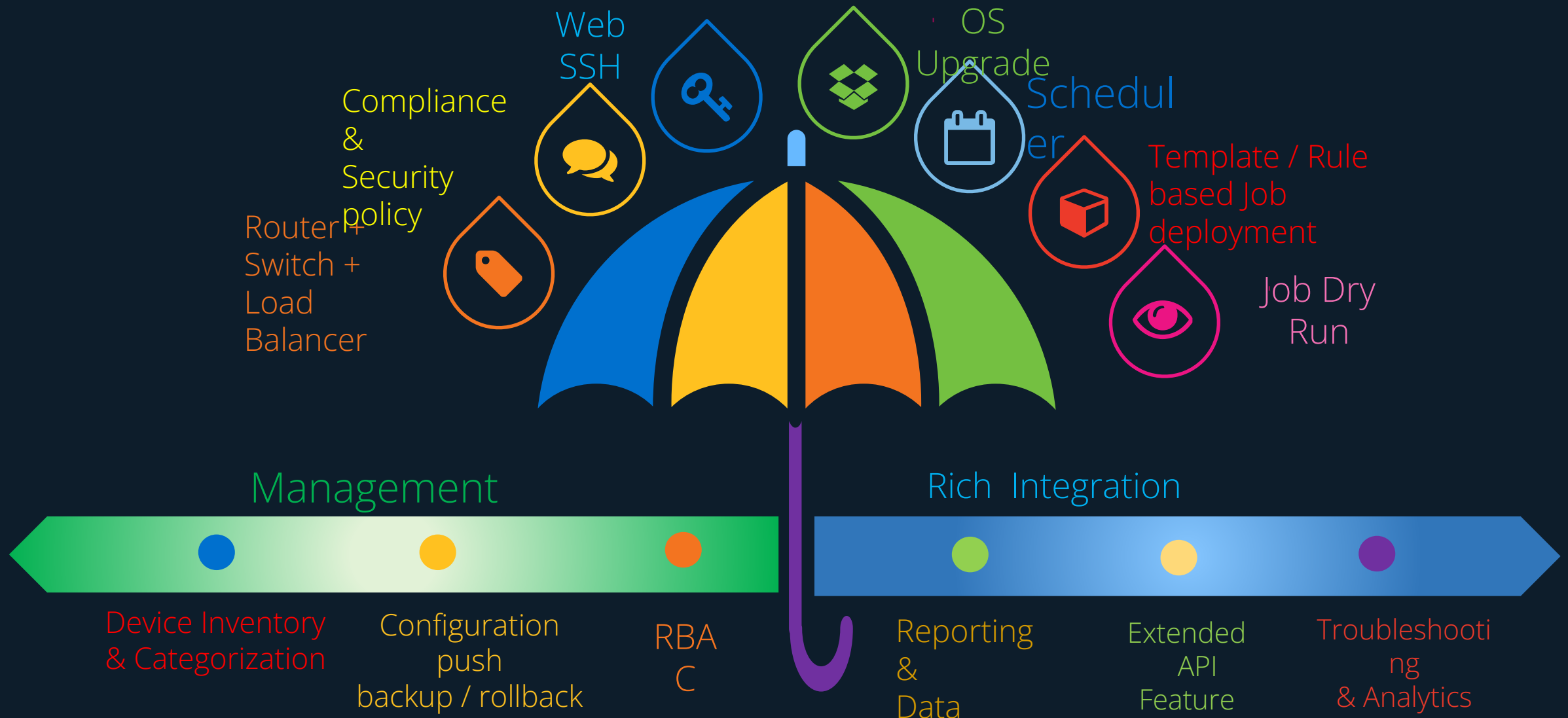# Network Automation Platform & Analytics

