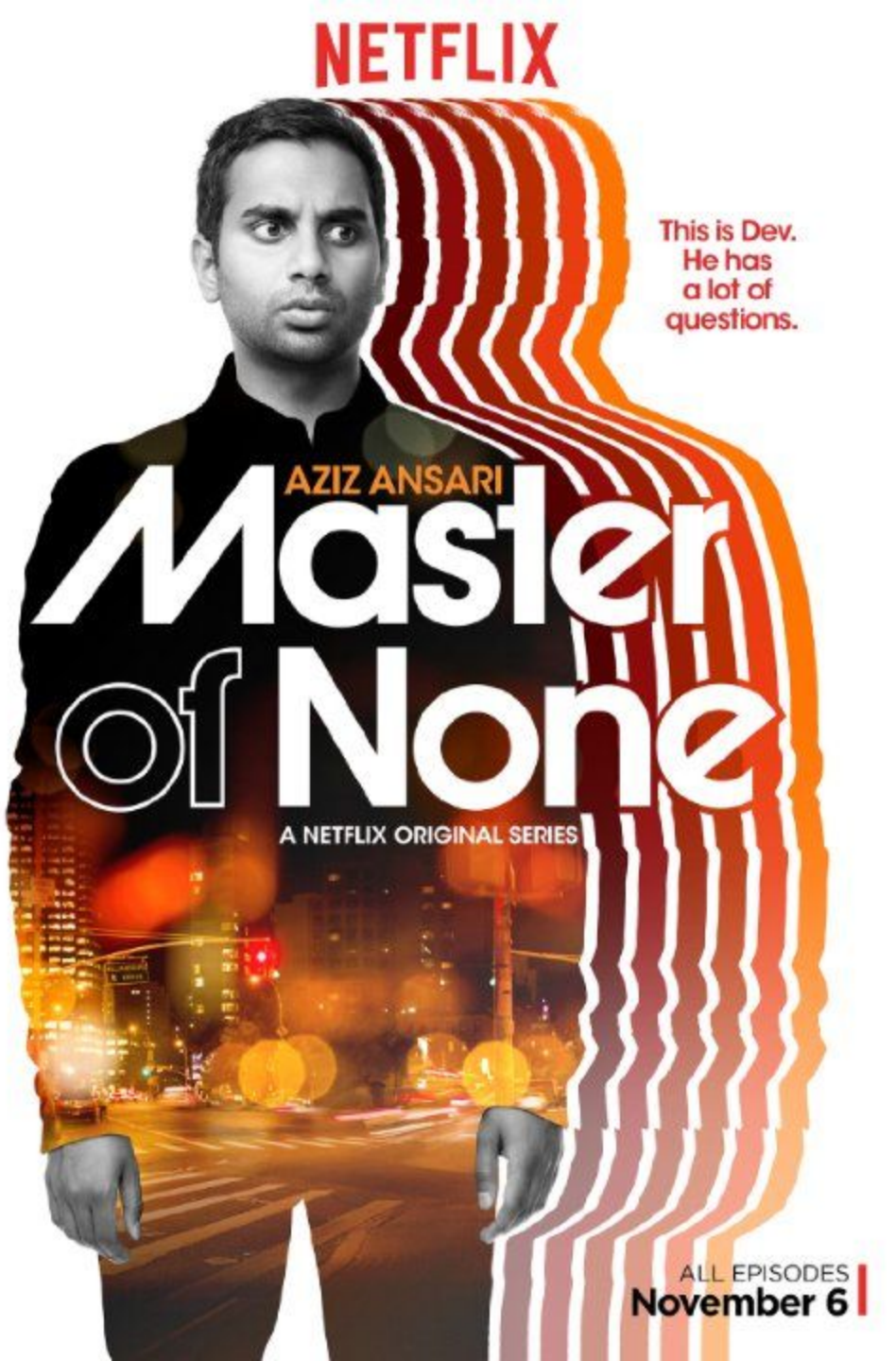
From Sysadmin to SRE

CORE Site Reliability at Netflix

NETFLIX

The Seven Deadly Sins



C loud
O perations
R eliability
E ngineering

context > control

hire smart people

(and get out of the way)

