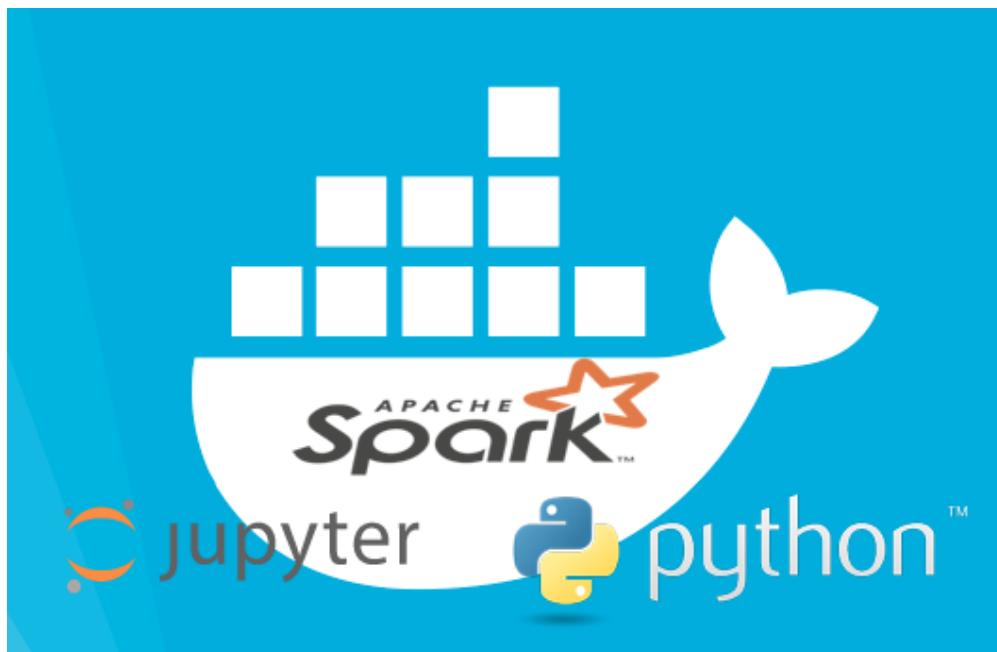


AUG presentation 2018

May 8, 2018

1 Experiments on Microservices



title

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Docker is a piece of software that makes it possible to have a copy of an operating system run in isolation on your machine.

Spark is open-source cluster-computing framework.

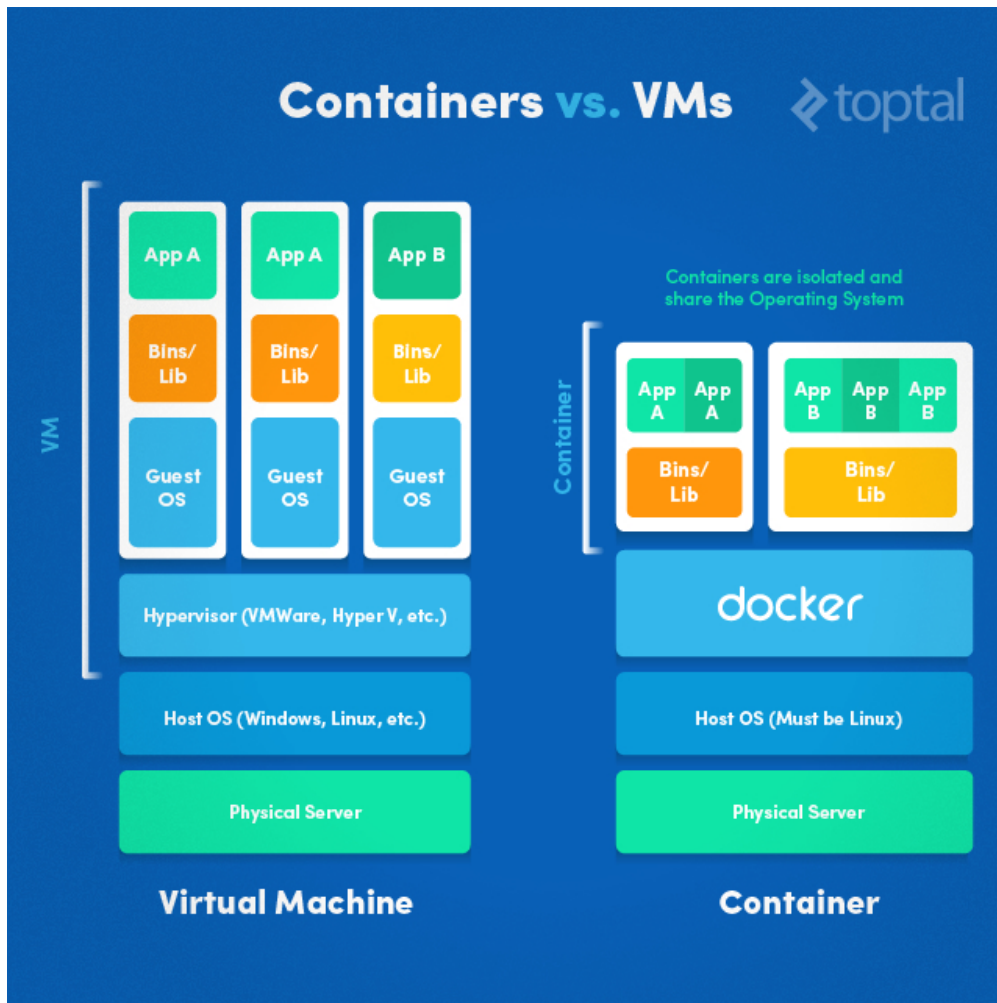
Jupyter web interface to Python.