Product Overview & Comparative Analysis
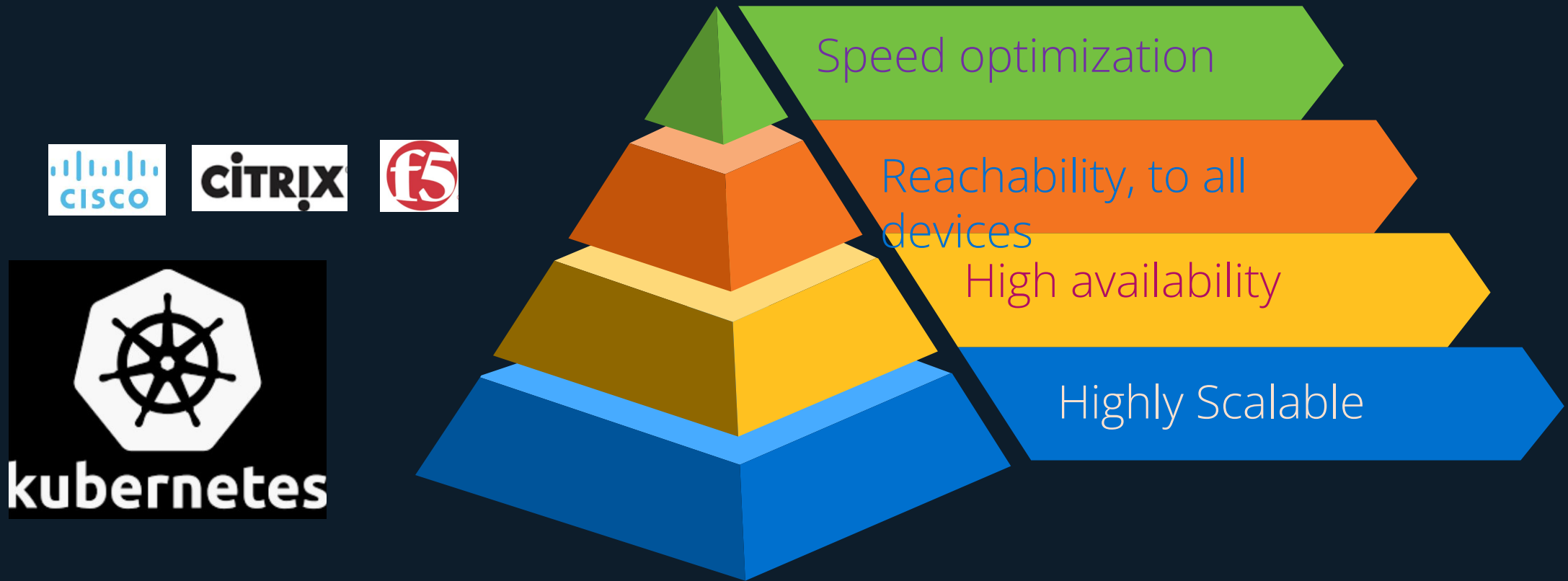
Walmart ⚹

Network Engineering
GIEO – IDC & US

NAPA as one stop solution

Web SSH

OS Upgrade

Scheduler

Compliance & Security policy

Template / Rule based Job deployment

Router + Switch + Load Balancer

Job Dry Run

Management

Rich Integration

Device Inventory & Categorization

Configuration push backup / rollback

RBAC

Reporting & Data

Extended API Feature

Troubleshooting & Analytics

2

NAPA – Design Principle

Speed optimization

Reachability, to all devices

High availability

Highly Scalable

NAPA vs BNA & Concord

Walmart in-house Product

BNA - Third party developed application, involves Licensing cost.
Concord - Strati team developed product for inventory management,
Inter team dependency. As of now using for LB only.

Interactive interface for the End user

BNA – Also provides user friendly interface.
Concord – Workflow orchestration tool, Ansible play-book based modules.

