



# Sharding for Mere Mortals

MongoDB Austin

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ubuntu  
CANONICAL



# Deploying Your App

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- I got some ideas.
- I have heard there are some great tools to use.
- How can I deploy with limited:
  - time and knowledge?

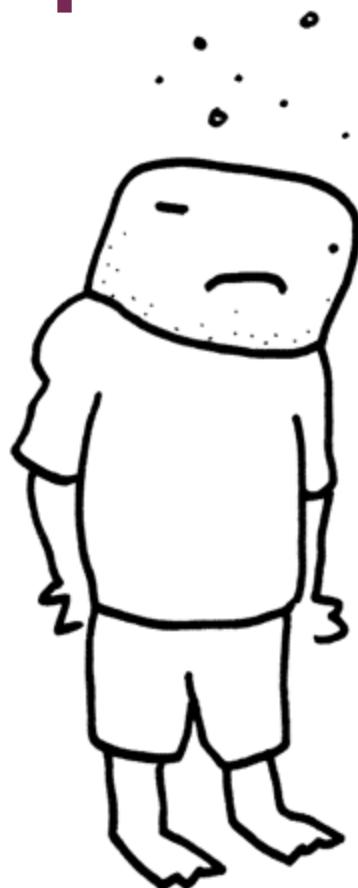


# Lots to Read





# Wake Up



I LOVE  
WAKING UP!

