMjIyMj
IyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjL/wAARCABwAHADASIAAhEBAxEB/8QAHwAAAQUBAQEBAQEAAAAAAAAA
AECAwQFBgcICQoL/8QAtRAAAgEDAwIEAwUFBAQAAAF9AQIDAAQRBRIhMUEGE1FhByJxFDKBkaEII0KxwRVS0fAkM2JyggkK
FhcYGRolJicoKSo0NTY3ODk6Q0RFRkdISUpTVFVWV1hZWmNkZWZnaGlqc3R1dnd4eXqDhIWGh4iJipKTlJWWl5iZmqKjpKW
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AAAAECAwQFBgcICQoL/8QAtREAAgECBAQDBAcFBAQAAQJ3AAECAxEEBSExBhJBUQdhcRMiMoEIFEKRobHBCSMzUvAVYnLRC
hYkNOEl8RcYGRomJygpKjU2Nzg5OkNERUZHSElKU1RVVldYWVpjZGVmZ2hpanN0dXZ3eHl6goOEhYaHiImKkpOUlZaXmJma
oqOkpaanqKmqsrO0tba3uLm6wsPExcbHyMnK0tPU1dbX2Nna4uPk5ebn6Onq8vP09fb3+Pn6/9oADAMBAAIRAxEAPwBnm+9
QXV/FZ27zTOAqjNVpbjYUwQMnnPXjkge9ctrL3VzOwnDR26+vAP0r0q00tD2KuLVOLS3I7zVp9QuRLLna5/dqTwoHtVVLk8
uiNsHG/B/yKqB1luo2A2RhQDjso6/nzVouw2gDbn7oHGBXG2eO25yu9zZhmme18t7Vww5jlfJ+oNRyTrLDgkCVecbenv8Az
qO3WYRg+Y+fXcabKjb92TuBzWfMi/Zs17C+PkNHLIHcDHPRgfftWlG4J4QYAyDn/Pv0rnrVUV8qqoAuCmfXqBkdPzrTiuIy
4zEAi9AckY+lS5IFBnQ295GUP3/TrnH6VoRzzmIKItkRPLsM8enOAf1rnUvLdsJ8qIBkLGD1+v8A9apRPHOkr20Cxtg4kc5
x7gdv1pXBxZNcu7jDRTIPFbxDu+O1p8/zwR6/rW9oGoLZa3ClyGEU5/4Ncn/Y2wR6/rMW5oGoLZa3ClyGEU5
EbncCu0/dJ9R0Oa6KEoq5S1ldHJio1PZPZv7v6Rt+zPm30q4yY12AE28Bg1PdP2bzhF4ij/ACqdx4Ti
kU+XuU+xr0VHDN6o8R4rHRWrO4t0ZHM8sNRtUj6Hc4vSJ7RbwrfzQsZSdjQMcgj8B61ytxNNIxMkhPuWJz+ddv458y4a02KzBBIcAdPu/1rhZ8
rHsY5GOfQfSvL5nLm0bnE5nlbe5ImN0RHK4Abnqc5/WRpShdlxGVR2NuqRgVE5WRpShdlxGAUVGw3N
