

# Lessons learned



kubernetes



kops



amazon  
web services





30000+ customers

1500+ employees

55 global offices

Founded 2001 in Oslo

```
1 //fires the appear event when appropriate
2 var check = function() {
3     //is the element hidden?
4     if (!t.is(':visible')) {
5         //it became hidden
6         t.appeared = false;
7         return;
8     }
9
10    //is the element inside the visible window?
11    var a = w.scrollLeft();
12    var b = w.scrollTop();
13    var o = t.offset();
14    var x = o.left;
15    var y = o.top;
16
17    var ax = settings.accX;
18    var ay = settings.accY;
19    var th = t.height();
20    var wh = w.height();
21    var tw = t.width();
22    var ww = w.width();
23
24    if (y + th + ay >= b &&
25        y <= b + wh + ay &&
26        x + tw + ax >= a &&
27        x <= a + ww + ax) {
28
29        //trigger the custom event
30        if (!t.appeared) t.trigger('appear', settings.data);
31
32    } else {
33
34        //it scrolled out of view
35        t.appeared = false;
36    }
37 };
38
39 //create a modified fn with some additional logic
40 var modifiedFn = function() {
41
42     //mark the element as visible
43     t.appeared = true;
44
45     //is this supposed to happen only once?
46     if (settings.one) {
47
48         //remove the check
49         w.unbind('scroll', check);
50         var i = $.inArray(check, $._fn.appear.checks);
51         if (i >= 0) $._fn.appear.checks.splice(i, 1);
52
53     }
54
55     //trigger the original fn
56     fn.apply(this, arguments);
57 }
58
59 //bind the modified fn to the element
60 t.one('appear', settings.data, modifiedFn);
61
62 //bind the one() to the element
63 t.one('appear', settings.data, modifiedFn);
```

9+ engineering offices (7+ countries)