Eat





# Work





# Family





# Family



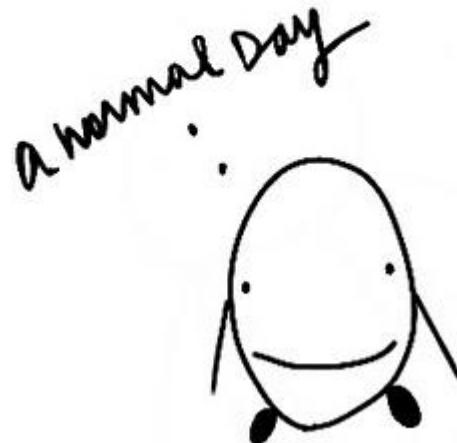


# Sleep





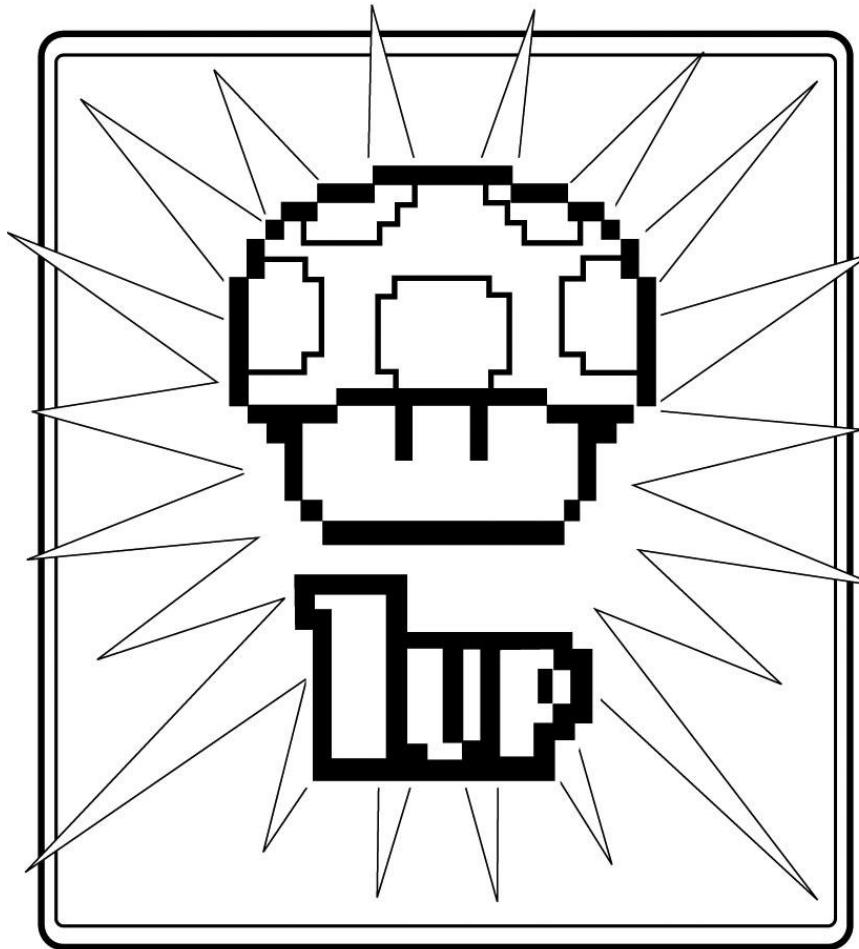
# Normal Day



Or . .



