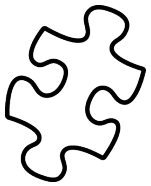
Katello

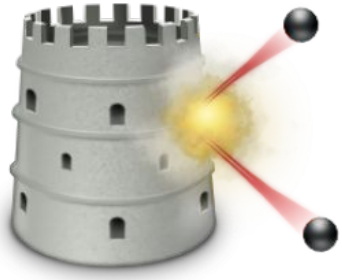
Content Management

Ian Ballou
iballou@redhat.com
IRC: iballou

The Stack

Foreman



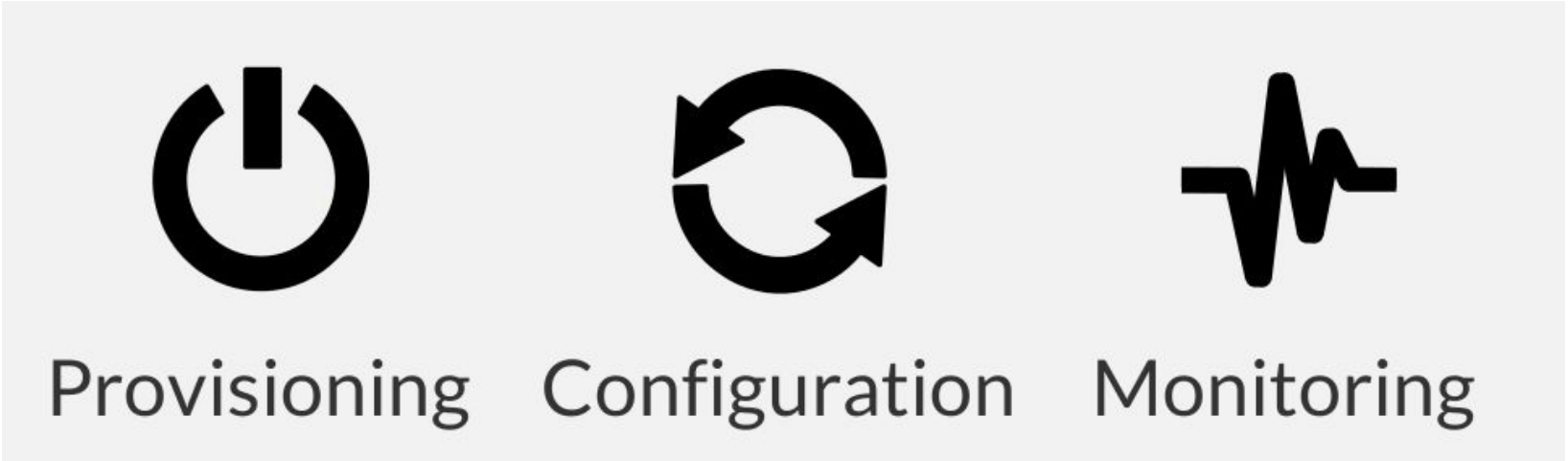


Katello

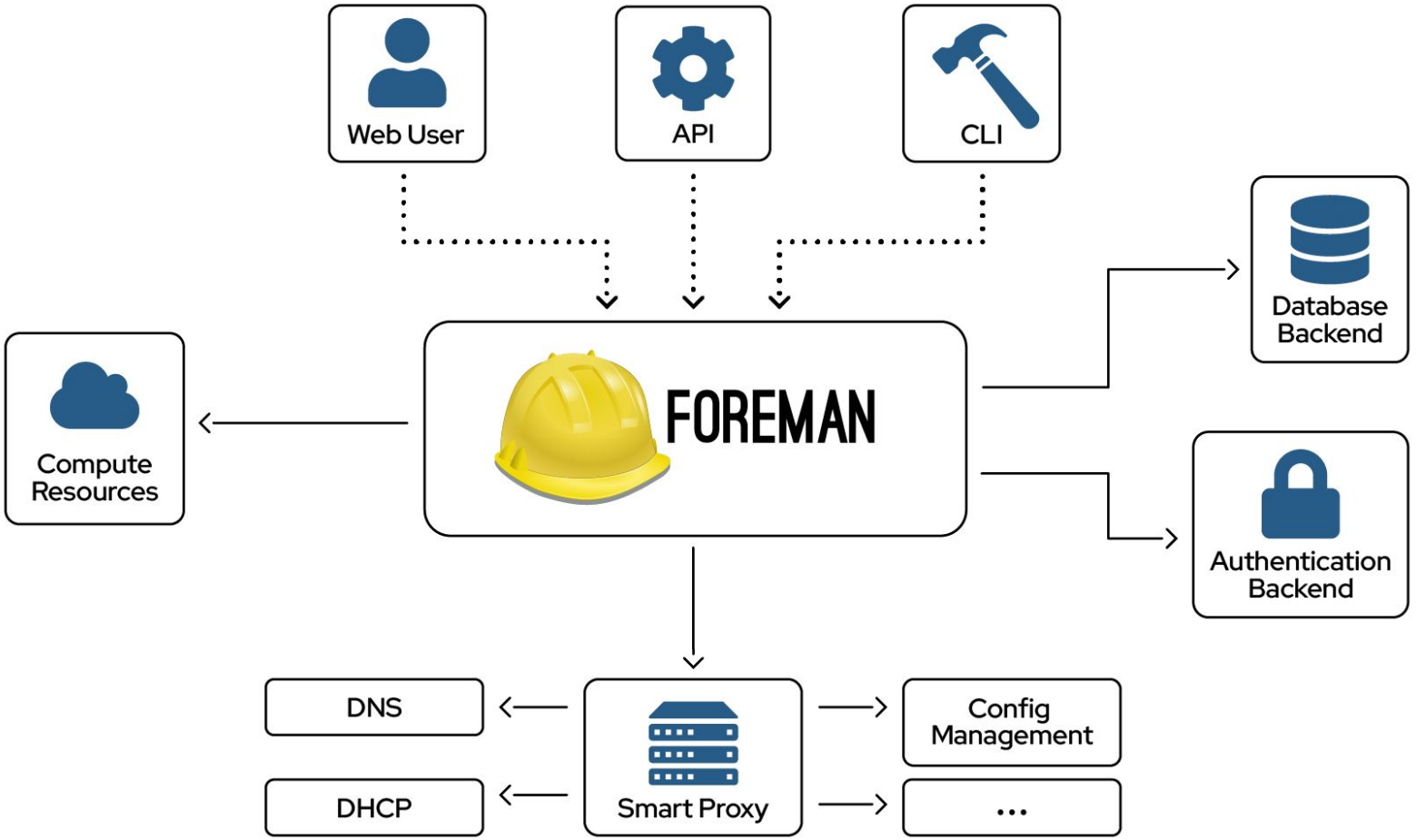
Candlepin

Pulp

Foreman

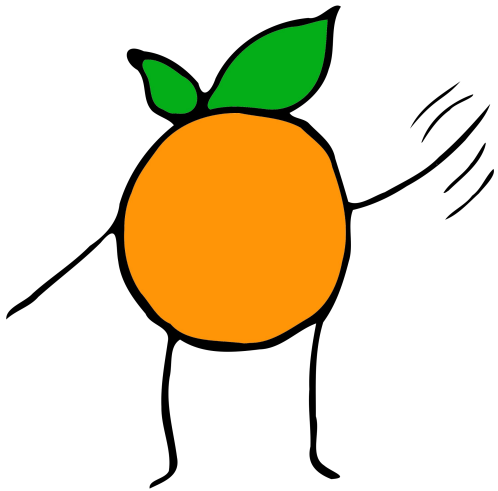


Foreman


Web User
API
CLI
Database Backend
Compute Resources
FOREMAN
Authentication Backend
DNS
DHCP
Smart Proxy
Config Management
...

Pulp

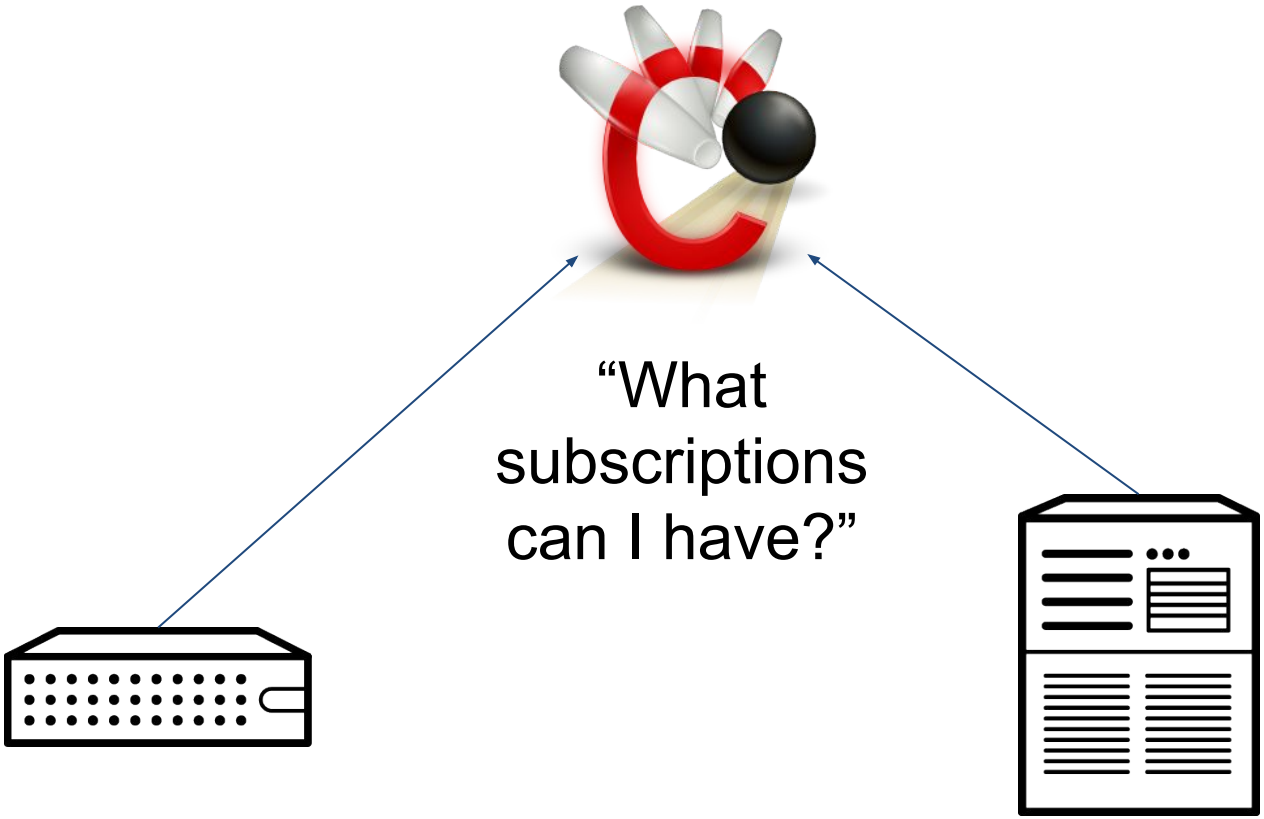
“Pulp fetches, uploads, organizes, and distributes software packages...”