330+ engineers in 50+ teams

AWS with 170+ accounts



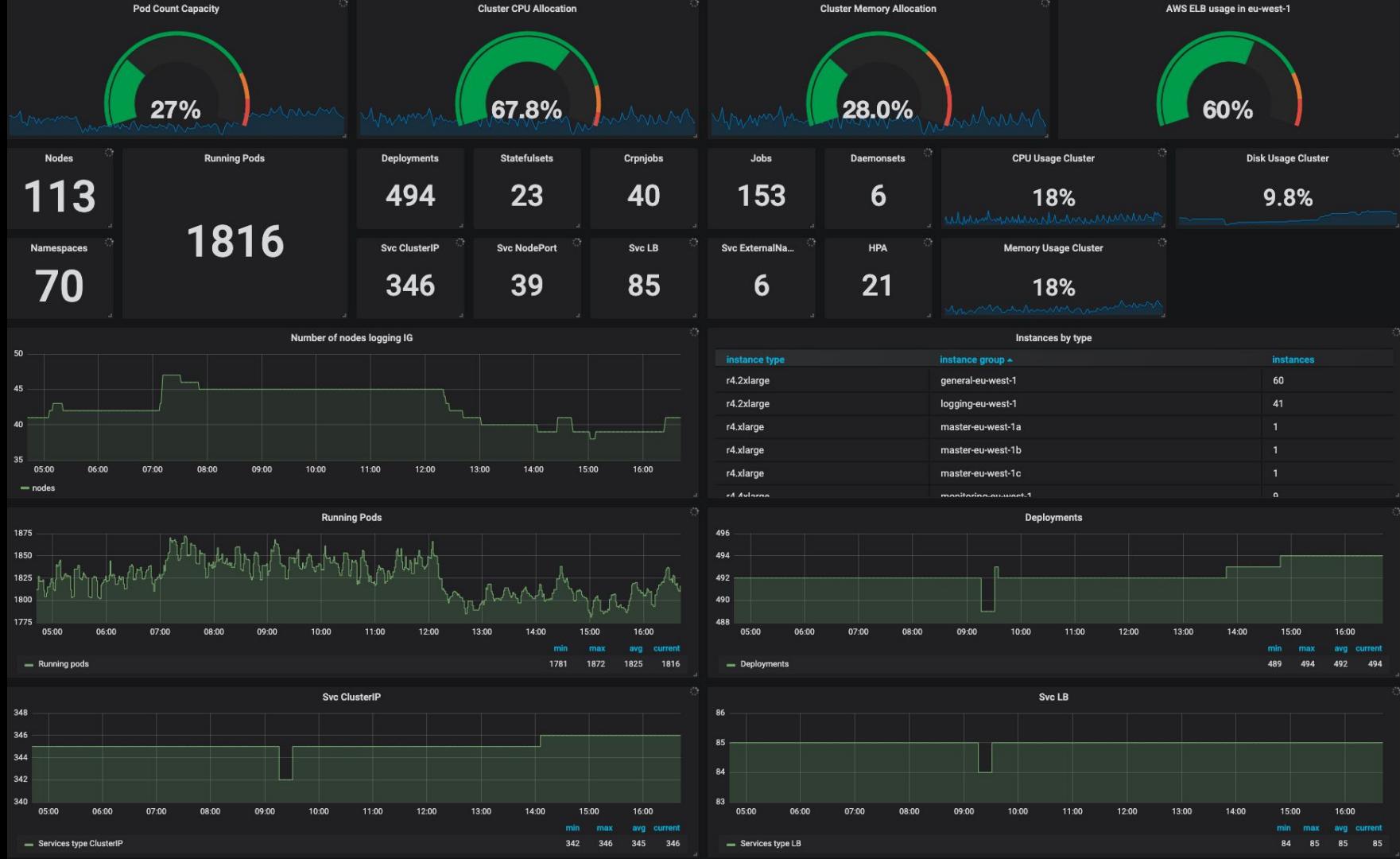
Meltwater  
EE - Foundation



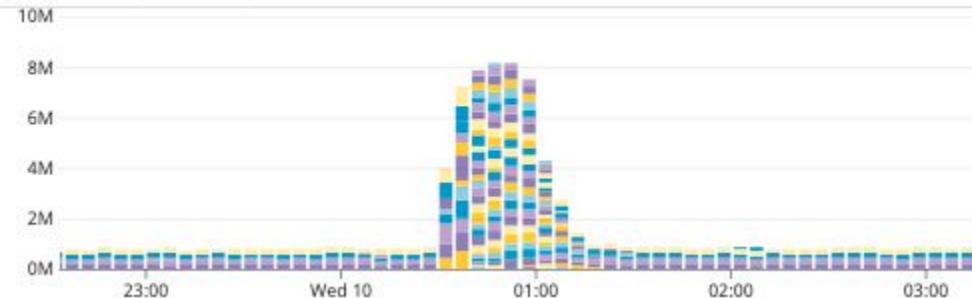
Engineering enablement (7 teams)

Team Bravo (5 engineers)

Kubernetes, Logging, ...

