Beyond top(1)

Command-Line Monitoring on the JVM

Colin Jones @trptcolin 8th Light

8th Light

What to expect

command-line tooling

on the JVM

introspection & serviceability

--all-flags=false

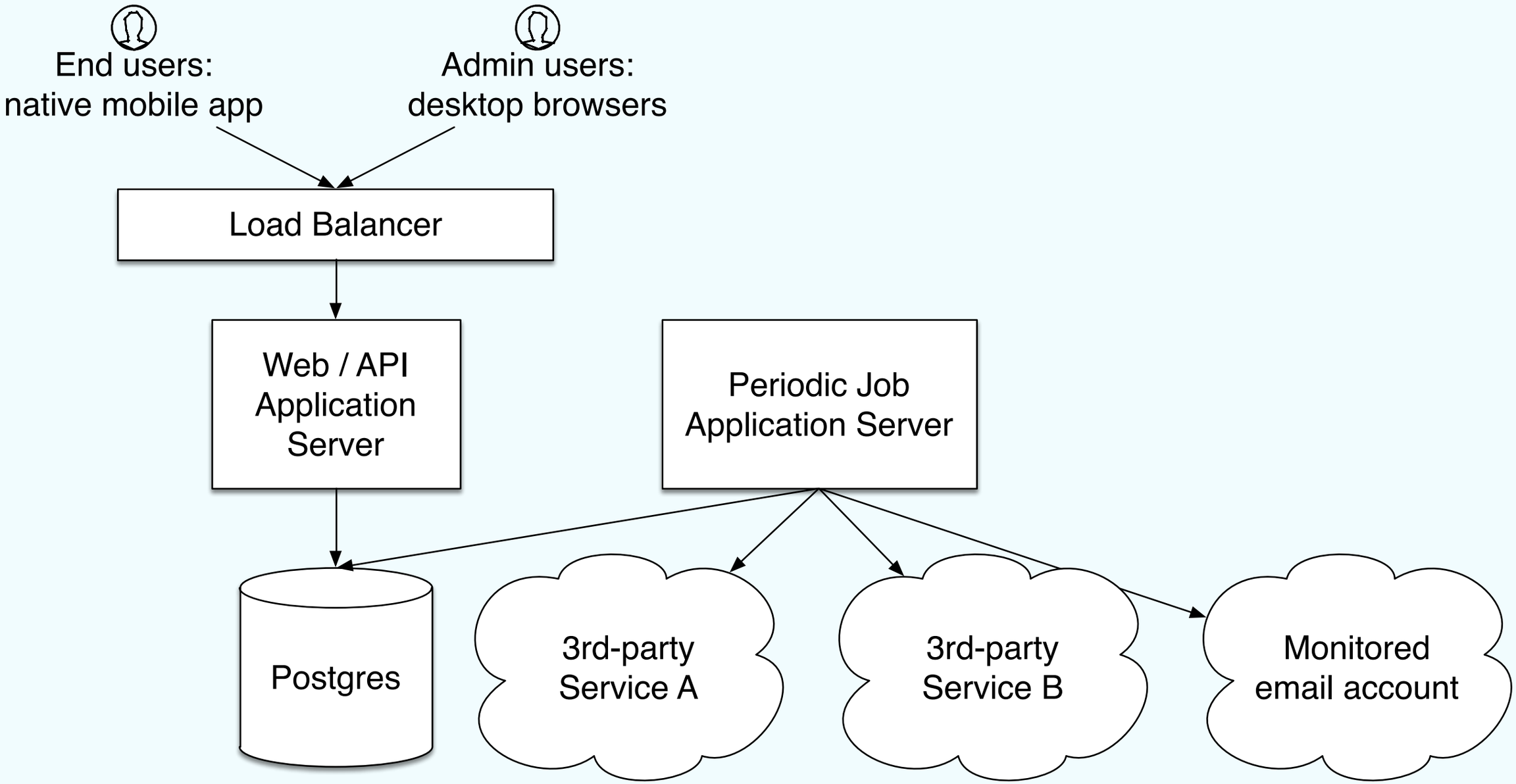
war stories

real-life usage
(well, re-enacted anyway)

A long time ago in a software shop far, far away...

Things are going pretty well 😏

What does this thing look like?