1.1 Docker

```
In [1]: import import_ipynb
import dbscope
```

```
testDB = dbscope.antelopeDB( '/home/notebooks/antelope_data/db/demo/demo' )
```

Containers vs. VMs



title

```
importing Jupyter notebook from dbscope.ipynb
importing Jupyter notebook from dblogger.ipynb
```

```
In [3]: testDB.load('site',columns=['sta','lat','lon','ondate'], nrows=10 )
        print( testDB['site'] )
        display(testDB['site'] )
```

	sta	ondate	lat	lon
0	BSAP	2011-08-12	33.2602	-116.3223
1	BZN	1983-01-20	33.4915	-116.6670
2	CPE	2004-05-04	32.8889	-117.1051
3	CRY	1982-10-01	33.5654	-116.7373
4	CSLB	2003-01-01	33.7793	-118.1126
5	CSLB	2012-08-17	33.7799	-118.1123
6	FRD	1982-10-01	33.4947	-116.6022
7	GARR	2012-11-01	33.5918	-116.6708
8	HSSP	2012-10-31	33.5847	-116.6641
9	KNW	1982-10-01	33.7141	-116.7119

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8	HSSP	2012-10-31	33.5847	-116.6641
9	KNW	1982-10-01	33.7141	-116.7119

```
In [4]: testDB.plot( 'site' )
```

```
<folium.folium.Map at 0x7f3774366940>
```

```
In [5]: testDB.load('wfdisc', nrows=5 )
        display( testDB['wfdisc'] )
```

	sta	chan	time	wfid	chanid	jdate	\
0	B081	HHZ	2016-01-12 03:28:37.500	1	3465	2016-01-12	
1	B082	HHZ	2016-01-12 03:28:37.500	2	3474	2016-01-12	
2	B082A	HHE	2016-01-12 03:28:37.500	3	3492	2016-01-12	
3	B082A	HHN	2016-01-12 03:28:37.500	4	3493	2016-01-12	
4	B082A	HHZ	2016-01-12 03:28:37.500	5	3494	2016-01-12	

	endtime	nsamp	samprate	calib	calper	instype	segtype	\
0	2016-01-12 03:30:21.320	20765	200.0	1.279758	0.05	NaN	V	
1	2016-01-12 03:30:21.320	20765	200.0	1.279758	0.05	NaN	V	
2	2016-01-12 03:30:21.320	20765	200.0	1.984793	20.00	NaN	V	
3	2016-01-12 03:30:21.320	20765	200.0	1.984793	20.00	NaN	V	
4	2016-01-12 03:30:21.320	20765	200.0	1.984793	20.00	NaN	V	

	datatype	clip	dir	dfile	foff	commid	\
0	sd	NaN	wf/2016/012	201601203.w	49152	NaN	
1	sd	NaN	wf/2016/012	201601203.w	65536	NaN	
2	sd	NaN	wf/2016/012	201601203.w	81920	NaN	
3	sd	NaN	wf/2016/012	201601203.w	102400	NaN	
4	sd	NaN	wf/2016/012	201601203.w	118784	NaN	

	lddate
0	2016-08-02 15:41:20.681950
1	2016-03-08 19:59:02.830850
2	2016-03-08 19:59:02.861910
3	2016-03-08 19:59:02.896380
4	2016-03-08 19:59:02.943890