- Ansible Playbooks
- Arbitrary files
- Container images
- RPM content

… and more!

Candlepin



Core Katello

Terminology

Content: Software packages, like RPMs

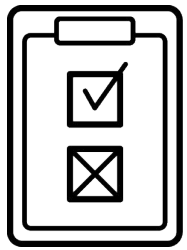
Repository: A collection of content

Product: A collection of repositories

Hosts: Servers managed by Katello

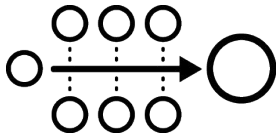
Katello

Content Management



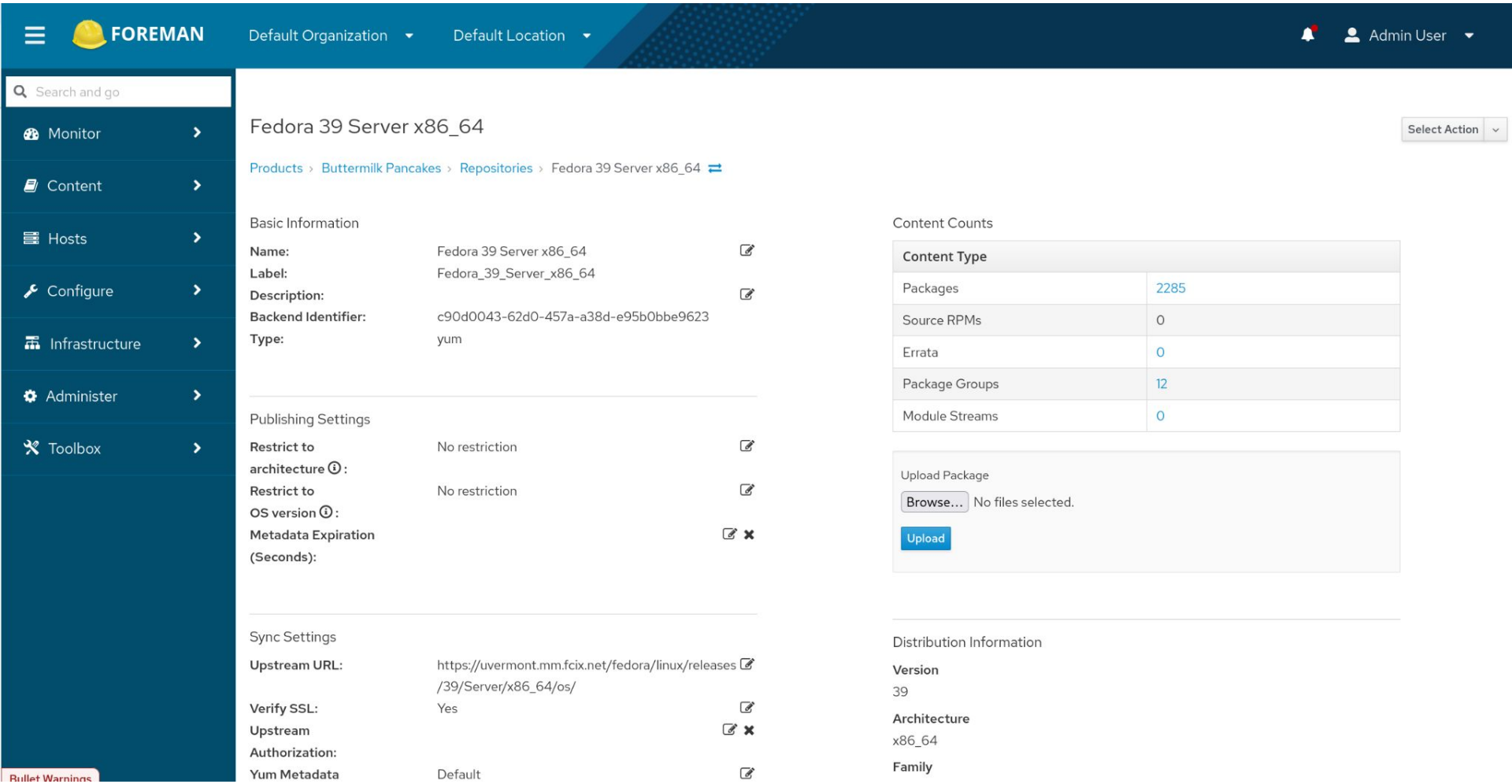
Subscription Management

Patch Management



Lifecycle Management

Katello Repositories



Katello Repositories

Sync Settings

Upstream URL: https://uvermont.mm.fcix.net /fedora/linux/releases/39/Server /x86_64/os/

Published At: https://centos8-katello-devel-stable.example.com/pulp/content /Default_Organization/Library /custom/Buttermilk_Pancakes /Fedora_39_Server_x86_64/

Distribution Information

Version
39

Architecture
x86_64

Family
Fedora

Variant
Server

Bootable
true

Katello Repositories

Content Counts

Content Type	
Packages	2285
Source RPMs	0
Errata	0
Package Groups	12
Module Streams	0

Upload Package

Browse... No files selected.

Upload

Download Policies

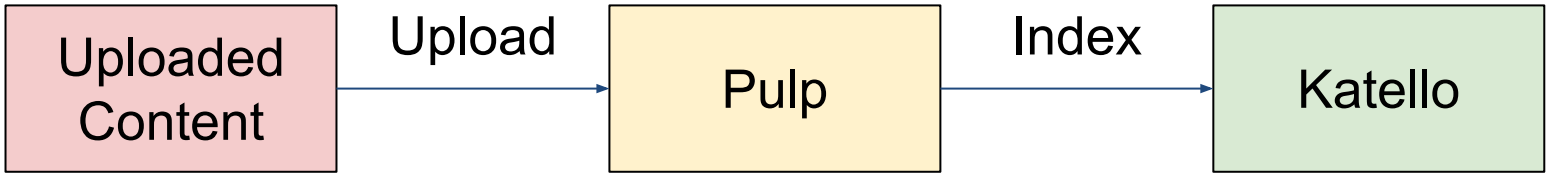
On Demand	Immediate	Streamed
Content is downloaded only when requested	Content is downloaded at synchronization time	Content is never cached, only passed from upstream to client

Mirroring Policies

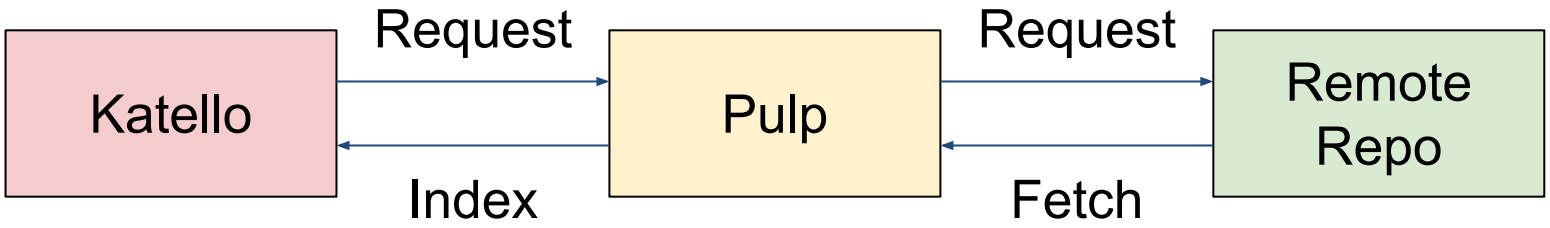
Additive	Content Only	Complete Mirroring
Repo metadata is generated Existing content is not cleared during synchronization	Repo metadata is generated Existing content is cleared during synchronization	Entire repository, including metadata, matches upstream

