Cisco COS Automated Deployment Overview

Cisco Cloud Object Store

Cisco AS
October 2017
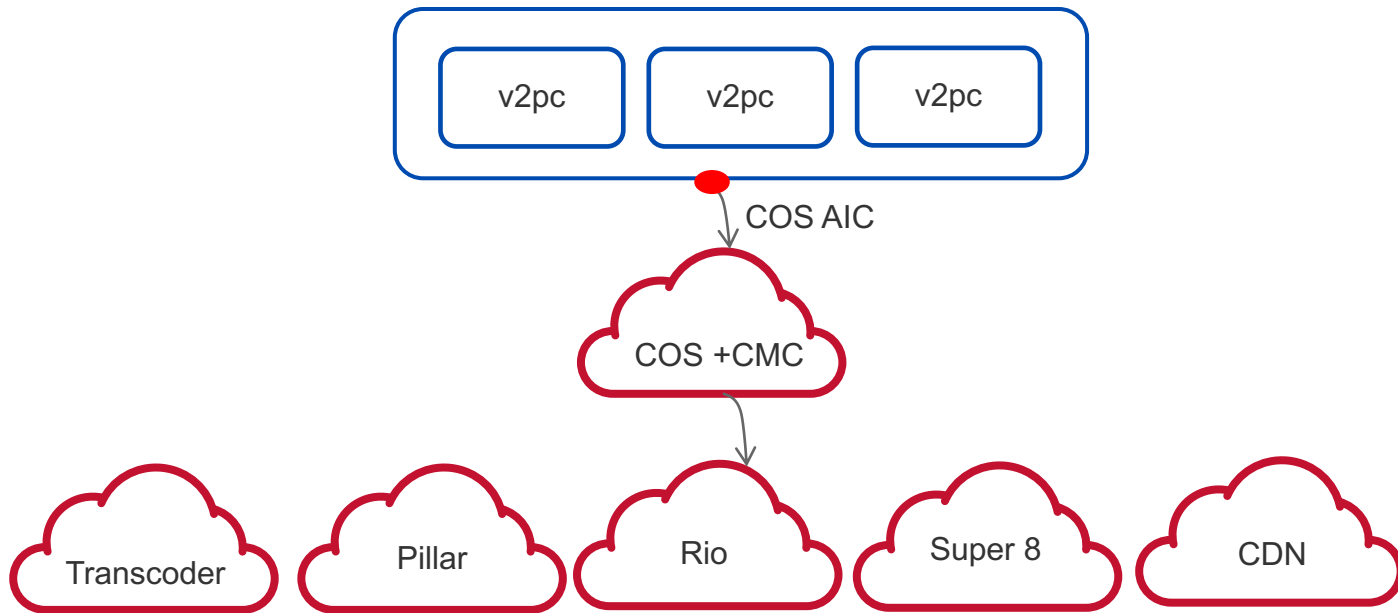
Agenda

V2PC architecture

Overview of Cisco COS deployment

Overview of Vaquero workflow

Overview of AS Automation script for Vaquero

Samples.
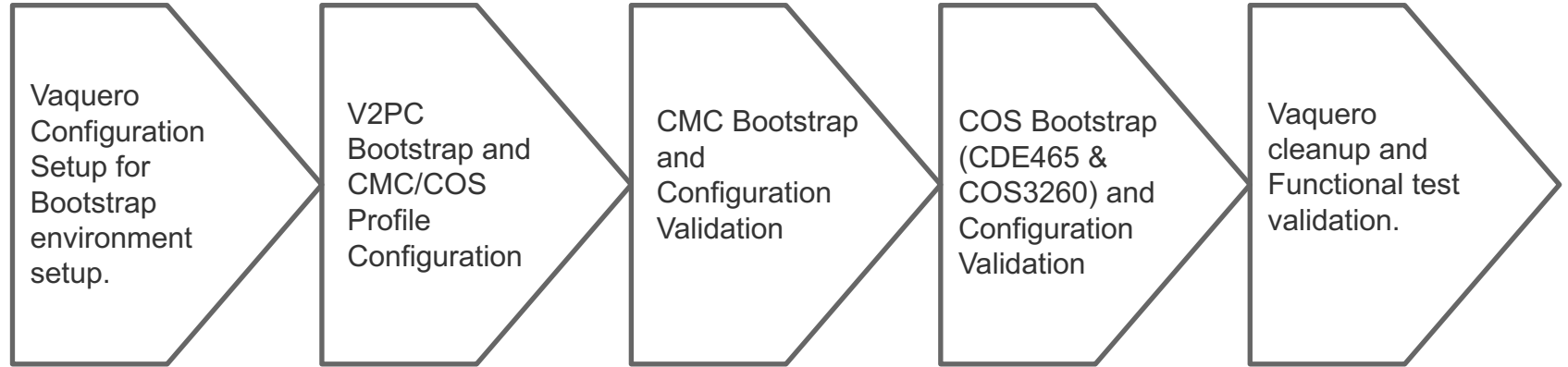
v2pc Architecture overview

v2pc : Virtualized Video Platform Controller
CMC: COS Metadata Cluster
AIC: Application Instance Controller

High level overview of Cisco COS deployment

Vaquero Configuration Setup for Bootstrap environment setup.

