We use the cloud

to make our infrastructure problems someone else's problems

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Building an Engineering org to make the next envoy product versions

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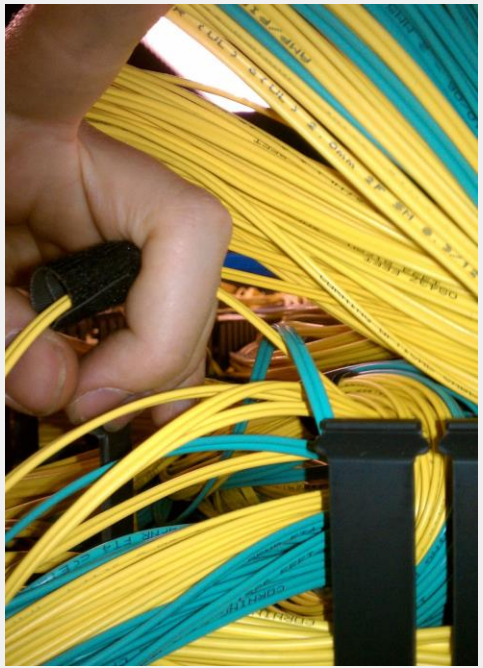
Agenda

1. Data center or Cloud
2. What is your core business
3. Awesome tools make us better at our work
4. Build it or buy it
5. Time is money etc.
6. What we do and some tool case studies

Somebody else's datacenter

- "The cloud is just someone else's computer in Virginia with a bad power supply."
- Sure, but that bad power supply is not my problem and if you know what's good for you you'll never make it your problem.

Because running data centers sucks



Time

- Negotiate a contract (1mo)
- Spec and buy servers (3mo)
- Order & receive servers (45 d)
- Rack them (1wk)
- Network them (1wk)
- And maintain them (several days a week forever)

Money

- Price cage $20k/mo
- Buy the servers $100k/rack
- Buy network gear $50k
- Transit $2k/mo
- Data center staffing

Envoy automates the laborious and annoying parts of office life

Manning the front desk

Receiving deliveries for employees

Managing conference rooms

What's not Envoy's business?

Running data centers

Infrastructure as a service

- Let cloud providers do the heavy lifting.
  Let them
  Build and
  staff the data center
  build a stupid amount of cooling
  Provide redundant power and network egress
  Spec the hardware
  Operate the network
  Handle all physical maintenance

- You get a virtual server etc. You pay by the minute.

But what about scale?

- Some people pay AWS a million dollars a year, can't I build out a datacenter cheaper?

- Can you? Seriously. Can you compete with Amazon on large logistics tasks where economies of scale benefit larger and more established companies? Can you build out 10 years worth of orchestration tools?

- If you can do all of those things (well), you should do it for a living. (Hit me up, I have work for you)

Awesome tooling we miss from our previous lives

- Straight outta Google

- App Engine
- Borg
- Borgmon
- Blaze
- SSO
- Prodaccess
- GGC (global cache)
- GFE (front end load balancers)

Build it, buy it, or do without

- Remember that your time isn't free (it's actually really expensive)
- Time = Money (Spend money to buy time)
- Money = Money (If you spend too much money you fail)
- Time + Money = Runway (always look at the big picture)

The tools we found to replace the ones we left behind

Eng

- Heroku web app hosting
- AWS data tier
- Stream IO
- Pubnub
- Github Enterprise
- Pager Duty
- Notion for documentation
- SendGrid
- Circle CI
- Datadog
- Split

IT

- Slack for communication
- Google apps for domains
- Okta
- 1password
- Pivotal
- Spoke for IT tickets
- Bugsnag bug collection
- Sidekiq for queuing
- Zoom for video conferencing

Infrastructure as a service

- Let cloud providers do the heavy lifting.
  They are taking data center problems for you so you can focus on your core business