freedom &
responsibility

learning organization

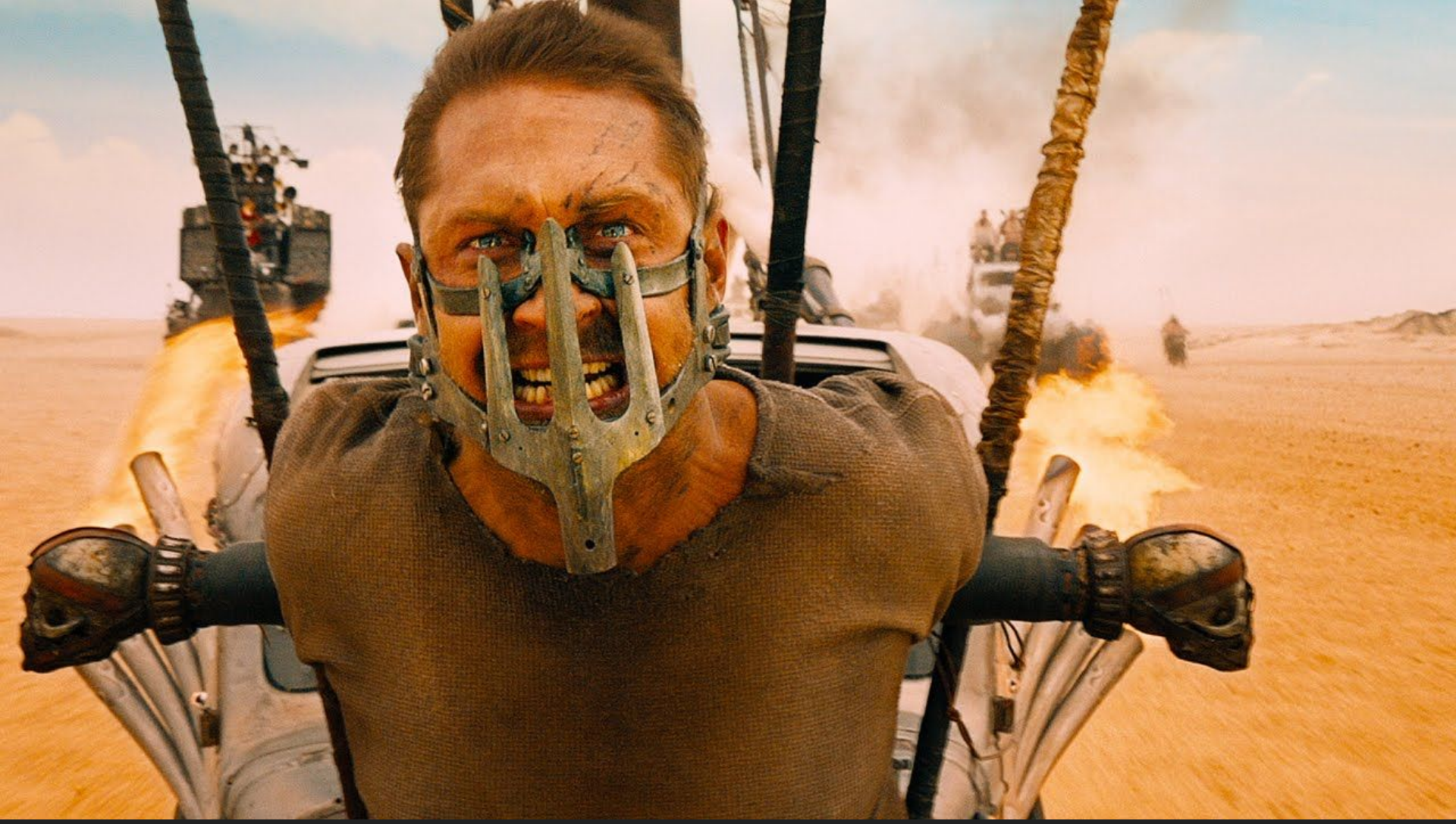
Netflix as a Node shop

sysadmin to SRE

a before and after story

configuration management

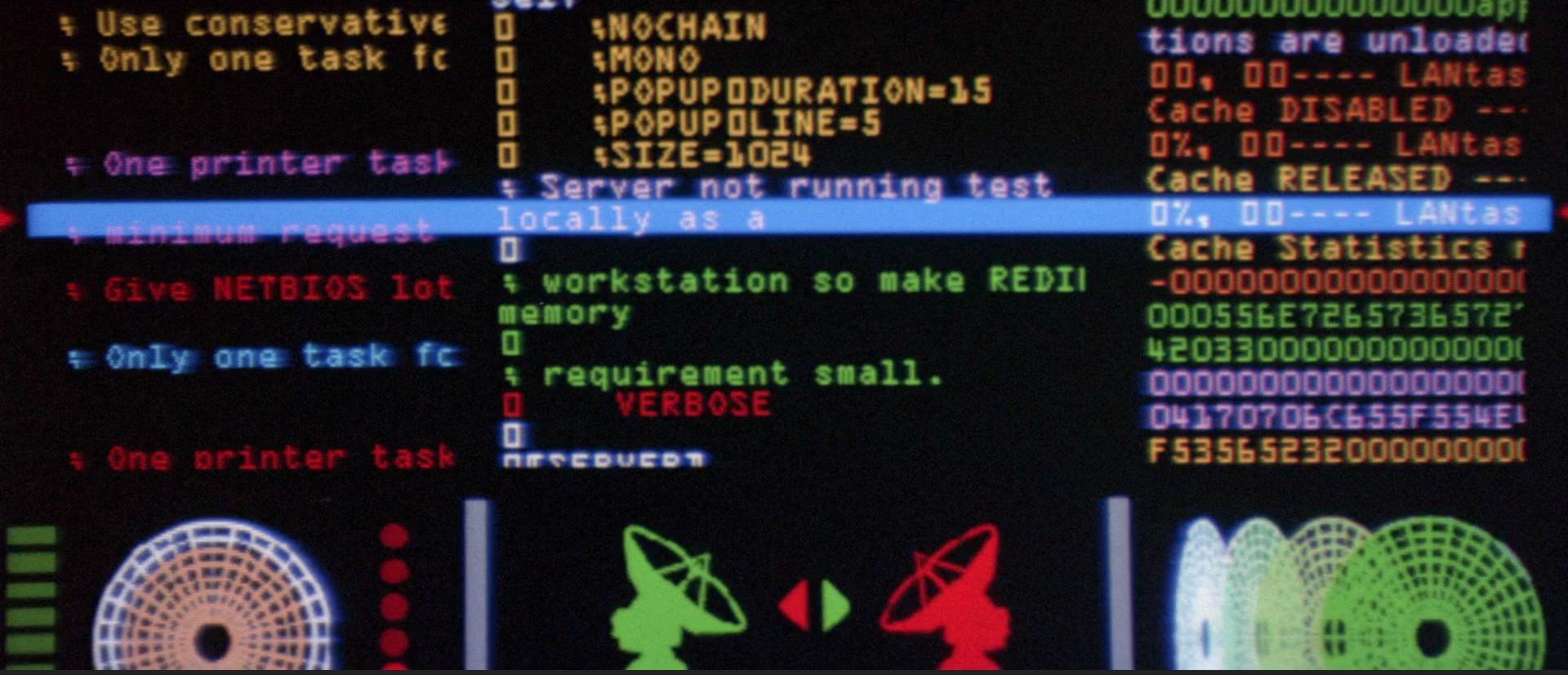
baked AMIs



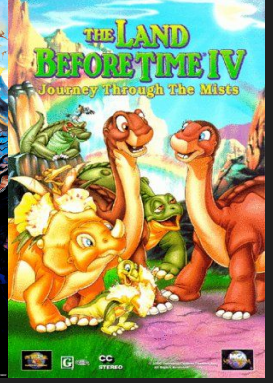
uncontrolled chaos

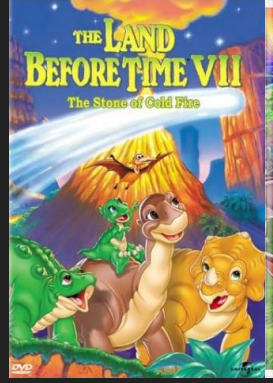
