

# Learnings from scaling IroniC at Yahoo

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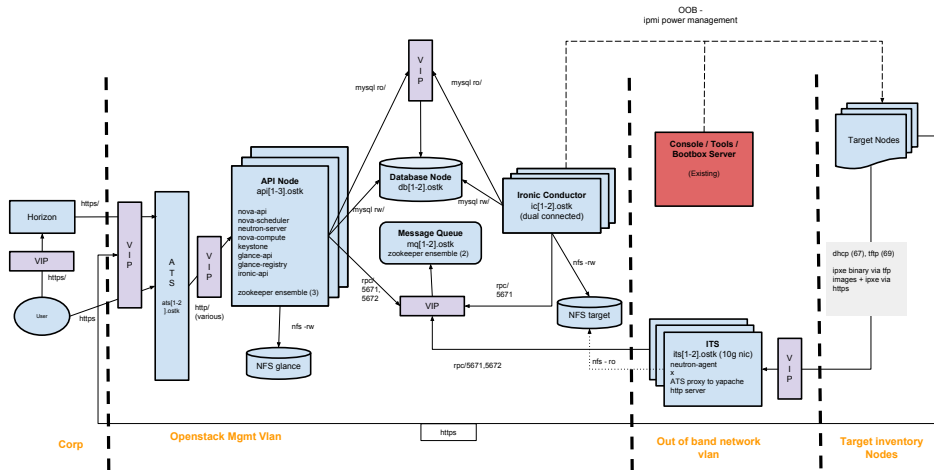
Yahoo Inc

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<https://github.com/sagarun/presentations/>

# Background and Architecture

# Cluster Architecture



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- ▶ Create neutron port for the node
- ▶ If the node is already active in the old system, 'fake' boot it with fake\_pxe driver
- ▶ Once everything is successful, switch to pxe\_ipmitool driver

# Ironic



# Ironic Setup

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- ▶ Ironic Conductors(2)





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- ▶ Ironic API calls took too long

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- ▶ Increase the number of Ironi Conductors
- ▶ Run multiple conductors on the same host

# Neutron

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- ▶ 24 API/RPC workers
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- ▶ All networks/subnets are managed by all 4 agents (HA)
- ▶ ISC DHCPD driver instead of dnsmasq



What is sync state?

# A tale of two drivers

- ▶ OMShell driver

# A tale of two drivers

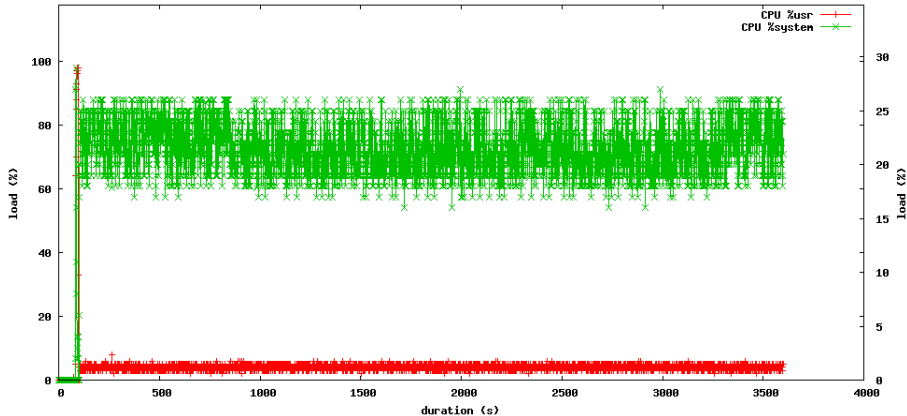
- ▶ OMShell driver
- ▶ Pypureomapi driver

# OMShell

```
-bash-4.1$ omshell
> server 127.0.0.1
> port 7911
> key keyname secret
> connect
obj: <null>
> new host
obj: host
> set hardware-address = 00:1c:1a:1d:10:54
obj: host
hardware-address = 00:1c:1a:1d:10:54
> open
obj: host
hardware-address = 00:1c:1a:1d:10:54
ip-address = 0a:d7:a6:b1
name = "hostname.yahoo.com-0"
hardware-type = 00:00:00:01
>remove
```

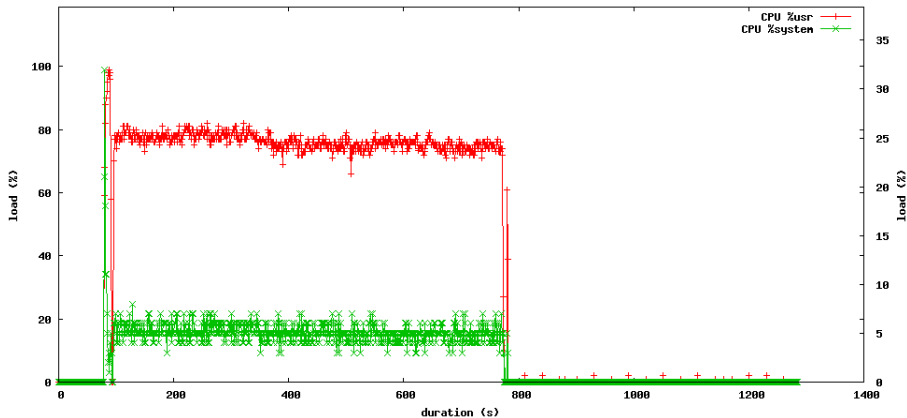
# Sync State with OMShell

LOAD for cmd: /home/y/share/venv/openstack\_yahoo\_neutron/bin/python2 /home/y/share/venv/openstack\_yahoo\_neutron/bin/neutron-dhcp-agent --conf



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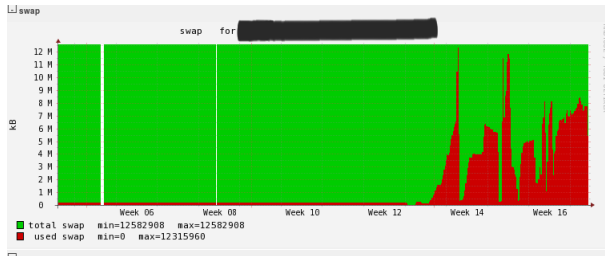
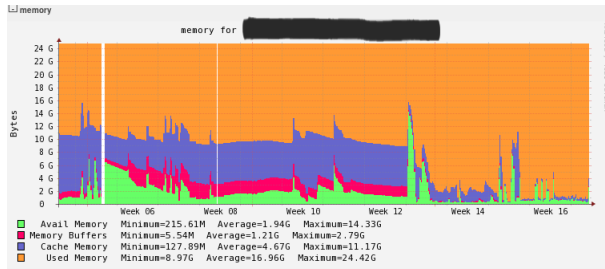
- ▶ ISC DHCPD restarts are not ideal
- ▶ VIP thinks dhcpd is down whenever it restarts
- ▶ Move to Kea DHCP Server

# Density Test

# When did things started to break?

- ▶ At 24500 nodes, API servers started swapping

# Swap and memory usage on API nodes



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- ▶ Subnets: 2500 Ports: 43000
- ▶ Easy fix: Reduce number of api\_workers and rpc\_workers
- ▶ Long Term Fix: Investigate memory usage, isolate neutron



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- ▶ Do a *\*density\** and *\*scale\** testing before taking on production
- ▶ Avoid spawning processes, try and use native python libraries whenever possible
- ▶ Pay attention to periodic tasks
- ▶ Be prepared to scale horizontally
- ▶ Pay attention to number of workers,conductors,rpc\_workers
- ▶ Don't forget to have fun :)

# Questions