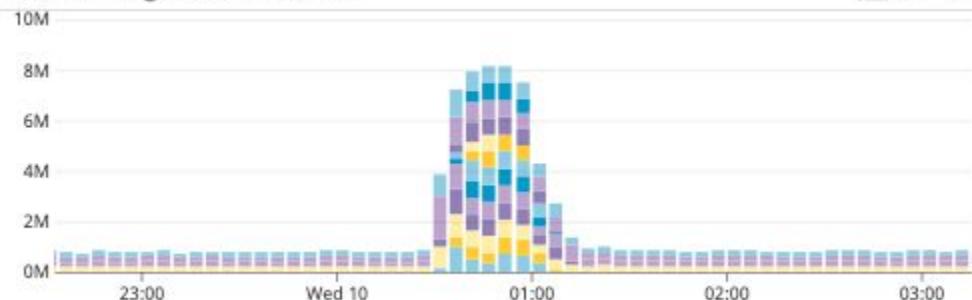


### parser - log events parsed

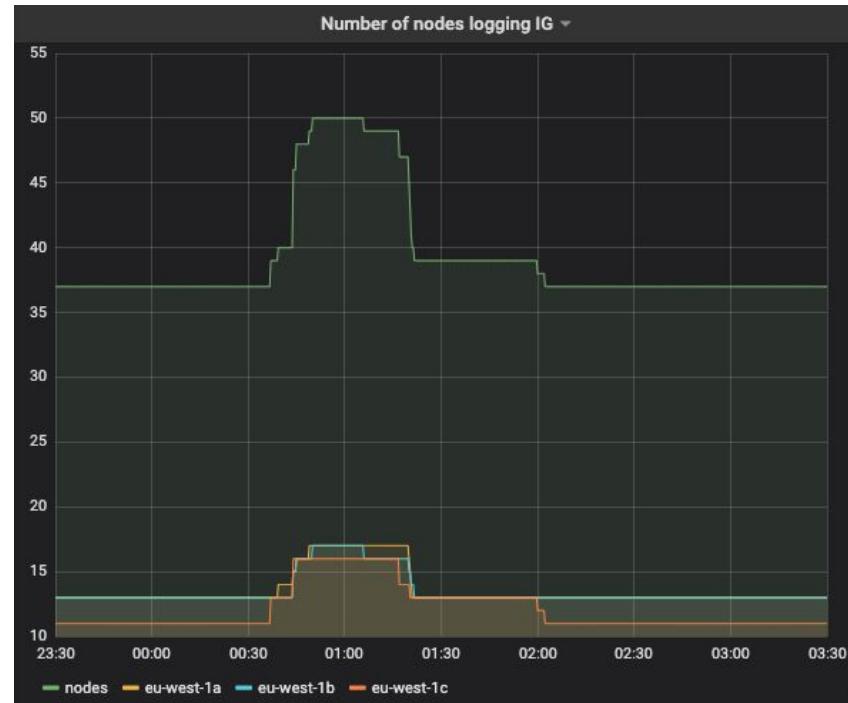


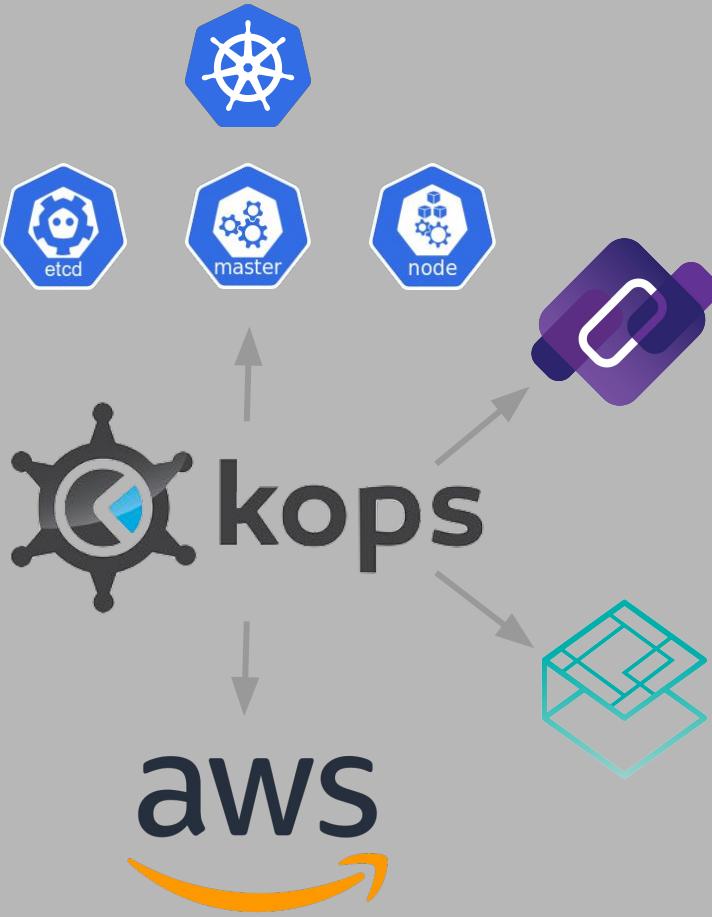
☰ ⚒ ⚙

### indexer - log events indexed



☰ ⚒ ⚙





```
apiVersion: kops/v1alpha2
kind: Cluster
metadata:
  name: test.example.com
spec:
  api:
    loadBalancer:
      type: Public
      additionalSecurityGroups:
      - sg-exampleid3
    authorization:
      rbac: {}
    kubernetesApiAccess:
    - 0.0.0.0/0
    channel: stable
    cloudProvider: aws
    configBase: s3://test.example.com/test.example.com
  etcdClusters:
    - etcdMembers:
      - instanceGroup: master-us-test-1a
        name: us-test-1a
      name: main
      version: 3.2.26
    kubeAPIServer:
      authorizationMode: RBAC
      authorizationRbacSuperUser: admin
      oidcIssuerURL: https://login.example.com
    kubelet:
      enableCustomMetrics: true
      cloudProvider: aws
    kubeControllerManager:
      horizontalPodAutoscalerUseRestClients: true
    kubernetesVersion: 1.12.2
  iam:
    allowContainerRegistry: true
  masterInternalName: api.internal.test.example.com
  masterPublicName: api.test.example.com
  networkCIDR: 172.20.0.0/16
  networkID: vpc-12345678
  networking:
    amazonvpc: {}
```