V2PC Bootstrap and CMC/COS Profile Configuration

CMC Bootstrap and Configuration Validation

COS Bootstrap (CDE465 & COS3260) and Configuration Validation

Vaquero cleanup and Functional test validation.

Vaquero workflow overview on Cisco COS deployment

Define Env.yml with subnet, gateway and DNS to be used for bootstrapped devices.

Define Inventory.yml with bootstrapped device specific information based on device type.

Execute Pre-install script or reboot to initiate bootstrap and post install steps.

Validate

Clean up inventory.yaml to prevent bootstrap

Pre-install reboot

DHCT

PXE

Post Config

COS/CMC/ V2PC
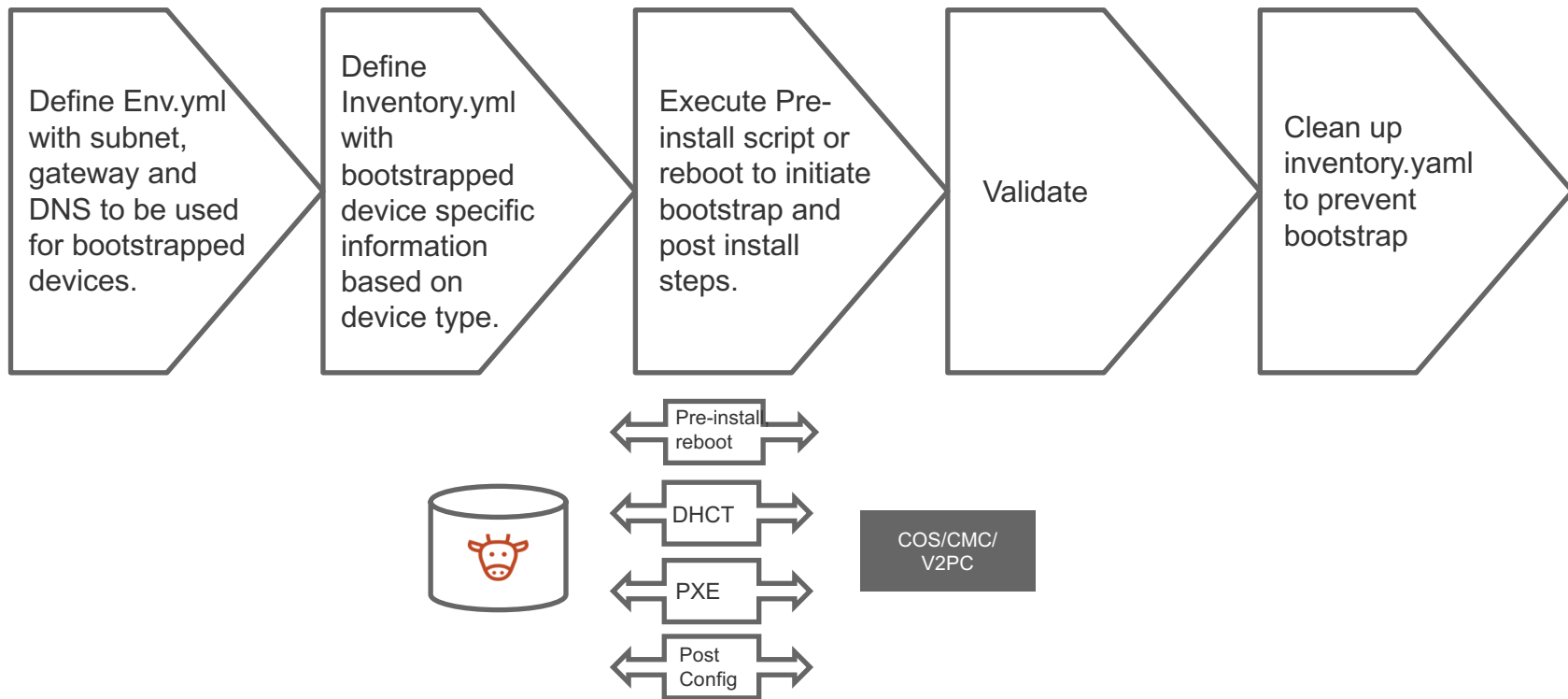
Bootstrapping with Vaquero

A bare metal configuration utility that network boots machines based on user defined templates. We leverage iPXE and support cloud-config, ignition, kickstart, and untyped unattend boot scripts.

