$ whoami
CAUTION
Snake Lunges at Face
When Door Opens
ZooKeeper?

- This talk is about ZooKeeper.
- Preaching Java software in Python conference. I can think of more healthier things to do too.

- On side note, our Product Owner is really damn good at this game
ZooKeeper!

- Apache project, Yahoo 2007
- Consistency & Partition tolerance
- Filesystem like, actually can be viewed as a trie, store data in directories too
- In memory, limits the dataset you can store. Maximum zookeeper node, znode, data size 1M
The Tao of ZooKeeper

Orderly, Reliable, Efficient, Timely, Contention free, ambition free
HOW DO I SHOT WEB
One library for the enterprise

Curator, from Netflix
Seven for the pythonistas

gevent-zookeeper
zkpython
zc.zk
pykeeper
twitter's zookeeper library
zoop
txzookeeper
One Library to rule them all*

* unless you are running twisted

- txzookeeper still valid for twisted
Origins from the Nimbus project
- Ben Bangert as the Sauron of ZooKeeper
- Not Frodo, that bastard wanted to destroy the perfectly good ring.
- All Python, including the protocol. No more segfaults!
Let's talk about KaZoo

Create, Read, Update, Delete
All basic operations available as async too, but we'll focus on the synchronous use
First we need to connect!

```python
from kazoo.client import KazooClient

zk = KazooClient(hosts='127.0.0.1:2181')
zk.start()
# ...
zk.stop()
```

Easy to connect to one host, multiple host, with namespace....
ZooKeeper supports connection namespace!
Bonus: get notified when the connection state changes
First we need to connect!

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zk = KazooClient(hosts='127.0.0.1:2181,127.0.0.2:2181')
```

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zk = KazooClient(hosts='127.0.0.1:2181,127.0.0.2:2181')

zk = KazooClient(hosts='127.0.0.1:2181/namespace,127.0.0.2:2181')
```

Easy to connect to one host, multiple host, with namespace....
ZooKeeper supports connection namespace!
Bonus: get notified when the connection state changes
Create

```
zk.create('/europython', b'2013')
```

Adding nodes easy, helpers exist for recursive creation
Ephemeral ZK feature, session + heartbeats, can’t have children!
Incremental: guaranteed ever increasing 10 digit number in node name
Create

zk.create('/europython', b'2013')

zk.create('/europython/jyrki', ephemeral=True)

Adding nodes easy, helpers exist for recursive creation
Ephemeral ZK feature, session + heartbeats, can’t have children!
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Create

```python
zk.create('/europython', b'2013')

zk.create('/europython/jyrki', ephemeral=True)

zk.create('/europython/sequential', sequence=True)
```

Adding nodes easy, helpers exist for recursive creation
Ephemeral ZK feature, session + heartbeats, can’t have children!
Incremental: guaranteed ever increasing 10 digit number in node name
zk.get('/europython')
Read

```
zk.get('/europython')

zk.exists('/europython/jyrki')
```
zk.get('/europython')

zk.exists('/europython/jyrki')

zk.get_children('/europython')
Update & Delete

\[ \text{zk.set_data}(''/europython/jyrki'\text{, }b'\text{nervous}'\text{)} \]
Update & Delete

```python
zk.set_data('/europython/jyrki', b'nervous')
zk.delete('/europython/jyrki')
```
SO YEAH, LIBRARY IS NICE AND ALL BUT IF YOU COULD TELL ME WHAT TO DO WITH IT

THAT WOULD BE GREAT
Distributed locks?

Barrier?

Semaphores?

Counters?

Elections?
from kazoo.recipe import <your-favourite-thing>

Of course it does not have everything from curator
Want to know when things change?
watchers
zk.exists('/europython/wine', watch=callback)

zk.get('/europython/wine', watch=callback)

zk.get_children('/europython/dinners', watch=callback)
from kazoo.recipe.watchers import DataWatch, ChildWatch

@DataWatch('/path/to/node')
def data_callback(data, stat):
    # ...
    do_something

@ChildWatch('/path/to/node')
def child_callback(children):
    # ...
    do_something
TESTS
What if something goes WRONG?
sys.exit()
Stand back!

It’s time for real life example
SEARED FOR THE NEWEST
JUSTIN BIEBER

Encryption keys were not available to play it.

Wednesday, 3 July 13
SUMMARY
Guess what, we’re hiring
Thank You!
jyrki@spotify.com
@nailor