deliberate chaos

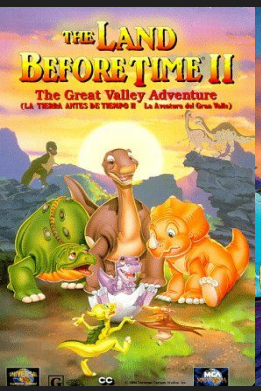
change prevention

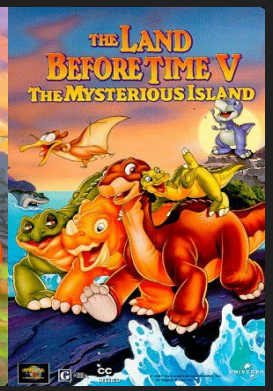


change logging

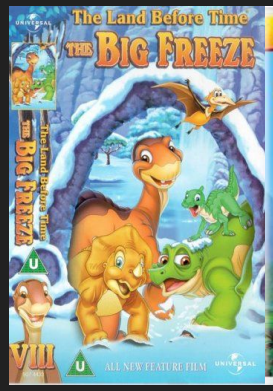


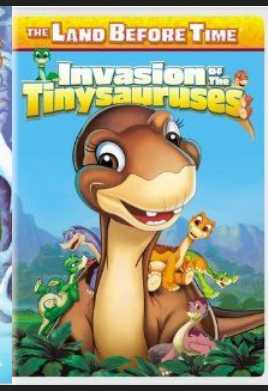


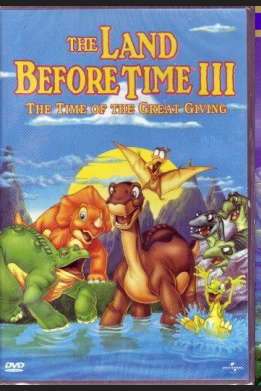


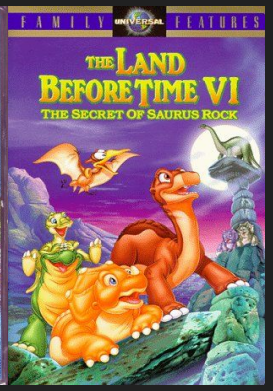