FROM ubuntu:latest

```
RUN apt-get update \
  && apt-get install -y build-essential bash vim curl git wget \
  python3 python3-pip python3-dev \
  && apt-get -y autoremove \
  && apt-get -y clean \
  && apt-get autoclean \
  && rm -rf /var/lib/apt/lists/*
```

No need for Python 2

```
RUN rm -f /usr/bin/python && ln -s /usr/bin/python3 /usr/bin/python
```

```
RUN pip3 install --upgrade pip
```

```
RUN pip3 install numpy scipy pandas matplotlib pymongo
```

```
ENV HOME /home
```

```
RUN mkdir -p /home/notebooks
```

```
COPY db2mongo.py /home/
```

```
COPY dblogger.py /home/
```

```
COPY dbevents.py /home/
```

```
COPY dbscope.py /home/
```

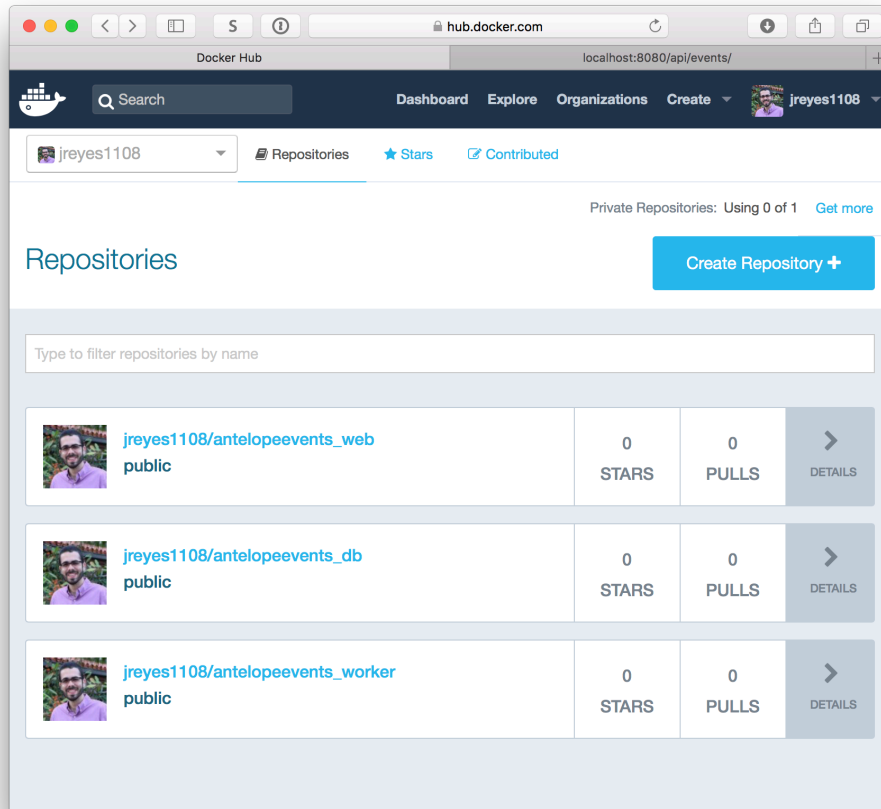
```
RUN mkdir -p /home/notebooks/db
```

```
ADD demo/ /home/notebooks/db/
```

```
RUN mkdir -p /home/notebooks/antelope/data/schemas
ADD schemas /home/notebooks/antelope/data/schemas/
```

```
WORKDIR /home/
```

