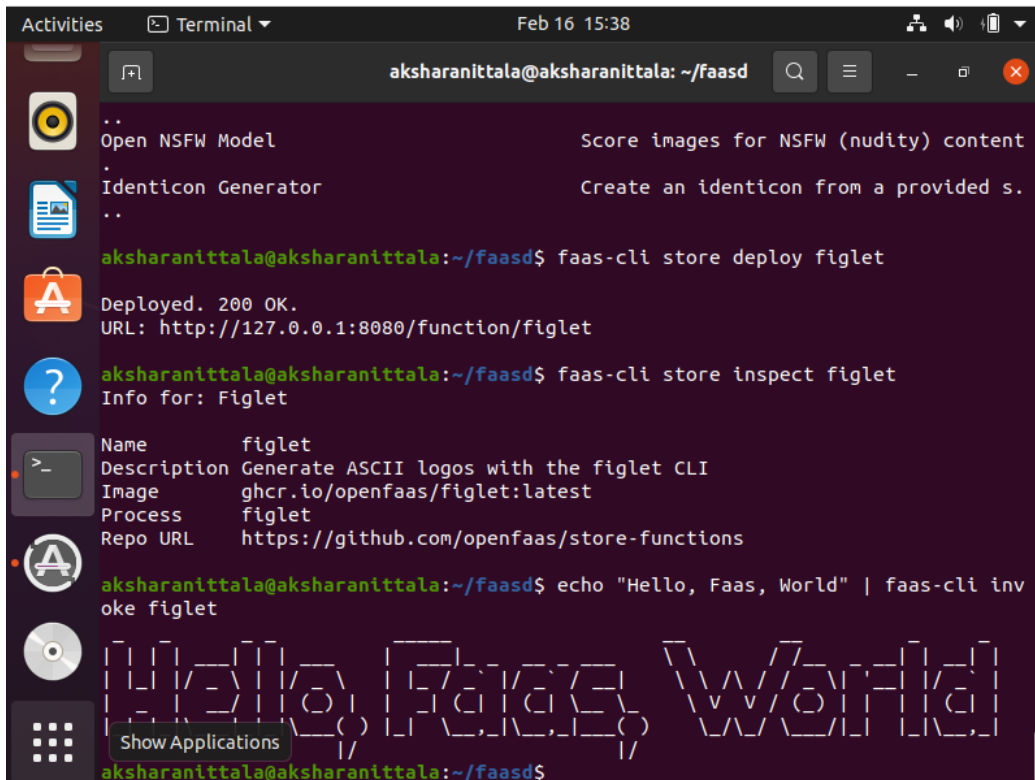


1. Provide a screenshot of invoking the figlet function



The screenshot shows a terminal window with the following content:

```
aksharanittala@aksharanittala: ~/faasd
..
Open NSFW Model                               Score images for NSFW (nudity) content
..
Identicon Generator                             Create an identicon from a provided s.
..

aksharanittala@aksharanittala:~/faasd$ faas-cli store deploy figlet

Deployed. 200 OK.
URL: http://127.0.0.1:8080/function/figlet

aksharanittala@aksharanittala:~/faasd$ faas-cli store inspect figlet
Info for: Figlet

Name      figlet
Description Generate ASCII logos with the figlet CLI
Image     ghcr.io/openfaas/figlet:latest
Process   figlet
Repo URL  https://github.com/openfaas/store-functions

aksharanittala@aksharanittala:~/faasd$ echo "Hello, Faas, World" | faas-cli invoke figlet

Hello, Faas, World
```

