

# Monitoring

# Monitoring

- Riak Health
- Riak Metrics
- System Metrics
- Thresholds
- Tools
- Alerting

# Riak Health

```
riak@node:~$ riak ping  
pong
```

```
riak@node:~$ riak-admin test  
Successfully completed 1 read/write cycle to  
'riak@node.example.com'
```

# Riak Health

```
riak@node:~$ riak-admin ring_status
```

```
===== Claimant =====
```

```
Claimant: 'riak@node.example.com'
```

```
Status: up
```

```
Ring Ready: true
```

```
===== Ownership Handoff =====
```

```
No pending changes.
```

```
===== Unreachable Nodes =====
```

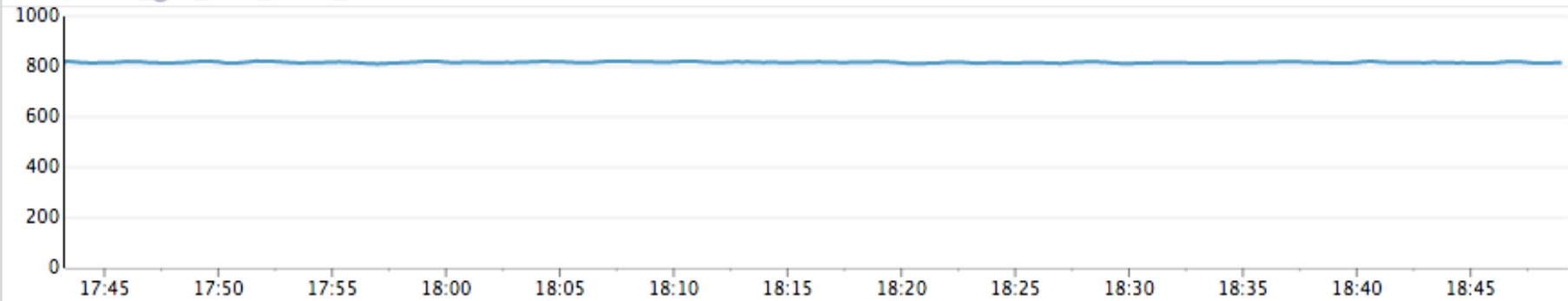
```
All nodes are up and reachable
```

# Riak Metrics

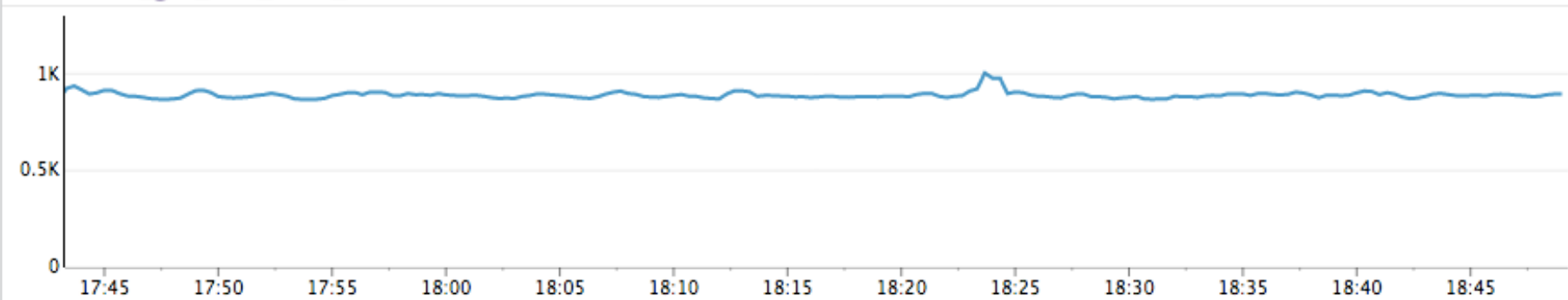
```
riak@node:~$ riak-admin status
1-minute stats for 'riak@node.example.com'
-----
riak_kv_stat_ts : 1396505566
vnode_gets      : 87324
vnode_gets_total : 12387621
vnode_puts      : 13572
vnode_puts_total : 1625343
vnode_index_refreshes : 1278
vnode_index_refreshes_total : 18726
vnode_index_reads : 9826421
vnode_index_reads_total : 347214
...
```