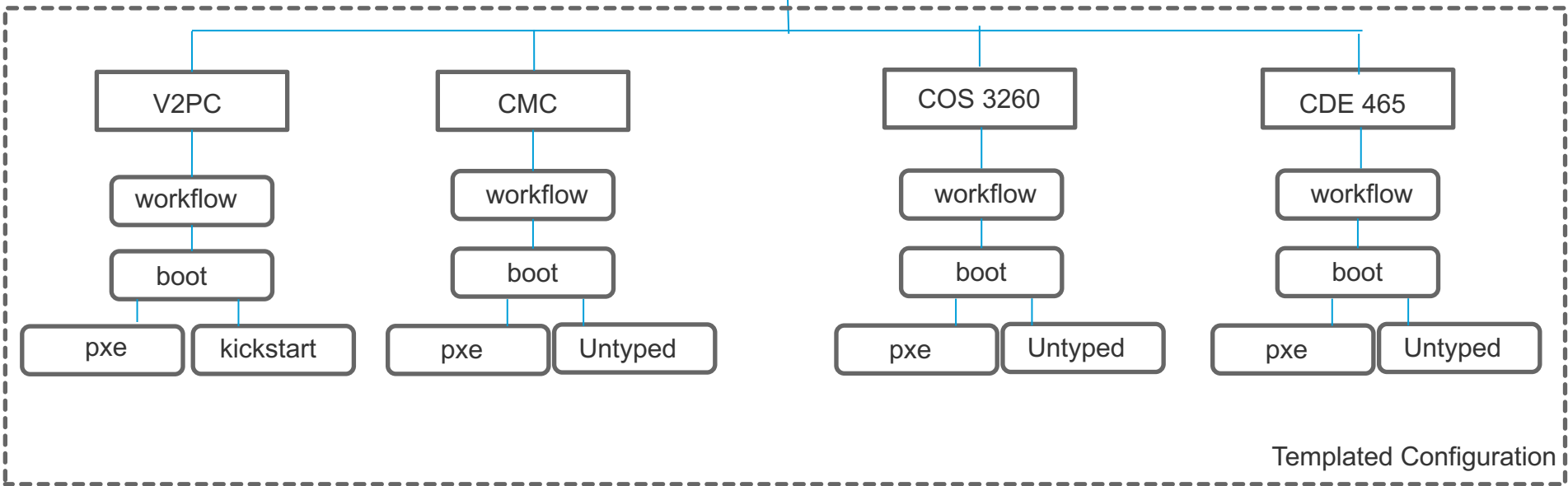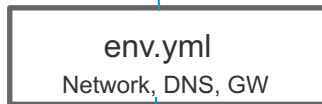# Vaquero Configuration Structure

```
                    ┌─────────────────────────────┐
                    │        Inventory.yml         │
                    │   Host Specific Information   │
                    └─────────────────────────────┘
                                   │
                    ┌─────────────────────────────┐
                    │           env.yml            │
                    │      Network, DNS, GW        │
                    └─────────────────────────────┘
```

V2PC	CMC	COS 3260	CDE 465
workflow	workflow	workflow	workflow
boot	boot	boot	boot
pxe · kickstart	pxe · Untyped	pxe · Untyped	pxe · Untyped
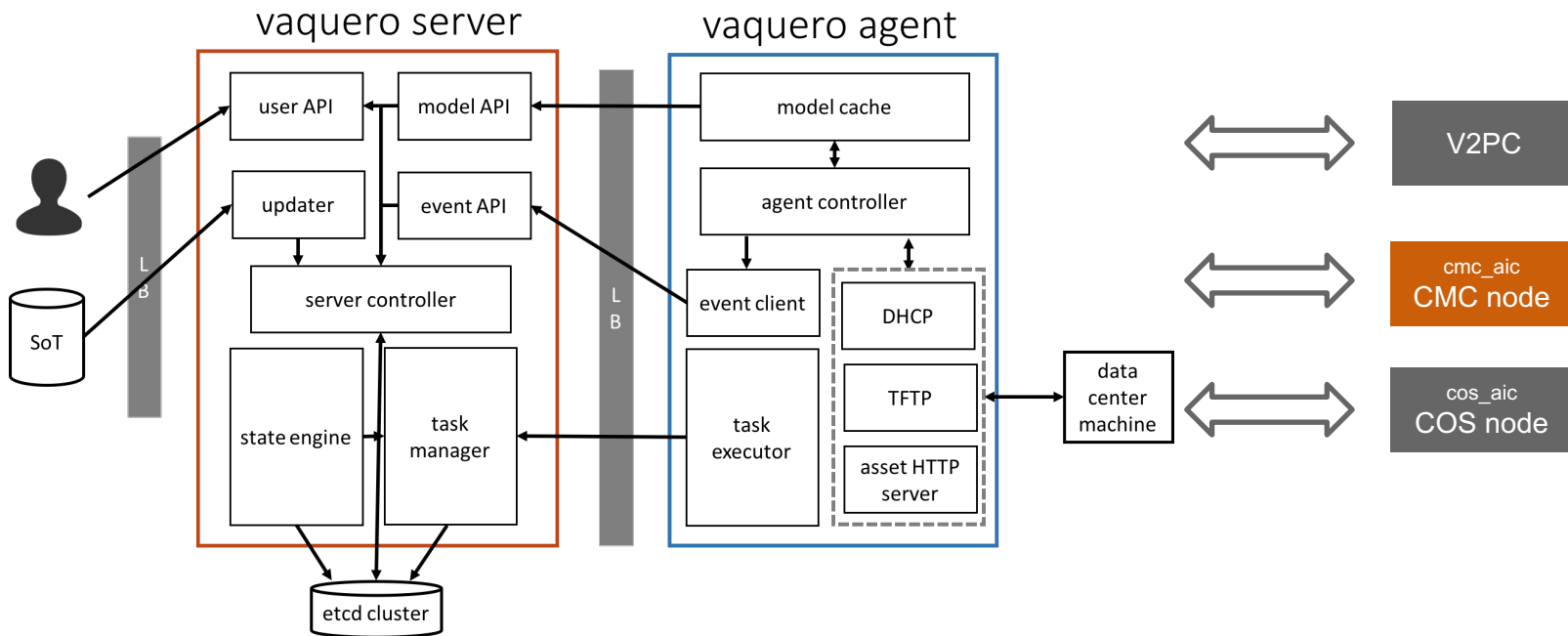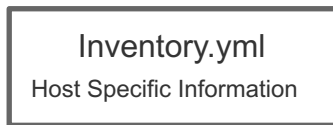
Templated Configuration