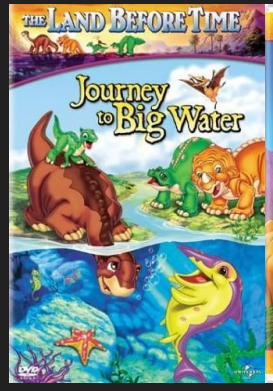
Nagios
Ganglia
Graphite
Cacti
MRTG

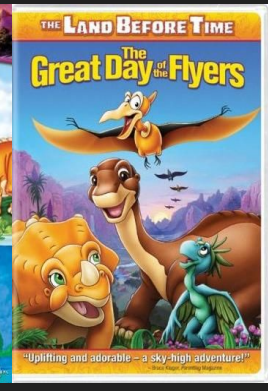








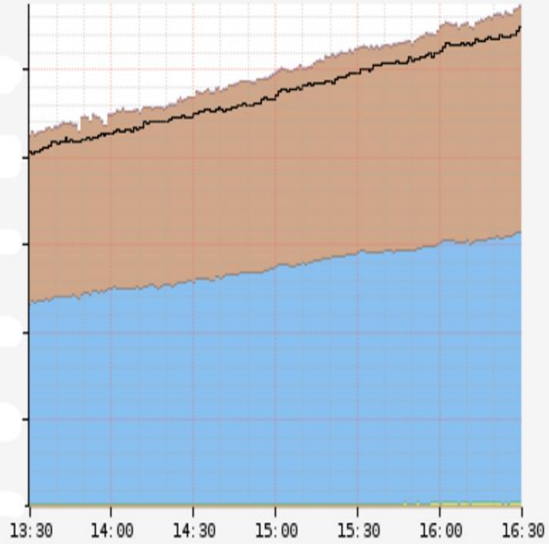




Atlas & insight engineering

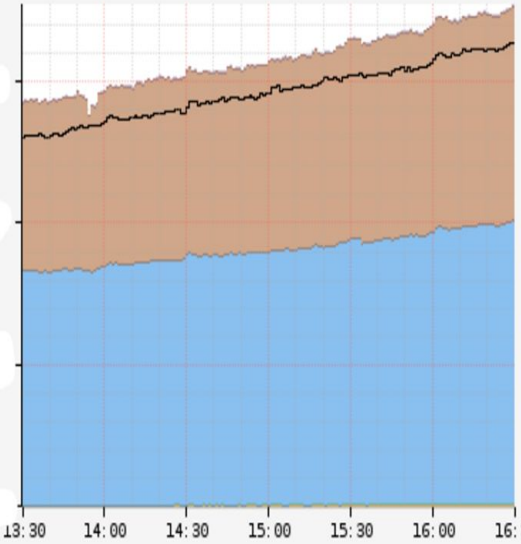
PROD:US-WEST-2 Log

SPS - us-west-2



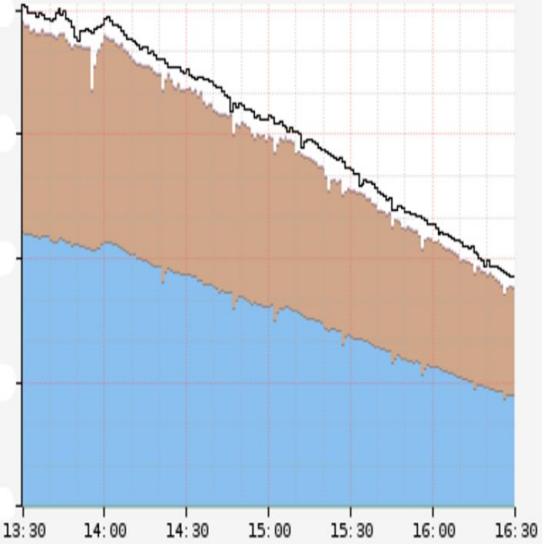
PROD:US-EAST-1 Log

SPS - us-east-1