# Game





# Watch





# Make a Discovery





# Train for the Olympics





# Be a Ninja



# Drink Beer(s)



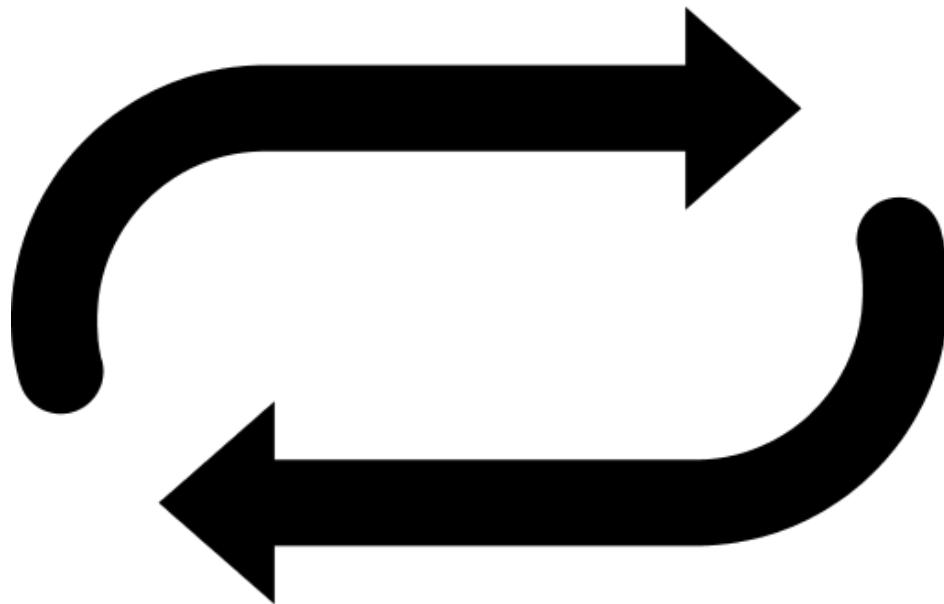


# Sleep





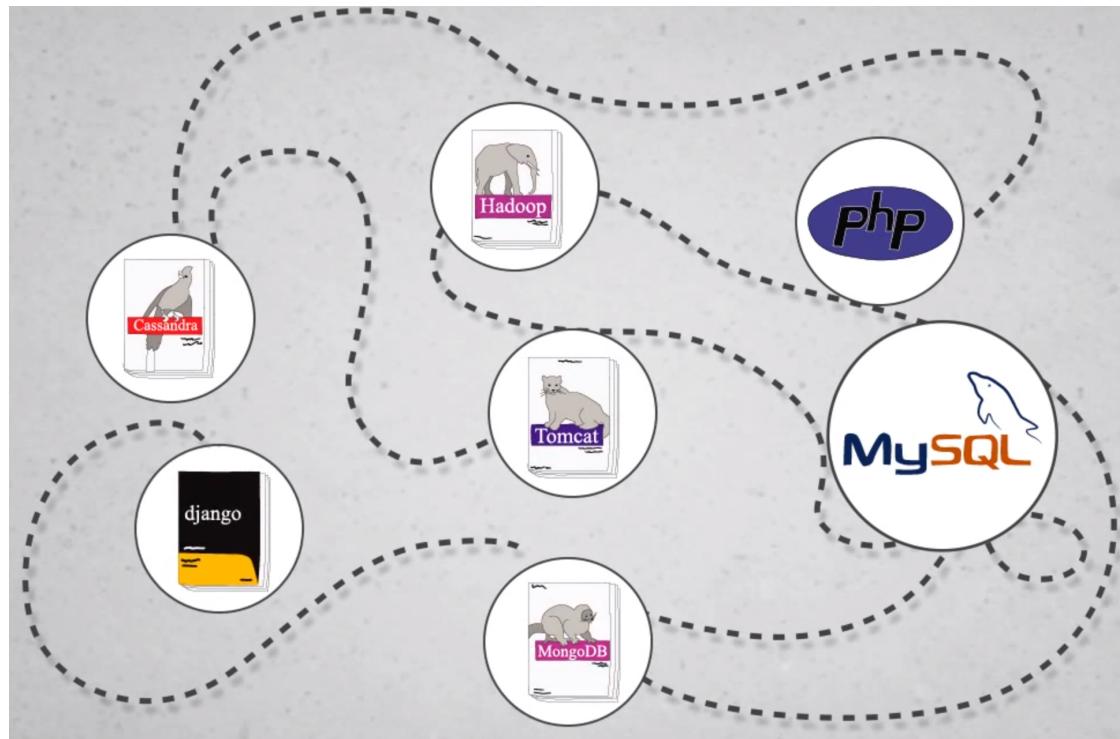
# Repeat





# Still Haven't Read

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# Time

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Not enough unless you have . . .