Vaquero Configuration structure

File System Structure

```
/home/vaquero/local/
                    ├── assets
                    │   ├── kickstart
                    │   │   ├── v2pc-ks-1.yml
                    │   │   └── v2pc-ks.yml
                    │   └── untyped
                    │       ├── cmcinit.yml
                    │       ├── cosinit-3260.yml
                    │       └── cosinit-465.yml
                    ├── boot
                    │   ├── cmc-boot.yml
                    │   ├── cos3260-boot.yml
                    │   ├── cos465-boot.yml
                    │   └── v2pc-boot.yml
                    ├── os
                    │   ├── cmc-os-pxe.yml
                    │   ├── cos3260-os-pxe.yml
                    │   ├── cos465-os-pxe.yml
                    │   └── v2pc-os-pxe.yml
                    ├── sites
                    │   └── test-site
                    │       ├── env.yml
                    │       └── inventory.yml
                    └── workflows
                        ├── cmc-wf.yml
                        ├── cos3260-wf.yml
                        ├── cos465-wf.yml
                        └── v2pc-wf.yml
```
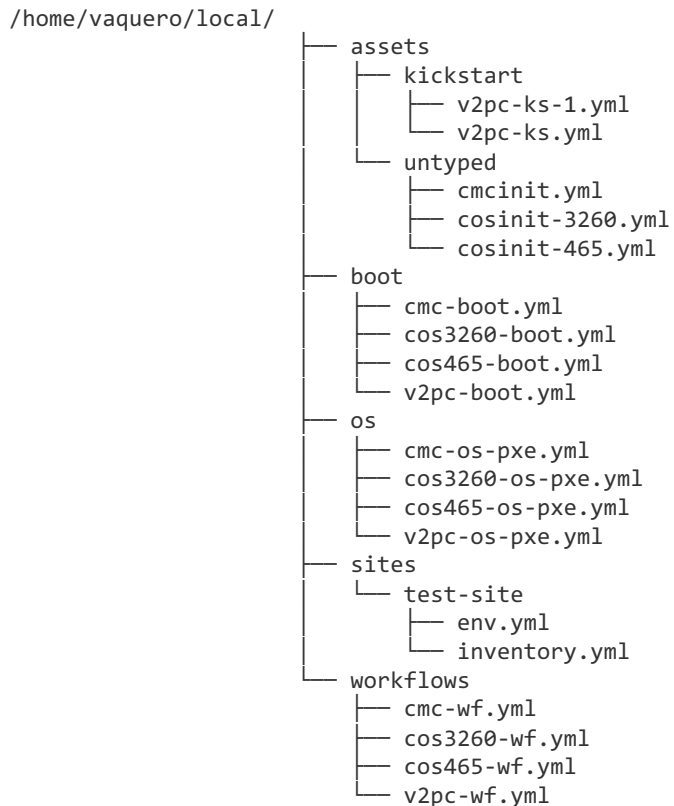
AS Automation Scripts for Vaquero

https://wwwin-github.cisco.com/kerhee/vaquero-auto

High level overview of Cisco COS deployment

Automation script execution points

Vaquero Configuration Setup for Bootstrap environment setup.

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Vaquero cleanup and Functional test validation.

