

Pool Party!

Autoscaling on EC2
EC2 for the criminally lazy
autoElastic cloud computing on EC2

Ari Lerner – CitrusByte

Amazon's EC2

What

- Clustered, web-service
- Easy scaled computing
- Completely customizable
- Pay for only what you use
- Highly elastic
- Incredibly flexible

Issues

- No auto-scaling
- No load-balancing
- Non-persistent instance data storage
- Volatile with no failover solution

Pool Party

- Self-healing computing clusters
- Auto-scales cloud based on user-configured parameters
- Inherent load-balancing
- Persistent data storage on instances using s3
- Failover safety
- CloudSpeak DSL – easily communicate with your cloud

How?

Load Balancing

Haproxy

Fail safety

Heartbeat

How?

Persistent data
storage

S3F(use)

Auto-scaling

PoolParty

*nix

HAProxy

This application-agnostic, hot-swappable load-balancer built from the ground up for high availability clusters is speedy because of it's closeness to the os.

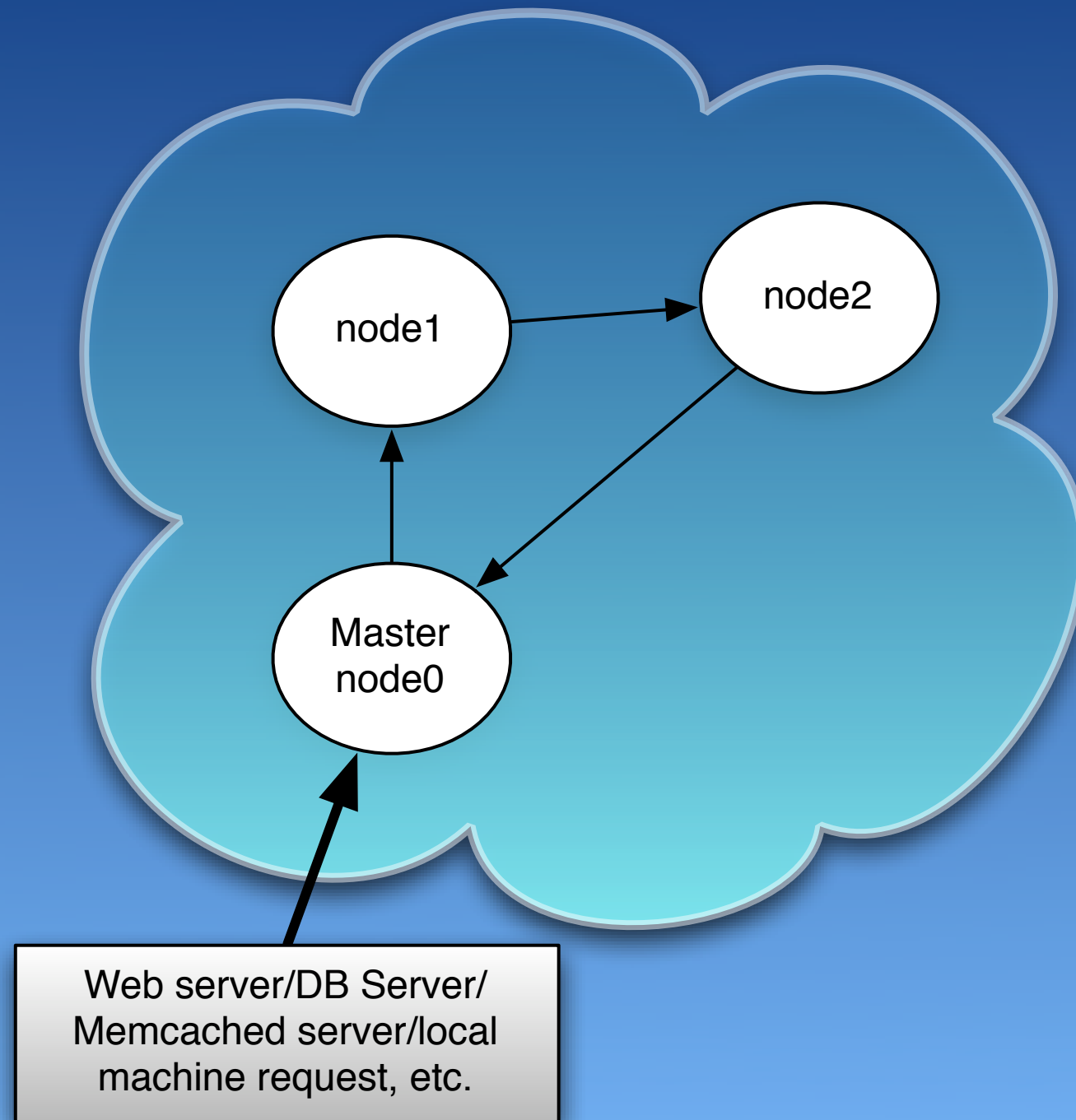
Heartbeat

Robust, enterprise-standard services monitor that provides pool party failover capabilities.

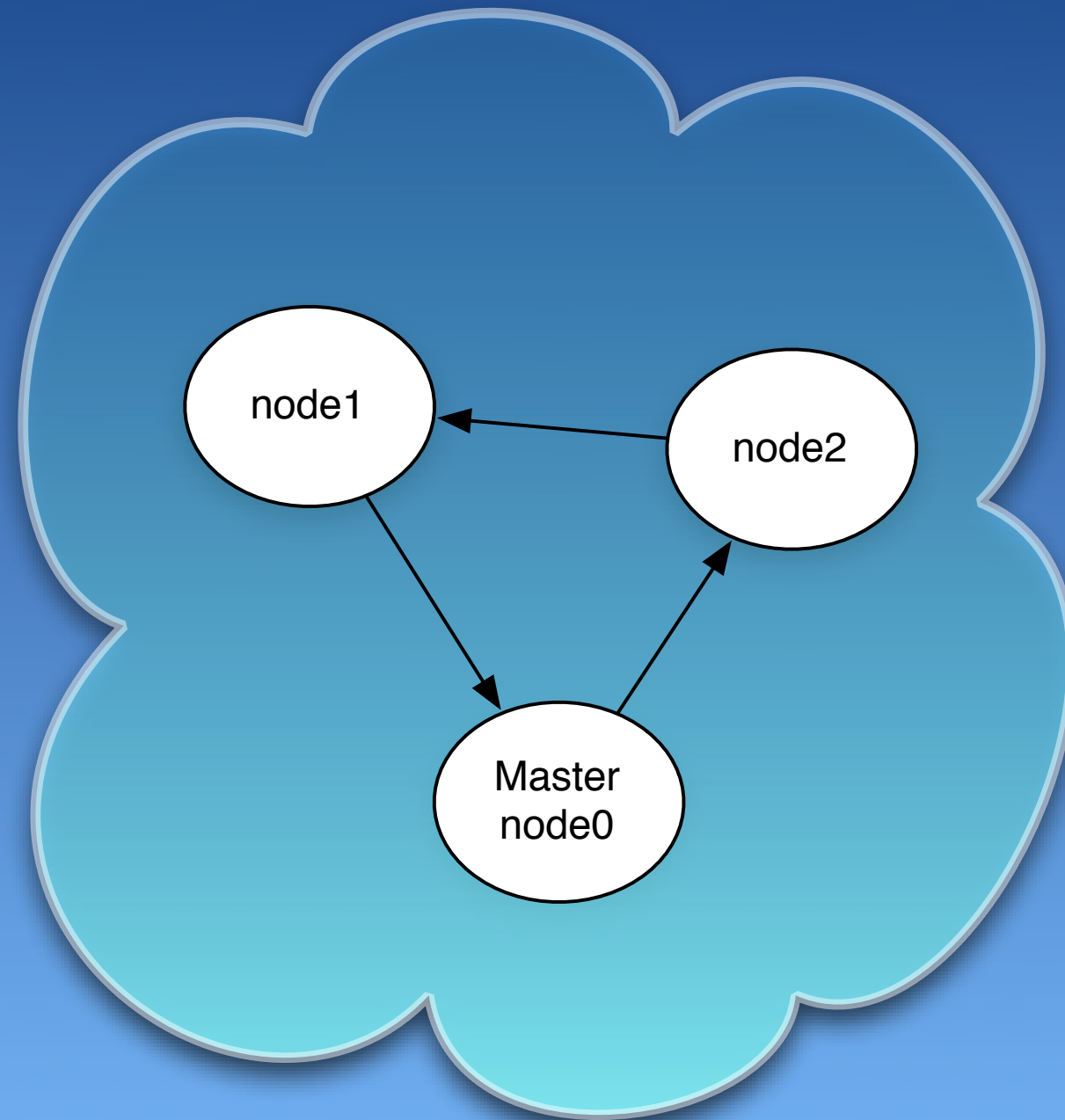
S3Fs

S3 backed filesystem in userspace (FUSE) uses little-to-no caching to reduce race conditions. Pool party uses the unlimited s3 data-store to provide instances access to the same data across the instances while providing an easy deployable.

