Gravitational Teleport on AWS

Towards a Safety Culture

- David Bock - dbock@decisiv.com / @bokman
- Hunter Madison - hmadison@decisiv.com / @355E3B

Let’s Discuss

- Whats in an audit?
- How do we convince users to change the way they access systems?
- What we commonly do for access
- What Teleport gives us
- Demos and Examples

Audits

Audits

- Standards like
  - ISO 27002
  - PCI DSS
  - ISO 9000
  - FedRamp
  - ISO 9660
  - NIST 500-292

Three Key Points

- Put your best foot forward
  - Use “best practices”
  - E.G. Strong Encryption, Multifactor, Don’t put secrets in source control
- Understand how you do things
  - Have policies around code review, access, abuse, patching, etc
- Understand who does what and when they do it
  - Know who can access what at a given time
  - Keepings logs of what changed when

Changing access

Making Security Usable

- *When Security Gets in the Way - Interactions, volume 16, issue 6: Norman, D. A.*
  - "The audience, either not understanding the rationale or simply disagreeing with the necessity for the procedures imposed upon them, see these as impediments to accomplishing their jobs."

Making Security Usable

- Its not good enough to change an existing workflow to make it more secure
- You need to go and provide your users a better experience

We’ve all seen this before

User Management

- A user playbook
- Which…
    - Creates user accounts
    - Adds ssh keys
    - (Sometimes) tries to keep the UIDs consistent
    - (Sometimes) sets up a .bash_profile
        - EDITOR=emacs

User Management

- What happens when new people join and need access?
    - Hopefully, their key is provided to you the day they start
    - And they don’t need access immediately
        - Script needs to get run everywhere
- What happens when people leave?
    - Script needs to run everywhere again
    - Revocations don’t happen as fast as they should

User Management

- What happens when access is used to change application or server state improperly?
    - Installing apps onto boxes scheduled for decommissioning
    - App console schenaginas
- What happens when one developer really wants to connect their blackberry to the vpn and ssh into boxes?
- How do you debug connection issues?

User Management

- This process isn’t very usable
- End users don’t have a good way to understand what state their user account is in
- We don’t have a good way to diagnose access issues
- When something happens, we get minimal logging
  - Usually /etc/security connections

Teleport

Teleport

- Is a system used to implement high availability bastion ssh hosts
- Handles user access and logging user sessions
    - Also lets you share ssh sessions
- Generally stateless
- Open Source with paid enterprise extensions
    - SAML / LDAP / IDP Integration
    - RBAC
    - Kubernetes

SSH Backed

- Built on top of the SSH Protocol
  - Fully interoperable with OpenSSH
    - Integrates with your ssh agent
- Works with most tools built on SSH
  - Ansible!
  - Parminko / Net::SSH!

Real sshd replacement

- All of the standard unix stuff works out of the box
- Any text based tool / tui
  - Emacs, Ed, top, mc
- Any alternative shell
  - Zsh, fish, lshell, git-shell
- Respects /etc/passwd; Makes real login sessions

Three Layers

Auth Servers

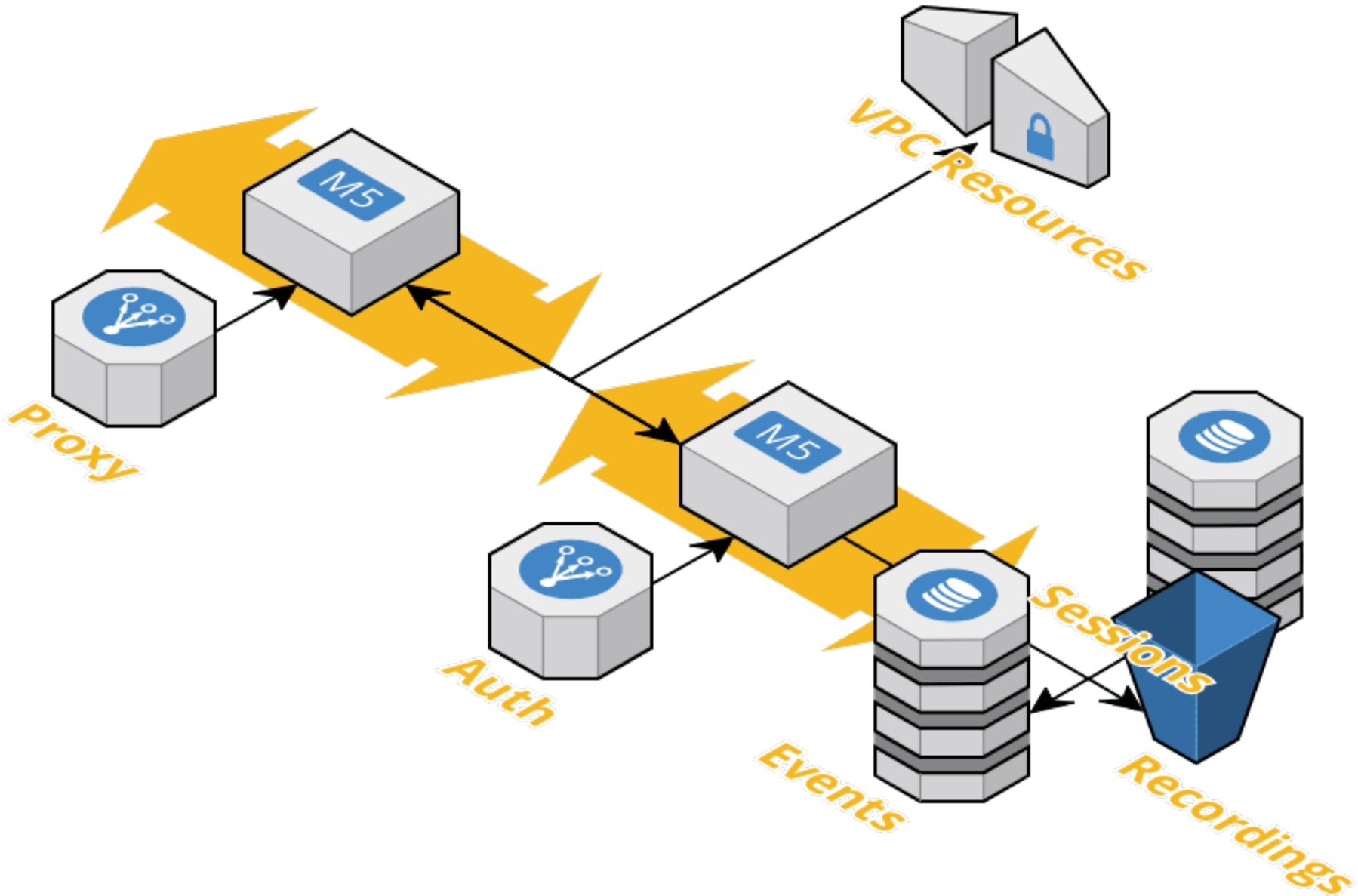
- Manages users, proxies, nodes and trusted clusters
  - This happens via join tokens
  - Or some other IDP for users (on enterprise)
- This is the only stateful component of the system

Proxy Servers

- Public facing endpoint
- Routes all of the traffic to the nodes
- Also hosts the web interface

Nodes

- These are the servers you want to connect to
- They also run teleport
- They only need to be reachable by the proxy and auth servers
    - You can run of your nodes inside of a VPC, the user connection gets tunneled through the proxy


VPC Resources
M5
Proxy
M5
Auth
Sessions
Events
Recordings

Demos!