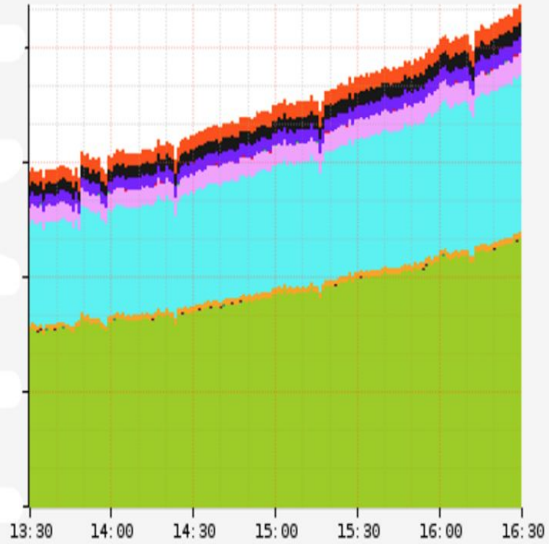
PROD:EU-WEST-1 Log

SPS - eu-west-1



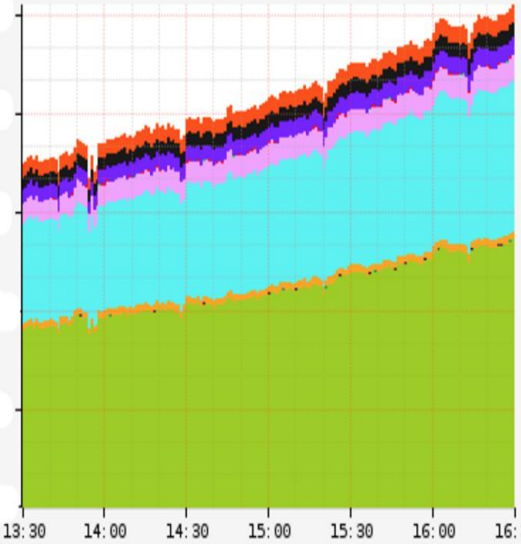
PROD:US-WEST-2 Log

Bladerunner Playback Actions - us-west-2



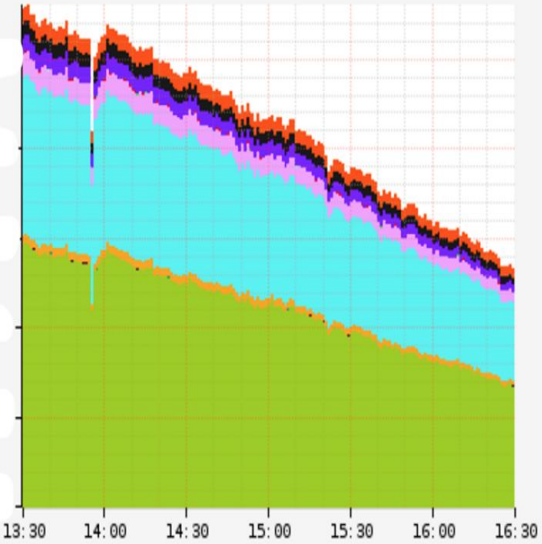
PROD:US-EAST-1 Log

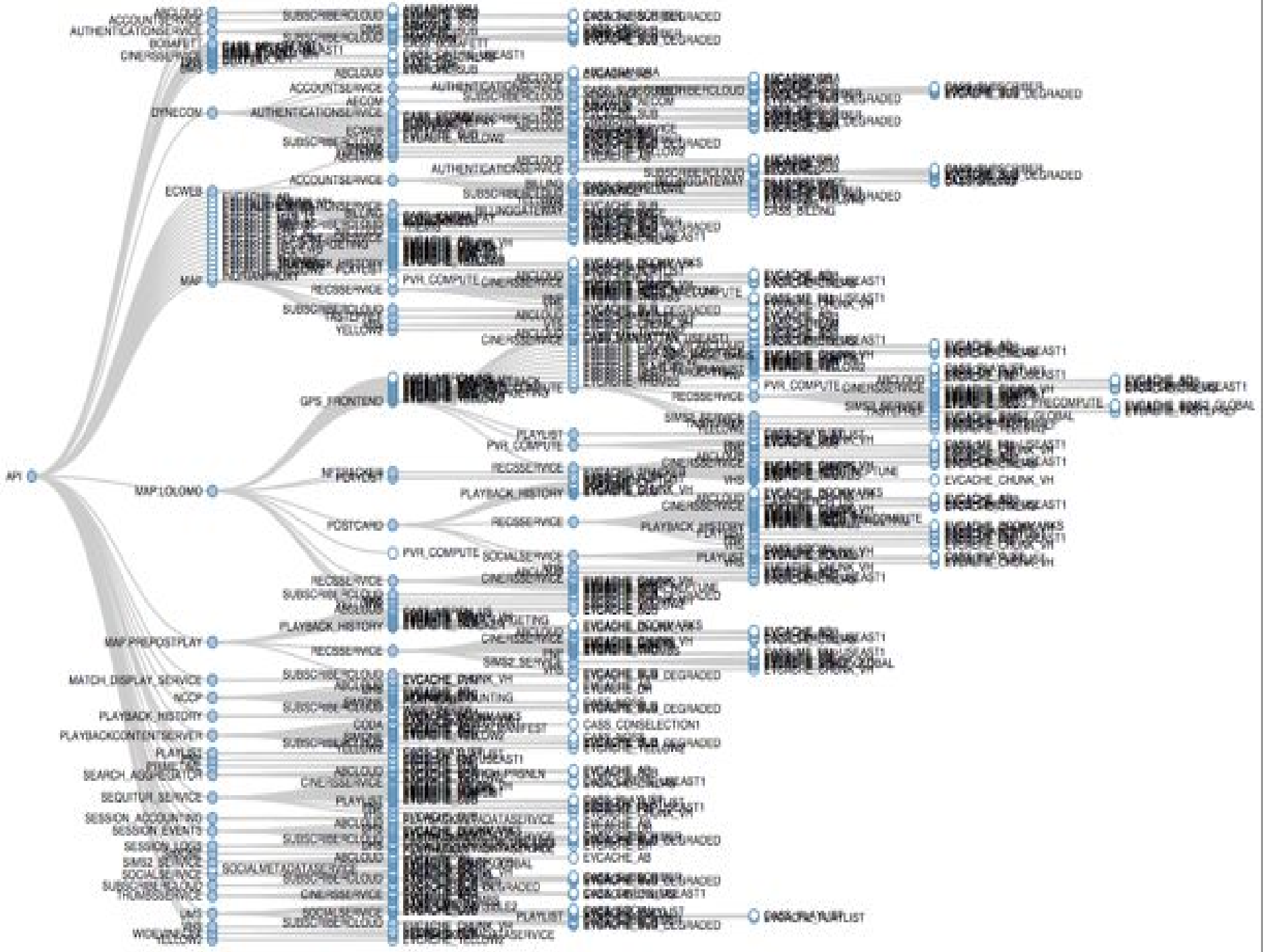
Bladerunner Playback Actions - us-east-1