**EVERYONE  
IS  
ENTITLED  
TO  
MY  
OPINION**





A photograph of a small, rocky island in the middle of a vast blue ocean. On the left side of the island stands a white lighthouse with a dark lantern room. The island is covered in patches of green vegetation and rocky terrain. The sky above is filled with scattered, white clouds.

# Immutable infrastructure



# Kubernetes feature-flags



Add-on configurations



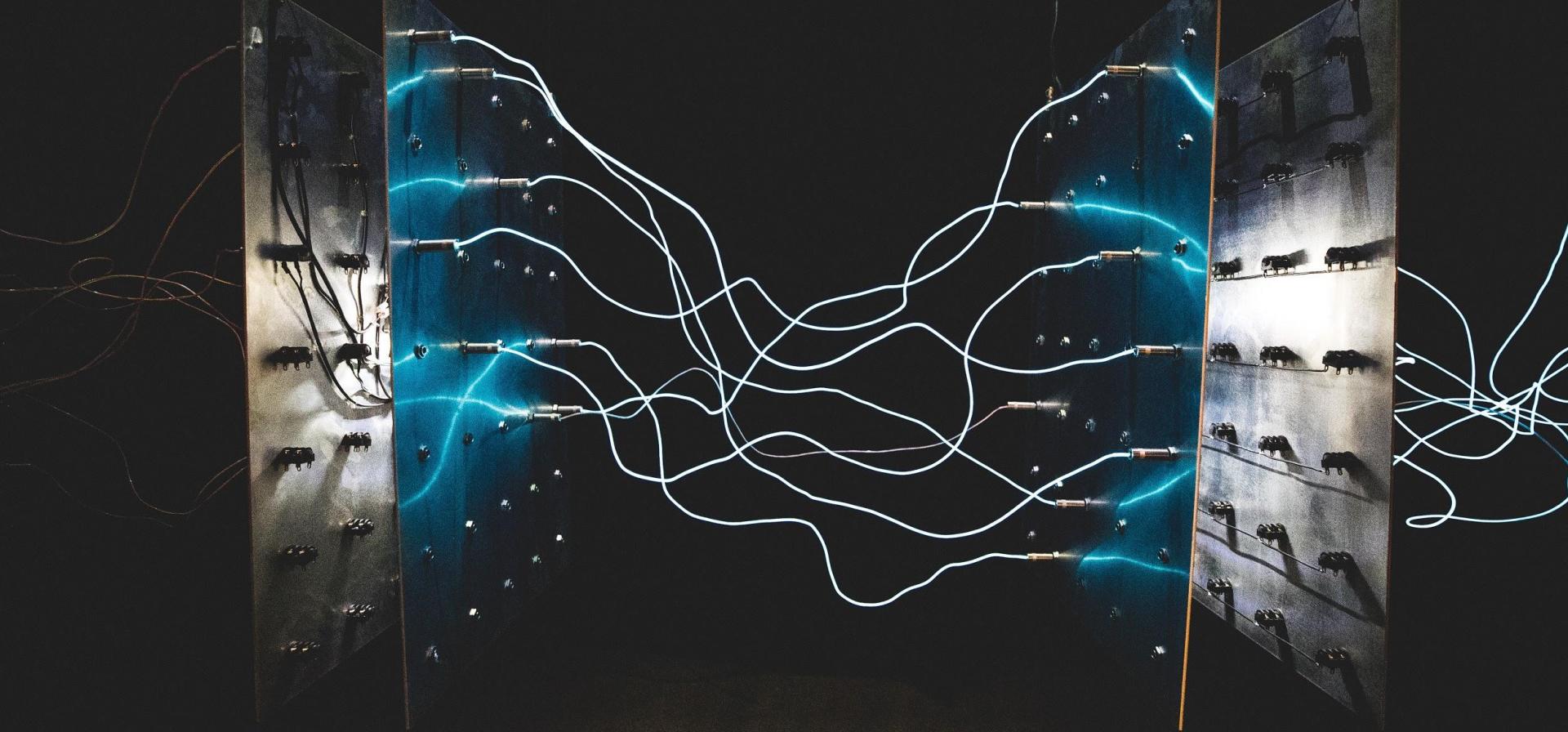
etcd on master nodes



kops release cycles

A white picket fence with several vertical slats. In the center, two purple flower stems with small blossoms are growing through the fence, one from the left slat and one from the right slat. The background is a blurred green garden.