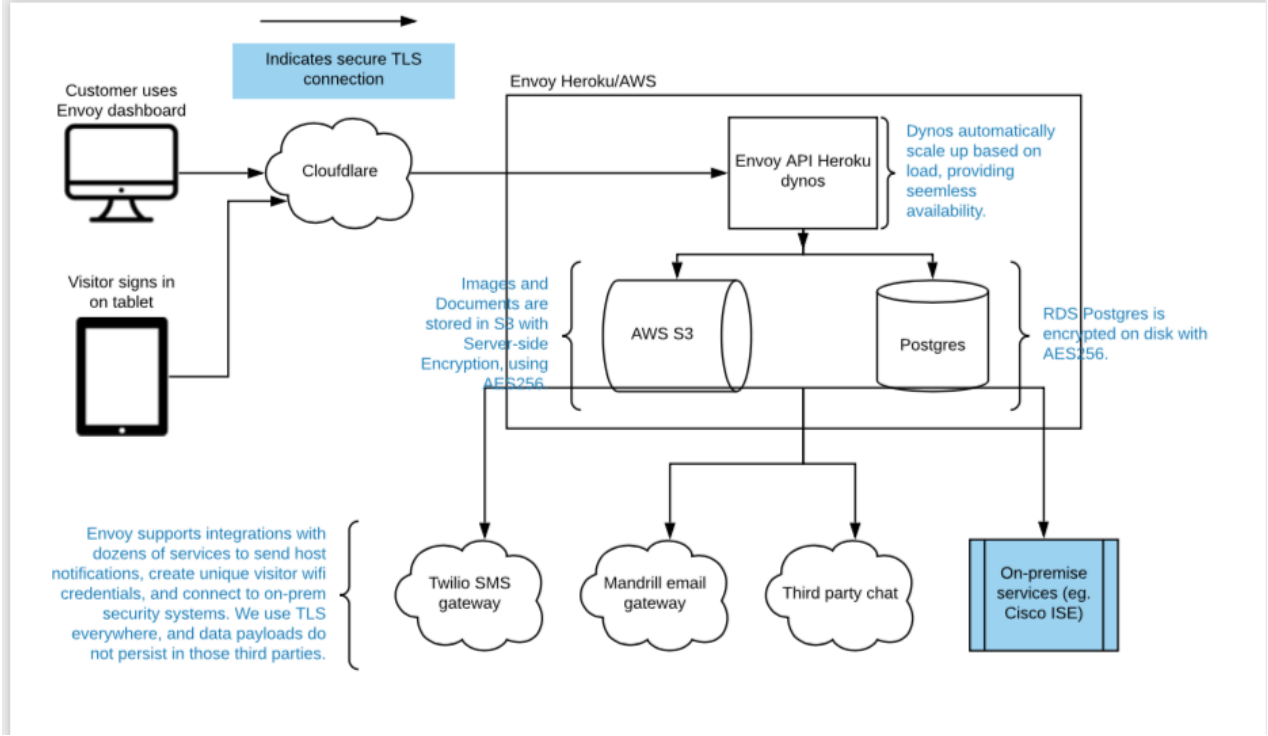
What about Heroku

- Application As A Service

- Whereas AWS is Infrastructure As A Service
  Fun fact: Heroku runs on AWS

- It's 5PM on a Saturday, you have this app idea and want to stand up a POC. Use Heroku. At this point AWS is more trouble than it's worth.