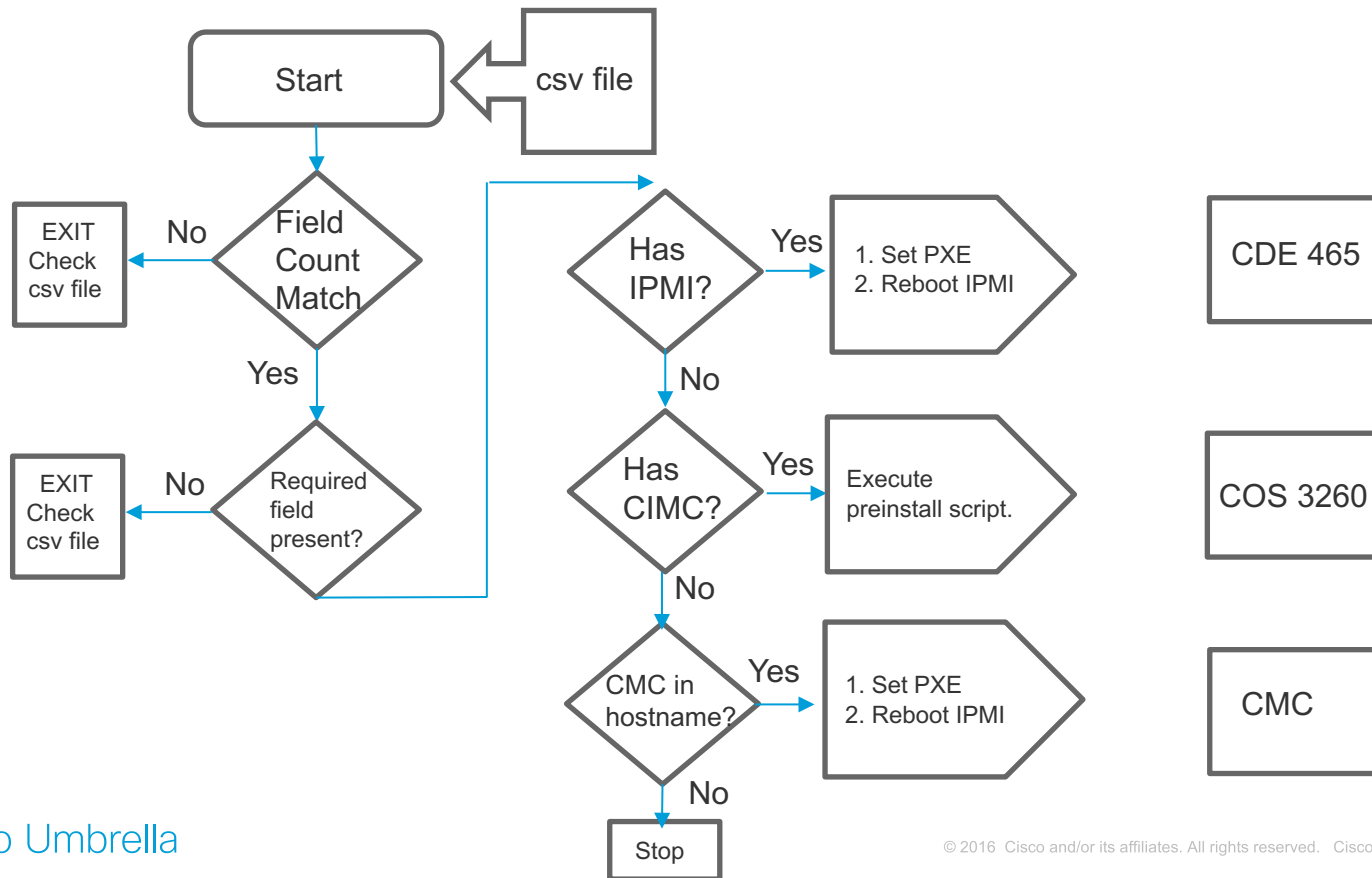Generate-inventory.sh

Pre-vaquero.sh

Clean-inventory.sh
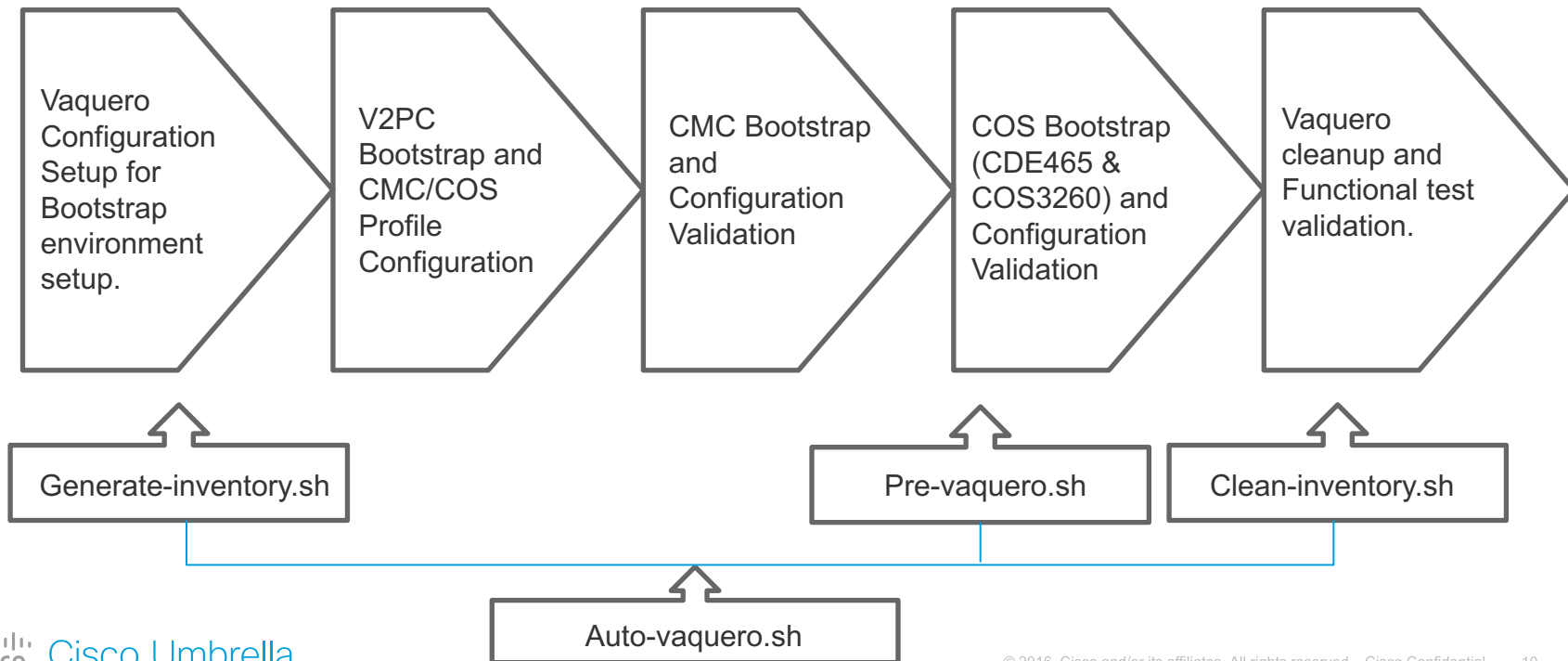
Auto-vaquero.sh

Cisco AS Automation Script: generate-inventory.sh