Katello Repositories

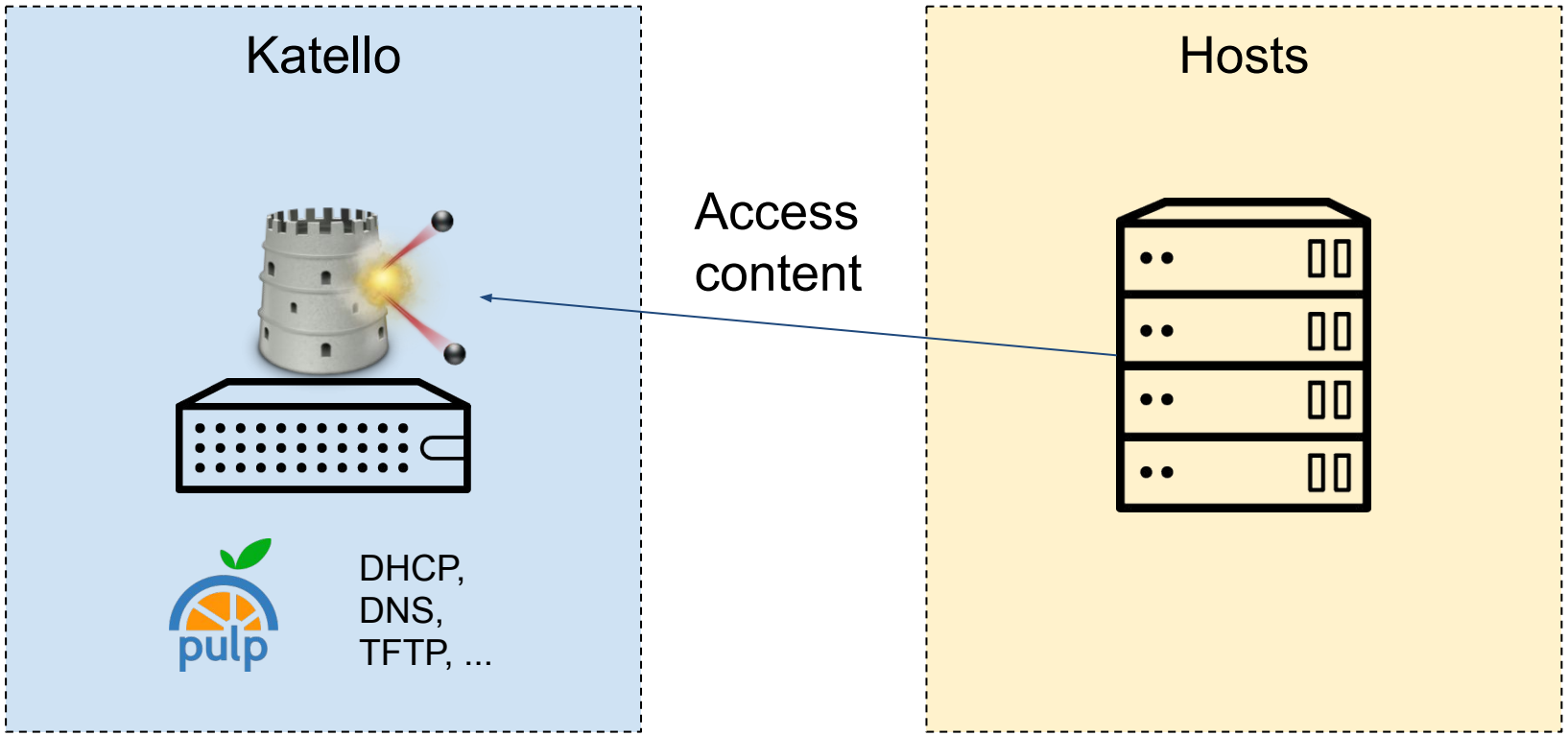
Upload scenario:



Sync scenario:



Katello Repositories



Content Views

Content View: “My Custom View”

Repositories

- Appstream
- BaseOS
- BusyBox Container Image
- Custom File Repo

Filters

- **Exclude Yum Packages:**
  - Wordnet-3.0-21
  - ImageMagick*
- **Include Container Tags:**
  - latest

Content Views

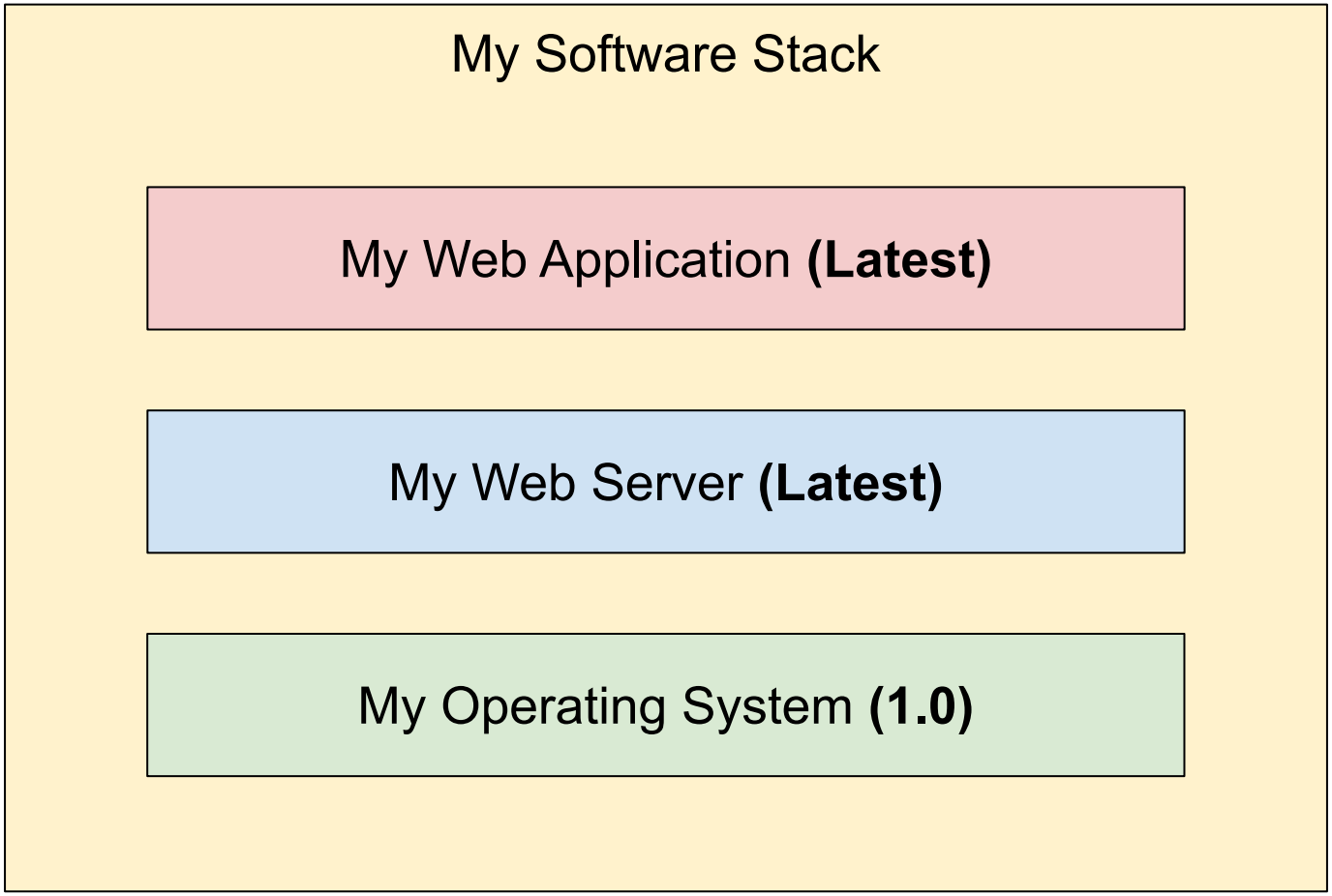
Publish...

Content View Versions

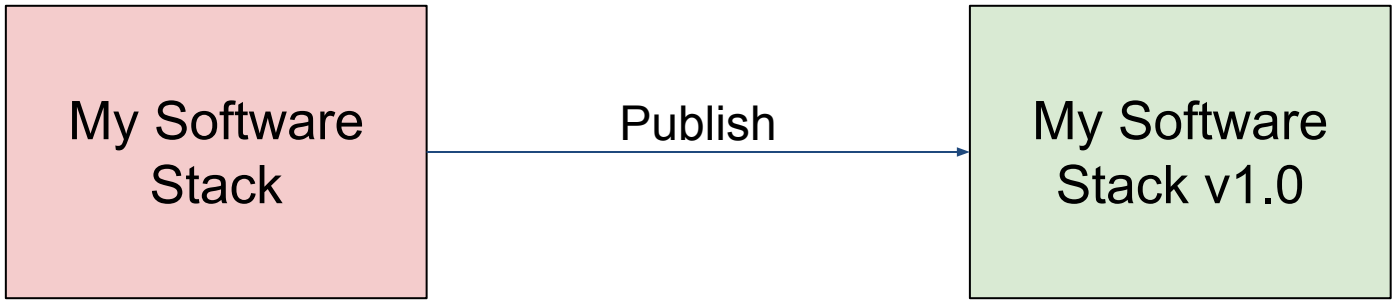
My Custom View Version 1.0

Yum Content	Container Content	File Content
All CentOS content except wordnet-3.0-21 and ImageMagick*	library/busybox:latest	All files in “Custom File Repo”