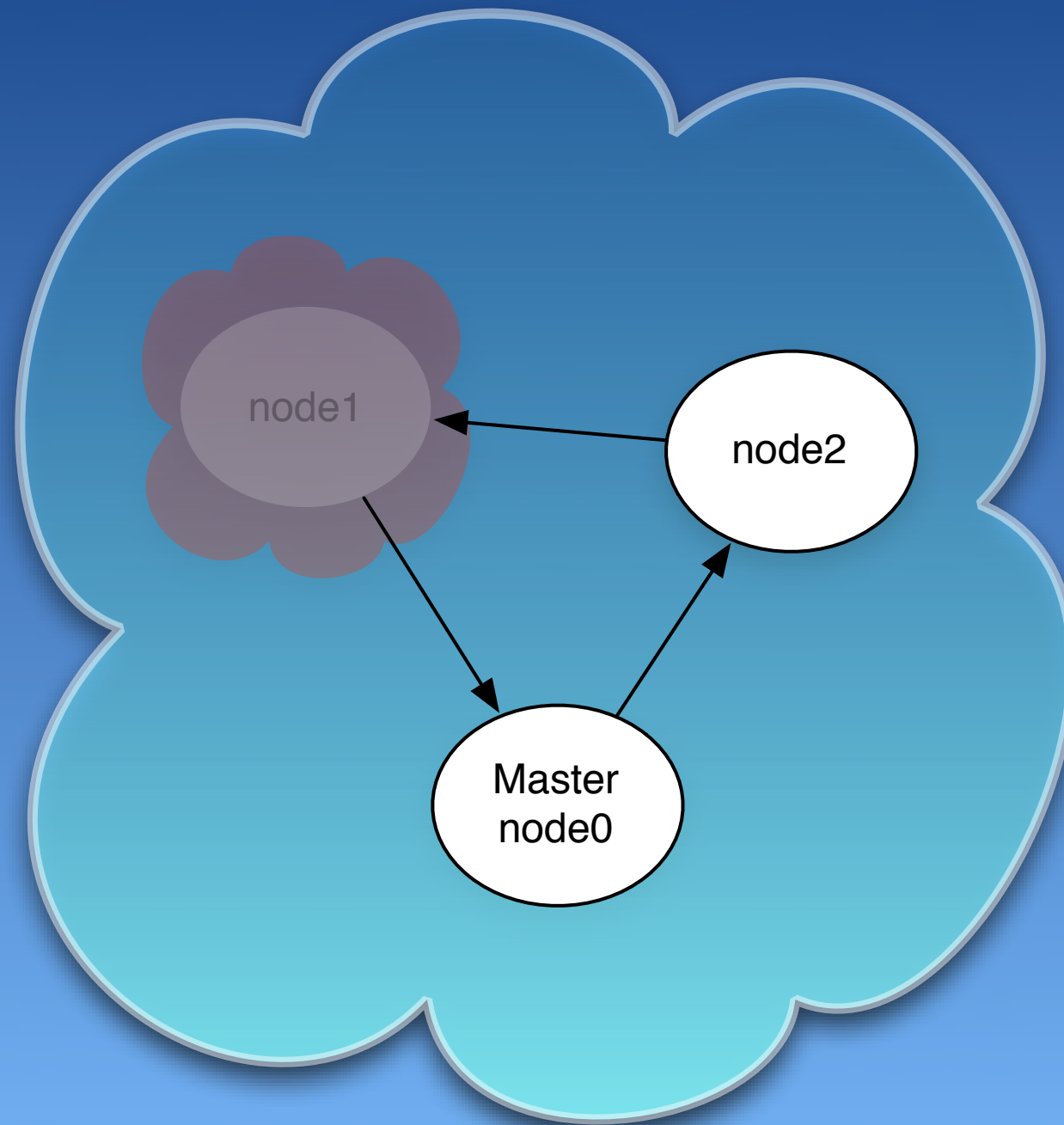
Load Balancing



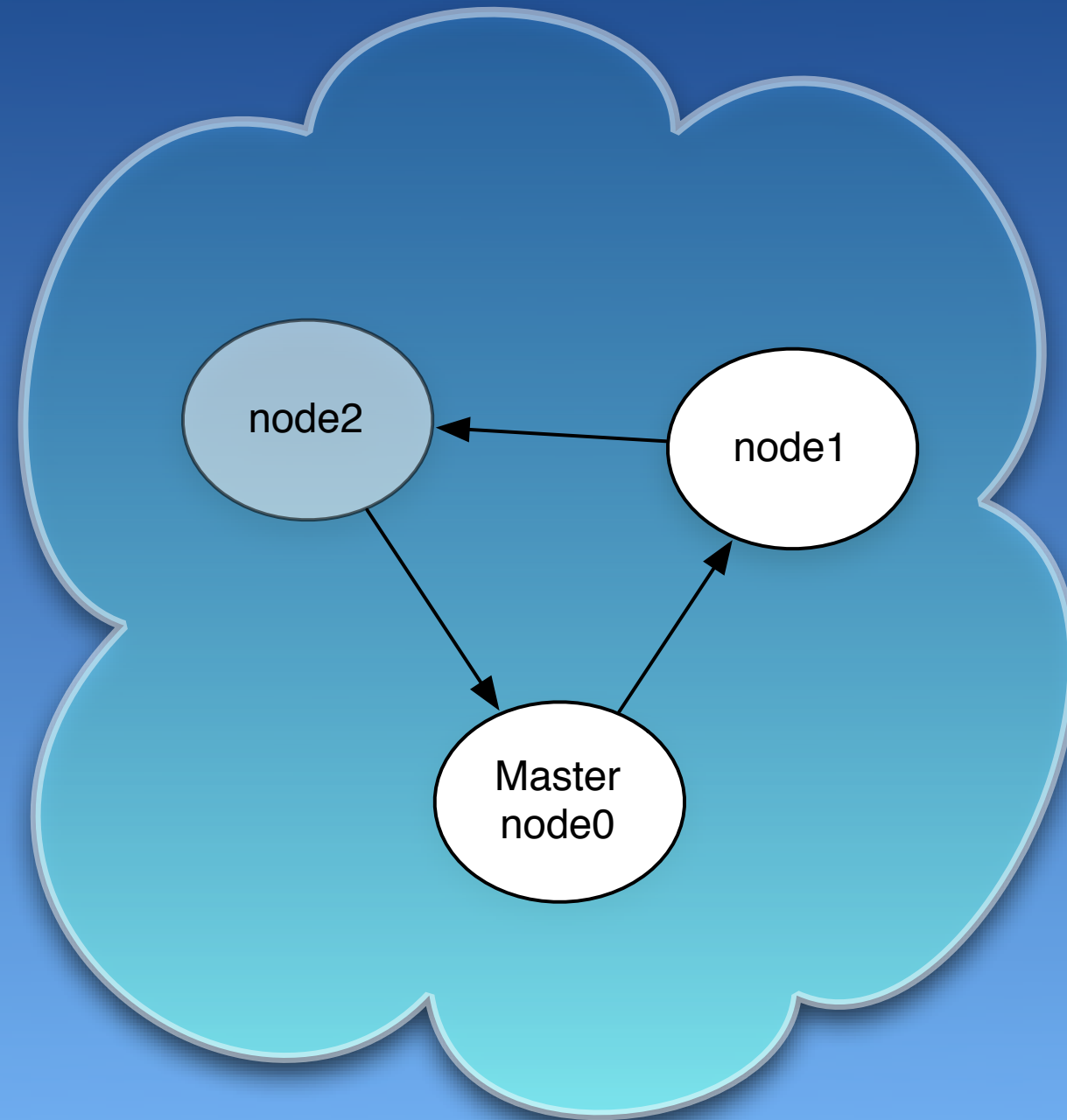
Failover (instance)