https://wwwin-github.cisco.com/kerhee/vaquero-auto/tree/master/generate-inventory

Start

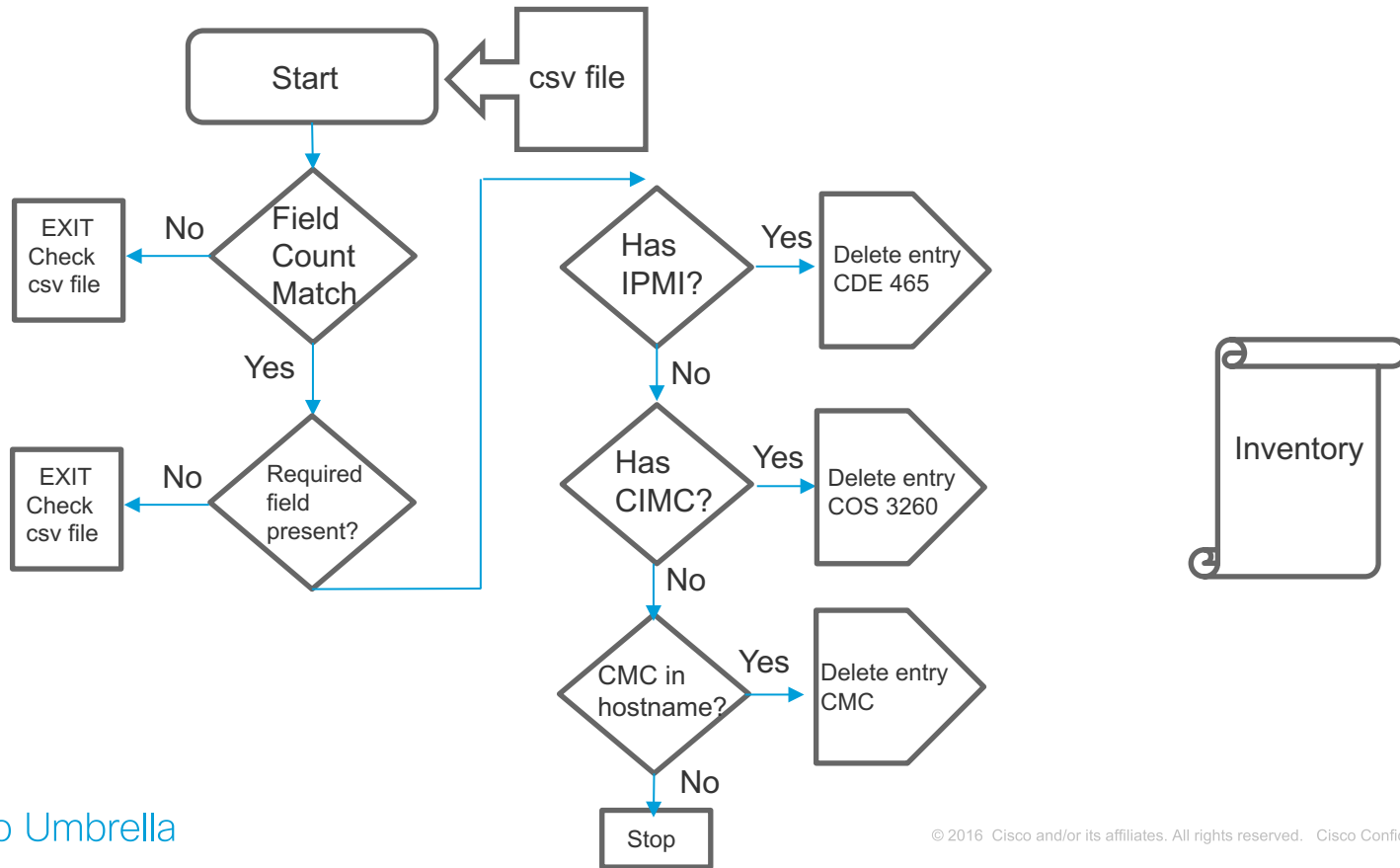csv file

Field Count Match

No → EXIT Check csv file

Yes

Required field present?