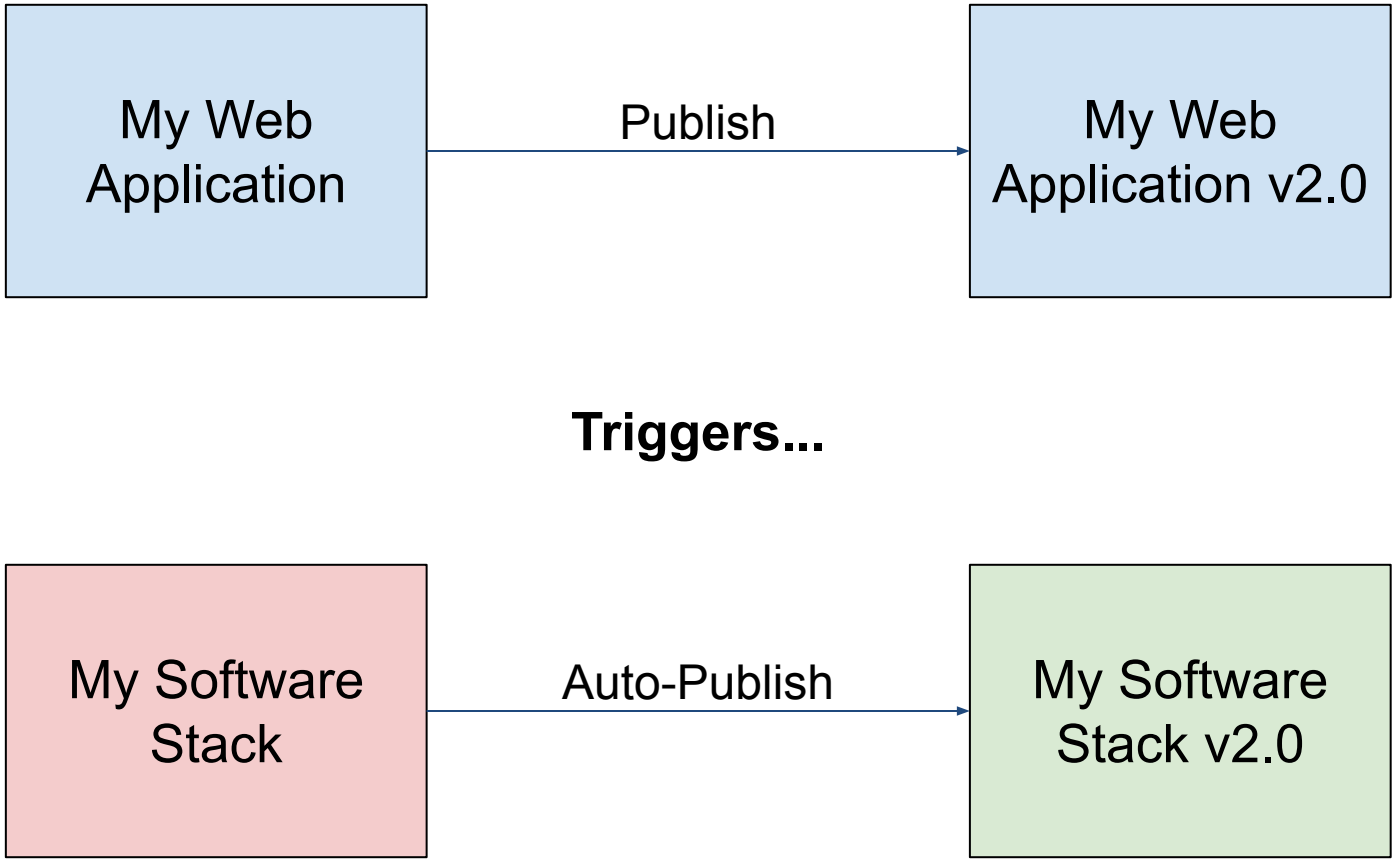
Advanced CVs: Composite Content Views



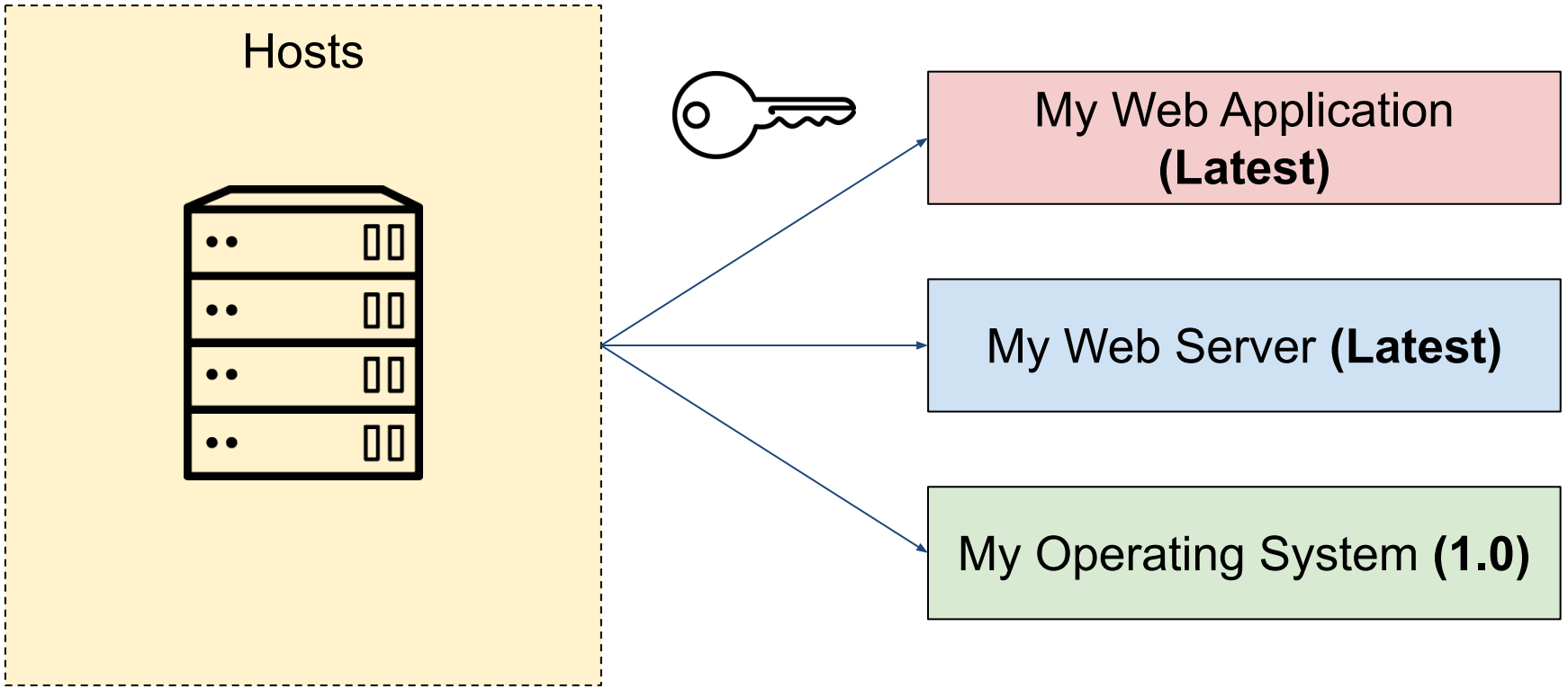
Advanced CVs: Composite Content Views



Composite Content View Auto Publish

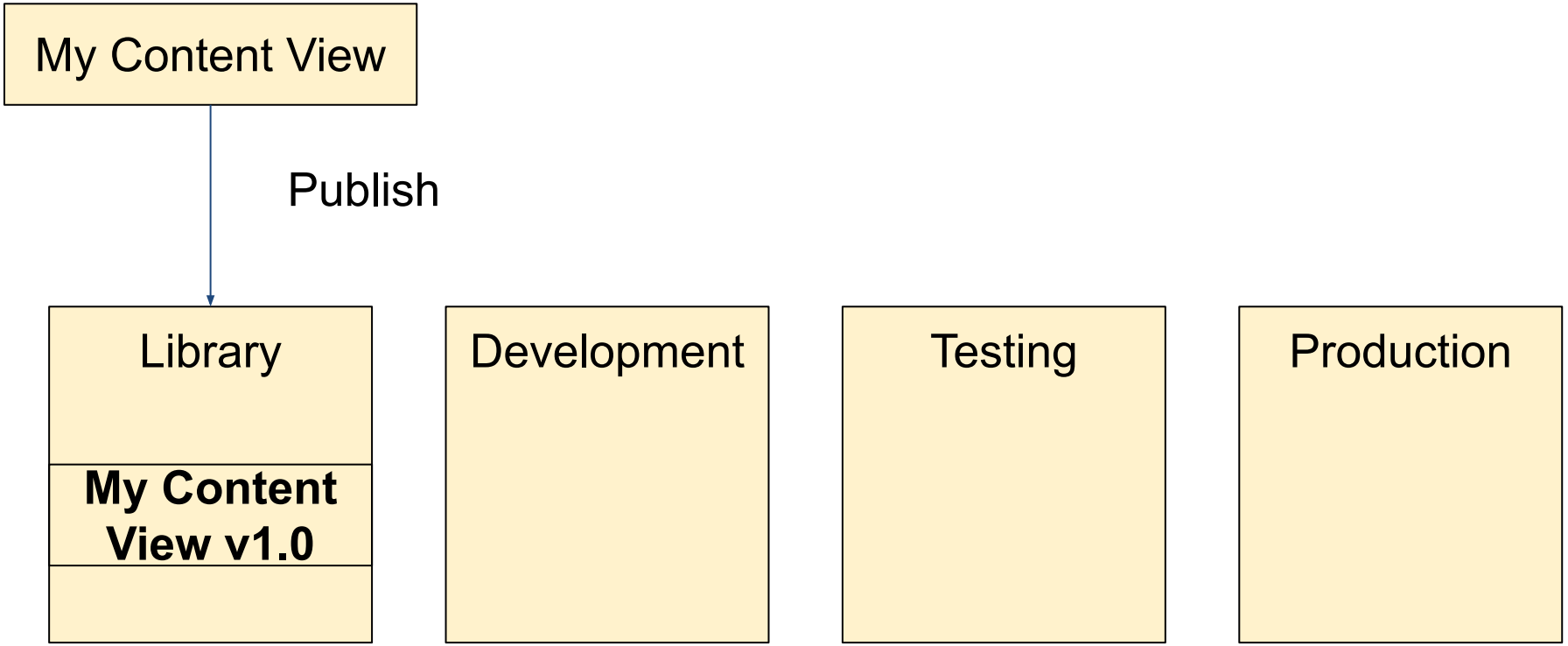


Modern Management: Multi-CV

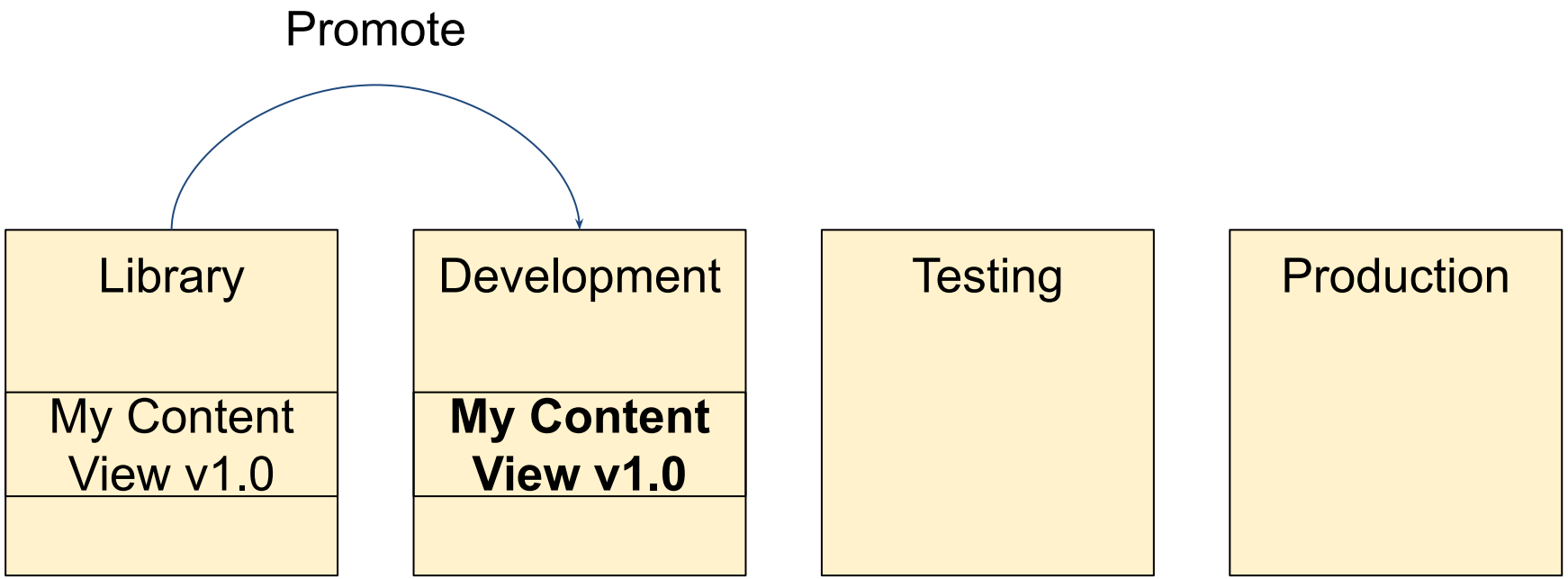