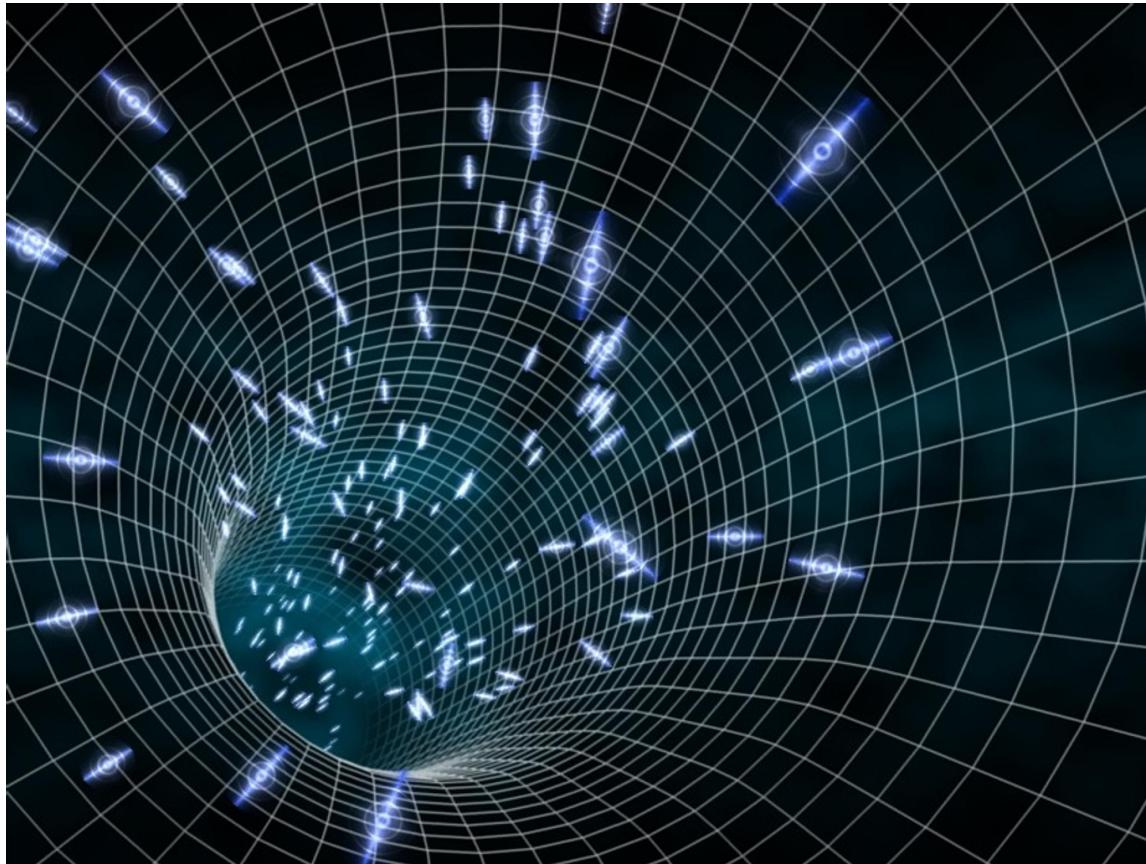


# Delorean Time Machine





# Wormhole



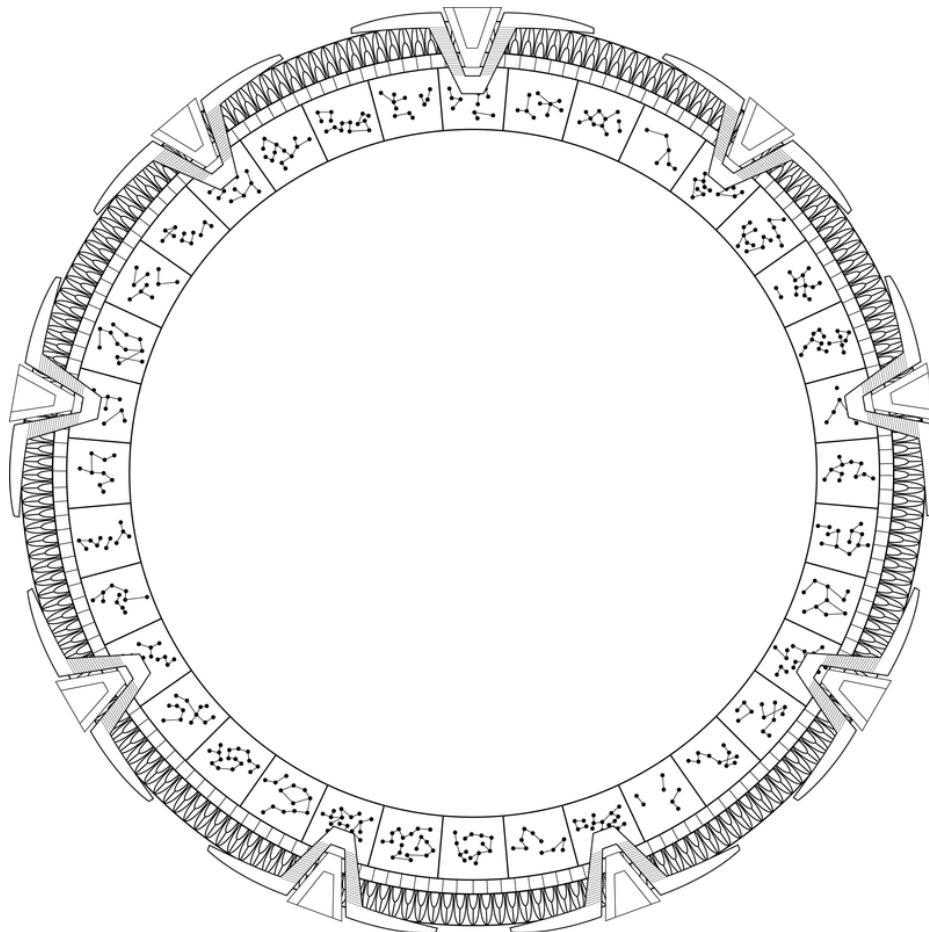


# Time Turner





# Star Gate





# Brain Envy

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My brain



