

Docker-Flask API

Deployment

Requirement: requirements.txt

Port is defined in manager.py, default port is 7999.

\$python3 manager.py runserver

Get statistics

URL: /stats

Method: GET

Response: 200 (application/json)

Statistic		Description
<i>P/V</i>	CPU time	CPU time in s
<i>P/V</i>	cpu usr	CPU time in user mode in s
<i>P/V</i>	cpu km	CPU time in kernel mode in s
<i>P/V</i>	cpu_idle	CPU idle time in s
<i>P/V</i>	contextsw	Number of context switches
<i>P/V</i>	cpu_io_wait	CPU time waiting for I/O to complete
<i>P/V</i>	cpu_sint_time	CPU time servicing soft interrupts
<i>V</i>	dsr	Disk sector reads (1 sector = 512 bytes)
<i>V</i>	dsreads	Number of completed disk reads
<i>V</i>	drm	Number of adjacent disk reads merged
<i>V</i>	readtime	Time in ms spent reading from disk
<i>V</i>	dsw	Disk sector writes (1 sector = 512 bytes)
<i>V</i>	dswrites	Number of completed disk writes
<i>V</i>	dwm	Number of adjacent disk writes merged
<i>V</i>	writetime	Time in ms spent writing to disk
<i>P/V</i>	nbr	Network bytes sent
<i>P/V</i>	nbs	Network bytes received
<i>P/V</i>	loadavg	Avg # of running processes in last 60 sec

List all containers and get statistics

URL: /container

Method: GET

Response: 200 (application/json)

Example:

```
{
  "7ab3515c6a": {
    "name": "jolly_knuth",
    "mem_max_usage": 117.390625,
    "mem_limit": 2048.0,
    "mem_usage": 94.6328125,
    "cpu_percent": 9.26165586745858,
    "id": "7ab3515c6a31227ac5593aa1459c610bfe78f14d3d7ee4e59f8e2a85b26b81cd",
    "status": "running"
  },
  "f664f08197": {
    "name": "nifty_swartz",
    "mem_max_usage": 119.078125,
    "mem_limit": 2048.0,
    "mem_usage": 99.07421875,
    "cpu_percent": 1.0381727158948686,
    "id": "f664f081977bade6fd1f341c5b2adf1e0743a8ca56445607425a859d0ef3bcbd",
    "status": "running"
  }
}
```

Parameter	Type	Description
name	String	Name of the container
mem_max_usage	float	Maximum memory usage in megabits
mem_limit	float	The maximum memory the container can use in megabits.
mem_usage	float	Current memory usage in megabits
cpu_percent	float	Current CPU usage in percentage
id	String	Container ID
status	String	running/stopped

Get statistics of a specific container

URL: /container/<Container short ID>

Method: GET

Response: 200 (application/json)

Example:

```
{
  "f664f08197": {
    "name": "nifty_swartz",
    "mem_max_usage": 119.078125,
    "mem_limit": 2048.0,
    "mem_usage": 99.09375,
    "cpu_percent": 1.5881471481942717,
    "id": "f664f081977bade6fd1f341c5b2adf1e0743a8ca56445607425a859d0ef3bcbd",
    "status": "running"
  }
}
```

Parameter	Type	Description
name	String	Name of the container
mem_max_usage	float	Maximum memory usage in megabits
mem_limit	float	The maximum memory the container can use in megabits.
mem_usage	float	Current memory usage in megabits
cpu_percent	float	Current CPU usage in percentage
id	String	Container ID
status	String	running/stopped

Create a container

URL: /container

Method: POST (application/json)

Parameter	Type	Required	Description
image_name	String	Yes	Image Name
ports	dict	No	{<String>“port/protocol”:<int>port exposed} Example: {“5900/tcp”:7998}
mem_limit	String	No	The maximum memory the container can use. Example: “2g”

Parameter	Type	Required	Description
cpu_percent_limit	int	No	The maximum cpu resources in percentage the container can use. Example: 50

Response: 201 (application/json)

Parameter	Type	Description
status	String	Success or Error
status_code	int	201 if succeed or 404 if error occurs
target	String	Container short ID
msg	String	Message

Delete a container

URL: /container/<Container short ID>

Method: Delete

Response: 200 (application/json)

Parameter	Type	Description
status	String	Success or Error
status_code	int	200 if succeed or 404 if container does not exist
target	String	Container short ID
msg	String	Message