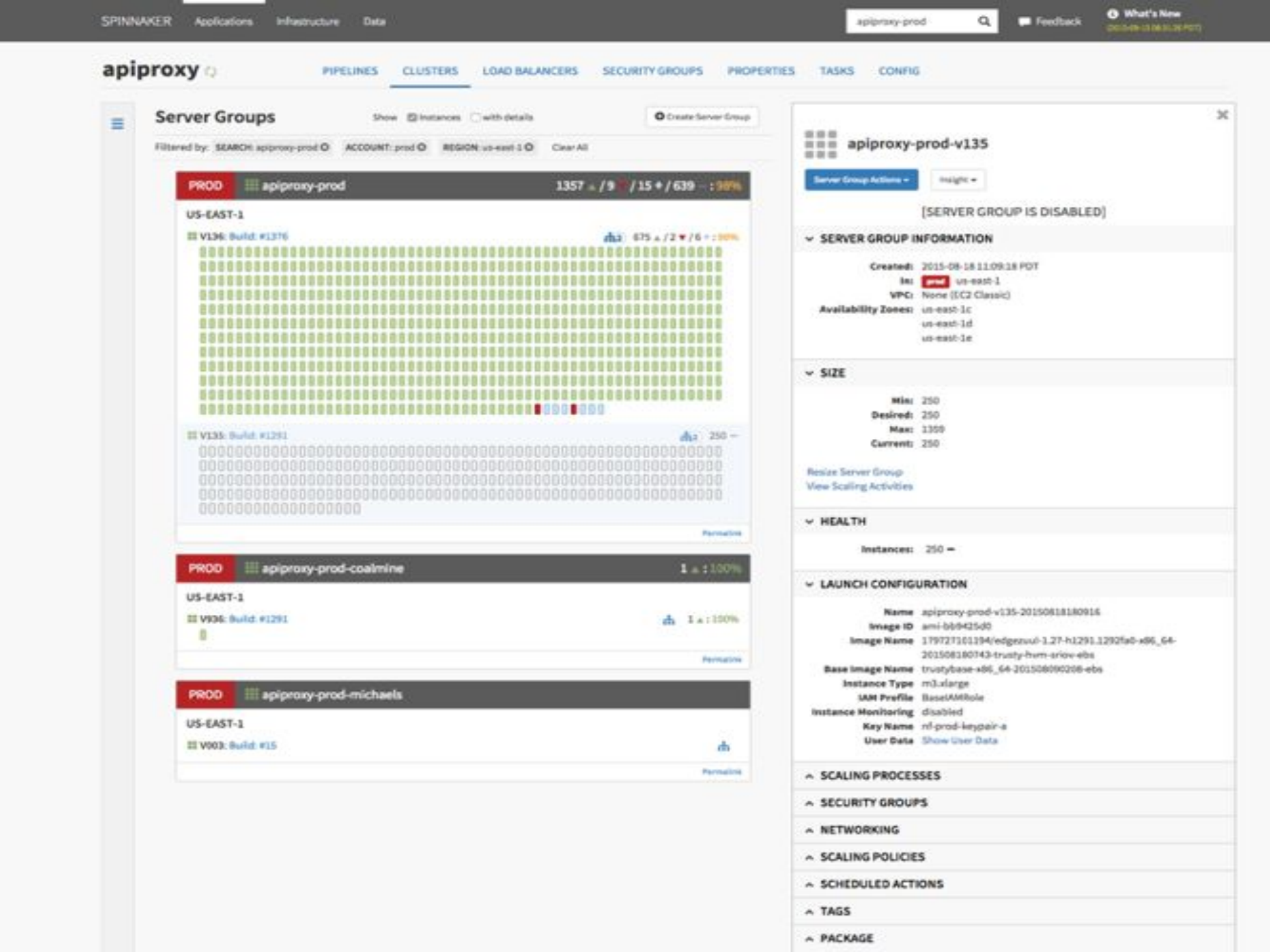


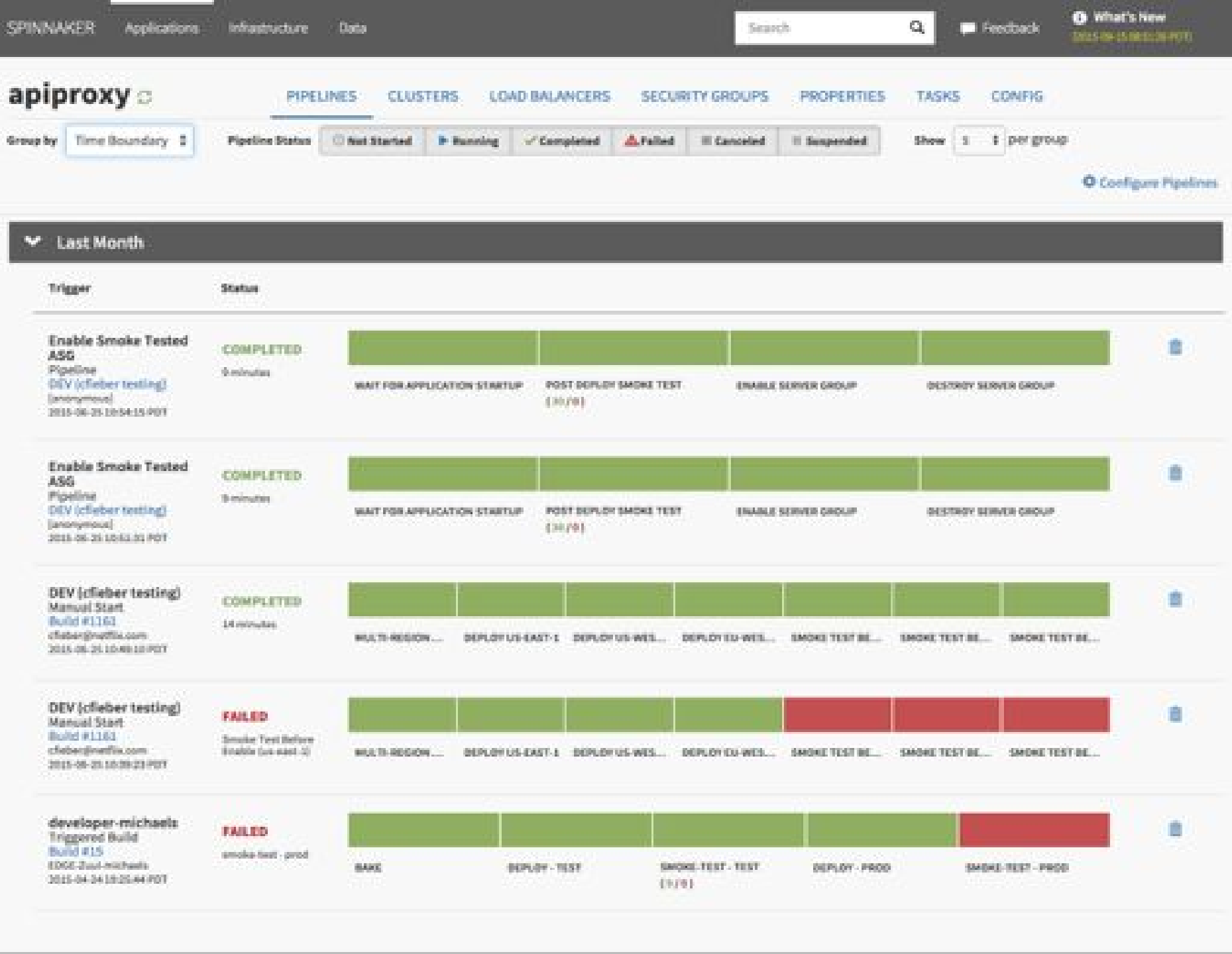
PROD:EU-WEST-1 Log

Bladerunner Playback Actions - eu-west-1




API
DYNECOM
ECWEB
MAP
MAP.LOLOMO
MAP.PREPOSTPLAY
MATCH_DISPLAY_SERVICE
NCCP
PLAYBACK_HISTORY
PLAYBACKCONTENTSERVER
PLAYLIST
SEARCH_AGGREGATOR
SEQUITUR_SERVICE
SESSION_ACCOUNTING
SESSION_EVENTS
SESSION_LOGS
SIMS2_SERVICE
SOCIAL_SERVICE
SUBSCRIBERCLOUD
THUMBSSERVICE
UMS
WIDEVINE
YELLOW2
ABCLOUD
ACCOUNTSERVICE
AUTHENTICATIONSERVICE
BOBAFETT
CINERSSERVICE
AECOM
ECWEB
BILLING
BILLINGGATEWAY
PVR_COMPUTE
RECSSERVICE
GPS_FRONTEND
POSTCARD
SOCIALSERVICE
CODA
SOCIALMETADATASERVICE
EVCACHE_CHUNK_VH
EVCACHE_AB
CASS_CONSELECTION1
EVCACHE_SUB_DEGRADED
EVCACHE_PRECOMPUTE
EVCACHE_GLOBAL