Hosts and activation keys now support registration to multiple content view environments!

Lifecycle Environments



Lifecycle Environments

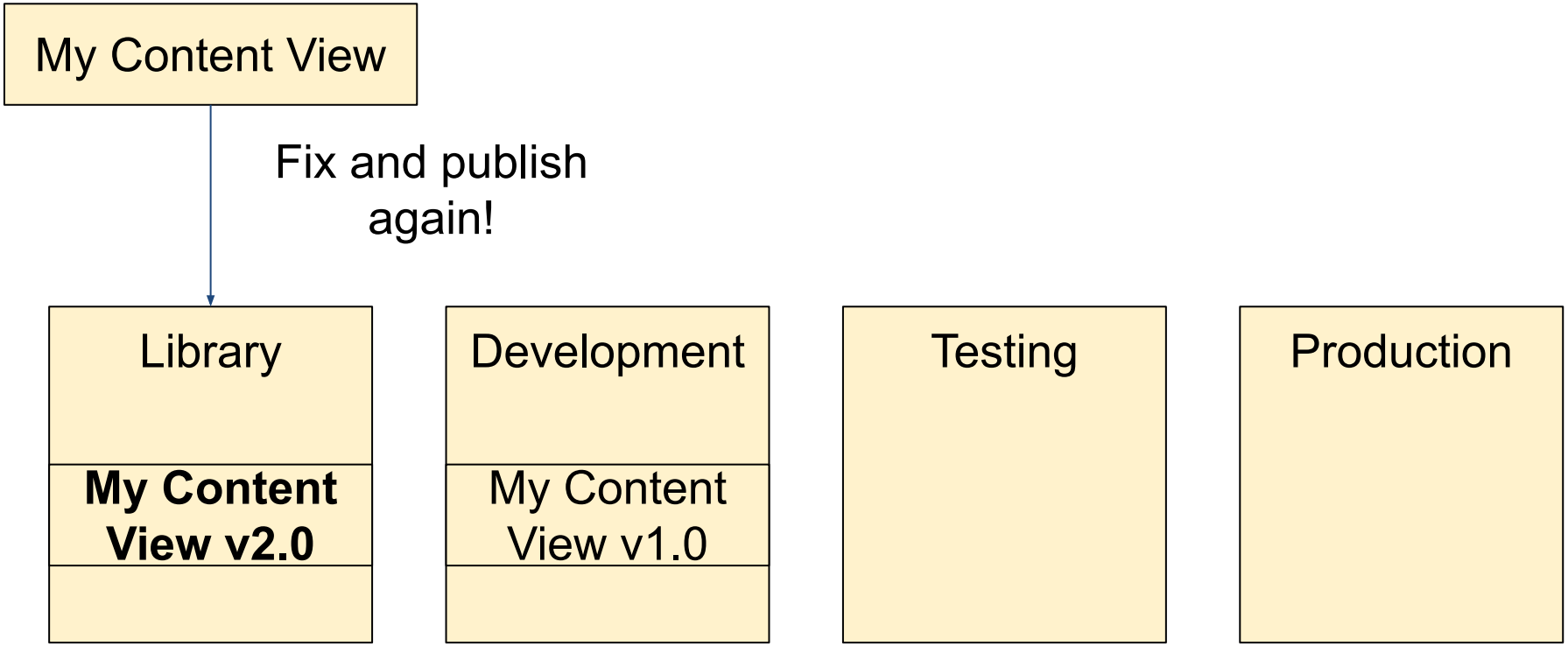


Lifecycle Environments

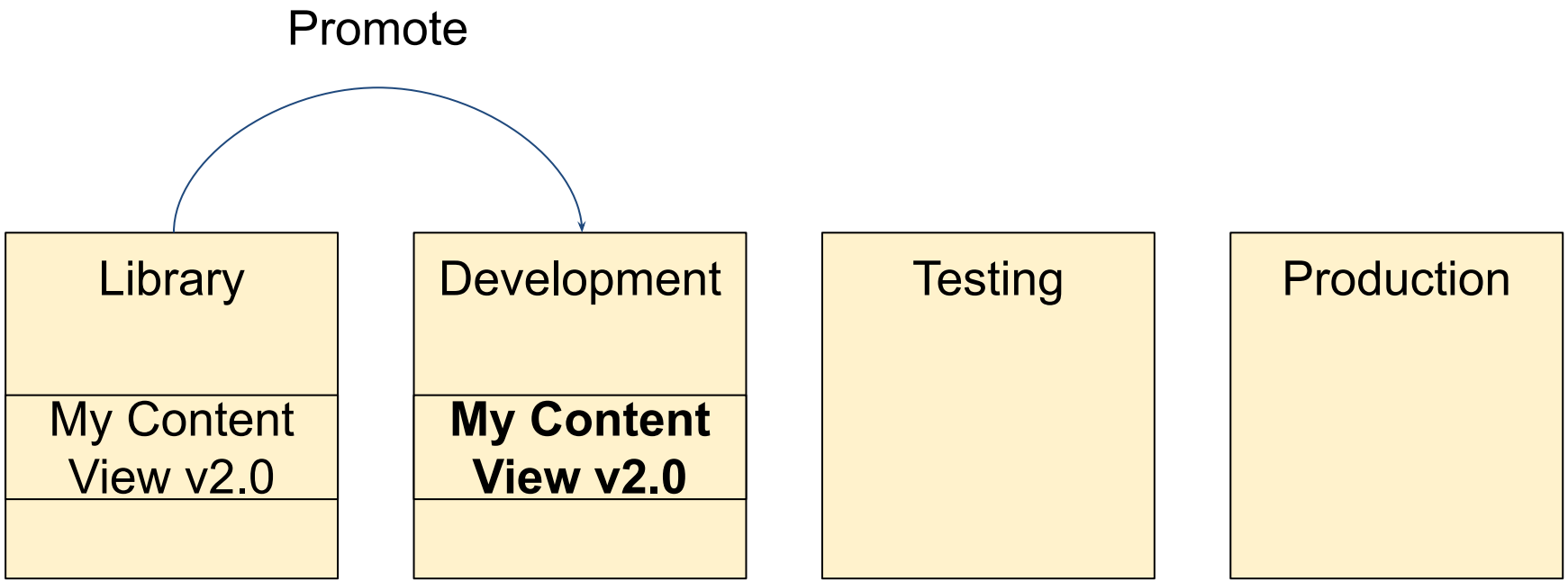
Oops, forgot a dependency!