But strange things are afoot

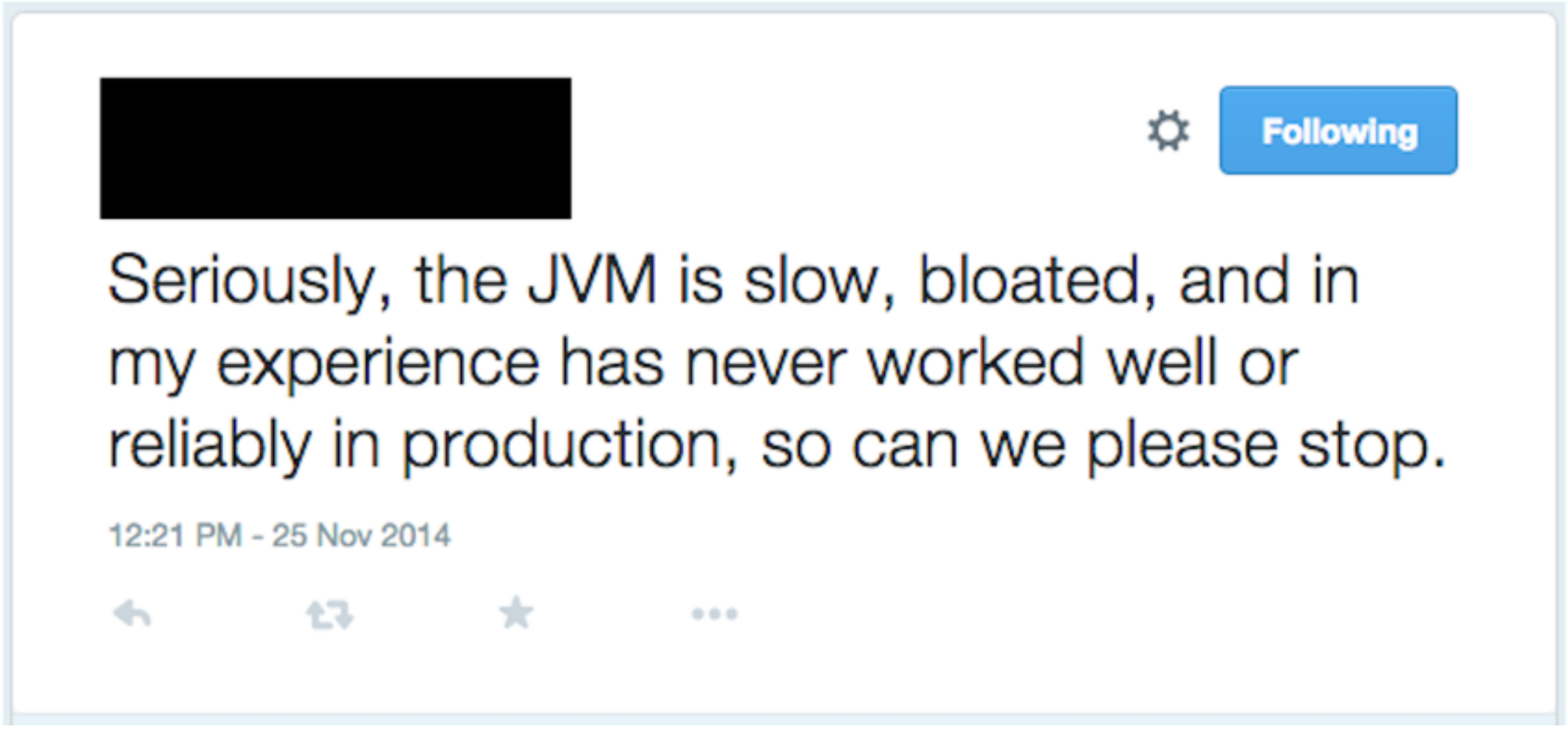
the server sometimes gets really slow

the team has to manually restart the application server

incident response time is ~5 minutes

Yes, strange things are afoot 😰

Pain, frustration, anger



Just the facts

sometimes,
things get slow

all requests seem to be affected

the JVM stays up

restart the JVM and
everything is fine

What could it be?