# AWS SG limits and LB



Kubelet bug: tcp connections #48638



CNI bug: ENI flood

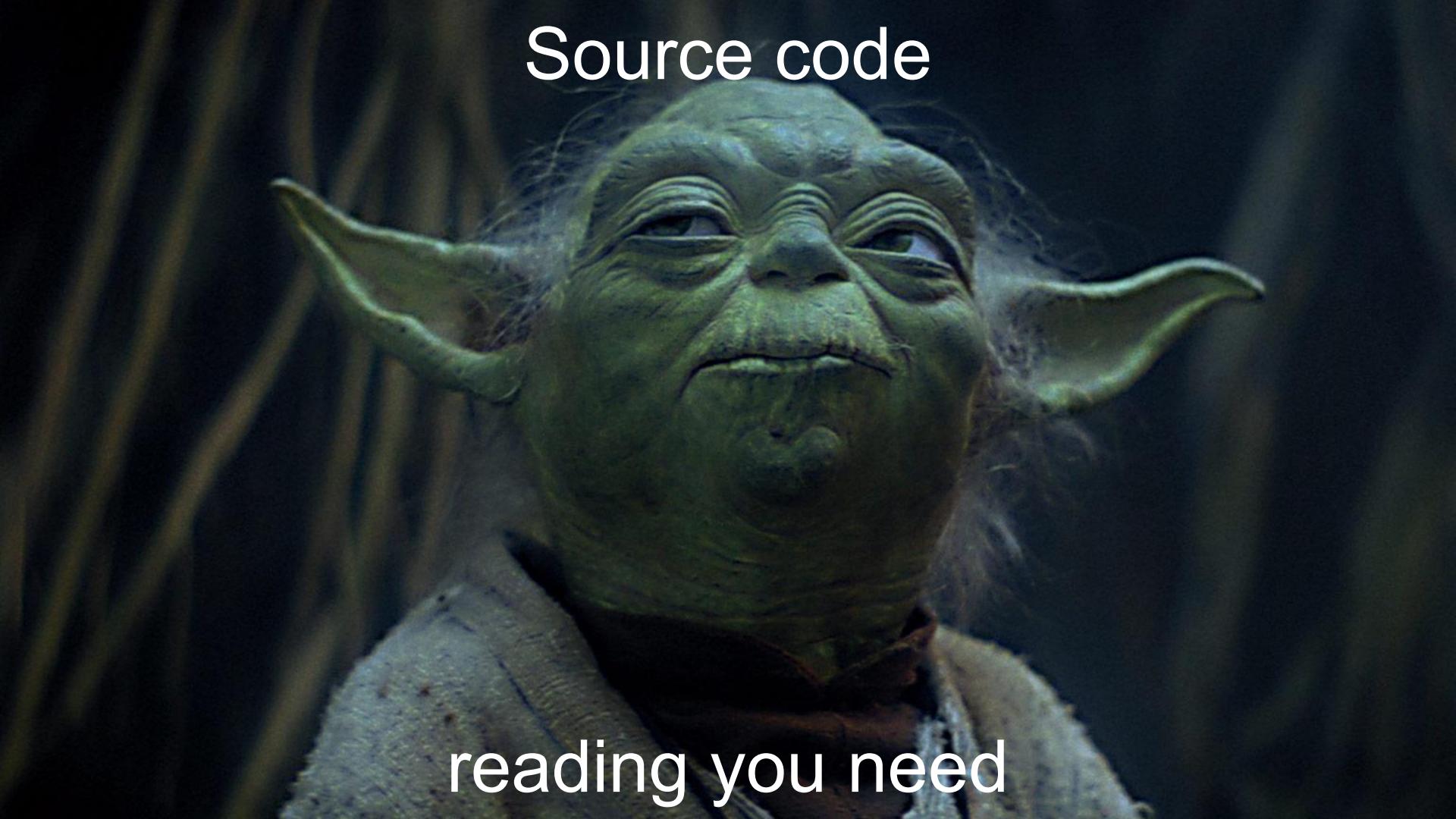


CNI bug: pods on secondary ENIs



kops hooks

# Source code



reading you need

So without further ado, here's the list of things you might want to look at before creating an EKS cluster with the goal of serving production traffic.

- [Networking](#)
- [Networking—Limited pod capacity per subnet & VPC](#)
- [Networking—Limited pod capacity per worker node](#)
- [Networking—Kubernetes scheduler is unaware about actual IP availability](#)
- [Networking—Some pods cannot be accessed from peered networks by default](#)
- [Default worker AMI](#)
- [AMI—Based on Amazon Linux 2](#)
- [AMI—No docker log rotation](#)
- [AMI—Docker freezes](#)
- [AMI—Corrupted disk statistics](#)
- [Authentication and authorization](#)
- [Auth—RBAC enabled](#)
- [Auth—AWS IAM authentication](#)
- [Auth—API Server endpoint is public](#)
- [Limited availability](#)
- [Alpha Kubernetes features are disabled](#)
- [CronJobs are problematic](#)
- [CronJobs—Backoff limit does not work](#)
- [CronJobs don't work well with the Kubernetes network plugin](#)
- [Single kube-dns pod by default](#)

## Production proofing EKS

<https://medium.com/glia-tech/productionproofing-e-ks-ed52951ffd6c>