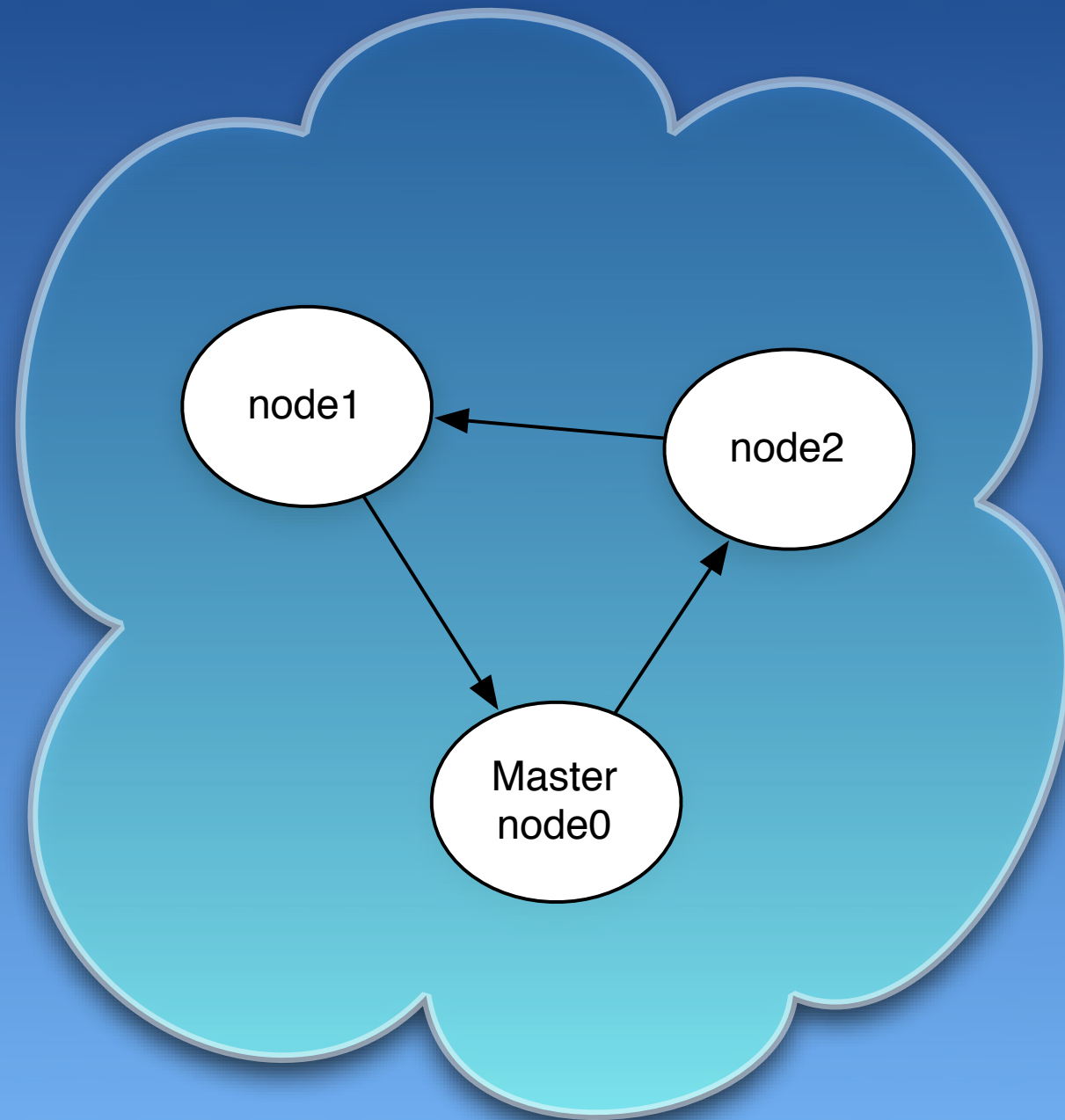
Failover (instance)



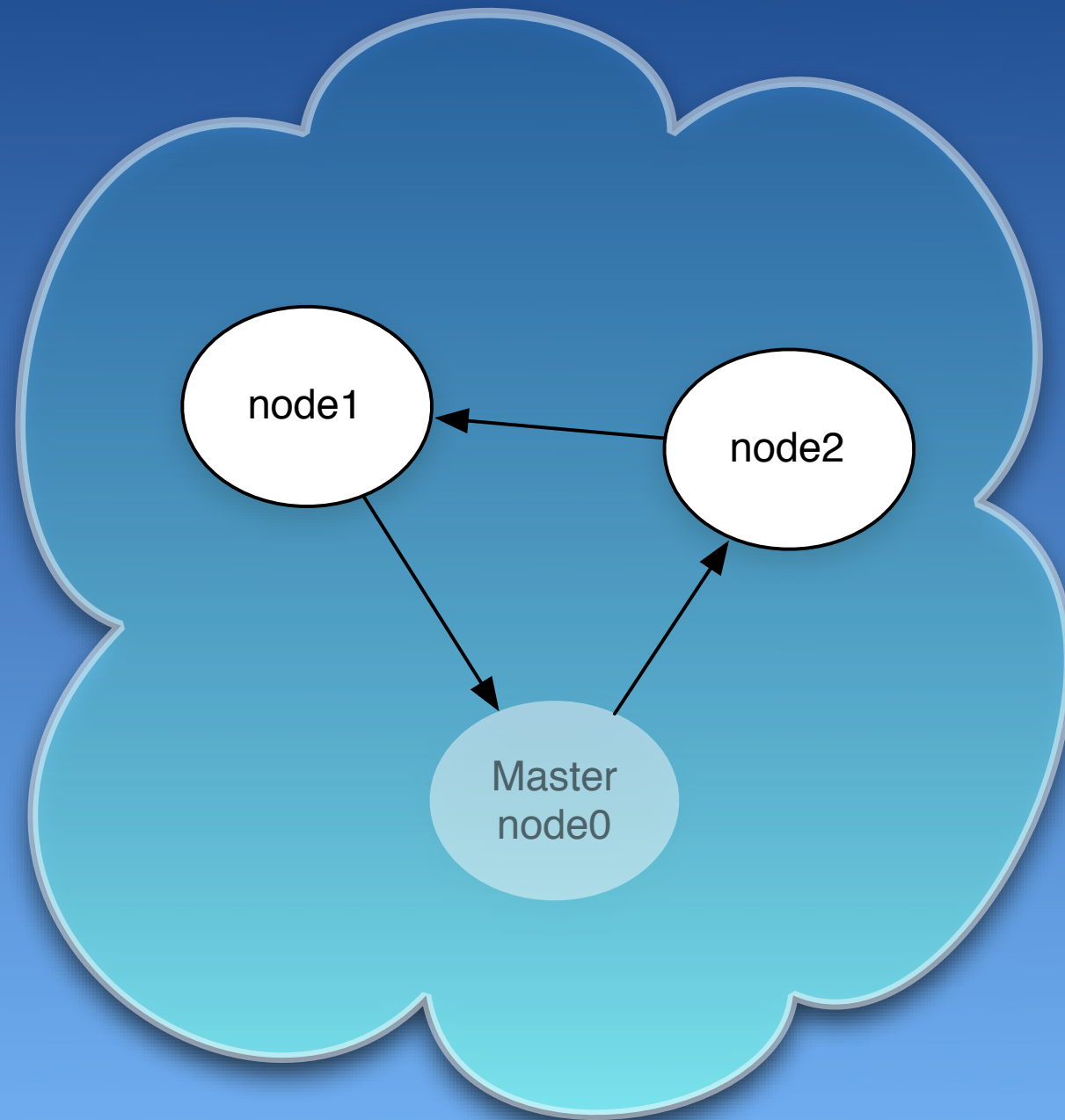
Failover (instance)