# Riak Metrics

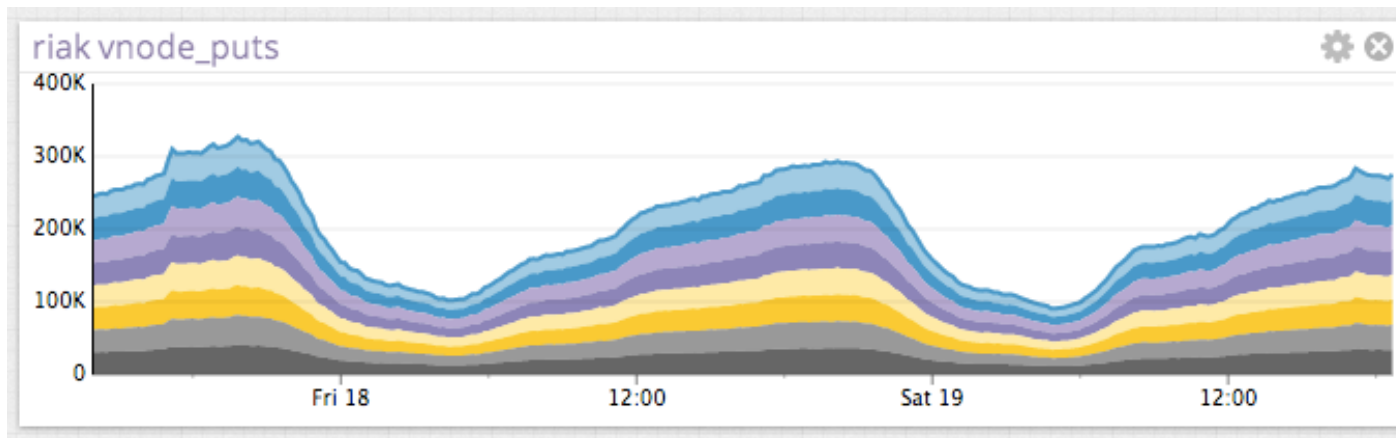
riak.node\_get\_fsm\_time\_median



riak.node\_get\_fsm\_time\_mean



# Riak Metrics



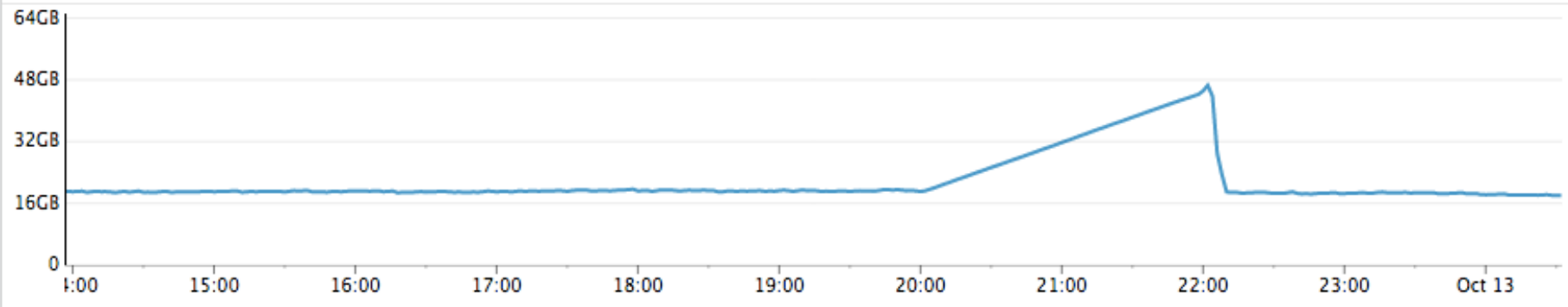
# System Metrics

- CPU
- Disk IO
- Disk Space
- File Descriptors
- Memory
- Network
- Swap

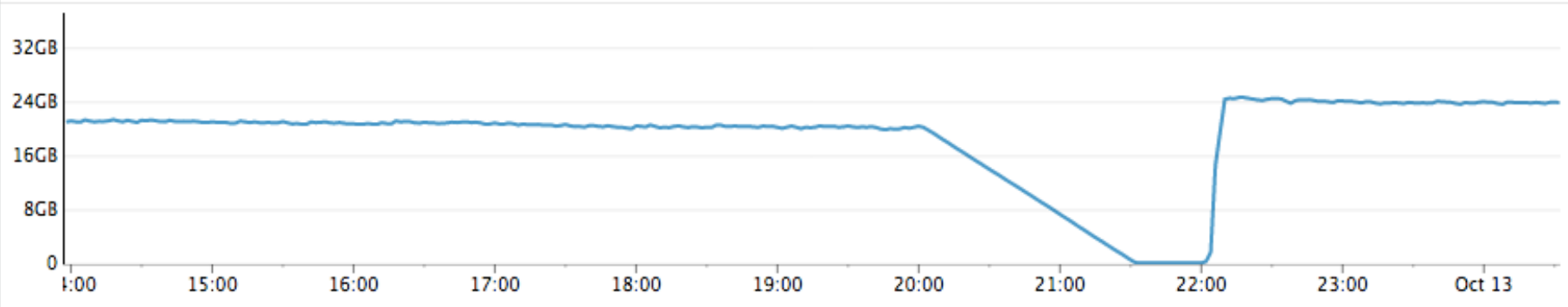


# System Metrics

system.disk.used with device:/srv



system.mem.free with host:riak01



# Thresholds

- CPU: 75% x num\_cores
- Memory: 65% utilization
- Swap: >0% used
- File Descriptors: 75% of ulimit

# Alerting

- console.log messages
- Sibling explosion
- Object size
- GET and PUT latencies
- Replication issues

# Tools

- Your favourite/existing monitoring software
- Zabbix templates
- Nagios plugins

# Logging

# Logging Configuration

```
{lager, [
  {handlers, [
    {lager_file_backend, [
      {"/var/log/riak/error.log", error, 10485760, "$D0", 5},
      {"/var/log/riak/console.log", info, 10485760, "$D0", 5}
    ]},
    {lager_syslog_backend, ["riak", daemon, info]}
  ]},
]}
```



# Logging Configuration

```
{crash_log, "/var/log/riak/crash.log"},  
{crash_log_msg_size, 65536},  
{crash_log_size, 10485760},  
{crash_log_date, "$D0"},  
{crash_log_count, 5},
```



# Common Log Files

- console.log
- error.log
- crash.log
- /var/lib/riak/leveldb/\*/LOG



# Common Error Messages

- Erlang
  - long\_gc
  - busy\_dist\_port
  - emfile
  - {error, e\_\_\_\_\_}
  - Posix errors: <http://erldocs.com/R15B/kernel/inet.html>

# Erlang Errors

- {error,duplicate\_name}
- {error,econnrefused} / {error,ehostunreach}
- {error,eacces}
- {error,enoent}
- {error,erofs}
- system\_memory\_high\_watermark

# Monitoring Logs

- Lager supports syslog
- Log rotate and look for errors & warnings
- Logstash?
- Splunk?