On demand Load Capacity management

BNA - Not scalable. Has upper limit for device provisioning.
Concord – N/A

Better Performance & High Availability

BNA – Comparatively less performance, owing to legacy framework.
Concord – N/A

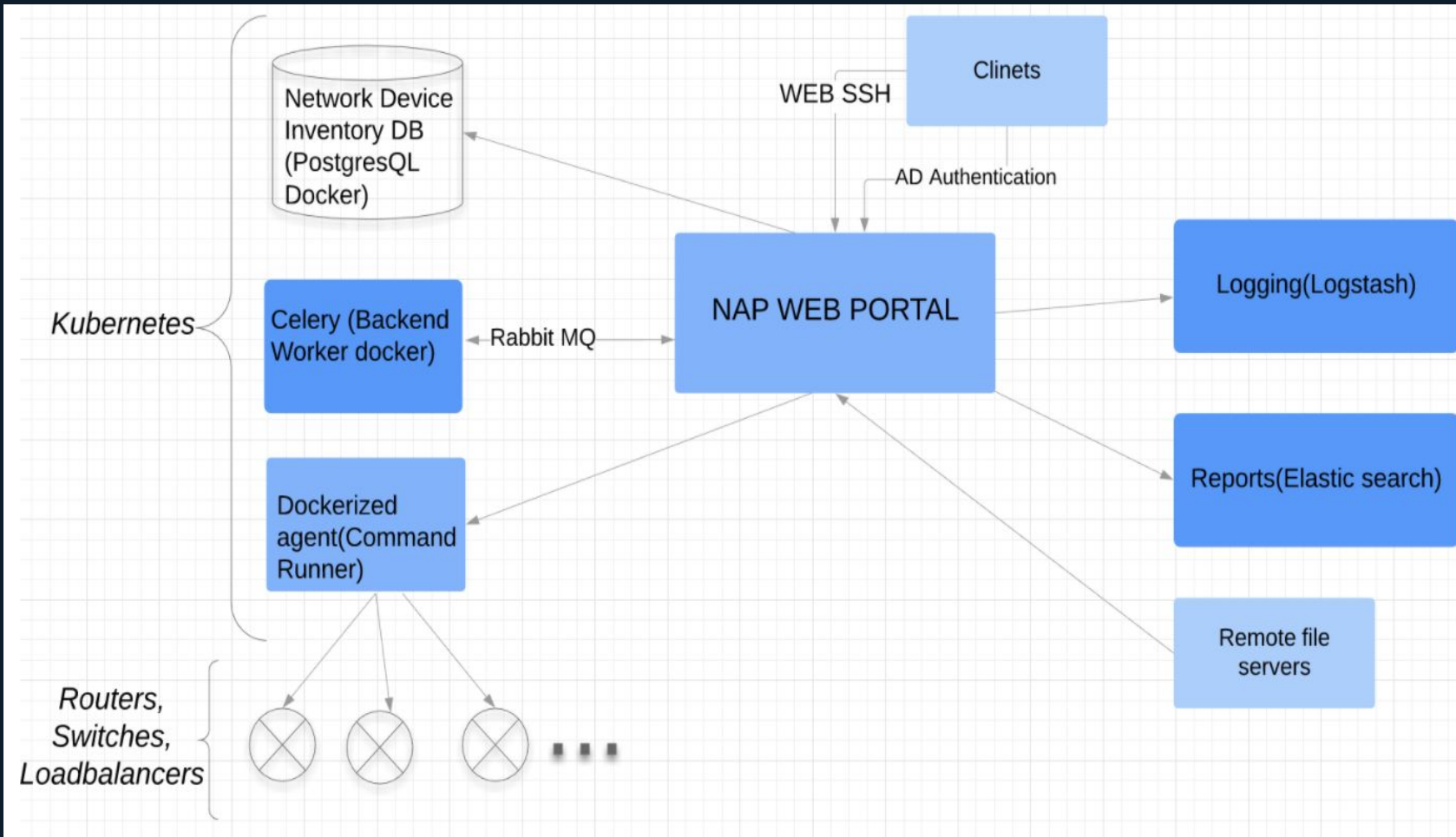**Fully customizable, Open Source Technology**