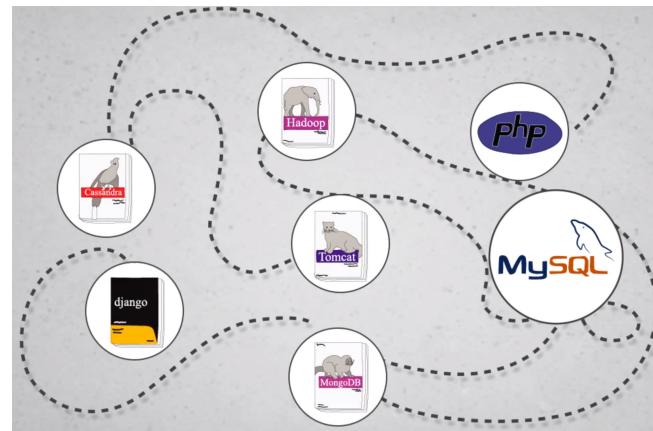
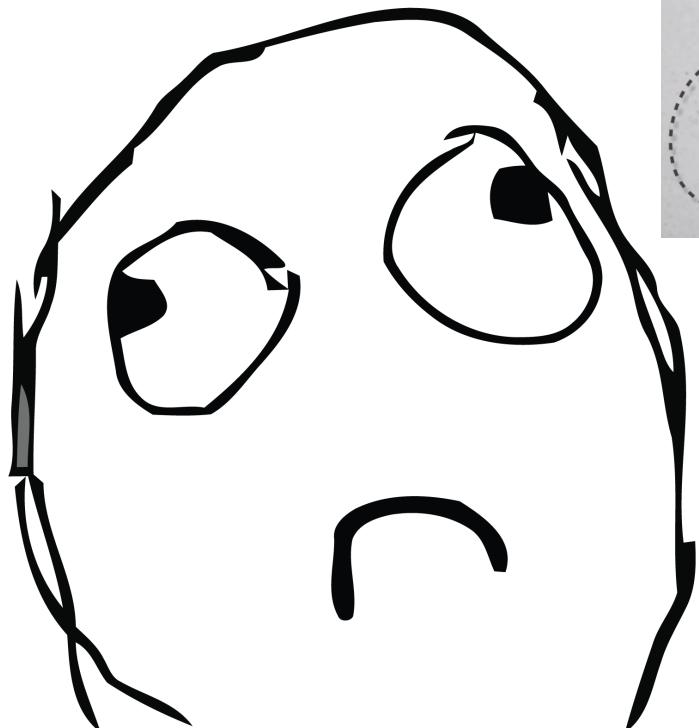
Your brain

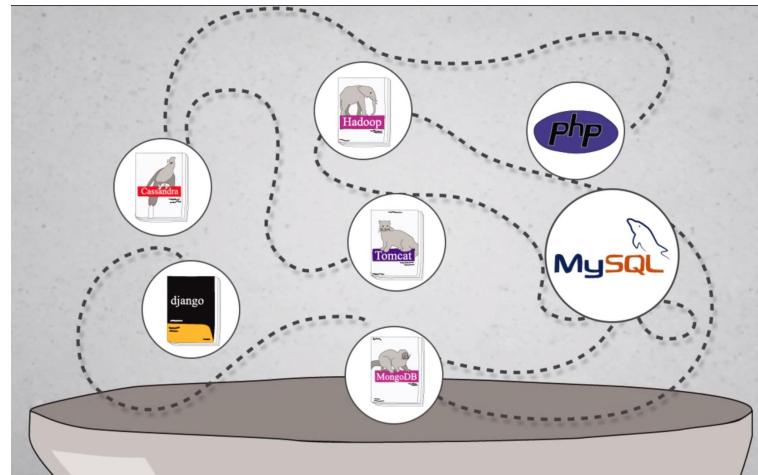




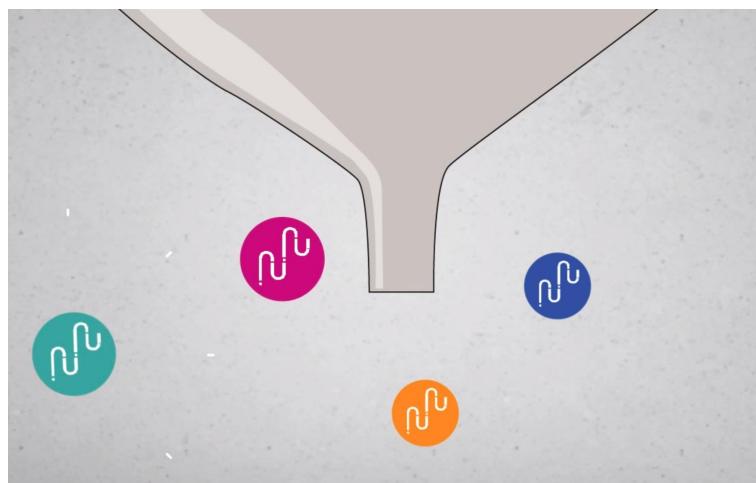
# How Can I configure, deploy, scale?

