We will be digging into three problem areas:
1. Utilization
2. Fleet management
3. Host management

We will be limiting the scope of this talk to stateless services.
Utilization
Our first try at sharing hosts:

No containerization and manual placement.
Why fix two problems when you can fix one?

Containerization with manual placement.
Automatic placement
Failed hosts no longer impact services.
Scheduling a service
Host failure
Service is rescheduled
Fleet Management
Puppet

Host

Host

Host

Host

Host

Upgrade agent version and change sudo file

Upgrade agent version and change sudo file

Upgrade agent version and change sudo file

Upgrade agent version and change sudo file

Upgrade agent version and change sudo file
Platform Lifecycle Manager

T0

Host

T1

Host

Host

T2

Host

Host

Host

T3

Host

Host

Host

Host
T3

Platform Lifecycle Manager

Host

Service 1

Host

Service 1

Host

Service 1

Host

Service 1
Cluster Lifecycle Manager

- CLM
- Scheduler
- Hosts

T0:
- Hosts ➔ Service 1

T1:
- Hosts ➔ Service 2 ➔ Service 3

T2:
- Hosts ➔ Service 4 ➔ Service 5 ➔ Service 6

T3:
- Hosts ➔ Service 7 ➔ Service 8 ➔ Service 9 ➔ Service 10
Cluster Lifecycle Manager

SLA Safe

Host 1
Host 2
Host 3
Host 4

Not SLA Safe

Host 5
Host Management
Architecture

- **Cadence Orchestration Engine**
  - Assign workflow action to worker
- **Cadence Worker**
- **CLM Dispatcher**
- **Cache**
  - Push or pull host information into cache
- **CLM Detector**
  - Write issue
  - Git != Cache
- **Git Repo**
- **Host**
  - ssh based remediation

Note: The diagram illustrates the architecture of a system, showing how different components interact and exchange information.
Store Goalsate

- **Schema Git Repo**: 
  - Cluster list schema
  - Cluster goalstate schema

- **Goalstate Git Repo**: 
  - Cluster list
  - Cluster goalstate

**Pre-Commit hook** validates files against schema
Cache

Host

Pull from host provider

Pull from API on host

Push to cache

Inventory

Monitoring

CLM detector
Tying it all together with CLM

- Cadence Orchestration Engine
- MySQL
- Cache
- CLM Dispatcher
- CLM Detector
Q & A