No → EXIT Check csv file

Has IPMI?

Yes → Add entry CDE 465

No

Has CIMC?

Yes → Add entry COS 3260

No

CMC in hostname?

Yes → Add entry CMC

No

Stop
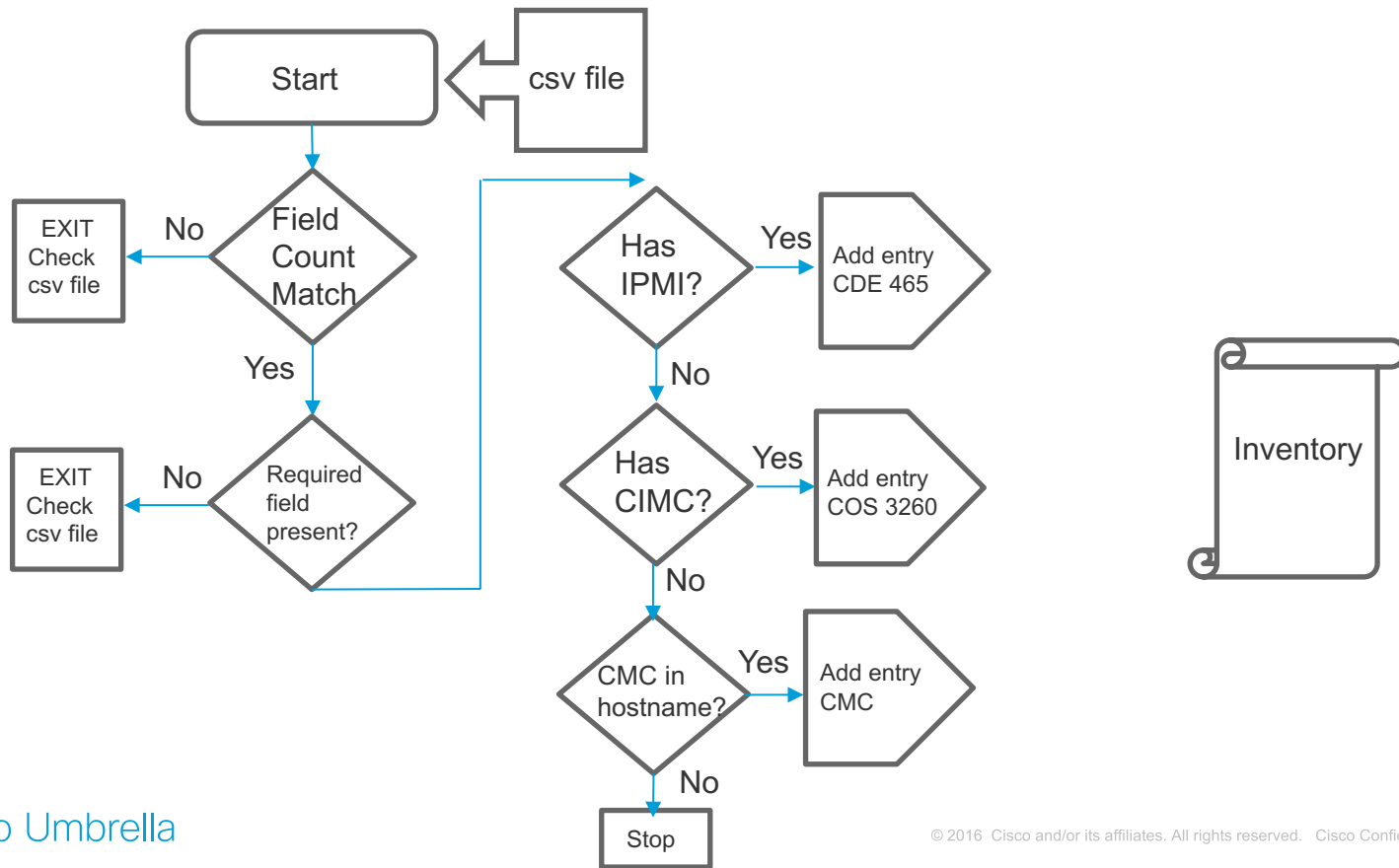
Inventory

Cisco AS Automation Script: pre-vaquero.sh

https://wwwin-github.cisco.com/kerhee/vaquero-auto/tree/master/pre-vaquero

```
                                           ┌──────────┐
                       ┌─────────┐  ◄────── │ csv file │
                       │  Start  │          └──────────┘
                       └─────────┘
```

- Start
- csv file

- Field Count Match
  - No → EXIT Check csv file
  - Yes → Required field present?
    - No → EXIT Check csv file
    - Yes → Has IPMI?
      - Yes → 1. Set PXE 2. Reboot IPMI → CDE 465
      - No → Has CIMC?
        - Yes → Execute preinstall script. → COS 3260
        - No → CMC in hostname?
          - Yes → 1. Set PXE 2. Reboot IPMI → CMC
          - No → Stop

Cisco AS Automation Script: clean-inventory.sh

https://wwwin-github.cisco.com/kerhee/vaquero-auto/tree/master/clean-inventory

Start

csv file

Field Count Match

No → EXIT Check csv file

Yes ↓

Required field present?