2. Complete slack-request/handler.py

```
import json

def handle(req):
    data = {
        "text": "Serverless Message",
        "attachments": [{
            "title": "The Awesome world of Cloud Computing!
COEN 241",
            "fields": [{
                "title": "Amazing Level",
                "value": "100",
                "short": True
            }],
            "author_name": "Akshara Nittala",
            "author_icon": "",
            "image_url": "https://github.com/anittala.png"
        }],
        {
            "title": "About COEN 241",
            "text": "COEN 241 is the most awesome class ever!."
```

```

        },
        {
            "fallback": "Would you recommend COEN 241 to your
friends?",
            "title": "Would you recommend COEN 241 to your
friends?",
            "callback_id": "response123",
            "color": "#3AA3E3",
            "attachment_type": "default",
            "actions": [
                {
                    "name": "recommend",
                    "text": "Of Course!",
                    "type": "button",
                    "value": "recommend"
                },
                {
                    "name": "definitely",
                    "text": "Most Definitely!",
                    "type": "button",
                    "value": "definitely"
                }
            ]
        }
    ]
}
return json.dumps(data)

```

3. Complete slack-interactive/handler.py

```

import json
import urllib

def handle(req):
    urlstring =
urllib.unquote(req).decode('utf8').strip('payload=')
    response = json.loads(urlstring)
    data = {
        "attachments": [
            {
                "replace_original": True,
                "response_type": "ephemeral",
                "fallback": "Required plain-text summary of the
attachment.",
                "color": "#36a64f",

```

```

        "pretext": "Ahh yeah! Great choice, COEN 241 is
absolutely amazing!",
        "author_name": "",
        "author_link":
"https://github.com/anittala/cloud-computing.git",
        "author_icon":
"https://github.com/anittala.png",
        "title": "COEN 241",
        "title_link":
"https://www.scu.edu/engineering/academic-programs/department-o
f-computer-engineering/graduate/course-descriptions/",
        "text": "Head over to COEN 241",
        "image_url":
"https://www.scu.edu/media/offices/umc/scu-brand-guidelines/vis
ual-identity-amp-photography/visual-identity-toolkit/logos-amp-
seals/Mission-Dont3.png",
        "thumb_url":
"https://www.scu.edu/engineering/academic-programs/department-o
f-computer-engineering/graduate/course-descriptions/",
        "footer": "Slack Apps built on OpenFaas",
        "footer_icon":
"https://a.slack-edge.com/45901/marketing/img/_rebrand/meta/sla
ck_hash_256.png",
        "ts": 123456789
    }
]
}
return json.dumps(data)