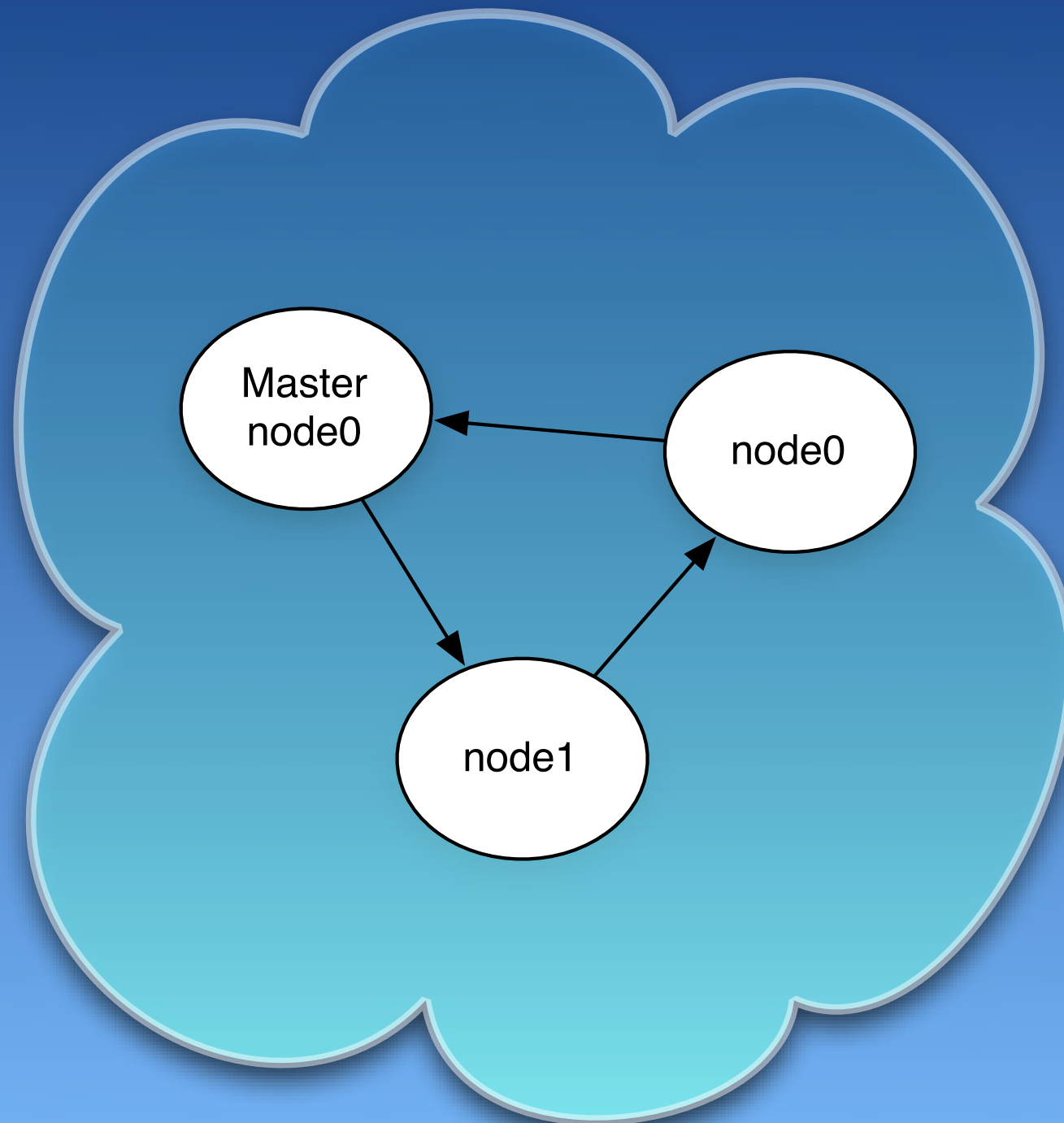
Failover (master)



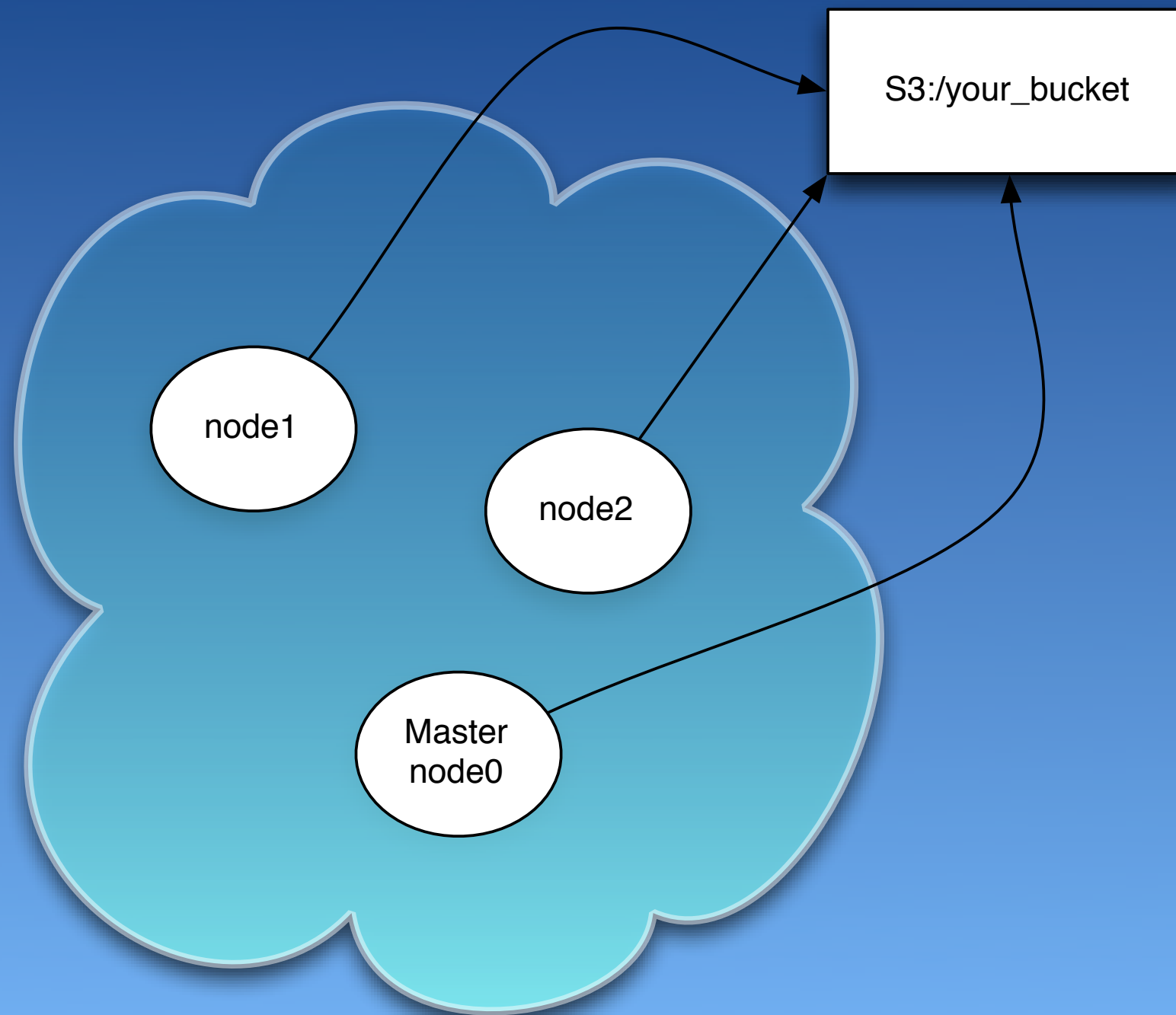
Failover (master)



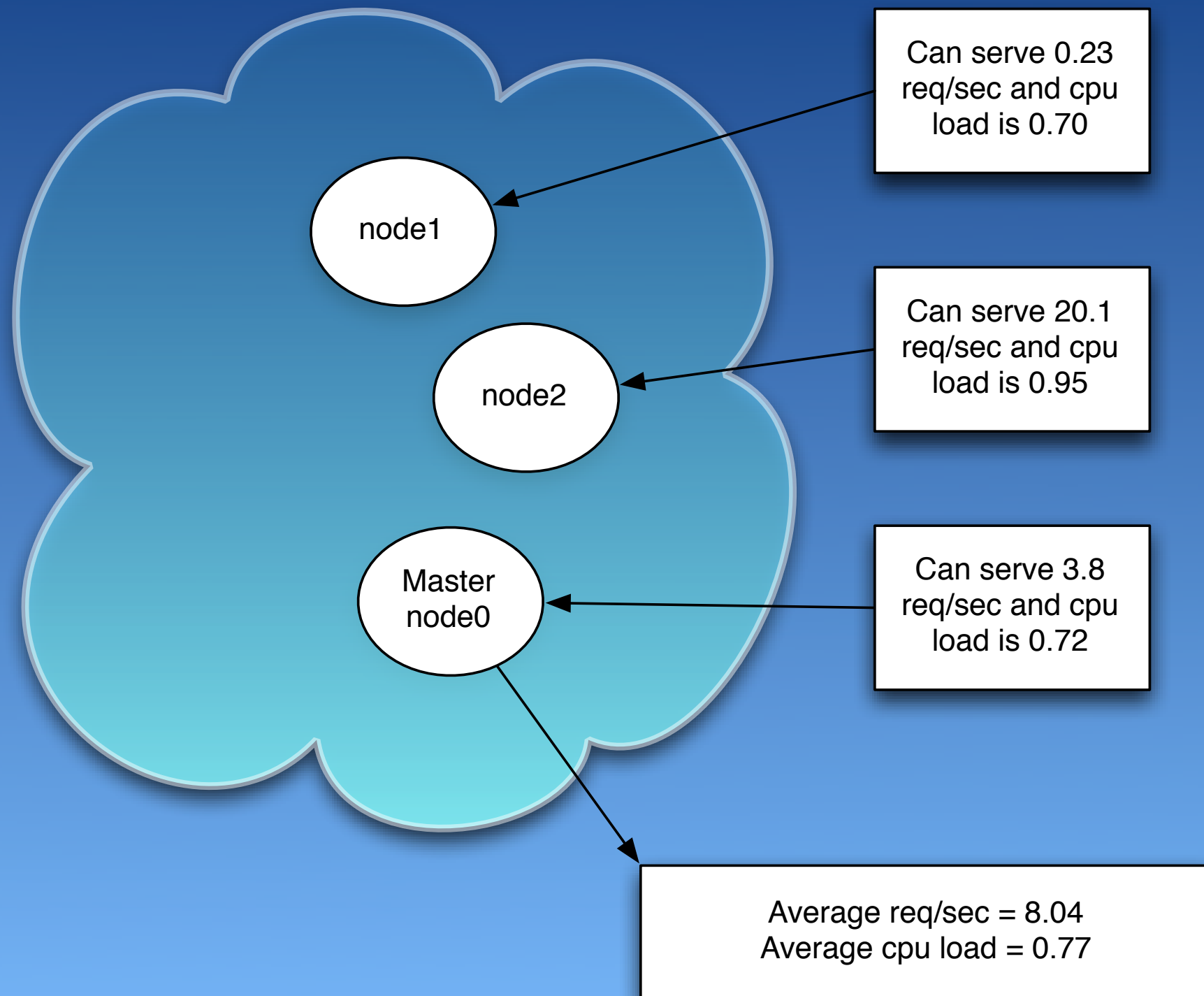
Failover (master)