Demo

More facts, please!

constant full GCs

what's in the heap

what application
code was running

The right tools for the job

vmstat

system-level:

CPU, memory, disk, context switching

top

per-process:

CPU & memory

jps

what’s our PID?

jstack

status of all threads (**right now-ish!**)

jcmd

what **can't** it do?!

```
jcmd [PID] help
```

(sorry, JVM 6 users: see jinfo/jmap/jstack)

jstat

GC

classloader

compiler

Mystery solved! 🙌

Now “just” fix it

idea 1:

eliminate the leak

idea 2:
eliminate the cache altogether?

idea 3:

delete the feature

idea 4:

full-text search engine

So we're good now... 😎

until the next incident

Lessons

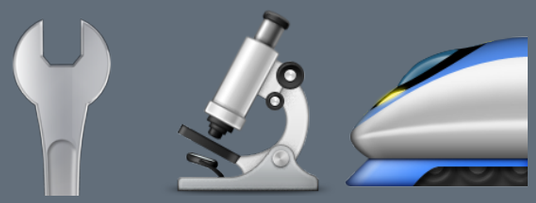
“it’s slow” could mean lots of things

“high CPU” could mean lots of things

collecting data is crucial in a crisis

reproducing the issue
helps me sleep at night

Other “right tools for the job”