Heroku AWS Hybrid model

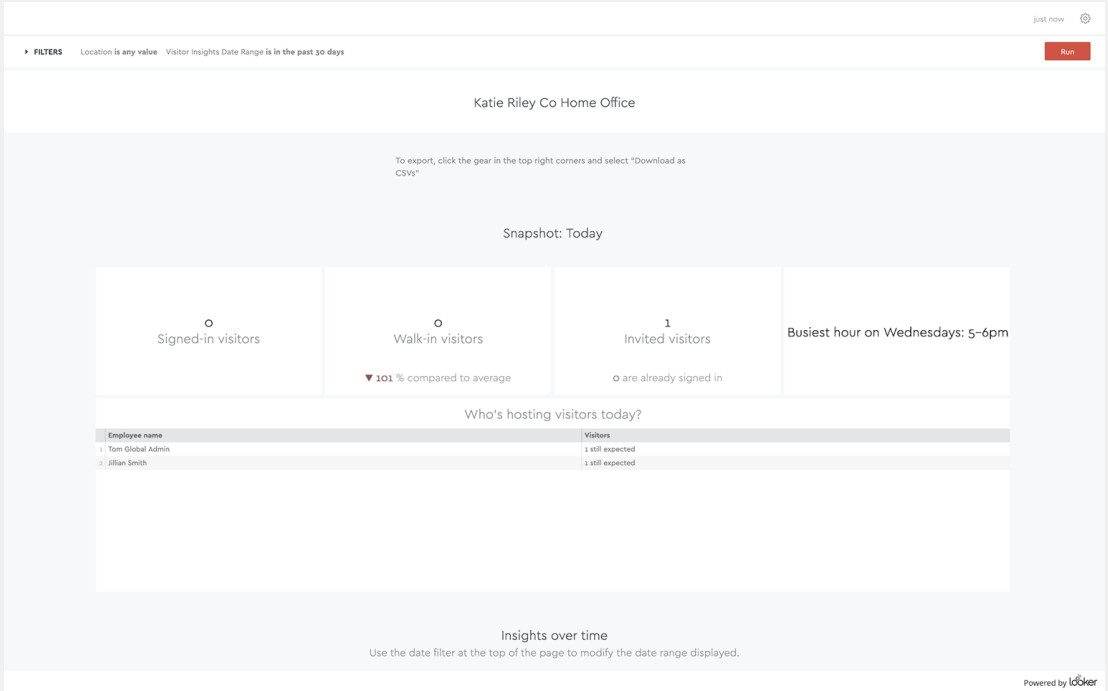


- We get the ease of Heroku and the tuning options of RDS

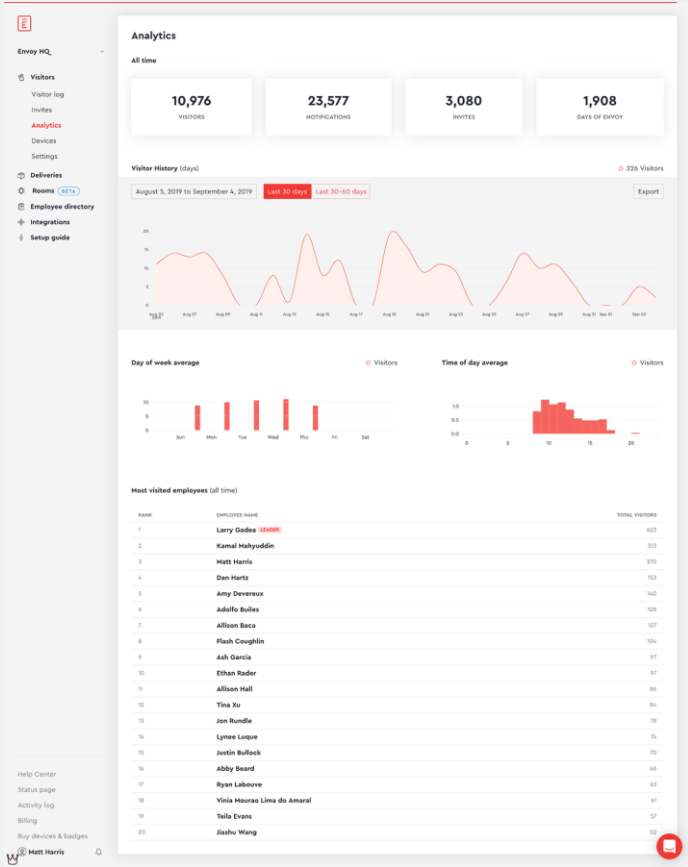
Looker case study

New feature: In product analytics in dashboard

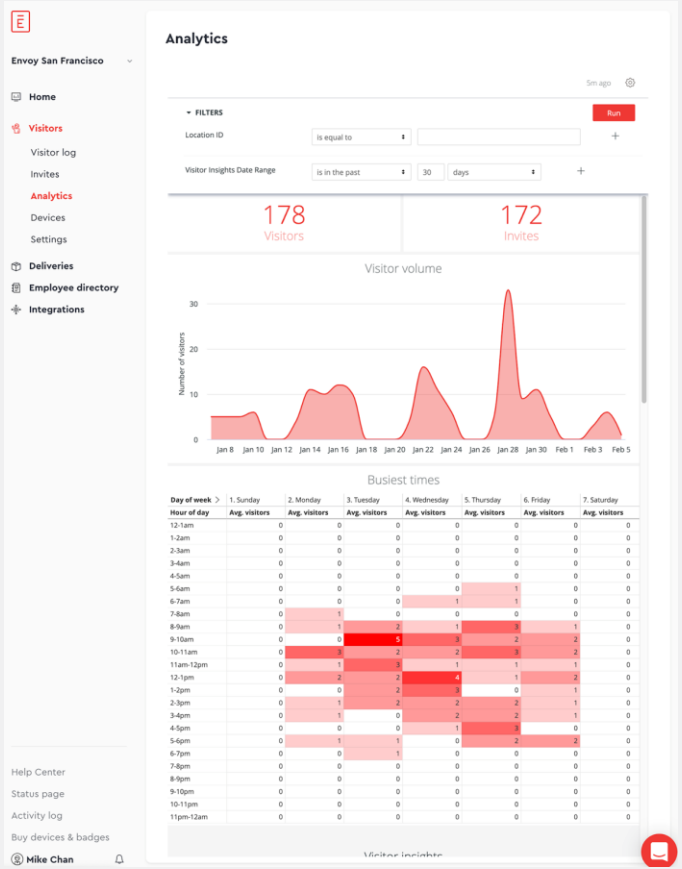
- Design team hated it
- Opened in its own tab
- Looker branding
- Looker would let us launch faster with less resources