**ONE DOES NOT SIMPLY**

**RUN KUBERNETES**



Watch ▾

236



Unstar

2,689



Fork 100

Code

Issues 2

Pull requests 0

Insights

Compilation of public failure/horror stories related to Kubernetes

kubernetes

postmortem

incidents

failures

production-engineering

sre

reliability

post-mortem

45 commits

1 branch

0 releases

11 contributors

Branch: master ▾

New pull request

Create new file

Upload files

Find File

Clone or download ▾

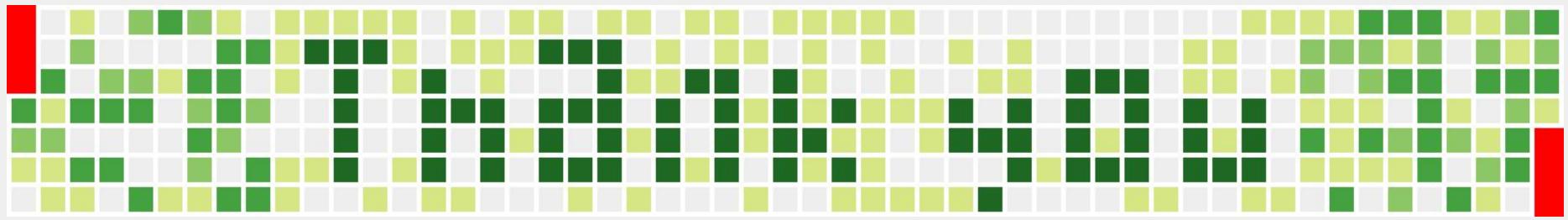
 philipthomas and hjacobs Add Moonlight's outage post-mortem (#13) ... Latest commit 06b37c7 7 days ago .gitignore add involved topics & impact 2 months ago README.md Add Moonlight's outage post-mortem (#13) 7 days ago README.md

# Kubernetes Failure Stories

A compiled list of links to public failure stories related to Kubernetes. Most recent publications on top.

<https://github.com/hjacobs/kubernetes-failure-stories>

1. Immutable infrastructure
2. Kubernetes feature flags
3. Add-on configurations
4. Etcd on master nodes
5. Kops release cycles
6. AWS SG limits and LB
7. Kubelet bug: tcp connections
8. CNI bug: ENI flood
9. CNI bug: pods on secondary ENIs
10. Kops hooks
11. Read the source code



Federico Hernandez  
@recollier

- Photos from unsplash.com
- Icons from project repositories