Library	Development	Testing	Production
My Content View v1.0	My Content View v1.0		

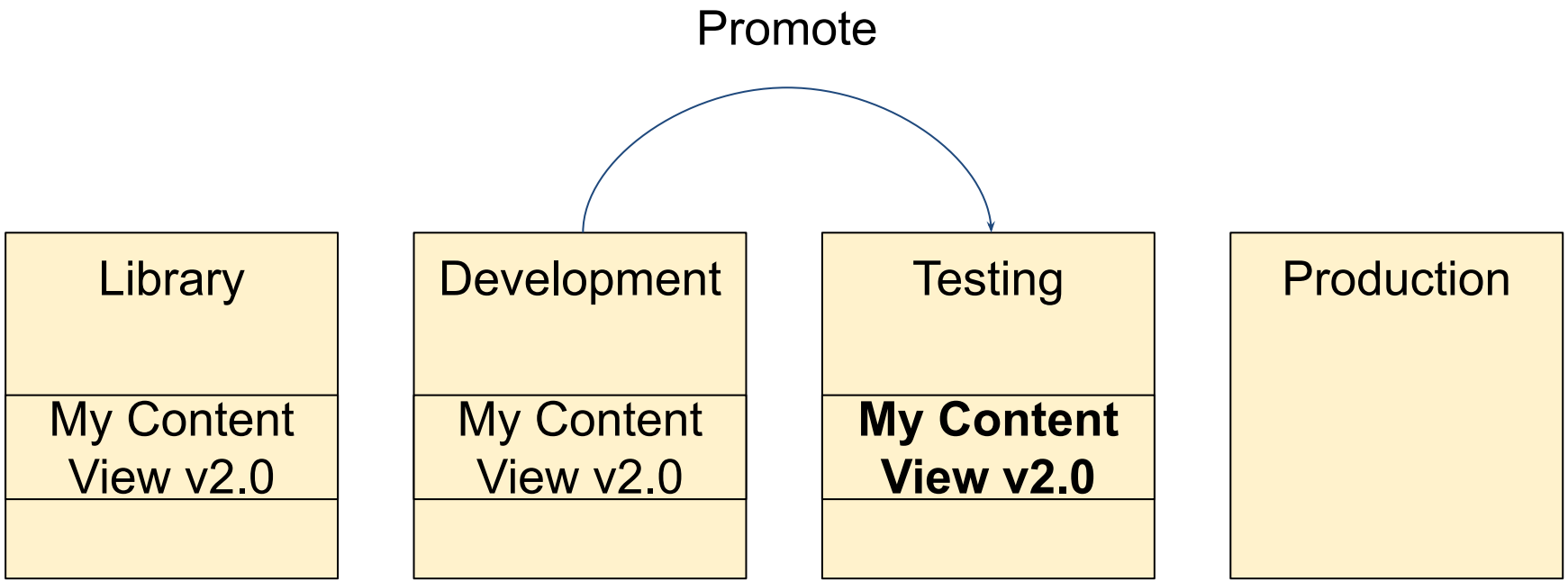
Lifecycle Environments



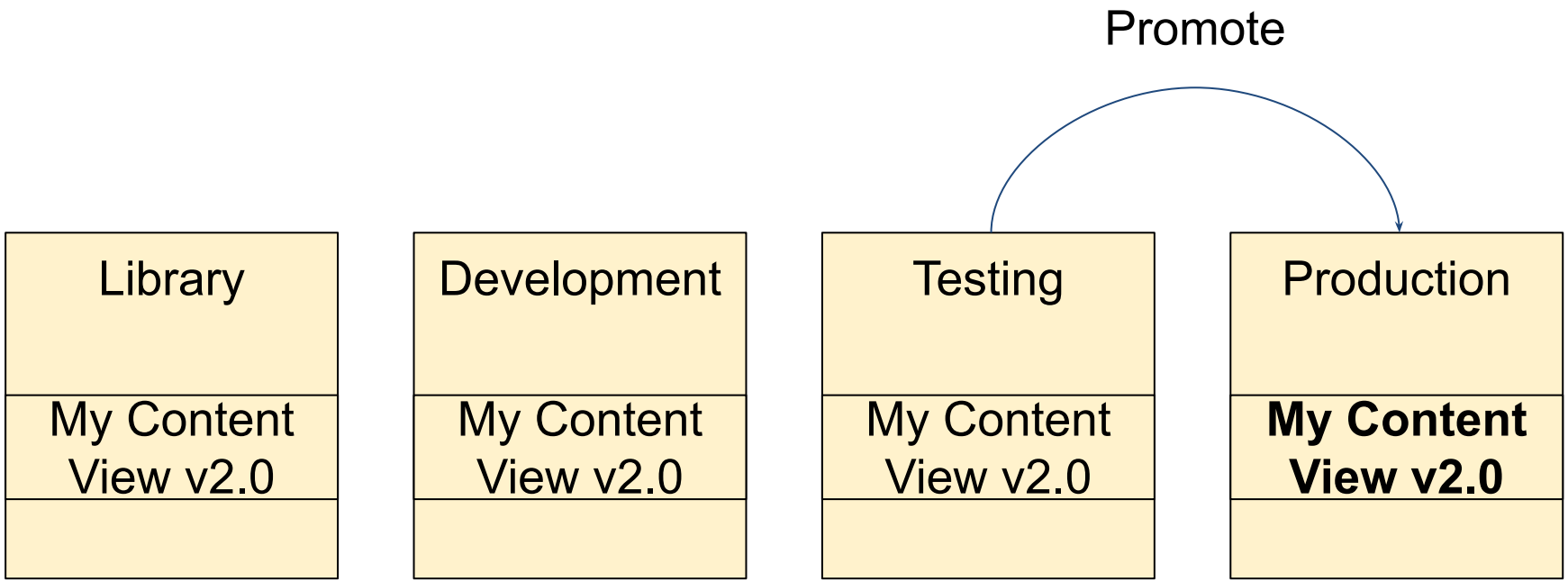
Lifecycle Environments



Lifecycle Environments



Lifecycle Environments

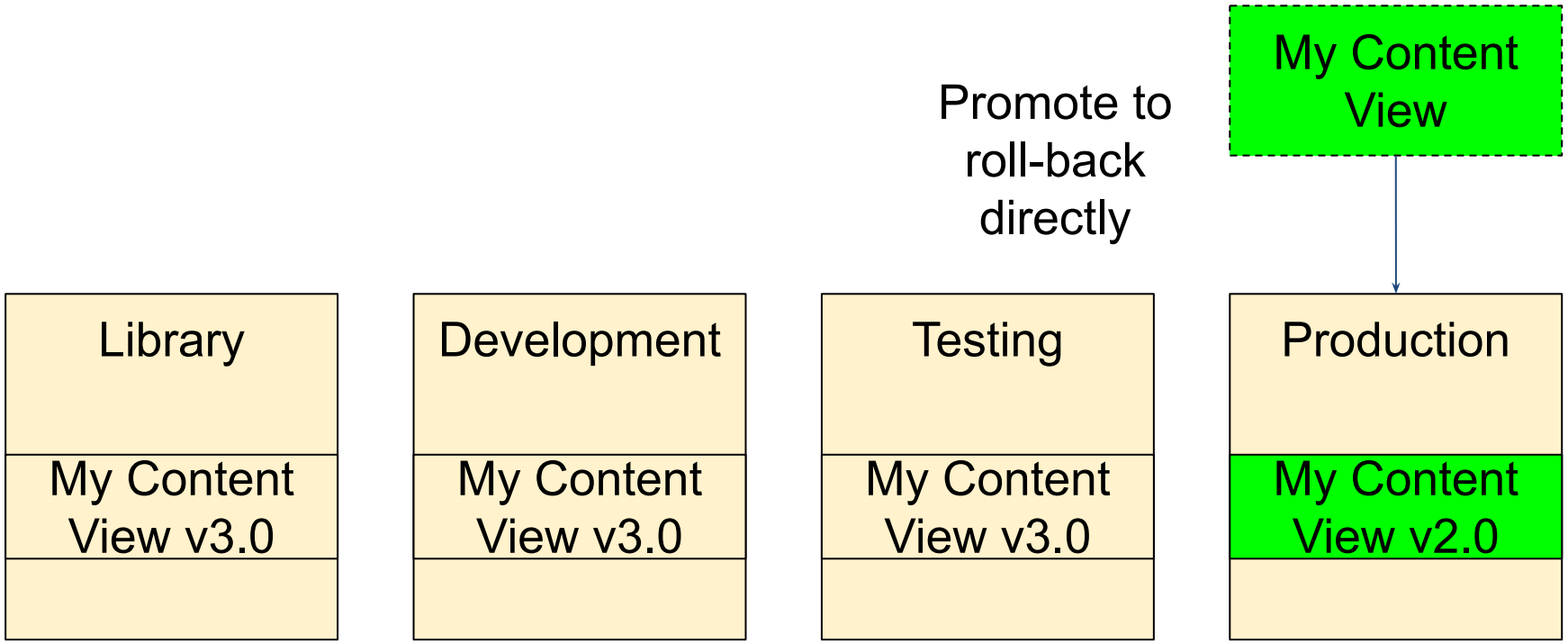


Lifecycle Environments

Oops, Production failure!