8oqZY8/SrEEG5+K5zYzJ7ObJ1tvnbwV7nt8pw5ok2I/JS7BpYnJtSO1KtnbxlIDasEjGY3w/KzKcASJqQ/p6nQ7j0aotjOyrIabsP3YRP/MWw6CtPtXYEhqUt0hbesvi
tKARlTgACqjIiUTK3K3WCKPaA/UEY6is26uB0vP3WCxA1zV8/Xn863LyIMp5IGCg+mKyrqRdA9ljQyod0bB3/DBrWk9
TmrxsstsrnsOiX73GmjGpHTuhdxBpDLVyPx9KpWL232YVotKCoc3RqBmeTJJDqmgUV2XTi0Ha5ZUPWjnhaigS2C2Ivf07cs
```
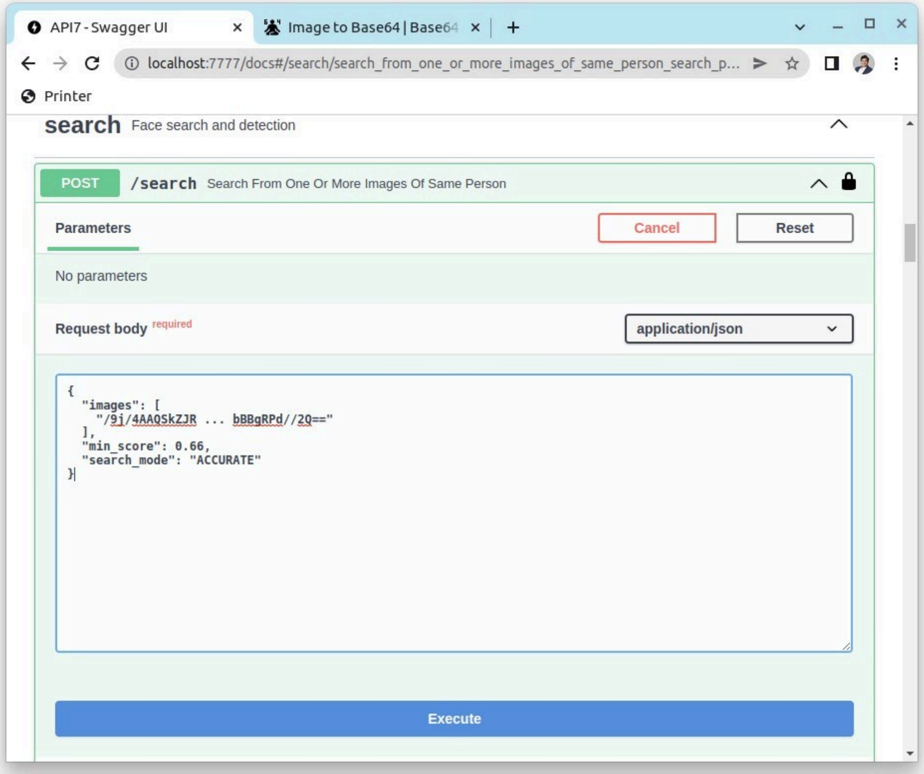

POST /search


API7 - Swagger UI
Image to Base64 | Base64
localhost:7777/docs#/search/search_from_one_or_more_images_of_same_person_search_p...
Printer
search Face search and detection
POST
/search Search From One Or More Images Of Same Person
Parameters
Cancel
Reset
No parameters
Request body required
application/json
Execute

```
{
  "images": [
    "/9j/4AAQSkZJR ... bBBgRPd//2Q=="
  ],
  "min_score": 0.66,
  "search_mode": "ACCURATE"
}
```

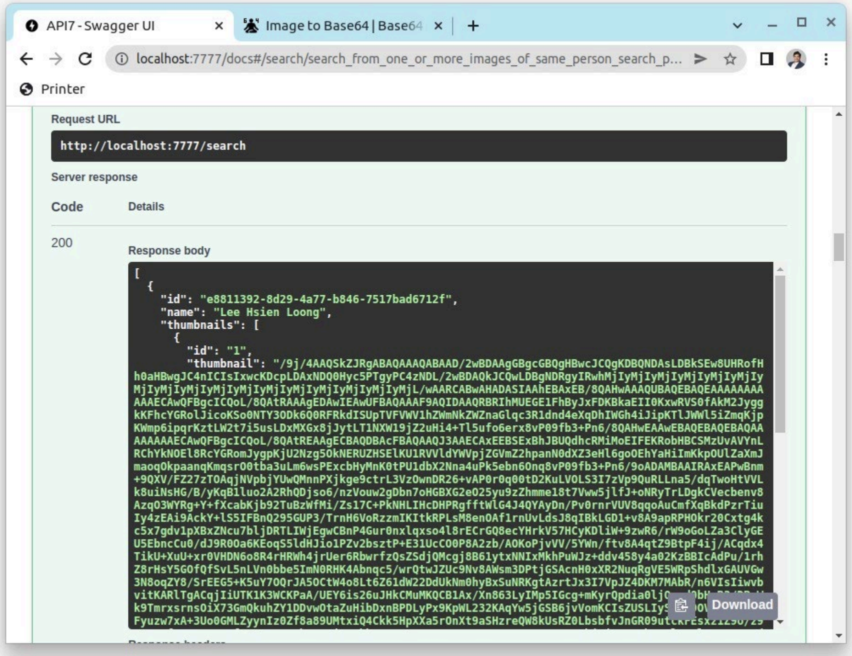
Expand the POST /search end-point. As usual, click the **Try it out** button. Then paste a Base64 encoded image in the body.

Hit **Execute** to get results for the search.

POST /search

You can see the API returns Lee Hsien Loong in the results.

Again, you can copy the thumbnail text and paste it on the Base64 decode website (https://base64.guru/converter/decode/image) to verify that the thumbnail returned is the one that we registered earlier.


API7 - Swagger UI
Image to Base64 | Base64
localhost:7777/docs#/search/search_from_one_or_more_images_of_same_person_search_p...