SPINNAKER
Applications
Infrastructure
Data
apiproxy-prod
Feedback
What's New
apiproxy
PIPELINES
CLUSTERS
LOAD BALANCERS
SECURITY GROUPS
PROPERTIES
TASKS
CONFIG
Server Groups
Show
Instances
with details
Create Server Group
Filtered by:
SEARCH: apiproxy-prod
ACCOUNT: prod
REGION: us-east-1
Clear All
PROD
apiproxy-prod
1357 / 9 / 15 / 639
US-EAST-1
V136: Build: #1376
675 / 2 / 6
V135: Build: #1291
250
PROD
apiproxy-prod-coalmine
1
US-EAST-1
V036: Build: #1291
1
PROD
apiproxy-prod-michaels
US-EAST-1
V003: Build: #15
apiproxy-prod-v135
Server Group Actions
Insight
[SERVER GROUP IS DISABLED]
SERVER GROUP INFORMATION
Created: 2015-08-18 11:09:18 PDT
In: prod us-east-1
VPC: None (EC2 Classic)
Availability Zones: us-east-1c
us-east-1d
us-east-1e
SIZE
Min: 250
Desired: 250
Max: 1359
Current: 250
Resize Server Group
View Scaling Activities
HEALTH
Instances: 250
LAUNCH CONFIGURATION
Name apiproxy-prod-v135-20150818180916
Image ID ami-bb9425d0
Image Name 179727161194/edgezuul-1.27-h1291.1292fa0-x86_64-201508180743-trusty-hvm-sriov-ebs
Base Image Name trustybase-x86_64-201508090208-ebs
Instance Type m3.xlarge
IAM Profile BaseIAMRole
Instance Monitoring disabled
Key Name nf-prod-keypair-a
User Data Show User Data
SCALING PROCESSES
SECURITY GROUPS
NETWORKING
SCALING POLICIES
SCHEDULED ACTIONS
TAGS
PACKAGE


SPINNAKER
Applications
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What's New
apiproxy
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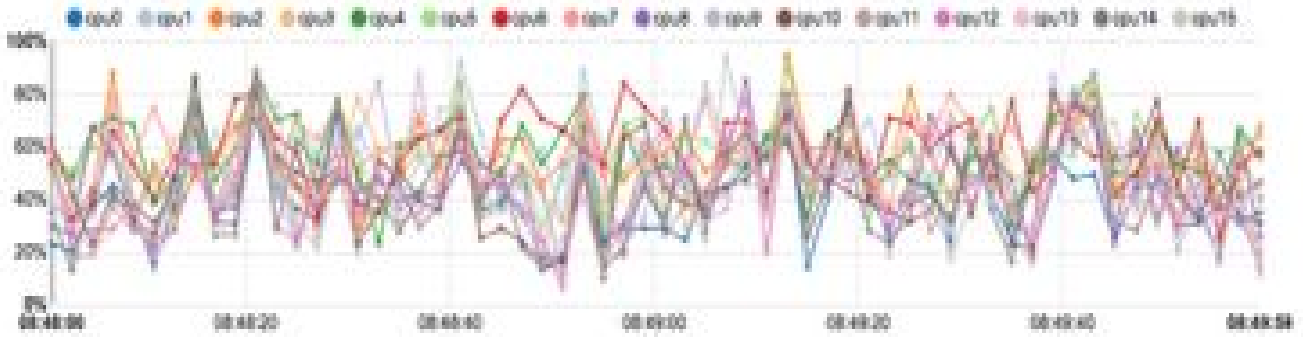
CLUSTERS
LOAD BALANCERS
SECURITY GROUPS
PROPERTIES
TASKS
CONFIG
Group by
Time Boundary
Pipeline Status
Not Started
Running
Completed
Failed
Canceled
Suspended
Show
per group
Configure Pipelines
Last Month
Trigger
Status
Enable Smoke Tested ASG
Pipeline
DEV (cfieber testing)
[anonymous]
COMPLETED
9 minutes
WAIT FOR APPLICATION STARTUP
POST DEPLOY SMOKE TEST
ENABLE SERVER GROUP
DESTROY SERVER GROUP
Enable Smoke Tested ASG
Pipeline
DEV (cfieber testing)
[anonymous]
COMPLETED
9 minutes
WAIT FOR APPLICATION STARTUP
POST DEPLOY SMOKE TEST
ENABLE SERVER GROUP
DESTROY SERVER GROUP
DEV (cfieber testing)
Manual Start
Build #1161
COMPLETED
14 minutes
MULTI-REGION ...
DEPLOY US-EAST-1
DEPLOY US-WES...
DEPLOY EU-WES...
SMOKE TEST BE...
SMOKE TEST BE...
SMOKE TEST BE...
DEV (cfieber testing)
Manual Start
Build #1161
FAILED
Smoke Test Before Enable (us-east-1)
MULTI-REGION ...
DEPLOY US-EAST-1
DEPLOY US-WES...
DEPLOY EU-WES...
SMOKE TEST BE...
SMOKE TEST BE...
SMOKE TEST BE...
developer-michaels
Triggered Build
Build #15
FAILED
smoke test - prod
BAKE
DEPLOY - TEST
SMOKE TEST - TEST
DEPLOY - PROD
SMOKE TEST - PROD