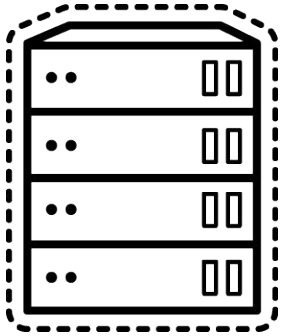
Library	Development	Testing	Production
My Content View v3.0	My Content View v3.0	My Content View v3.0	My Content View v3.0

Lifecycle Environments



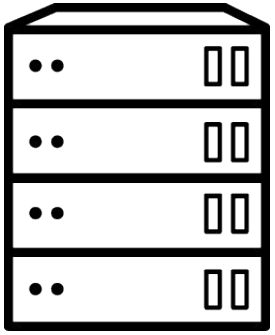
Lifecycle Environments in Practice

Development



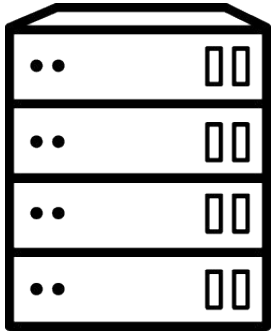
My Content View v3.0

Testing



My Content View v3.0

Production



My Content View v2.0

Hosts

Hosts

rhel9-2.cannolo.example.com RedHat 9.2 x86_64

Created 8 days ago by Anonymous Admin (updated 23 hours ago)

Schedule a job | Edit

Overview | Details | Content | Parameters | Traces | Ansible | Reports

Host status

7 | 1 | 2 | 2

Manage all statuses

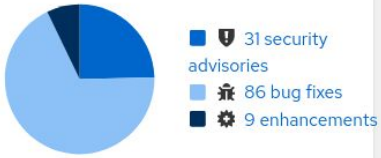
Content view details

Content view

Default Organization View Library

Errata Applicable | Installable

126 errata



Details

IPv6 address

Not available

IPv4 address

192.168.122.73

MAC address

52:54:00:38:a1:d7

Host group

Not available

Host owner

Admin User

Comment

Not available

Recent jobs

Finished | Running | Scheduled

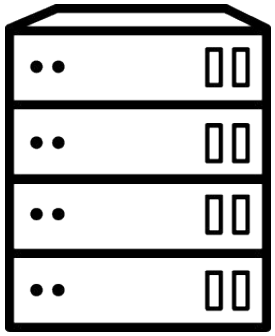
Module enable maven:3.8	3 days ago	failed
Install errata errata_id ^ (...	3 days ago	succeeded
Upgrade package(s) aut...	3 days ago	succeeded

Recent communication

Last configuration report: Never

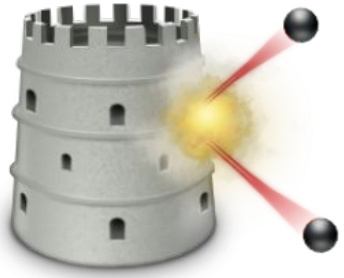
Last check-in: 20 minutes ago

Activation Keys

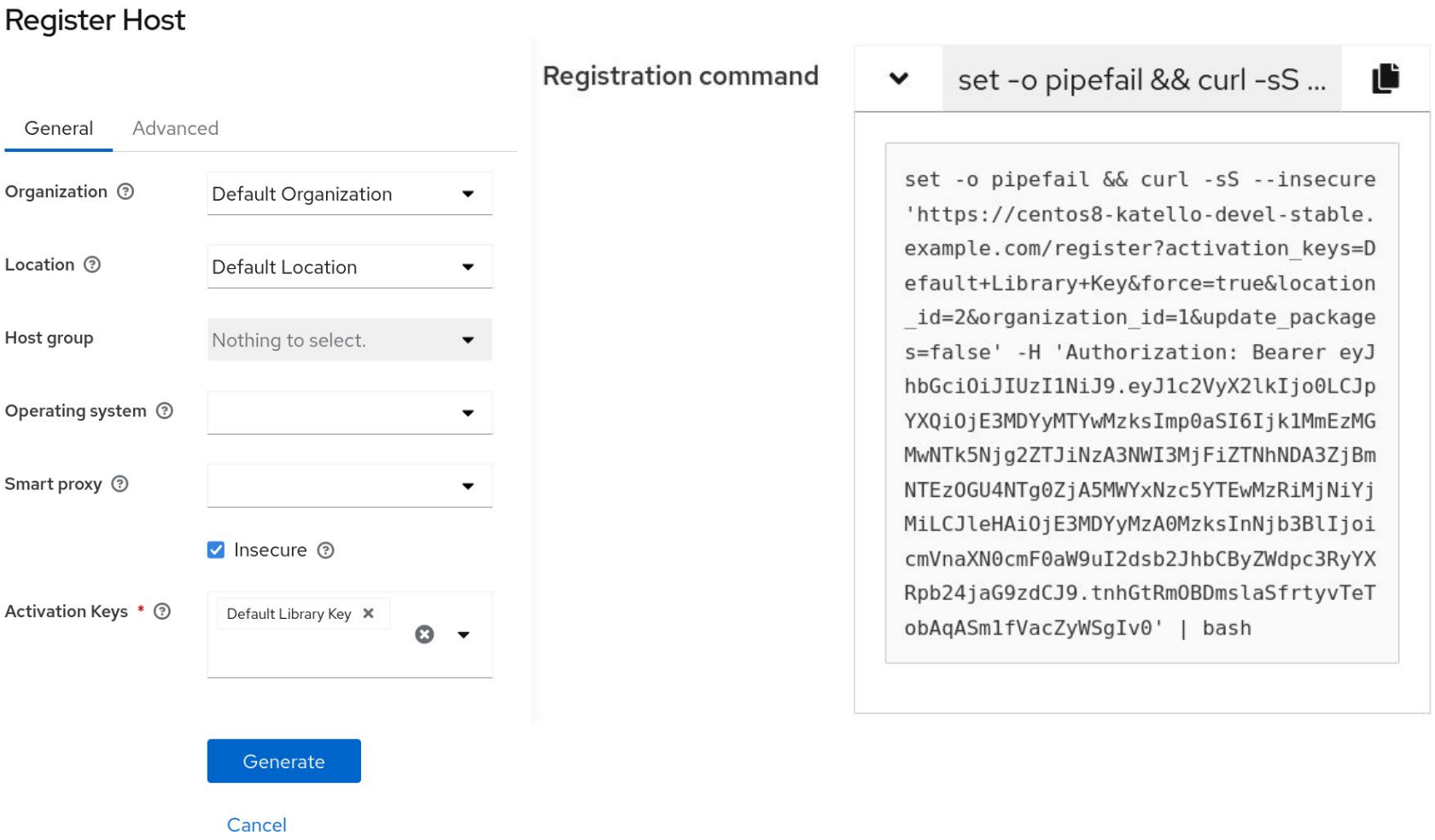


Activation Key

- Subscriptions
- ~~Lifecycle Environment~~
- ~~Content View~~
- Content View Environments
- Repositories