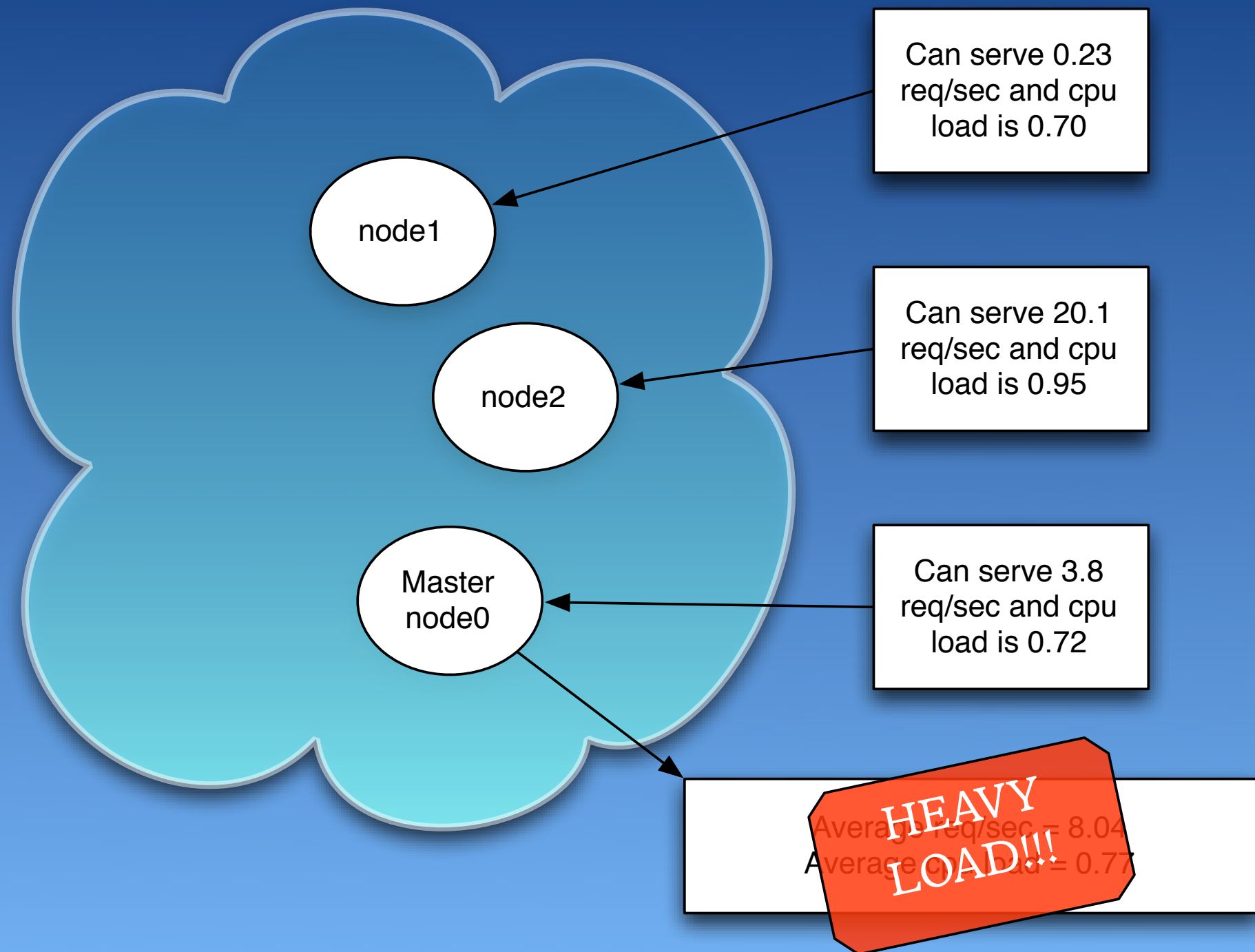
Persistent data store



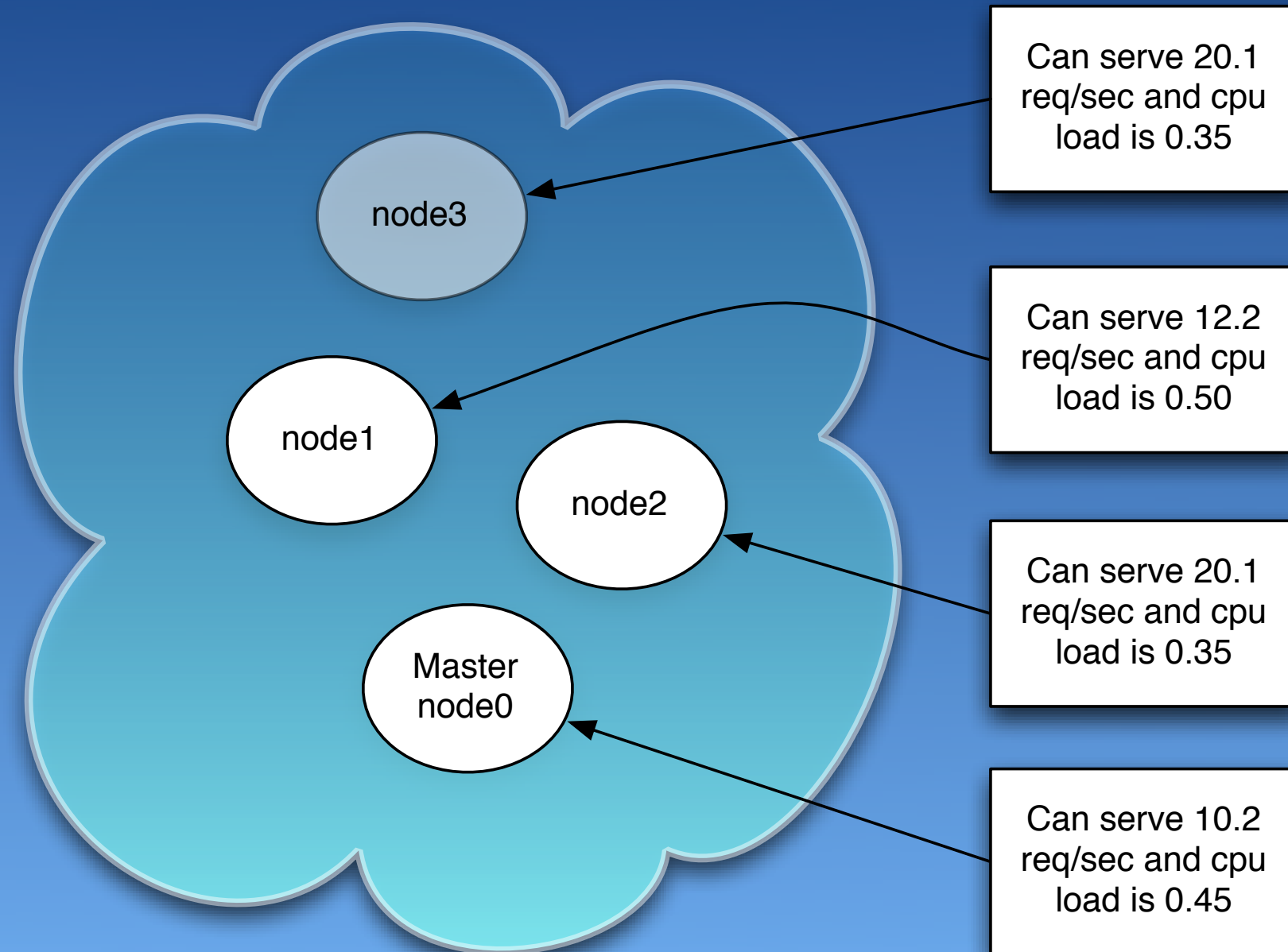
Auto-scaling



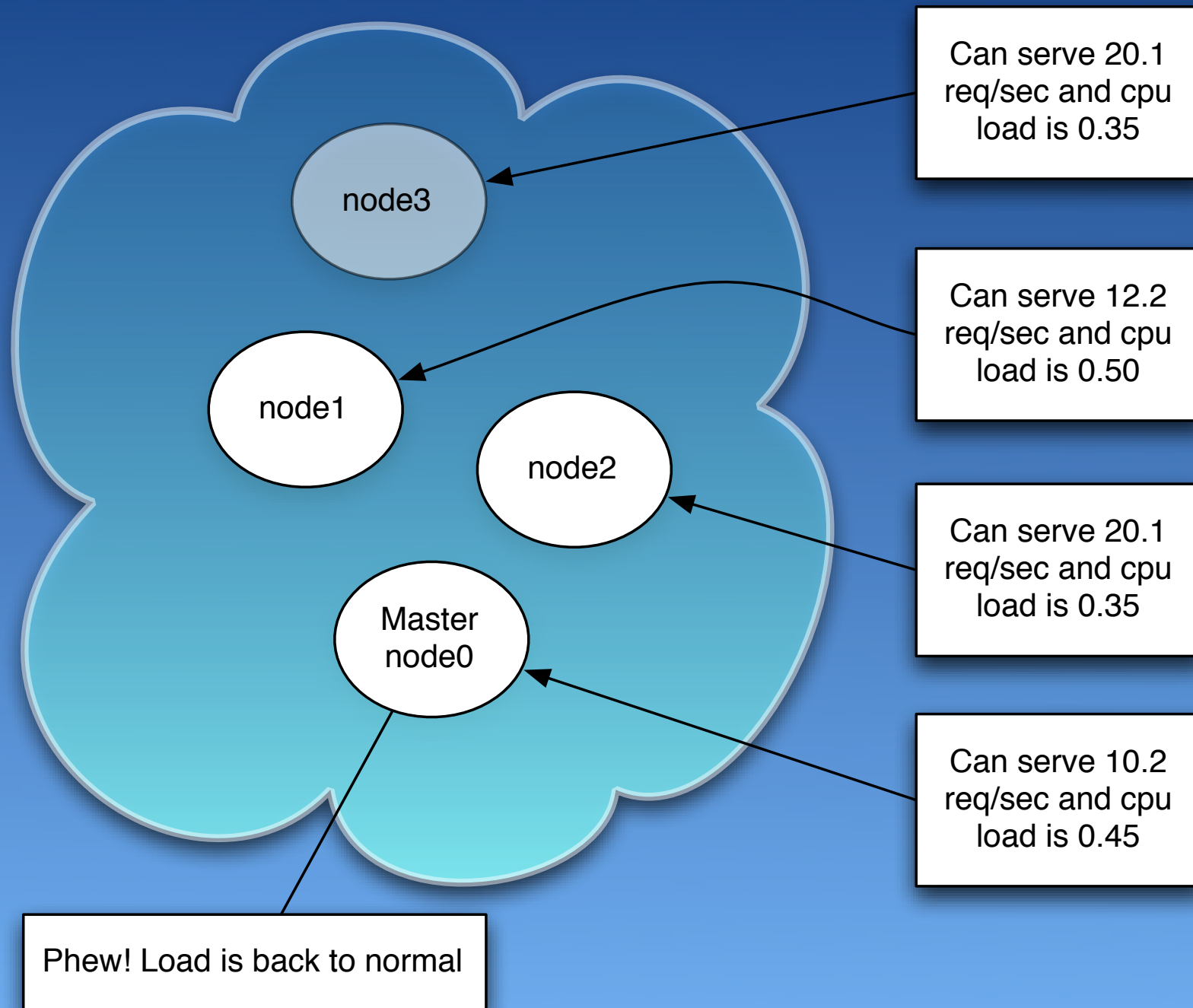
Auto-scaling



Auto-scaling



Auto-scaling