Printer
Download

Request URL

```
http://localhost:7777/search
```

Server response

Code Details

200

Response body

```
[
  {
    "id": "e8811392-8d29-4a77-b846-7517bad6712f",
    "name": "Lee Hsien Loong",
    "thumbnails": [
      {
        "id": "1",
        "thumbnail": "/9j/4AAQSkZJRgABAQAAAQABAAD/2wBDAAgGBgcGBQgHBwcJCQgKDBQNDAsLDBkSEw8UHRofH
h0aHBwgJC4nICIsIxwcKDcpLDAxNDQ0Hyc5PTgyPC4zNDL/2wBDAQkJCQwLDBgNDRgyIRwhMjIyMjIyMjIyMjIyMjIyMjIy
MjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjL/wAARCABwAHADASIAAhEBAxEB/8QAHwAAAQUBAQEBAQEAAAAAAAA
AAAECAwQFBgcICQoL/8QAtRAAAgEDAwIEAwUFBAQAAAF9AQIDAAQRBRIhMUEGE1FhByJxFDKBkaEII0KxwRVS0fAkM2Jygg
kKFhcYGRolJicoKSo0NTY3ODk6Q0RFRkdISUpTVFVWV1hZWmNkZWZnaGlqc3R1dnd4eXqDhIWGh4iJipKTlJWWl5iZmqKjp
KWmp6ipqrKztLW2t7i5usLDxMXGx8jJytLT1NXW19jZ2uHi4+Tl5ufo6erx8vP09fb3+Pn6/8QAHwEAAwEBAQEBAQEBAQAA
AAAAAAECAwQFBgcICQoL/8QAtREAAgECBAQDBAcFBAQAAQJ3AAECAxEEBSExBhJBUQdhcRMiMoEIFEKRobHBCSMzUvAVYnL
RChYkNOEl8RcYGRomJygpKjU2Nzg5OkNERUZHSElKU1RVVldYWVpjZGVmZ2hpanN0dXZ3eHl6goOEhYaHiImKkpOUlZaXmJ
maoqOkpaanqKmqsrO0tba3uLm6wsPExcbHyMnK0tPU1dbX2Nna4uPk5ebn6Onq8vP09fb3+Pn6/9oADAMBAAIRAxEAPwBnm
+9QXV/FZ27zTOAqjNVpbjYUwQMnnPXjkge9ctrL3VzOwnDR26+vAP0r0q00tD2KuLVOLS3I7zVp9QuRLLna5/dqTwoHtVVL
k8uiNsHG/B/yKqB1luo2A2RhQDjso6/nzVouw2gDbn7oHGBXG2eO25yu9zZhmme18t7Vww5jlfJ+oNRyTrLDgkCVecbenv8
AzqO3WYRg+Y+fXcabKjb92TuBzWfMi/Zs17C+PkNHLIHcDHPRgfftWlG4J4QYAyDn/Pv0rnrVUV8qqoAuCmfXqBkdPzrTiu
Iy4zEAi9AckY+lS5IFBnQ295GUP3/TrnH6VoRzzmIKItkRPLsM8enOAf1rnUvLdsJ8qIBkLGD1+v8A9apRPHOkr20Cxtg4k
c5x7gdv1pXBxZNcu7bljDRTLIWjEgwCBnP4Gur0nxlqxso4l8rEClZa3ClygE
U5EbncCu0/dJ9R0Oa6KEoqS5ldHHJio1PZztP8A2zb/AOKopjvVV/5YWn/ftv8A4qtZ9BtpF4ij/ACqdx4
TikU+XuU+xr0VHR4rHRWh4PDTN6o8R4rHRWh4jrUer6RbwrfzQsRxrUwZQMcgj8B61ytxNNIxPuWJz+ddv4Ipu/1rh
Z8rHsY5GOfQfSvL5nLVn0bbe5RbZ3M
3N8oqZY8/SrEEG5+K5uY7OQrJA5OCtW4o8Lt6Z61dW22DdUkNm0hyBxSuNRKgtAzrtJx3I7VpJZ4DKM7MAbR/n6VIsIiwvb
vitKARlTgACqjIiUTK1K3WCKPaA/UEY6is26uJHkCMuMKQCB1Ax/Xn863LyIMp5IGcg+mKyrQpdia0ljQ       0bH
k9Tmrxsrns0iX73GmQkuhZY1DDvwOtaZuHibDxnBPDLyPx9KpWL232KAqYw5jGSB6jvVomKCIsZUSLIyS      0V
Fyuzw7xA+3Uo0GLZyynIz0Zf8a89UMtxiQ4Ckk5HpXXa5rOnXt9aSHzreQW8kUsRZ0LbsbfvJnGR09ut
```

Other useful end-points

Apart from **POST** /person and **POST** /search, the API offers the following useful end-points:

POST /detect – Find and search for multiple people in a single image

POST /verify – Given a person's id, verify that a supplied image is of the same person

POST /compare – For our most security conscious customers, this API call allows them to assign a similarity score between two sets of images, without storing anything in our database or index.