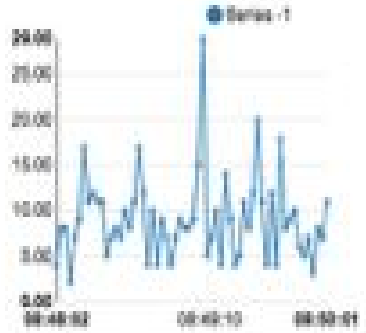
Hostname ec2-54-159-49-252.compute-1.amazonaws.com ✔ | Widget - | Window 2 min | Interval 2 sec

CPU Utilization

Per-CPU Utilization

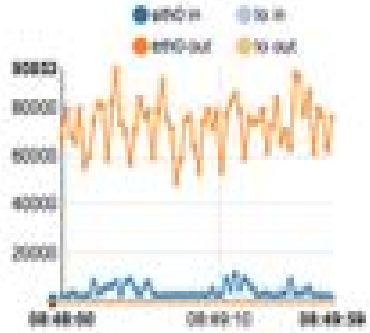


Runnable

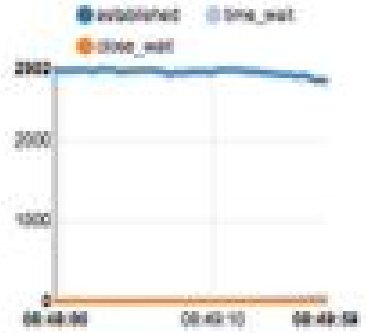


Load Average

Network kB



TCP Connections



Network Packets

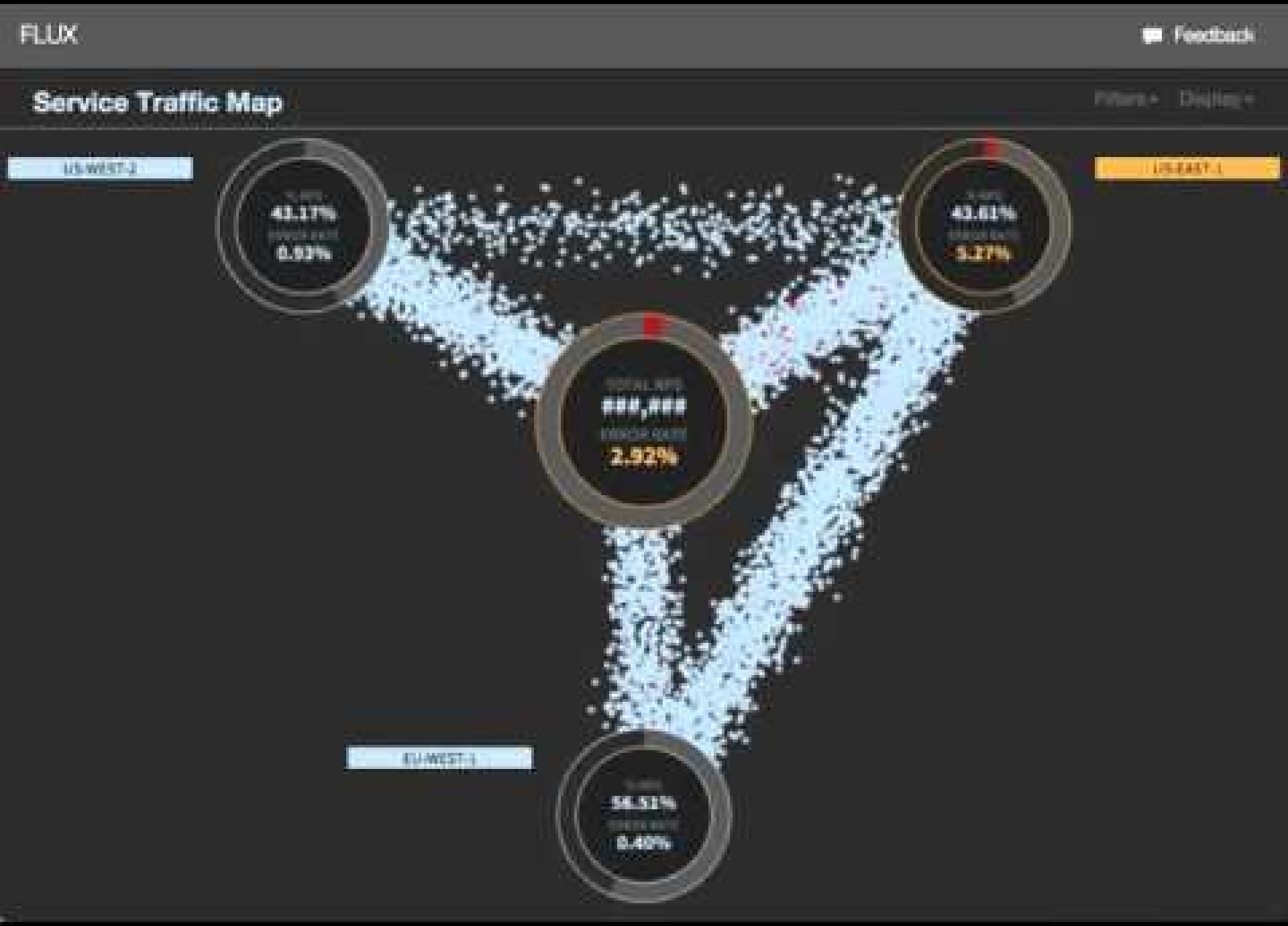
TCP Retransmits

Memory Utilization

@jonahhorowitz
@altobey

https://netflix.github.io/
https://jobs.netflix.com/

@brendangregg, next:
Broken Linux Performance Tools
Ballroom H - 13:30 to 14:30


FLUX
Feedback
Service Traffic Map
Filters
Display
US-WEST-2
41.17%
0.93%
US-EAST-1
43.81%
5.27%
###,###
2.92%
EU-WEST-1
56.51%
0.40%