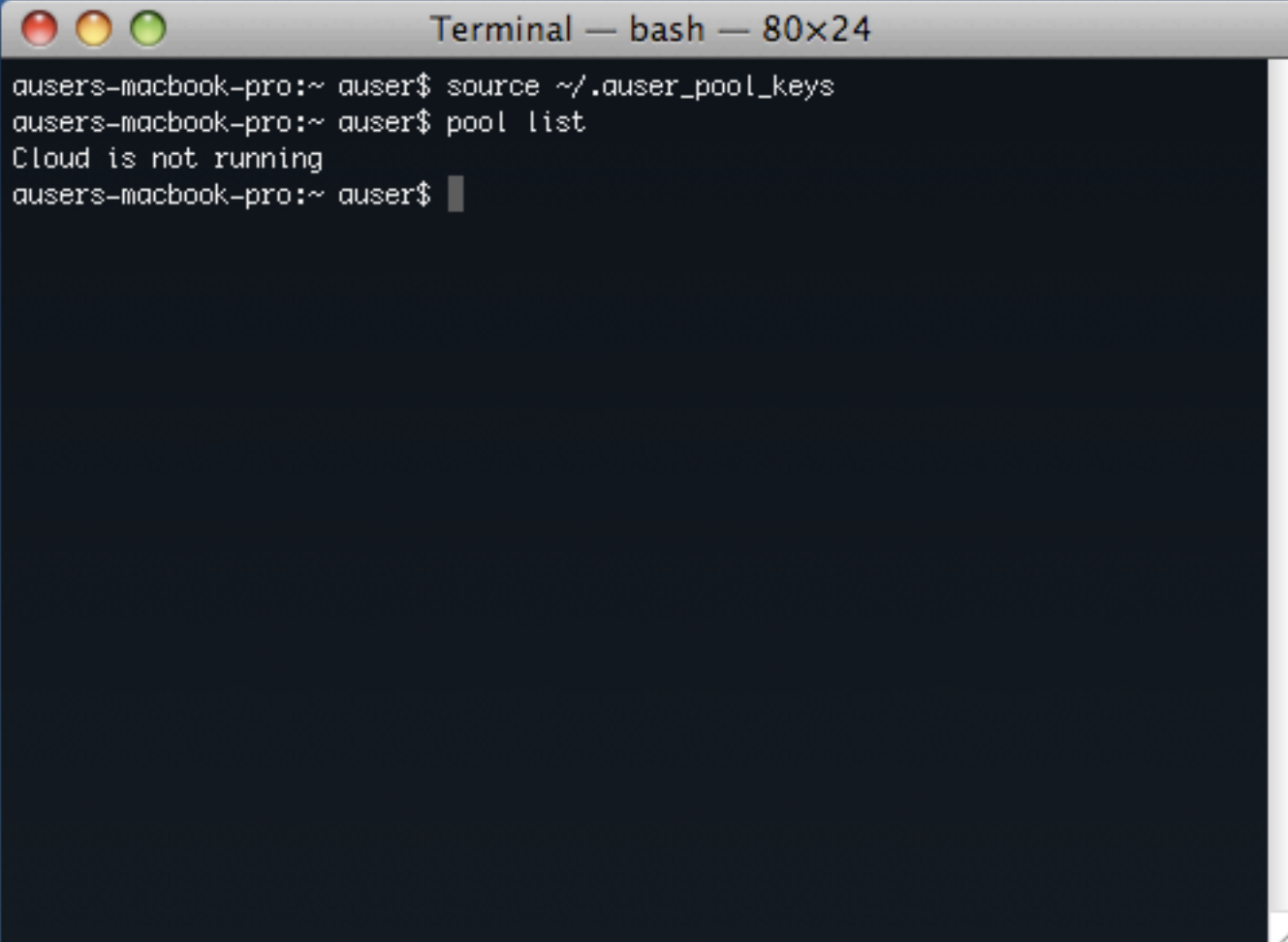


CloudSpeak

- pool
 - start | stop | restart | list | maintain
- instance
 - start | stop | reconfigure | install | ssh | scp | cmd | start_maintain | stop_maintain