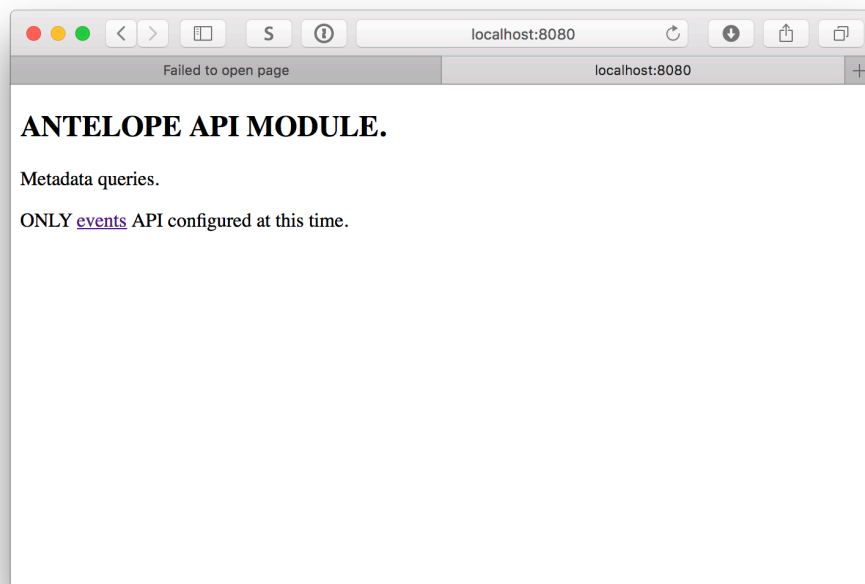
```
CMD ["python", "db2mongo.py", "/home/notebooks/db/demo"]
```



title

```
version: '3.1'
services:
  mongodb:
    image: jreyes1108/antelopeevents_db
    environment:
      - ADMIN_USER=admin
      - ADMIN_PASS=adminpass
      - USER=user
      - PASS=userpass
      - DB=dev
```

```
ports:
  - 27017:27017
web:
  image: jreyes1108/antelopeevents_web
  ports:
    - 80:80
  depends_on:
    - mongodb
worker:
  image: jreyes1108/antelopeevents_worker
  depends_on:
    - web
    - mongodb
```