```

4. Provide a screenshot of running the following command

```
sudo journalctl -u faasd --lines 40
```

```
Activities Terminal Feb 16 16:48
aksharanittala@aksharanittala: ~/functions

aksharanittala@aksharanittala:~/functions$ sudo journalctl -u faasd --lines 40
[sudo] password for aksharanittala:
-- Logs begin at Thu 2023-02-16 15:09:08 PST, end at Thu 2023-02-16 16:48:40 PST.
Feb 16 15:23:35 aksharanittala faasd[6180]: 2023/02/16 15:23:35 - gateway
Feb 16 15:23:35 aksharanittala faasd[6180]: 2023/02/16 15:23:35 - queue-worker
Feb 16 15:23:35 aksharanittala faasd[6180]: Starting: basic-auth-plugin
Feb 16 15:23:35 aksharanittala faasd[6180]: 2023/02/16 15:23:35 Created container
Feb 16 15:23:37 aksharanittala faasd[6180]: 2023/02/16 15:23:37 basic-auth-plu>
Feb 16 15:23:37 aksharanittala faasd[6180]: 2023/02/16 15:23:37 Task: basic-au>
Feb 16 15:23:37 aksharanittala faasd[6180]: Starting: nats
Feb 16 15:23:37 aksharanittala faasd[6180]: Creating local directory: /var/lib>
Feb 16 15:23:37 aksharanittala faasd[6180]: 2023/02/16 15:23:37 Running nats w>
Feb 16 15:23:37 aksharanittala faasd[6180]: 2023/02/16 15:23:37 Created conta>
Feb 16 15:23:38 aksharanittala faasd[6180]: 2023/02/16 15:23:38 nats has IP: 1>
Feb 16 15:23:38 aksharanittala faasd[6180]: 2023/02/16 15:23:38 Task: nats >
Feb 16 15:23:38 aksharanittala faasd[6180]: Starting: prometheus
Feb 16 15:23:38 aksharanittala faasd[6180]: Creating local directory: /var/lib>
Feb 16 15:23:38 aksharanittala faasd[6180]: 2023/02/16 15:23:38 Running promet>
Feb 16 15:23:38 aksharanittala faasd[6180]: 2023/02/16 15:23:38 Created conta>
Feb 16 15:23:39 aksharanittala faasd[6180]: 2023/02/16 15:23:39 prometheus has>
Feb 16 15:23:39 aksharanittala faasd[6180]: 2023/02/16 15:23:39 Task: promethe>
Feb 16 15:23:39 aksharanittala faasd[6180]: Starting: gateway
Feb 16 15:23:39 aksharanittala faasd[6180]: 2023/02/16 15:23:39 Created conta>
Feb 16 15:23:40 aksharanittala faasd[6180]: 2023/02/16 15:23:40 gateway has IP>
Feb 16 15:23:40 aksharanittala faasd[6180]: 2023/02/16 15:23:40 Task: gateway >
Feb 16 15:23:40 aksharanittala faasd[6180]: Starting: queue-worker
Feb 16 15:23:40 aksharanittala faasd[6180]: 2023/02/16 15:23:40 Created conta>
Feb 16 15:23:40 aksharanittala faasd[6180]: 2023/02/16 15:23:40 queue-worker h>
```

```
Activities Terminal Feb 16 16:49
aksharanittala@aksharanittala: ~/functions

-- Logs begin at Thu 2023-02-16 15:09:08 PST, end at Thu 2023-02-16 16:48:40 PST.
Feb 16 15:23:35 aksharanittala faasd[6180]: 2023/02/16 15:23:35 - gateway
Feb 16 15:23:35 aksharanittala faasd[6180]: 2023/02/16 15:23:35 - queue-worker
Feb 16 15:23:35 aksharanittala faasd[6180]: Starting: basic-auth-plugin
Feb 16 15:23:35 aksharanittala faasd[6180]: 2023/02/16 15:23:35 Created conta>
Feb 16 15:23:37 aksharanittala faasd[6180]: 2023/02/16 15:23:37 basic-auth-plu>
Feb 16 15:23:37 aksharanittala faasd[6180]: 2023/02/16 15:23:37 Task: basic-au>
Feb 16 15:23:37 aksharanittala faasd[6180]: Starting: nats
Feb 16 15:23:37 aksharanittala faasd[6180]: Creating local directory: /var/lib>
Feb 16 15:23:37 aksharanittala faasd[6180]: 2023/02/16 15:23:37 Running nats w>
Feb 16 15:23:37 aksharanittala faasd[6180]: 2023/02/16 15:23:37 Created conta>
Feb 16 15:23:38 aksharanittala faasd[6180]: 2023/02/16 15:23:38 nats has IP: 1>
Feb 16 15:23:38 aksharanittala faasd[6180]: 2023/02/16 15:23:38 Task: nats >
Feb 16 15:23:38 aksharanittala faasd[6180]: Starting: prometheus
Feb 16 15:23:38 aksharanittala faasd[6180]: Creating local directory: /var/lib>
Feb 16 15:23:38 aksharanittala faasd[6180]: 2023/02/16 15:23:38 Running promet>
Feb 16 15:23:38 aksharanittala faasd[6180]: 2023/02/16 15:23:38 Created conta>
Feb 16 15:23:39 aksharanittala faasd[6180]: 2023/02/16 15:23:39 prometheus has>
Feb 16 15:23:39 aksharanittala faasd[6180]: 2023/02/16 15:23:39 Task: promethe>
Feb 16 15:23:39 aksharanittala faasd[6180]: Starting: gateway
Feb 16 15:23:39 aksharanittala faasd[6180]: 2023/02/16 15:23:39 Created conta>
Feb 16 15:23:40 aksharanittala faasd[6180]: 2023/02/16 15:23:40 gateway has IP>
Feb 16 15:23:40 aksharanittala faasd[6180]: 2023/02/16 15:23:40 Task: gateway >
Feb 16 15:23:40 aksharanittala faasd[6180]: Starting: queue-worker
Feb 16 15:23:40 aksharanittala faasd[6180]: 2023/02/16 15:23:40 Created conta>
Feb 16 15:23:40 aksharanittala faasd[6180]: 2023/02/16 15:23:40 queue-worker h>
Feb 16 15:23:40 aksharanittala faasd[6180]: 2023/02/16 15:23:40 Task: queue-wo>
Feb 16 15:23:40 aksharanittala faasd[6180]: 2023/02/16 15:23:40 Supervisor ini>
lines 1-28
```