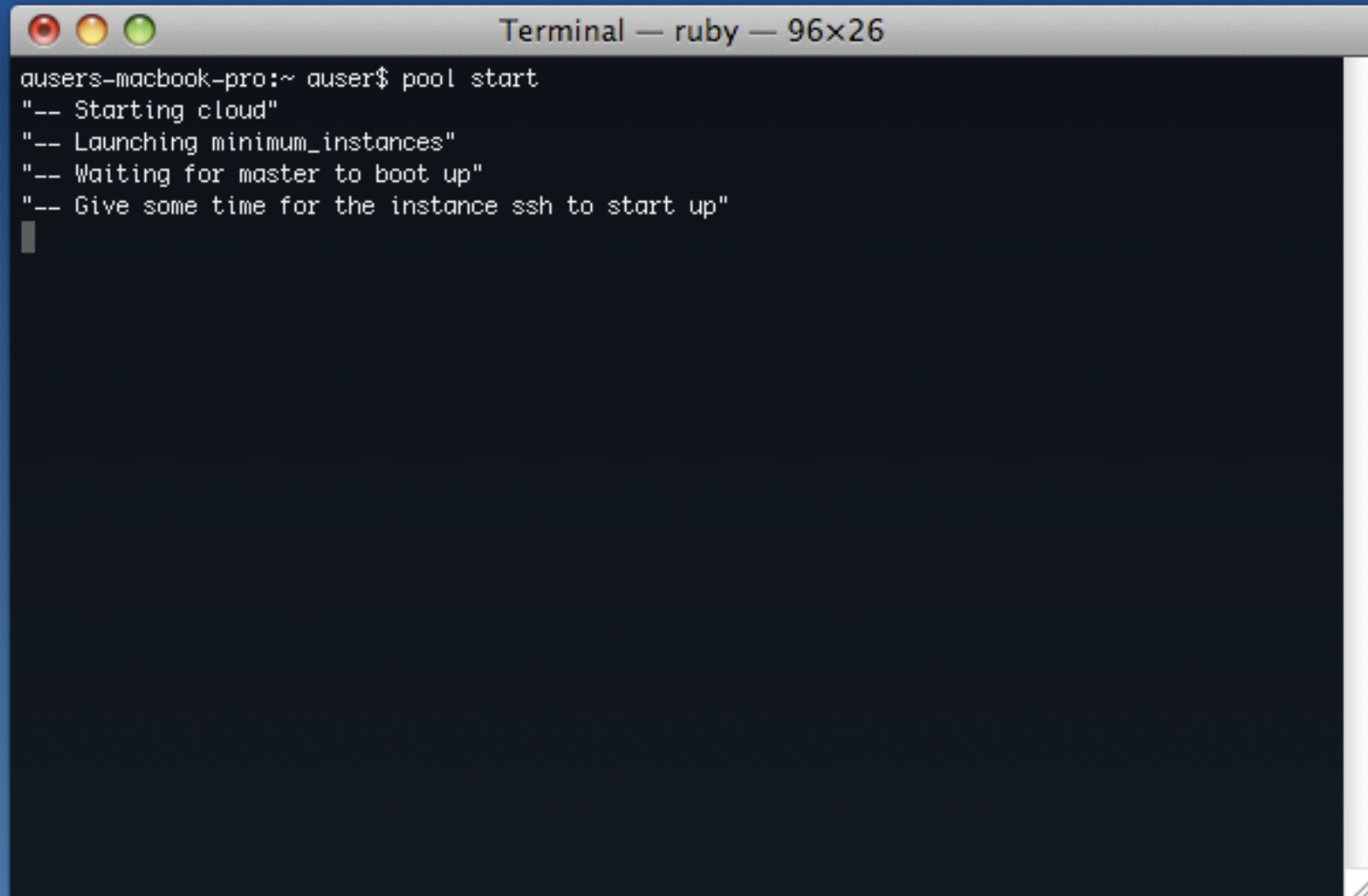
Usage example

Start with
rake dev:setup
source ~/.key_pool_keys

A screenshot of a macOS Terminal window. The title bar reads "Terminal — bash — 80x24". The window has three colored window control buttons (red, yellow, green) on the left. The terminal text shows a user at a shell prompt running two commands: "source ~/.user_pool_keys" and "pool list". The output of the second command is "Cloud is not running". The prompt returns to the user.

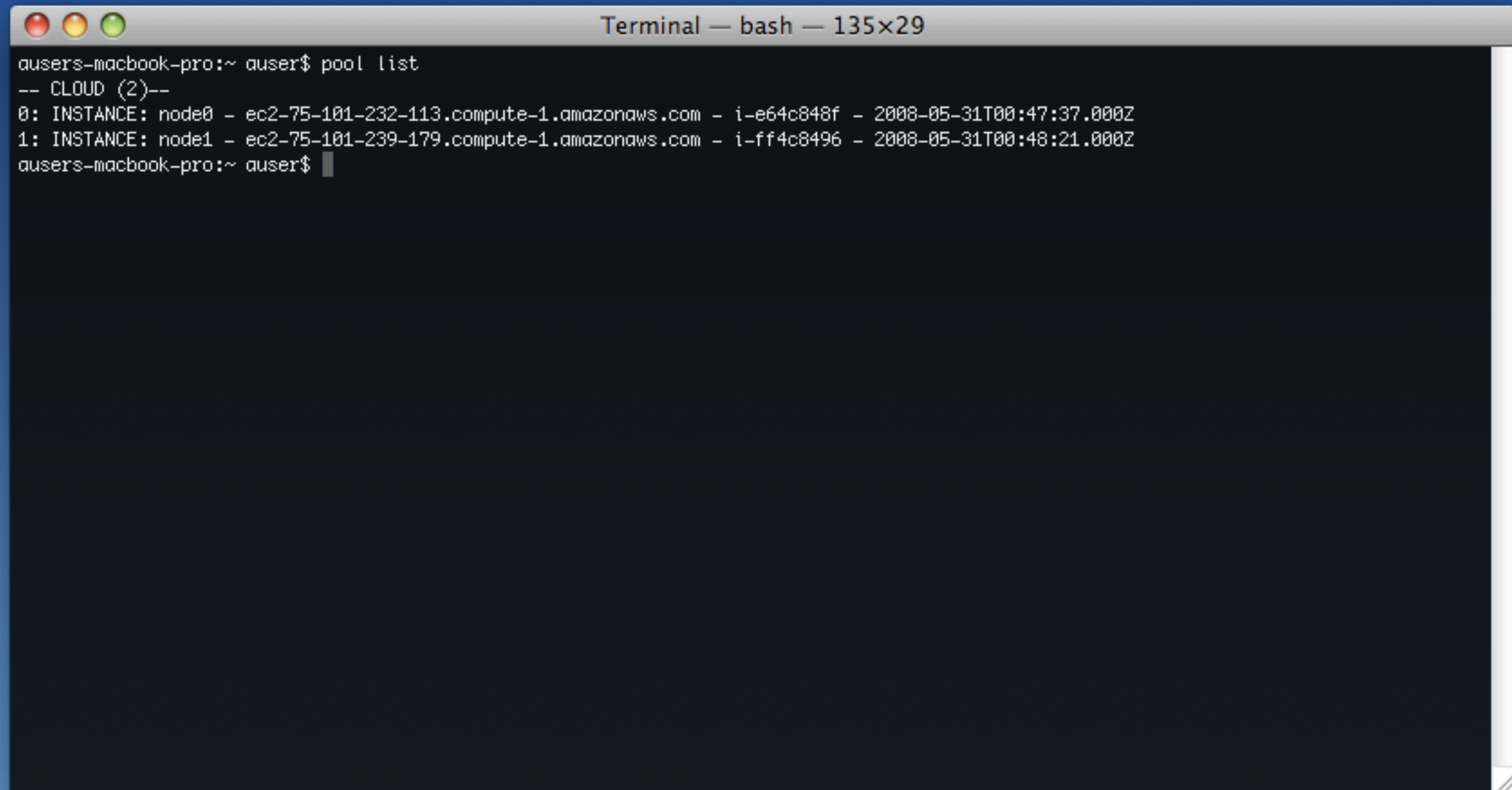
```
Terminal — bash — 80x24
ausers-macbook-pro:~ auser$ source ~/.user_pool_keys
ausers-macbook-pro:~ auser$ pool list
Cloud is not running
ausers-macbook-pro:~ auser$
```

pool start

A screenshot of a macOS Terminal window. The title bar at the top reads "Terminal — ruby — 96x26". The window has three standard macOS window control buttons (red, yellow, green) on the left. The terminal content shows the command "pool start" being executed in a shell. The output consists of four lines of status messages, each preceded by "--". The messages are: "Starting cloud", "Launching minimum_instances", "Waiting for master to boot up", and "Give some time for the instance ssh to start up". A cursor is visible on the line following the last message.