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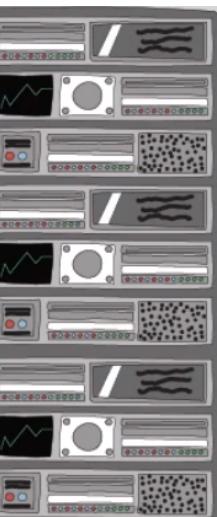




- Distills DevOps knowledge into Charms
  - Repeatable, Scalable, Relatable, Sharable



# Deploy over 100 Charms





# 0 to Deployed

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- **Install Juju**
  - `sudo apt-get-add-repository ppa:juju/pkgs`
  - `sudo apt-get update && sudo apt-get install juju`
- **Configure environments.yaml for interested cloud**
  - `juju bootstrap`
  - `~/juju/environments.yaml`
- **Deploy**
  - `juju deploy node-app my app`
  - `juju deploy mongodb`
  - `juju add-relation mongodb myapp`
  - `juju expose myapp`

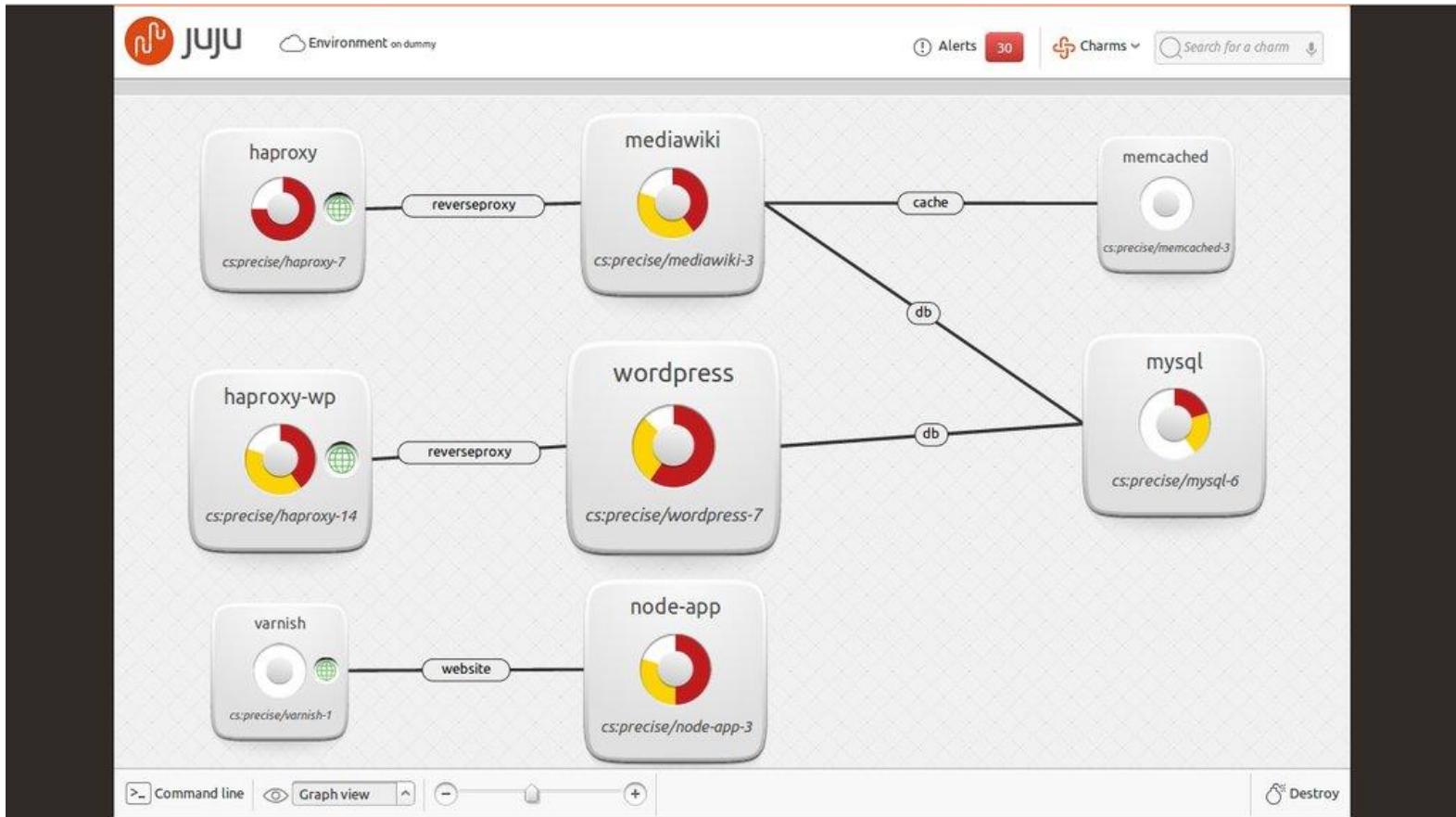


# Taking It Further

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- Scale
  - `juju add-unit -n 10 myapp`
- Add load balancing
  - `juju deploy haproxy`
  - `juju add-relation myapp haproxy`
- Add Monitoring
  - `juju deploy nagios`
  - `juju add-relation myapp nagios`

# GUI





# Sharding Example

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## Bootstrap the environment

```
juju bootstrap
```

## Mongo Shell

```
juju deploy mongodb mongos
```

## Config Servers ( we'll deploy 3 of them )

```
juju deploy mongodb configsvr --config ~/mongodb-shard.yaml -n3
```

## Shards ( We'll deploy three replica-sets )

```
juju deploy mongodb shard1 --config ~/mongodb-shard.yaml -n3  
juju deploy mongodb shard2 --config ~/mongodb-shard.yaml -n3  
juju deploy mongodb shard3 --config ~/mongodb-shard.yaml -n3
```

## Connect the Config Servers to the Mongo shell (mongos)

```
juju add-relation mongos:mongos-cfg configsvr:configsvr
```

## Connect each Shard to the Mongo shell (mongos)

```
juju add-relation mongos:mongos shard1:database  
juju add-relation mongos:mongos shard2:database  