5. Provide a screenshot of your OpenFaaS gateway AFTER deploying figlet, slack-handler and slack-interactive functions

Figlet OpenFaaS CLI:

The screenshot shows the OpenFaaS Portal interface in a Firefox Web Browser window. The browser's address bar displays `localhost:8080/ui/`. The portal's left sidebar contains a search bar and a list of functions: `slack-interactive`, `slack-request`, and `figlet`. The `figlet` function is selected and highlighted. The main content area displays the details for the `figlet` function, including its status (`Ready`), replicas (`1`), and invocation count (`1`). Below this, the 'Invoke function' section is visible, featuring an `INVOKE` button and radio buttons for `Text`, `JSON`, and `Download`. The `Request body` and `Response body` fields are also present.

Status	Replicas	Invocation count
Ready	1	1

Image: `ghcr.io/openfaas/figlet:latest` URL: `http://localhost:8080/function/figlet`

Function process: `figlet`

Invoke function

`INVOKE`

☒ Text ☐ JSON ☐ Download

Request body

Response status: `0.172` (Round-trip (s))

Response body

Slack-request OpenFaas CLI:

Activities Firefox Web Browser Feb 17 15:17

OpenFaas Portal

localhost:8080/ui/ 60%

OPENFAAS

Deploy New Function

Search for Function

slack-interactive

slack-request

figlet

slack-request

Status	Replicas	Invocation count
Ready	1	2

Image	URL
docker.io/aksharanittala/slack-request:latest	http://localhost:8080/function/slack-request