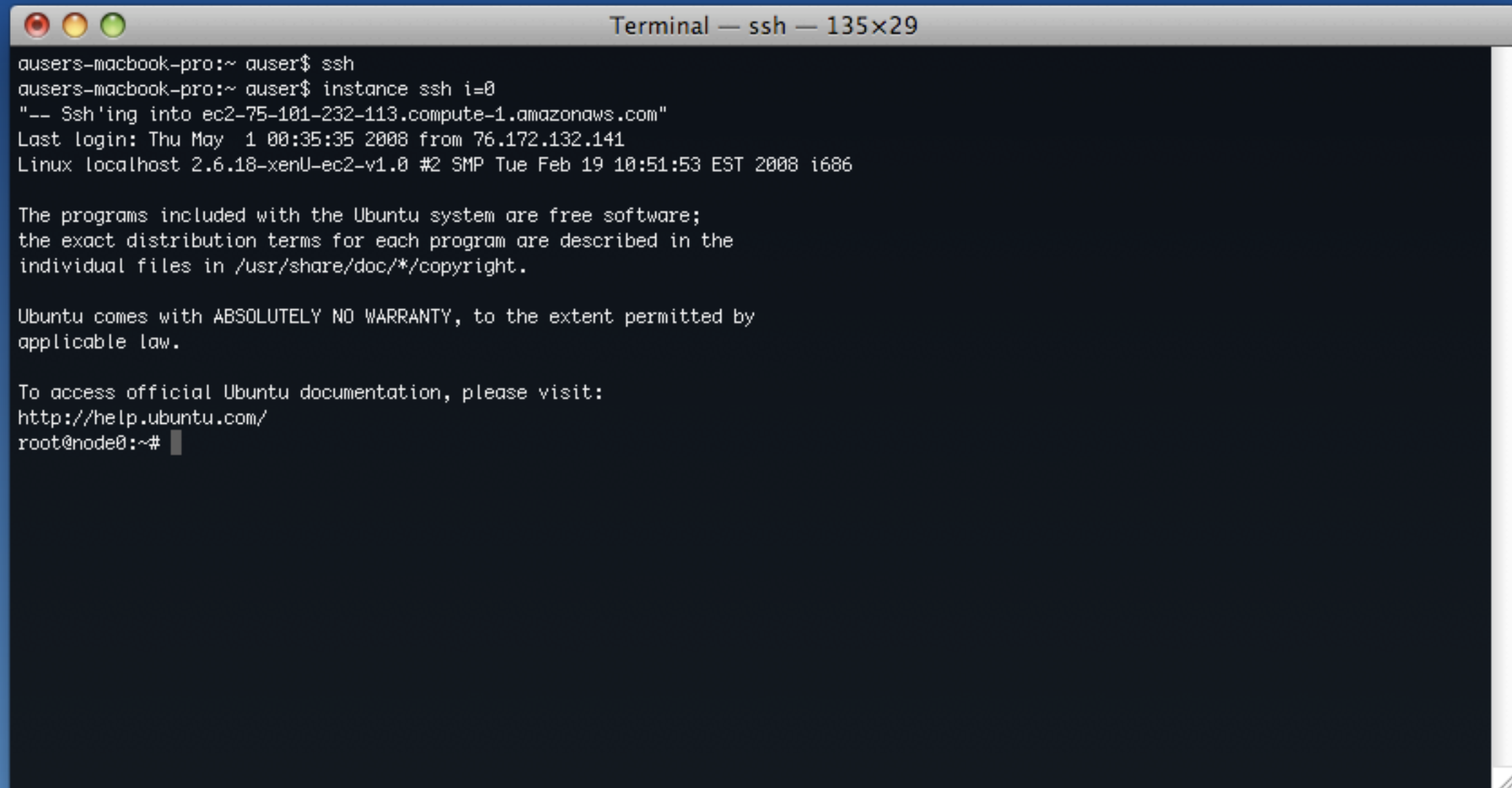
```
Terminal — ruby — 96x26
ausers-macbook-pro:~ auser$ pool start
"-- Starting cloud"
"-- Launching minimum_instances"
"-- Waiting for master to boot up"
"-- Give some time for the instance ssh to start up"
█
```

pool list



```
Terminal — bash — 135x29
ausers-macbook-pro:~ auser$ pool list
-- CLOUD (2)--
0: INSTANCE: node0 - ec2-75-101-232-113.compute-1.amazonaws.com - i-e64c848f - 2008-05-31T00:47:37.000Z
1: INSTANCE: node1 - ec2-75-101-239-179.compute-1.amazonaws.com - i-ff4c8496 - 2008-05-31T00:48:21.000Z
ausers-macbook-pro:~ auser$
```


instance ssh



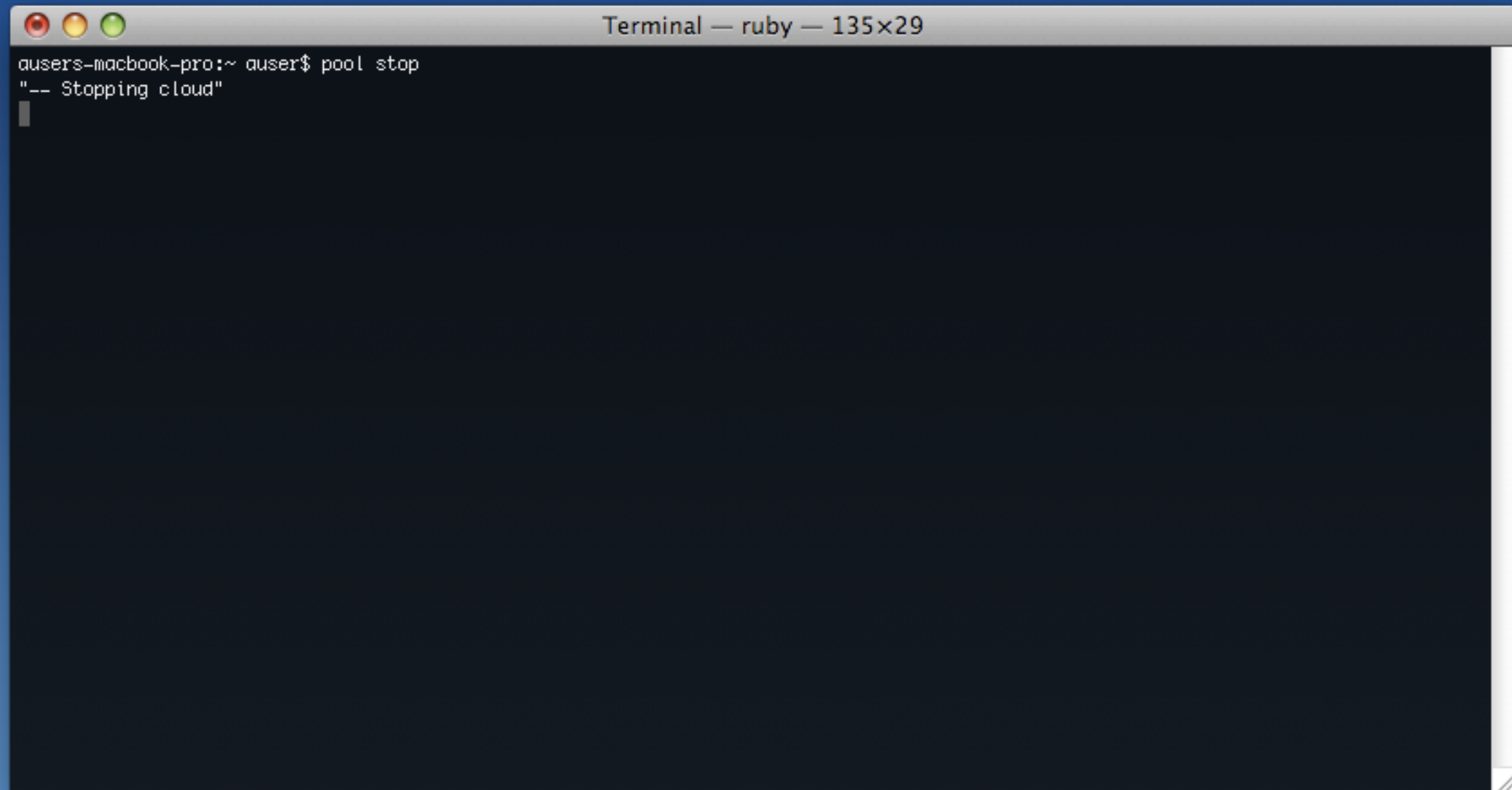
```
Terminal — ssh — 135x29
ausers-macbook-pro:~ auser$ ssh
ausers-macbook-pro:~ auser$ instance ssh i=0
"-- Ssh'ing into ec2-75-101-232-113.compute-1.amazonaws.com"
Last login: Thu May  1 00:35:35 2008 from 76.172.132.141
Linux localhost 2.6.18-xenU-ec2-v1.0 #2 SMP Tue Feb 19 10:51:53 EST 2008 i686

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To access official Ubuntu documentation, please visit:
http://help.ubuntu.com/
root@node0:~#
```

pool stop



```
Terminal — ruby — 135x29
ausers-macbook-pro:~ auser$ pool stop
"-- Stopping cloud"
█
```

Upcoming features

in development

- Speeding up configuration-time
- Plugin and extensible support
- Front-end client
- Monitor logging
- Capistrano deployment

Questions?

Resources

- <http://poolpartyrb.com>
- <http://blog.citrusbyte.com>
- <http://aws.amazon.com/>
- <mailto:ari.lerner@citrusbyte.com>

Thanks