juju add-relation mongos:mongos shard3:database
```



# Sharding Example

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- **Verify your config servers**
  - juju expose configsrv
  - juju status configsrv
  - Open your browser to `http://<public-address-of-configsvr>:28017`
- **Verify that each shard**
  - juju expose <shard1|shard2|shard3>
  - juju status <shard1|shard2|shard3>
  - Open your browser to `http://<public-address-of-shard>:28017`
- **Verify that each shard has been successfully register with the cluster:**
  - juju expose mongos
  - juju status mongos
  - mongo --host <public-address-of-mongos>:27021
  - **Once connected:**
    - `sh.status()`



# Sharding Example

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- **sh.status should return:**

```
|  
mongos> sh.status()  
--- Sharding Status ---  
sharding version: { "_id" : 1, "version" : 3 }  
shards:  
    { "_id" : "shard1", "host" : "shard1/ec2-184-169-236-25.us-west-1.compute.amazonaws.com:27017,ec2-  
54-241-89-206.us-west-1.compute.amazonaws.com:27017,ip-10-170-173-51:27017" }  
    { "_id" : "shard2", "host" : "shard2/ec2-204-236-159-194.us-west-1.compute.amazonaws.com:27017,ip-  
10-170-22-104:27017" }  
    { "_id" : "shard3", "host" : "shard3/ec2-184-169-219-11.us-west-1.compute.amazonaws.com:27017,ec2-  
184-169-239-214.us-west-1.compute.amazonaws.com:27017,ip-10-170-215-20:27017" }  
databases:  
    { "_id" : "admin", "partitioned" : false, "primary" : "config" }  
  
mongos>
```



# Get Involved

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- [juju@lists.ubuntu.com](mailto:juju@lists.ubuntu.com)
- [#juju on IRC Freenode](#)
- [juju.ubuntu.com](http://juju.ubuntu.com)
- Interested in Charming:
  - Embed best practice into charms



# Thanks!

MongoDB Austin

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