title

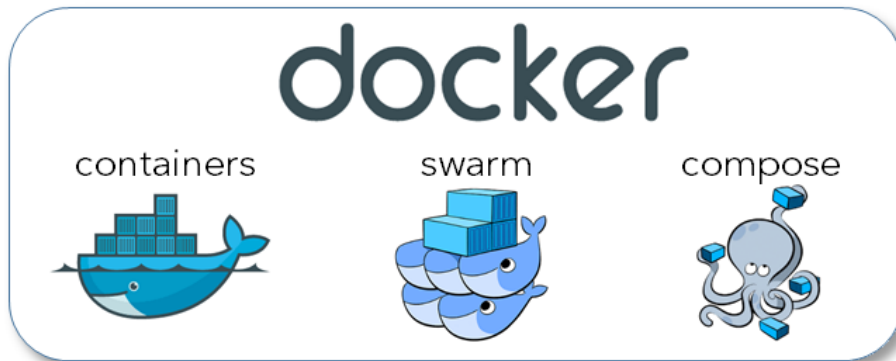
```
localhost:8080/api/events/

Failed to open page

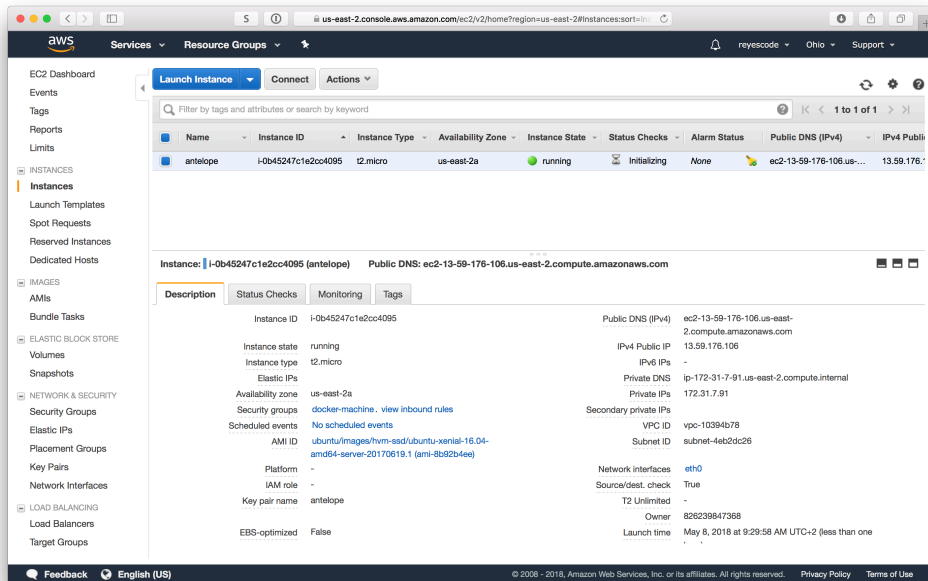
localhost:8080/api/events/

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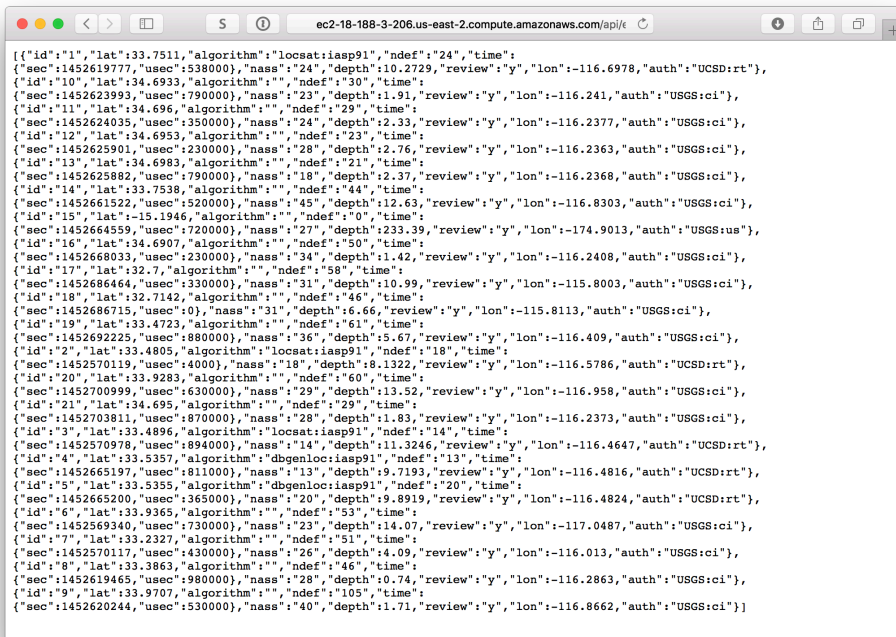
title



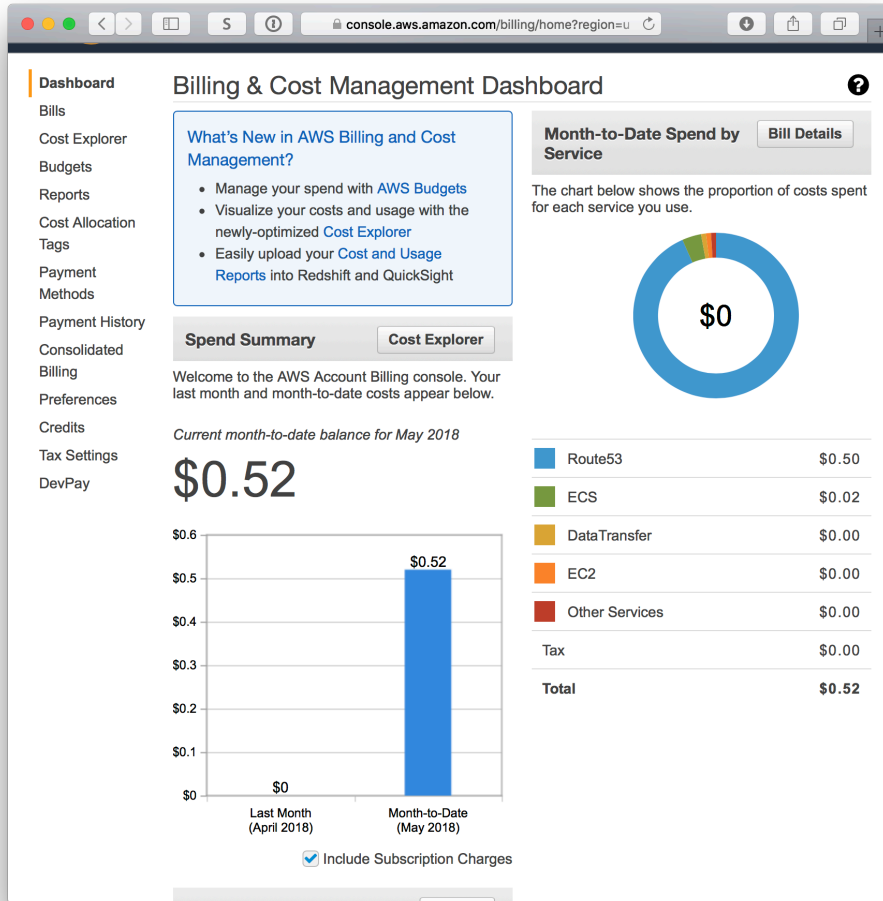
title



title



title



title