Function process
python index.py

Invoke function

INVOKE

☒ Text ☐ JSON ☐ Download

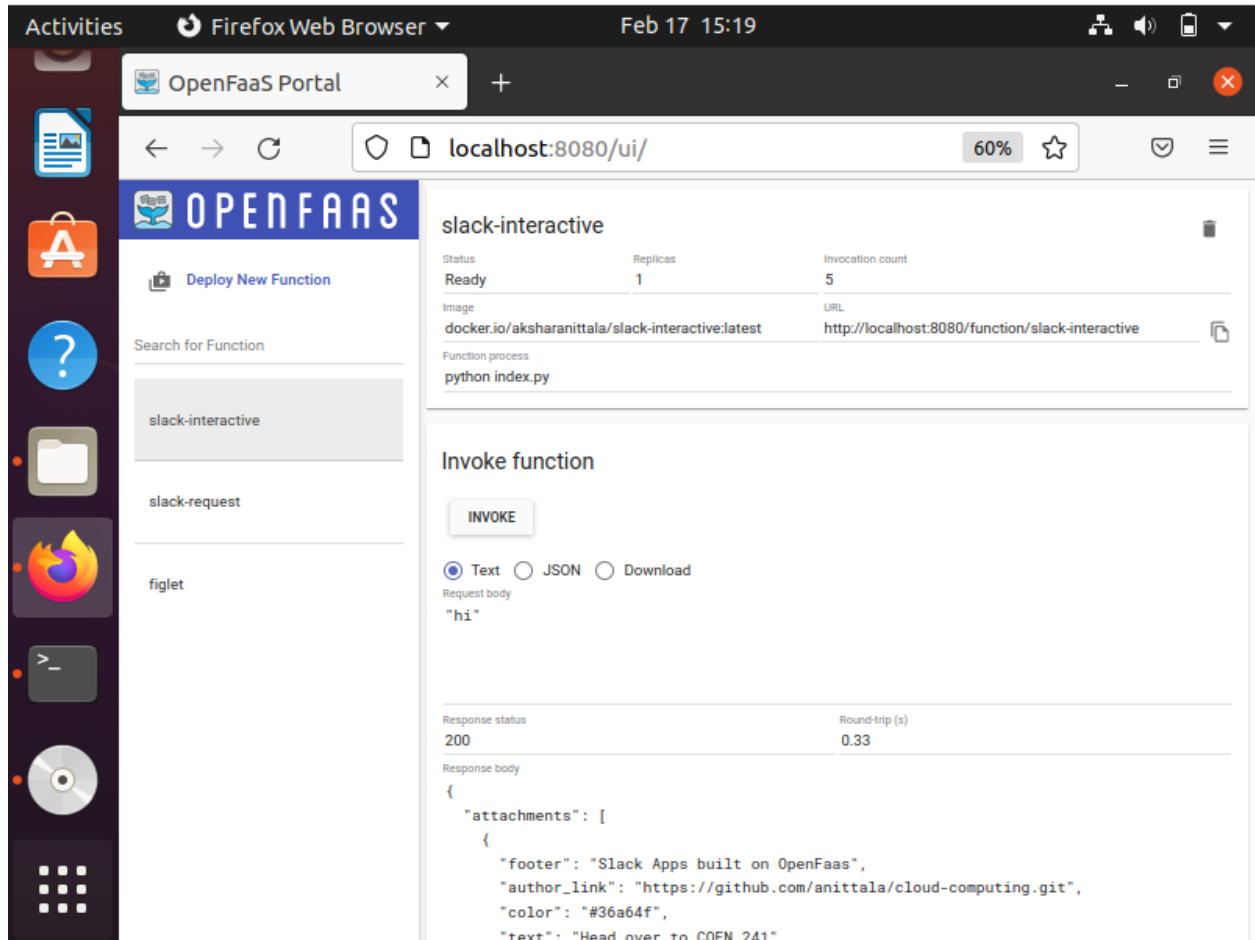
Request body

Response status	Round-trip (s)
200	0.172

Response body

```
{
  "text": "Serverless Message",
  "attachments": [
    {
      "fields": [
        {
          "short": true.
        }
      ]
    }
  ]
}
```

Slack-interactive OpenFaas CLI:



6. Provide a screenshot of invoking slack-request and slack-interactive functions

Invoking slack-request in faas-cli:

```
Activities Terminal Feb 17 15:20
aksharanittala@aksharanittala: ~/functions
879c0d8666e3: Layer already exists
20a7b70bdf2f: Layer already exists
3fc750b41be7: Layer already exists
beee9f30bc1f: Layer already exists
latest: digest: sha256:e58027e7f1393cfc9f525091cbfdef19937233c95b30eda19560e2be762c9ccf size: 4074
[0] < Pushing slack-request [aksharanittala/slack-request:latest] done.
[0] Worker done.
aksharanittala@aksharanittala:~/functions$ faas-cli deploy -f ./slack-request.yml
Deploying: slack-request.
Function slack-request already exists, attempting rolling-update.

Deployed. 200 OK.
URL: http://127.0.0.1:8080/function/slack-request

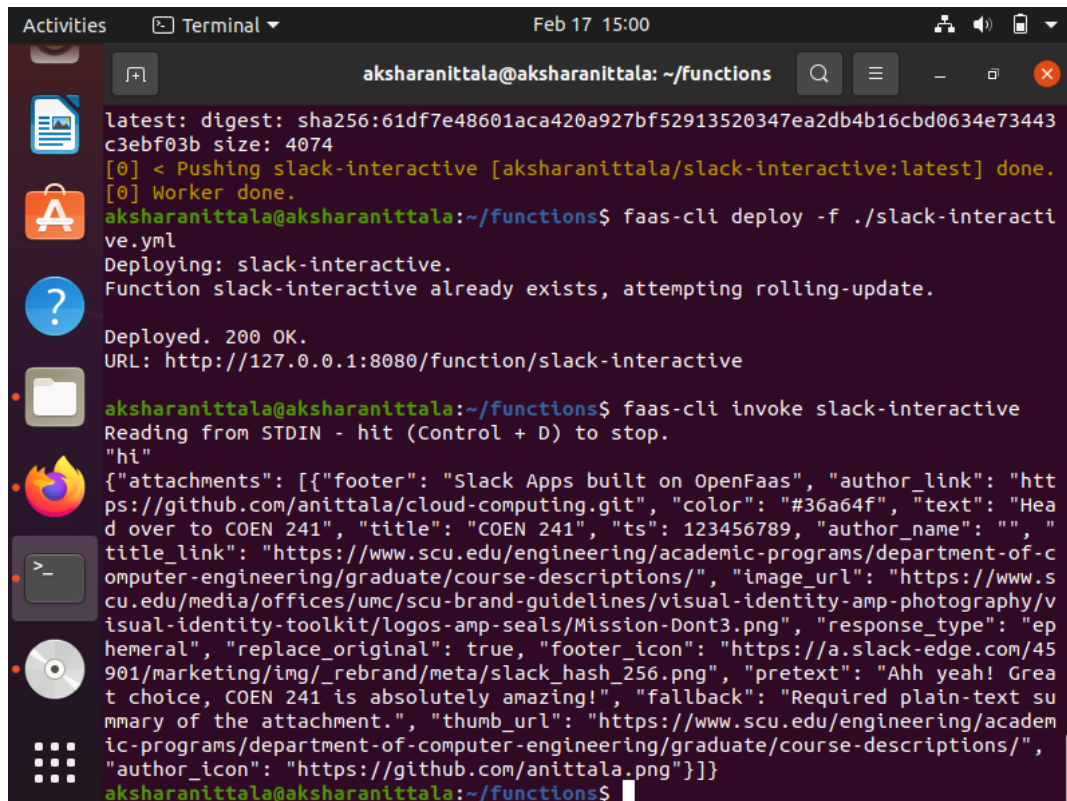
aksharanittala@aksharanittala:~/functions$ faas-cli invoke slack-request
Reading from STDIN - hit (Control + D) to stop.
{"text": "Serverless Message", "attachments": [{"fields": [{"short": true, "value": "100", "title": "Amazing Level"}], "author_icon": "", "image_url": "https://github.com/anittala.png", "author_name": "Akshara Nittala", "title": "The Awesome world of Cloud Computing! COEN 241"}, {"text": "COEN 241 is the most awesome class ever!", "title": "About COEN 241"}, {"title": "Would you recommend COEN 241 to your friends?", "color": "#3AA3E3", "actions": [{"text": "Of Course!", "type": "button", "name": "recommend", "value": "recommend"}, {"text": "Most Definitely!", "type": "button", "name": "definitely", "value": "definitely"}], "callback_id": "response123", "fallback": "Would you recommend COEN 241 to your friends?", "attachment_type": "default"}]}
aksharanittala@aksharanittala:~/functions$
```

Invoking slack-request with curl:

```
Activities Terminal Feb 17 15:27
aksharanittala@aksharanittala: ~/functions
Deployed. 200 OK.
URL: http://127.0.0.1:8080/function/slack-request

aksharanittala@aksharanittala:~/functions$ faas-cli invoke slack-request
Reading from STDIN - hit (Control + D) to stop.
{"text": "Serverless Message", "attachments": [{"fields": [{"short": true, "value": "100", "title": "Amazing Level"}], "author_icon": "", "image_url": "https://github.com/anittala.png", "author_name": "Akshara Nittala", "title": "The Awesome world of Cloud Computing! COEN 241"}, {"text": "COEN 241 is the most awesome class ever!", "title": "About COEN 241"}, {"title": "Would you recommend COEN 241 to your friends?", "color": "#3AA3E3", "actions": [{"text": "Of Course!", "type": "button", "name": "recommend", "value": "recommend"}, {"text": "Most Definitely!", "type": "button", "name": "definitely", "value": "definitely"}], "callback_id": "response123", "fallback": "Would you recommend COEN 241 to your friends?", "attachment_type": "default"}]}
aksharanittala@aksharanittala:~/functions$ curl -d '{"Hello"}' http://127.0.0.1:8080/function/slack-request
{"text": "Serverless Message", "attachments": [{"fields": [{"short": true, "value": "100", "title": "Amazing Level"}], "author_icon": "", "image_url": "https://github.com/anittala.png", "author_name": "Akshara Nittala", "title": "The Awesome world of Cloud Computing! COEN 241"}, {"text": "COEN 241 is the most awesome class ever!", "title": "About COEN 241"}, {"title": "Would you recommend COEN 241 to your friends?", "color": "#3AA3E3", "actions": [{"text": "Of Course!", "type": "button", "name": "recommend", "value": "recommend"}, {"text": "Most Definitely!", "type": "button", "name": "definitely", "value": "definitely"}], "callback_id": "response123", "fallback": "Would you recommend COEN 241 to your friends?", "attachment_type": "default"}]}
aksharanittala@aksharanittala:~/functions$
```