Trial Limits

The trial license restricts registrations to a maximum of 100 registrations.

If you would like to obtain a license which permits more than 100 registrations, you will need to provide the node id of your machine. The node id allows us to give you a license for a specific machine.

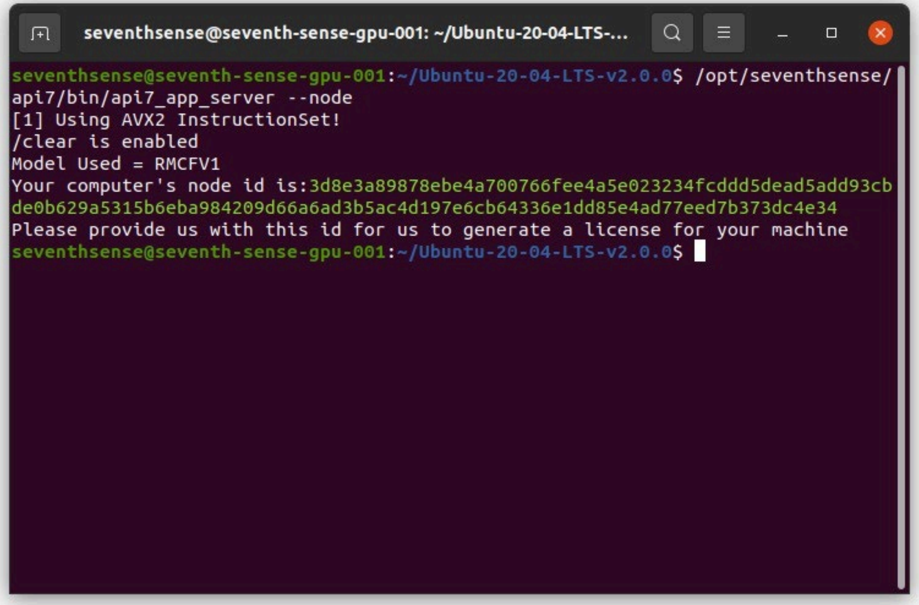
To obtain your node id, please run the following command on the machines/VMs where you installed API7 FR Server.

```
/opt/seventhsense/api7/bin/api7_app_server --node
```

Getting a production license

Please send your license key and the node id generated to support@seventhsense.ai

With this information, we can provide you with a node locked license that supports more than 100 registrations.



```
seventhsense@seventh-sense-gpu-001:~/Ubuntu-20-04-LTS-v2.0.0$ /opt/seventhsense/
api7/bin/api7_app_server --node
[1] Using AVX2 InstructionSet!
/clear is enabled
Model Used = RMCFV1
Your computer's node id is:3d8e3a89878ebe4a700766fee4a5e023234fcddd5dead5add93cb
de0b629a5315b6eba984209d66a6ad3b5ac4d197e6cb64336e1dd85e4ad77eed7b373dc4e34
Please provide us with this id for us to generate a license for your machine
seventhsense@seventh-sense-gpu-001:~/Ubuntu-20-04-LTS-v2.0.0$
```

Where is my data stored

API7 **on-premises edition** was designed to be installed locally requiring no external connectivity. Your data is stored on your computer’s/VM’s disk at **/opt/seventhsense/api7/data/**.

You can schedule a cron job to regularly backup this folder. Restoring data back is as easy as copying the data folder back.

There is no logging, or any “call home” mechanisms built into the product. You have complete control over your data and infrastructure.

What are /settings, /devices, /match, /alerts, /rules, /counts end-points?

In addition to providing a REST API for developers to use, Seventh Sense also has products like:

Terminal7 – a facial recognition kiosk solution for visitor management, access control, etc.

Module7 – an AI edge solution for homeland security and defence

Server7 – a real-time video analytics solution for security and surveillance

These products perform inference at the edge while synchronizing data from a central API7 deployment. The end-points mentioned above allow these edge hardware to communicate and synchronize data (they are not for software developers instead they are targeted at OEMs building and selling hardware).

Conclusion

We hope we have made it easy for you to get started with API7 FR Server (on premises edition).

The API documentation page can be used to quickly get started in integrating Facial Recognition technology in your own use-cases.

Please contact us at support@seventhsense.ai should you have any questions.