Looker dashboard



Original designs



What we shipped

Monitoring

- At Google I just used borgmon
  Great how did that work?
  Dunno, it was someone else's problem

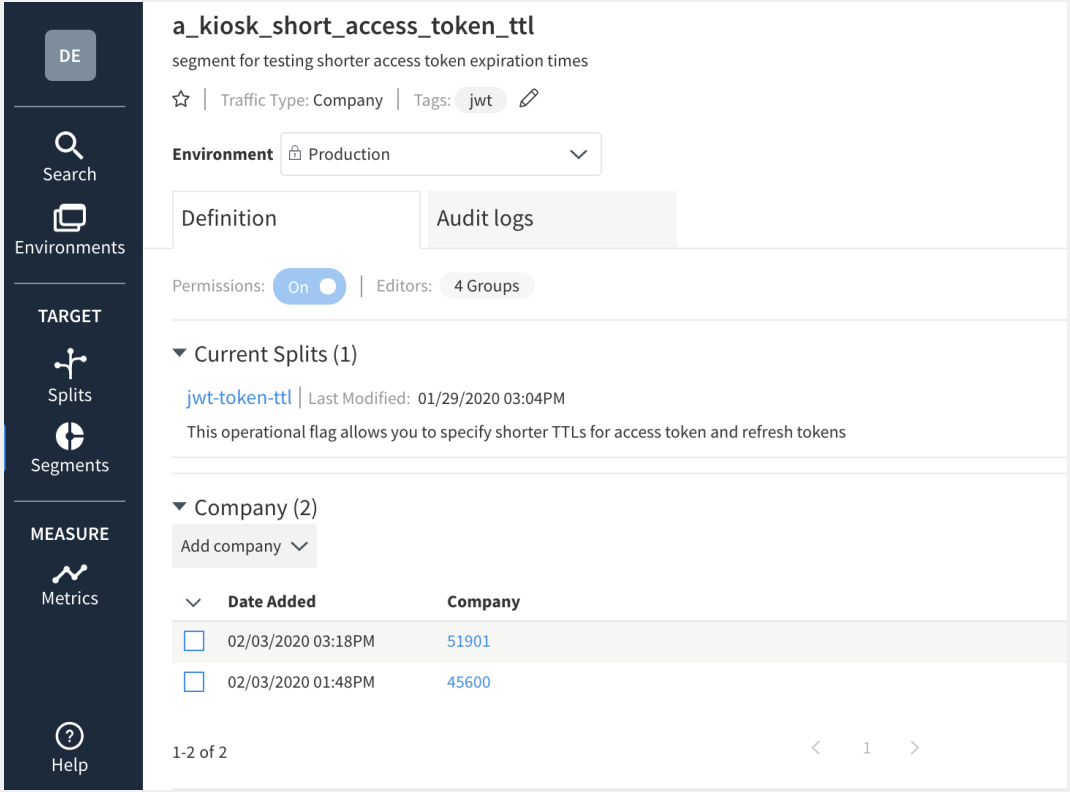
- Out in the real world you can use
  Prometheus + Grafana + IDP auth + WAF or VPN
  Again, solve this yourself or make it someone else's problem

