Jupyter for DevOps

Moshe Zadka – https://cobordism.com

Acknowledgement of Country

Belmont (in San Francisco Bay Area Peninsula)
Ancestral homeland of the Ramaytush Ohlone people

Jupyter for DevOps??

Yes!

Jupyter for DevOps??

Yes!
Data scientists:

Jupyter for DevOps??

Yes!
Data scientists:
Explore...

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Yes!
Data scientists:
Explore...Automate...

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Data scientists:
Explore...Automate...Share!
DevOps engineers:

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SSH

The cause of,

SSH

The cause of,and the solution to,

SSH

The cause of,and the solution to,all DevOps problems.

Connect with Paramiko

```
client = paramiko.SSHClient()
client.set_missing_host_key_policy(
    paramiko.client.WarningPolicy)
client.connect("localhost", **connect_params)
```

Run Command with Paramiko

```
res = client.exec_command("ls")
files = res[1].read().decode("ascii").splitlines()
files
```

```
['some_file', 'another_file']
```

Automate with Paramiko

```
files = set()
for connect_params in connect_params_list:
    client.connect("localhost", **connect_params)
    res = client.exec_command("ls")
    files.update(
        res[1].read().decode("ascii").splitlines()
    )
pprint.pprint(sorted(files), width=40)
```

```
['another_file',
 'even_more_files',
 'more_file',
 'some_file']
```

Cloud

Why not...
Web UI?

Cloud

Why not...
Web UI?
Command-line?

Cloud

Why not...
Web UI?
Command-line?
Scripts?

Cloud

Why not...
Web UI?
Command-line?
Scripts?

Connect to S3

```
s3 = boto3.client(
    service_name='s3',
    region_name='us-west-2',
    # Credentials can be read from
    # different sources.
    **access_credentials,
)
```

Upload to S3

```
some_contents = io.BytesIO(b"some contents")
s3.upload_fileobj(
    some_contents,
    "special-bucket.123.431",
    "some-contents.txt",
)
```

Automate Uploading to S3

```
for i in range(10):
    some_contents = io.BytesIO(
        f"some {i} contents".encode("ascii")
    )
    s3.upload_fileobj(
        some_contents,
        "special-bucket.123.431",
        f"some-contents-{i}.txt",
    )
```

Source collaboration platforms

Examples: GitHub, GitLab, BitBucket, ...

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GitLab: open core

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Why?

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GitLab: open core
Why? Multi-repo management!

Configuring Gitlab

```
client = gitlab.Gitlab(private_token=token)
```

Analyzing README

```
project = client.projects.get(project_name)
[readme] = [
    obj
    for obj in project.repository_tree(
        as_list=False
    )
    if obj["name"] == "README.md"
]
contents = project.repository_blob(readme["id"])
data = base64.b64decode(
    contents["content"].encode("ascii")
).decode("utf-8")
len(data.split())
```

```
882
```

Analyzing projects in a loop

```
for project_name in projects:
    project = client.projects.get(project_name)
    [readme] = [
        obj
        for obj in project.repository_tree(
            as_list=False
        )
        if obj["name"] == "README.md"
    ]
    contents = project.repository_blob(readme["id"])
    data = base64.b64decode(
        contents["content"].encode("ascii")
    ).decode("utf-8")
    print(len(data.split()))
```

```
882
563
```

Use Jupyter for DevOps

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- Prototype

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- Prototype
- Iterate

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- Automate

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- Document

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