BNA - For feature enhancement, it involves time and money.
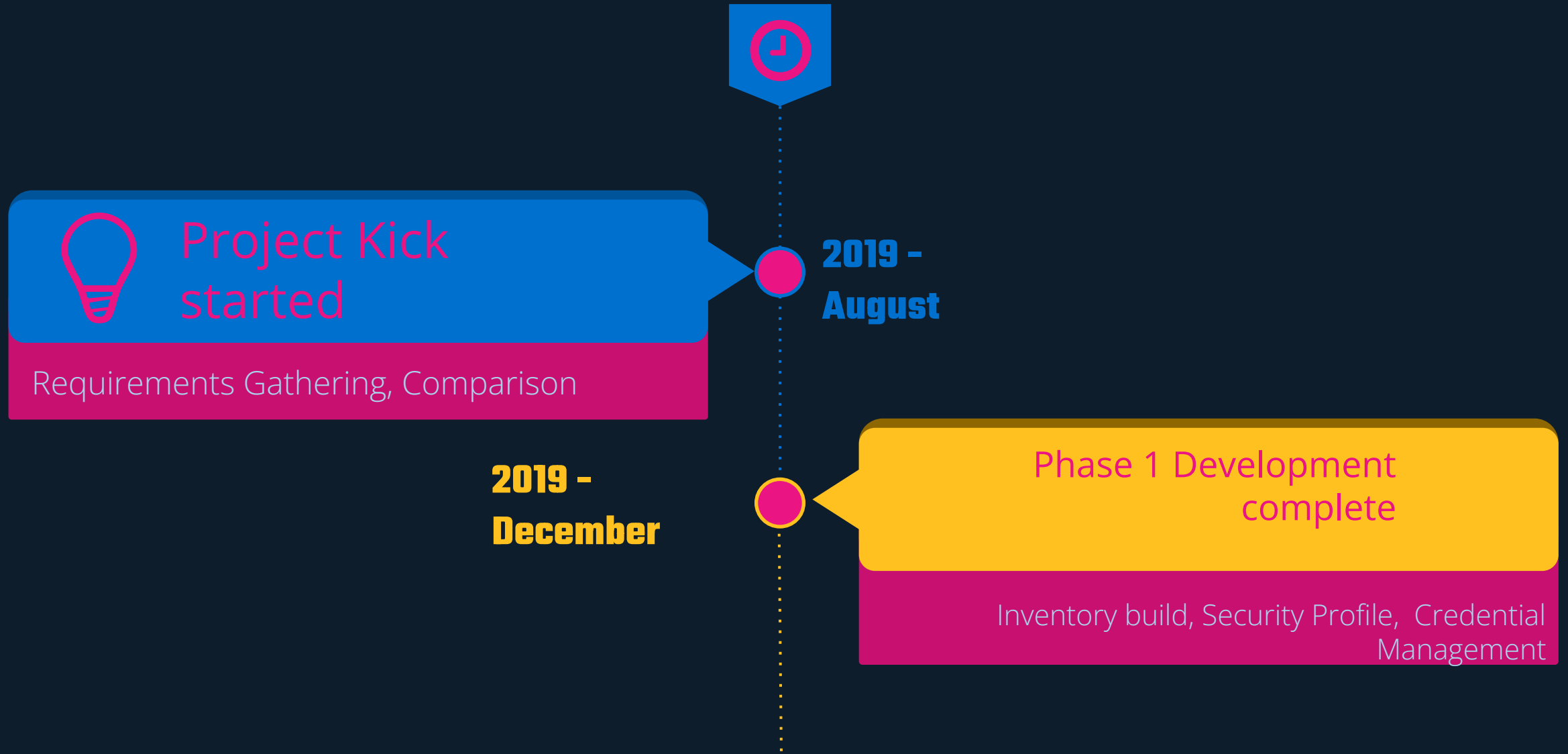**Concord** – Co-ordination required with other teams.