Invoking slack-interactive in faas-cli:

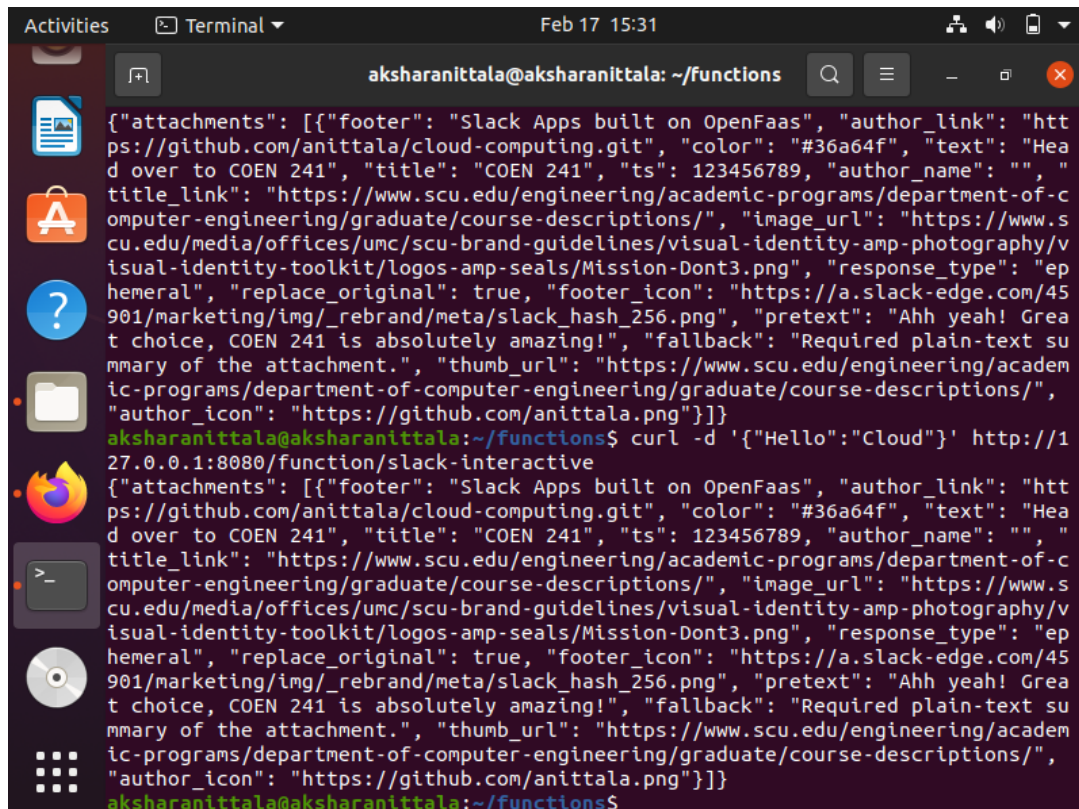


```
Activities Terminal Feb 17 15:00
aksharanittala@aksharanittala: ~/functions
latest: digest: sha256:61df7e48601aca420a927bf52913520347ea2db4b16cbd0634e73443
c3ebf03b size: 4074
[0] < Pushing slack-interactive [aksharanittala/slack-interactive:latest] done.
[0] Worker done.
aksharanittala@aksharanittala:~/functions$ faas-cli deploy -f ./slack-interactive.yml
Deploying: slack-interactive.
Function slack-interactive already exists, attempting rolling-update.

Deployed. 200 OK.
URL: http://127.0.0.1:8080/function/slack-interactive

aksharanittala@aksharanittala:~/functions$ faas-cli invoke slack-interactive
Reading from STDIN - hit (Control + D) to stop.
"hi"
{"attachments": [{"footer": "Slack Apps built on OpenFaas", "author_link": "https://github.com/anittala/cloud-computing.git", "color": "#36a64f", "text": "Head over to COEN 241", "title": "COEN 241", "ts": 123456789, "author_name": "", "title_link": "https://www.scu.edu/engineering/academic-programs/department-of-computer-engineering/graduate/course-descriptions/", "image_url": "https://www.scu.edu/media/offices/umc/scu-brand-guidelines/visual-identity-amp-photography/visual-identity-toolkit/logos-amp-seals/Mission-Dont3.png", "response_type": "ephemeral", "replace_original": true, "footer_icon": "https://a.slack-edge.com/45901/marketing/img/_rebrand/meta/slack_hash_256.png", "pretext": "Ahh yeah! Great choice, COEN 241 is absolutely amazing!", "fallback": "Required plain-text summary of the attachment.", "thumb_url": "https://www.scu.edu/engineering/academic-programs/department-of-computer-engineering/graduate/course-descriptions/", "author_icon": "https://github.com/anittala.png"}]}
aksharanittala@aksharanittala:~/functions$
```