No → EXIT Check csv file

Has IPMI?

Yes → Delete entry CDE 465

No ↓

Has CIMC?

Yes → Delete entry COS 3260

No ↓

CMC in hostname?

Yes → Delete entry CMC

No ↓

Stop

Inventory

Cisco Umbrella

Cisco AS Automation Script: auto-vaquero.sh

https://wwwin-github.cisco.com/kerhee/vaquero-auto/tree/master/auto-vaquero
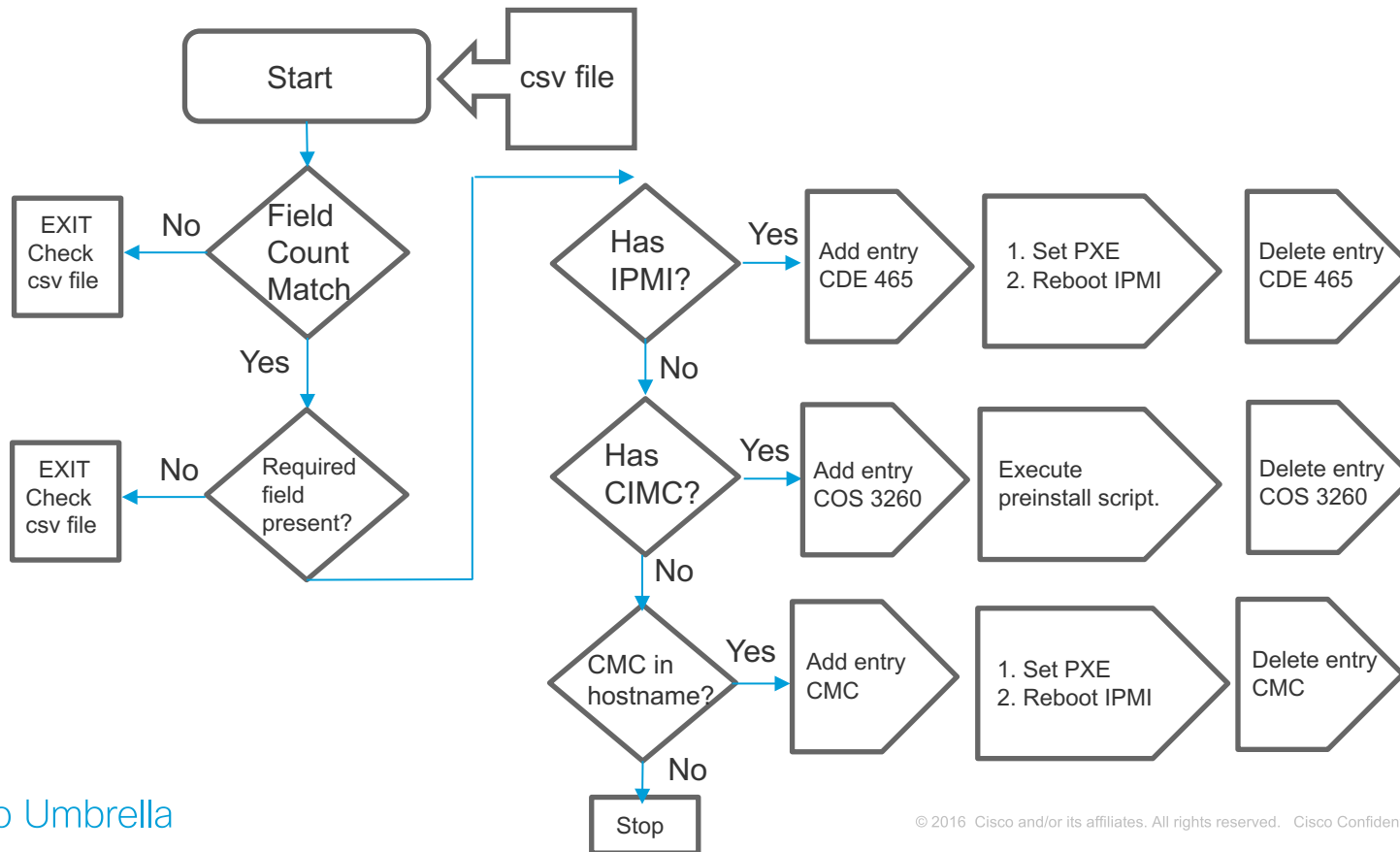
Future development

- Validation check points post deployment.
- Implementation of automated upgrade setup/initialization.