NAPA

- Hosted on Docker
- Managed by Kubernetes
- Celery as Broker
- Django as framework
- Database is Postgress
- Log Analytics by Elastic
- Redis for Caching
- Python & Go language

All Technologies are open-sourced & in-house development

Phase 2 Development complete
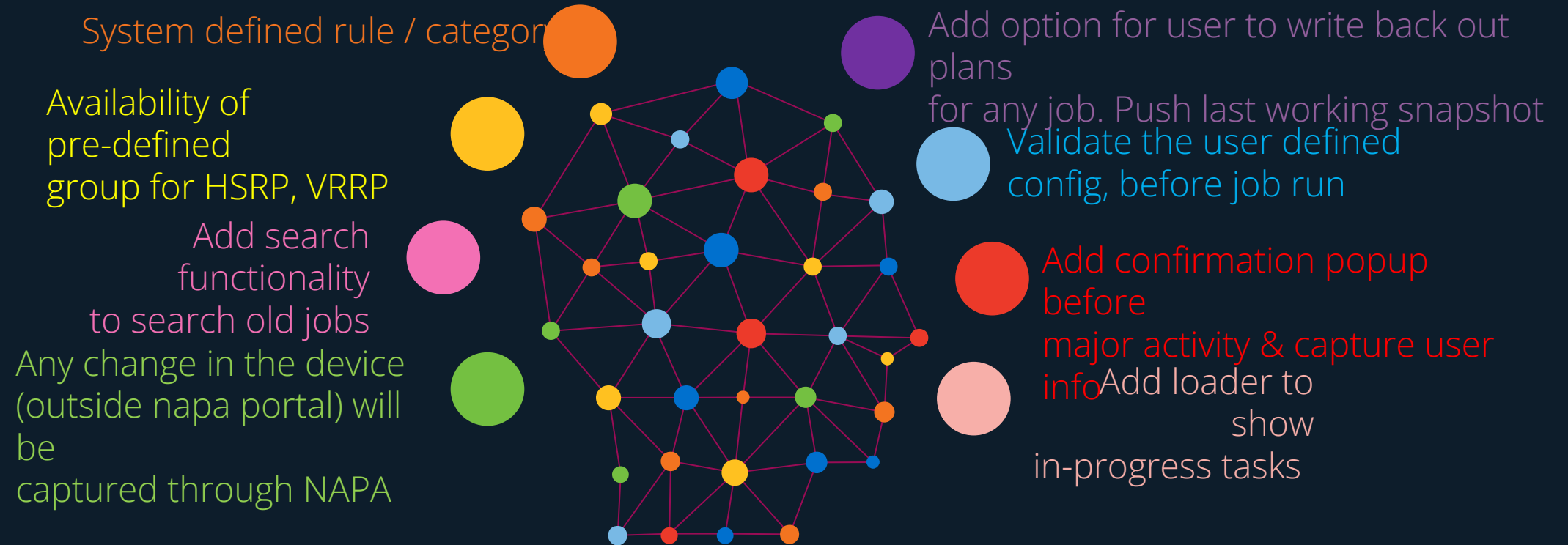
Config Push, Web SSH module development

2020 - March

2020 - April

Team Collaboration

Gathering requirements of LB Automation & Further feature integration

Connecting the Dots

System defined rule / category

Availability of
pre-defined
group for HSRP, VRRP

Add search
functionality
to search old jobs

Any change in the device
(outside napa portal) will
be
captured through NAPA

Add option for user to write back out plans
for any job. Push last working snapshot

Validate the user defined
config, before job run

Add confirmation popup before
major activity & capture user info

Add loader to
show
in-progress tasks

References for NAPA:

Application: http://napa.prd-k8s-infra.prod.walmart.com/

Git Hub: https://gecgithub01.walmart.com/Neteng/NetworkAutomationWeb

Confluence: https://confluence.walmart.com/pages/viewpage.action?pageId=288963855

App Monitor: http://napa-flower.prd-k8s-infra.prod.walmart.com/monitor

Thank You

Arkadip Basu
Rishi Singh
Vipin Panwar

Walmart