Invoking slack-interactive with curl:



```
Activities Terminal Feb 17 15:31
aksharanittala@aksharanittala: ~/functions

{"attachments": [{"footer": "Slack Apps built on OpenFaas", "author_link": "https://github.com/anittala/cloud-computing.git", "color": "#36a64f", "text": "Head over to COEN 241", "title": "COEN 241", "ts": 123456789, "author_name": "", "title_link": "https://www.scu.edu/engineering/academic-programs/department-of-computer-engineering/graduate/course-descriptions/", "image_url": "https://www.scu.edu/media/offices/umc/scu-brand-guidelines/visual-identity-amp-photography/visual-identity-toolkit/logos-amp-seals/Mission-Dont3.png", "response_type": "ephemeral", "replace_original": true, "footer_icon": "https://a.slack-edge.com/45901/marketing/img/_rebrand/meta/slack_hash_256.png", "pretext": "Ahh yeah! Great choice, COEN 241 is absolutely amazing!", "fallback": "Required plain-text summary of the attachment.", "thumb_url": "https://www.scu.edu/engineering/academic-programs/department-of-computer-engineering/graduate/course-descriptions/", "author_icon": "https://github.com/anittala.png"}]}
aksharanittala@aksharanittala:~/functions$ curl -d '{"Hello":"Cloud"}' http://127.0.0.1:8080/function/slack-interactive
{"attachments": [{"footer": "Slack Apps built on OpenFaas", "author_link": "https://github.com/anittala/cloud-computing.git", "color": "#36a64f", "text": "Head over to COEN 241", "title": "COEN 241", "ts": 123456789, "author_name": "", "title_link": "https://www.scu.edu/engineering/academic-programs/department-of-computer-engineering/graduate/course-descriptions/", "image_url": "https://www.scu.edu/media/offices/umc/scu-brand-guidelines/visual-identity-amp-photography/visual-identity-toolkit/logos-amp-seals/Mission-Dont3.png", "response_type": "ephemeral", "replace_original": true, "footer_icon": "https://a.slack-edge.com/45901/marketing/img/_rebrand/meta/slack_hash_256.png", "pretext": "Ahh yeah! Great choice, COEN 241 is absolutely amazing!", "fallback": "Required plain-text summary of the attachment.", "thumb_url": "https://www.scu.edu/engineering/academic-programs/department-of-computer-engineering/graduate/course-descriptions/", "author_icon": "https://github.com/anittala.png"}]}
aksharanittala@aksharanittala:~/functions$
```