Heap analyzers

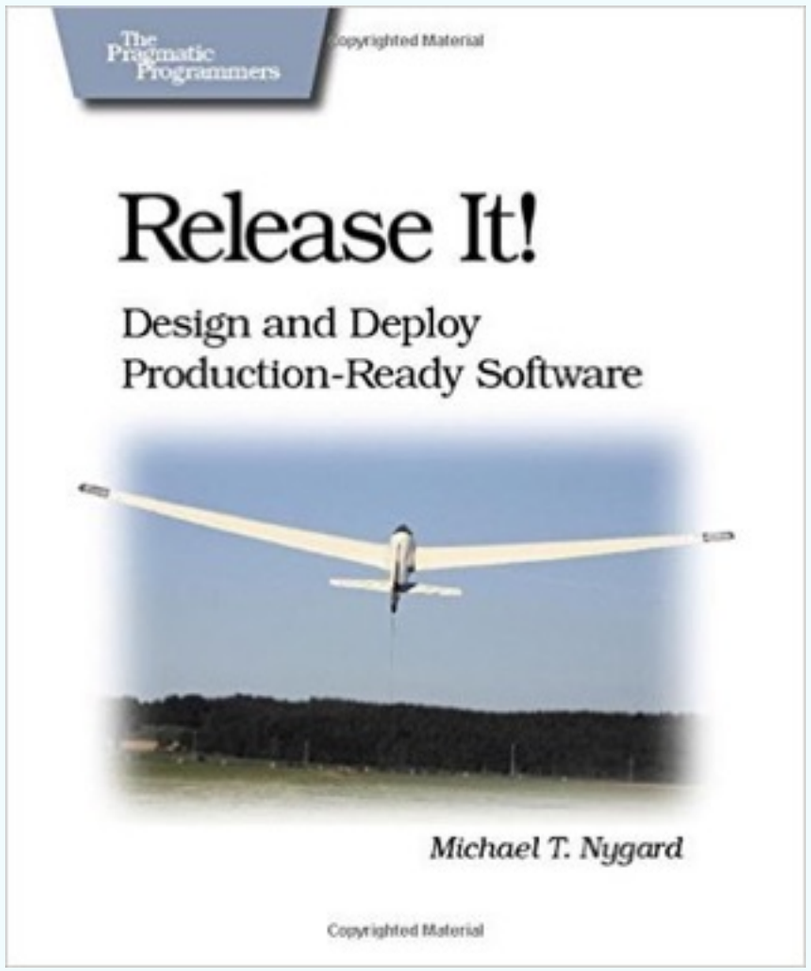
Profilers

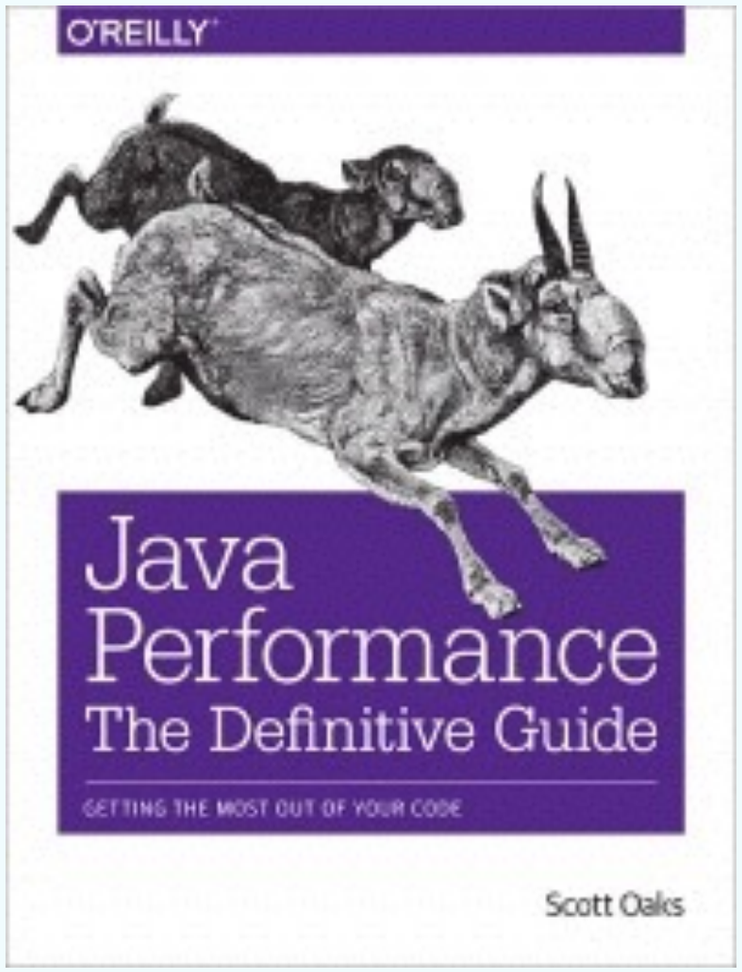
Constant monitoring & alerting

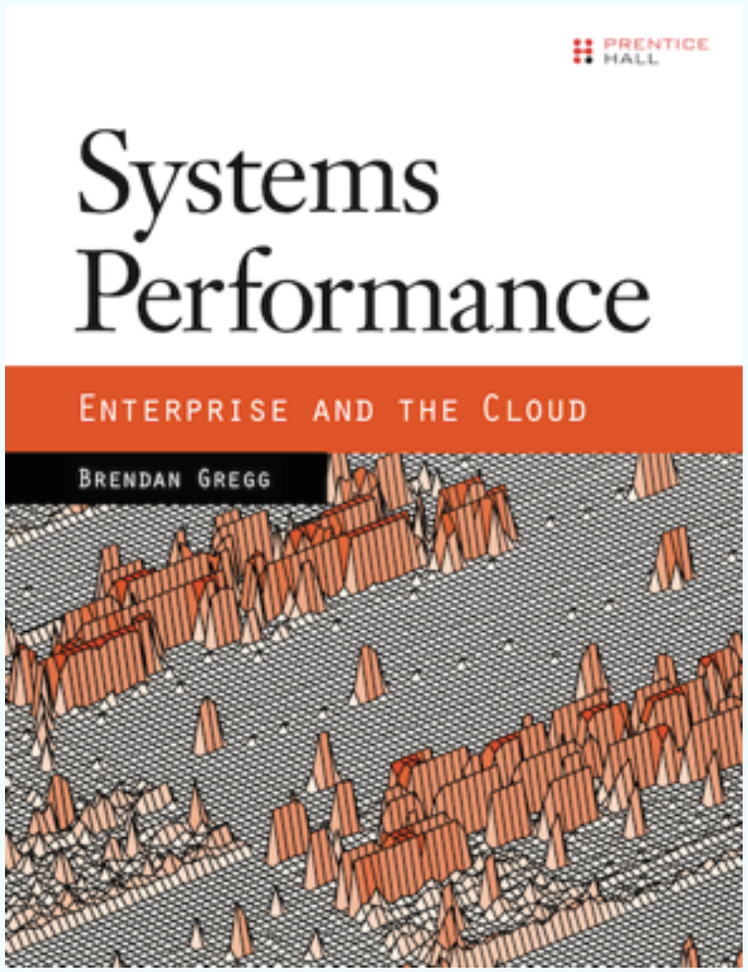
Dynamic tracing

Learning more

Books


The Pragmatic Programmers
Copyrighted Material
Release It!
Design and Deploy
Production-Ready Software
Michael T. Nygard
Copyrighted Material


O'REILLY
Java
Performance
The Definitive Guide
GETTING THE MOST OUT OF YOUR CODE
Scott Oaks


PRENTICE HALL
Systems
Performance
ENTERPRISE AND THE CLOUD
BRENDAN GREGG

operators are standing by!

man jstat

man jstack

jcmd [PID] help [COMMAND]

etc.

Thank you!

Colin Jones @trptcolin 8th Light