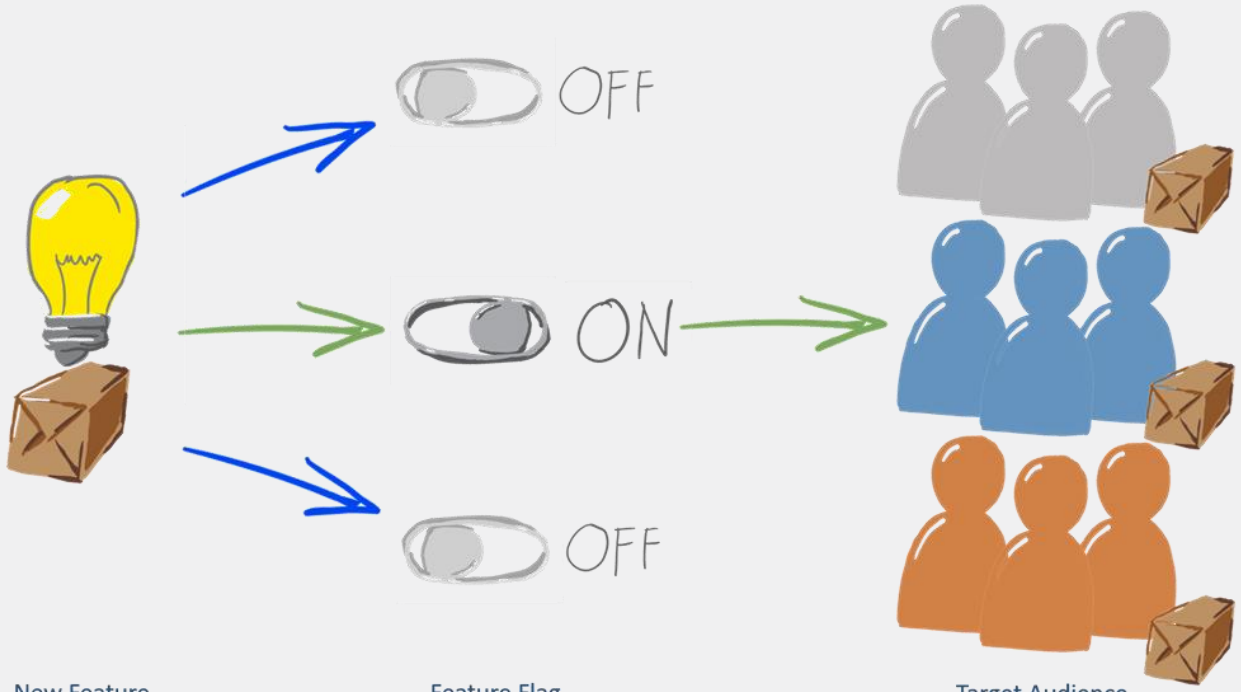
- We built that ^ it became a pain so we started using
  DataDog which was much faster, easier and led to much higher developer engagement (and value). But boy does it cost.

DATADOG
Envoy-Web DB for TV
Edit Widgets
Add Template Variables
Watchdog
Events
Dashboards
Infrastructure
Monitors
Metrics
Integrations
APM
Notebooks
Logs
Security
UX Monitoring
Number of connections
373 conns
Max connecti...
1h
8 %
Replication lag
Unvacuumed transactions (max)
176.9M
Dead rows
Locks by lock mode
CPU
Total I/O - Provisioned IOPS set to 10000
Read I/O
Write I/O

split.io case study

- Feature flags
- Every eng org needs this feature, it takes a while to build
- Test new features, roll them out slowly, roll them back if necessary




OFF
ON
OFF
New Feature
Feature Flag
Target Audience

Hiring for all eng roles!
Reach out directly
ENVOY
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mike@envoy.com

What did we learn?

The cloud makes your life easier so you can focus on your core business

Extend that idea to your tooling.

Thanks

Have questions?

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