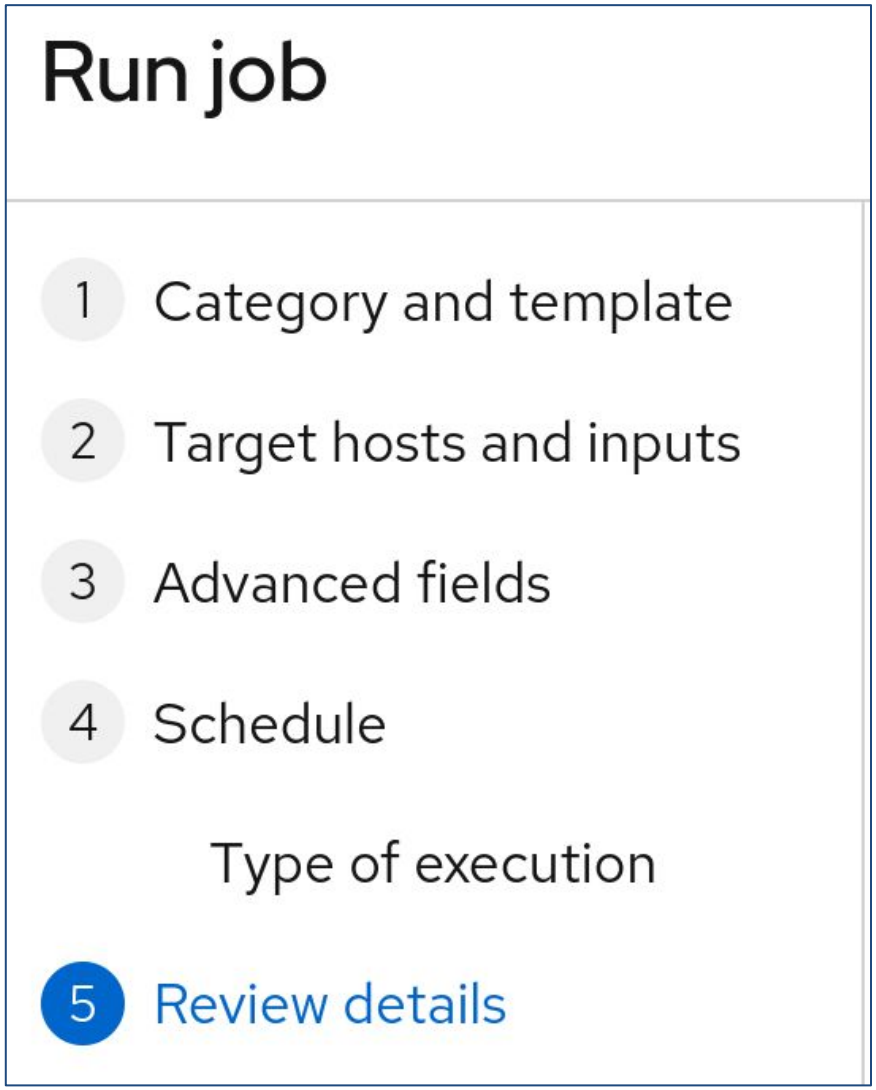


Global Registration

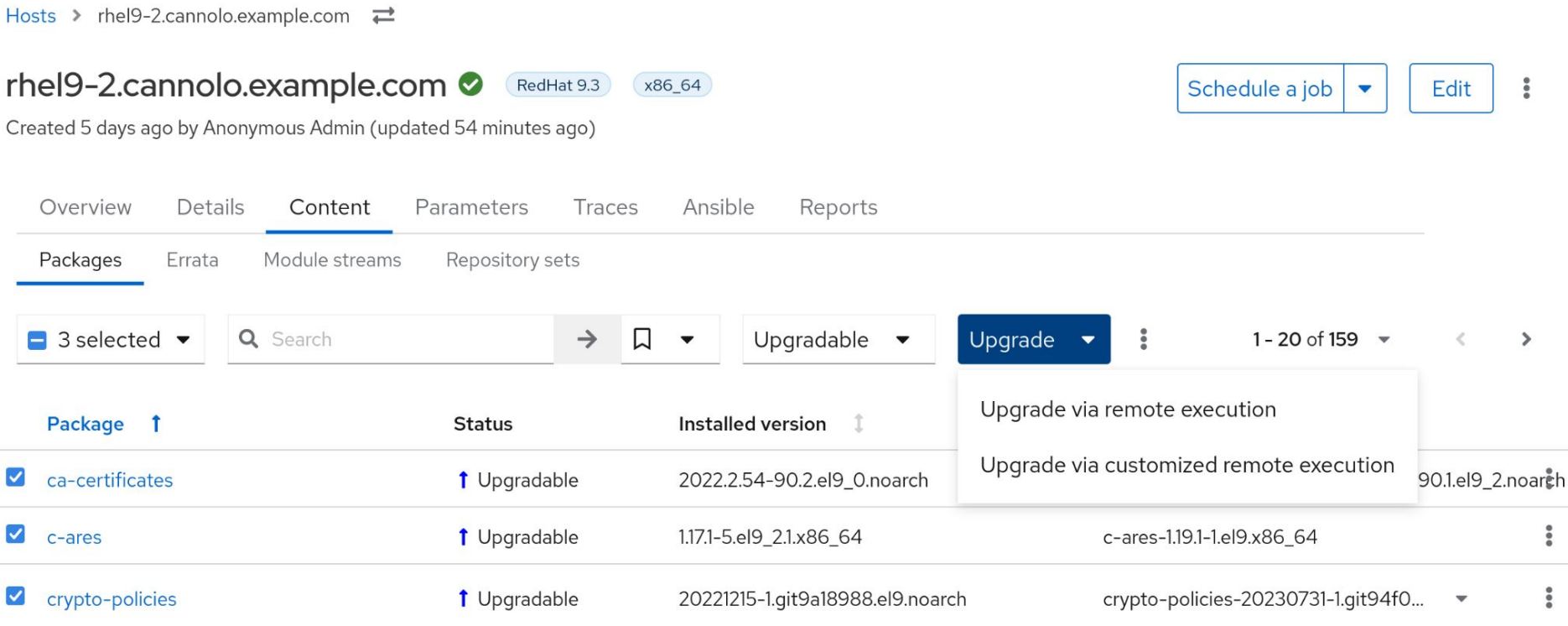


Remote Execution

- Run shell commands
- Filter target hosts
- Make a schedule
- Receive failure reports



Remote Execution



Errata

Errata ID	Title	Type	Content Host Counts	Updated
RHBA-2024:0076	tzdata bug fix and enhancement update	Bug Fix Advisory - None	1 Applicable, 1 Installable	2024-01-08
RHBA-2023:7752	sssd bug fix update	Bug Fix Advisory - None	1 Applicable, 1 Installable	2023-12-12
RHBA-2023:7748	firewalld bug fix update	Bug Fix Advisory - None	1 Applicable, 1 Installable	2023-12-12
RHSA-2023:7749	Important: kernel security update	Security Advisory - Important	1 Applicable, 1 Installable	2023-12-12

Errata

	Errata	Type	Severity	Installable	Synopsis	Published date
⌄ ☐	RHSA-2023:7749	Security	Important	✔ Yes	Important: kernel s...	12/11/2023

- Bugs 4
- CVEs 4
- Packages 26
- Module streams 0

Synopsis

Important: kernel security update

Summary

An update for kernel is now available for Red Hat Enterprise Linux 9. Red Hat Product Security has rated this update as having a security impact of Important. A Common Vulnerability Scoring System (CVSS) base score, which gives a detailed severity rating, is available for each vulnerability from the CVE link(s) in the References section.

0 of 3

	Power	Name	OS	Owner	Installable updates	Actions
☐	⏻	centos8-katello-devel-stable.exa...	CentOS Stream 8		0 ⚠ 0 🐞 0 ✚ 0 📦	Edit
☐	⏻	rhel9-2.cannolo.example.com	RedHat 9.3	Admin...	31 ⚠ 86 🐞 9 ✚ 281 📦	Edit
☐	⏻	rocky8-proxy-devel.cannolo.exa...	Rocky Linux 8.5		0 ⚠ 0 🐞 0 ✚ 0 📦	Edit

Incremental Update

Critical security update needed!

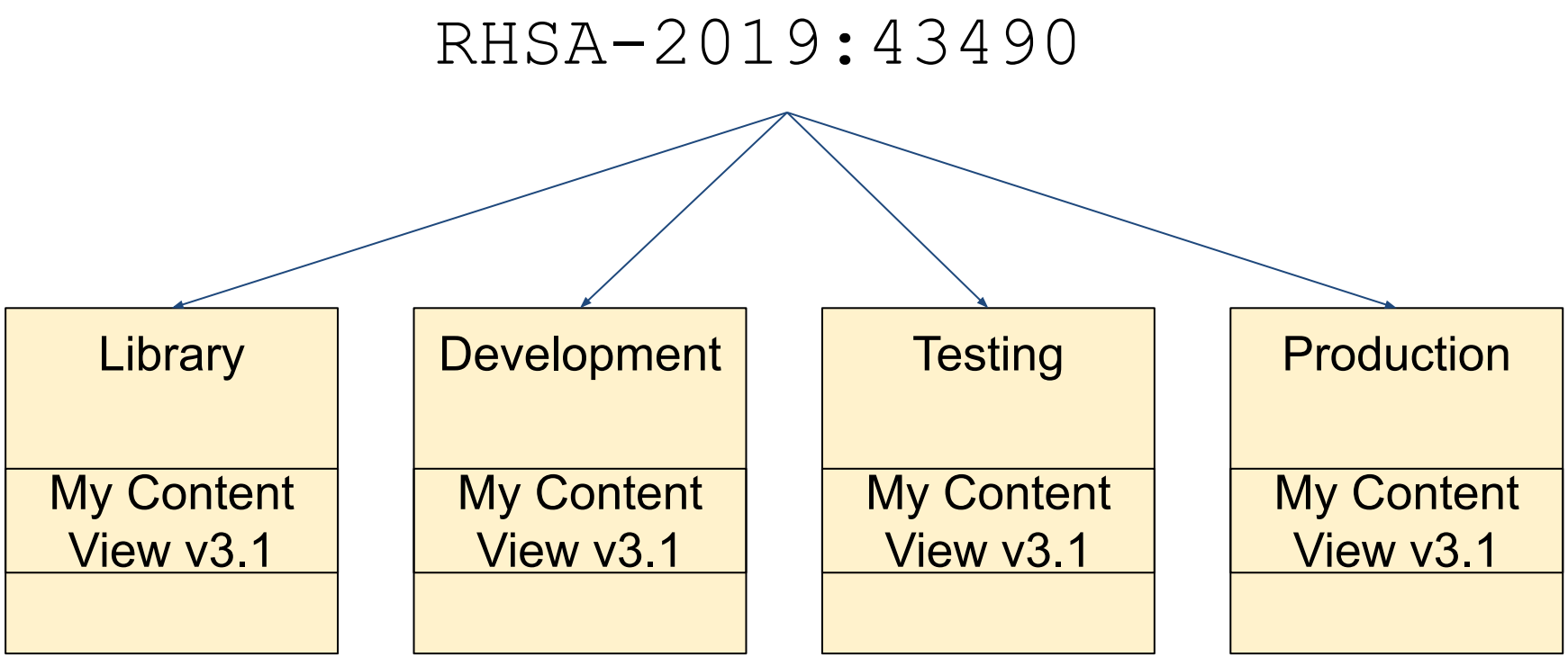
Critical security update needed!

Critical security update needed!

Critical security update needed!

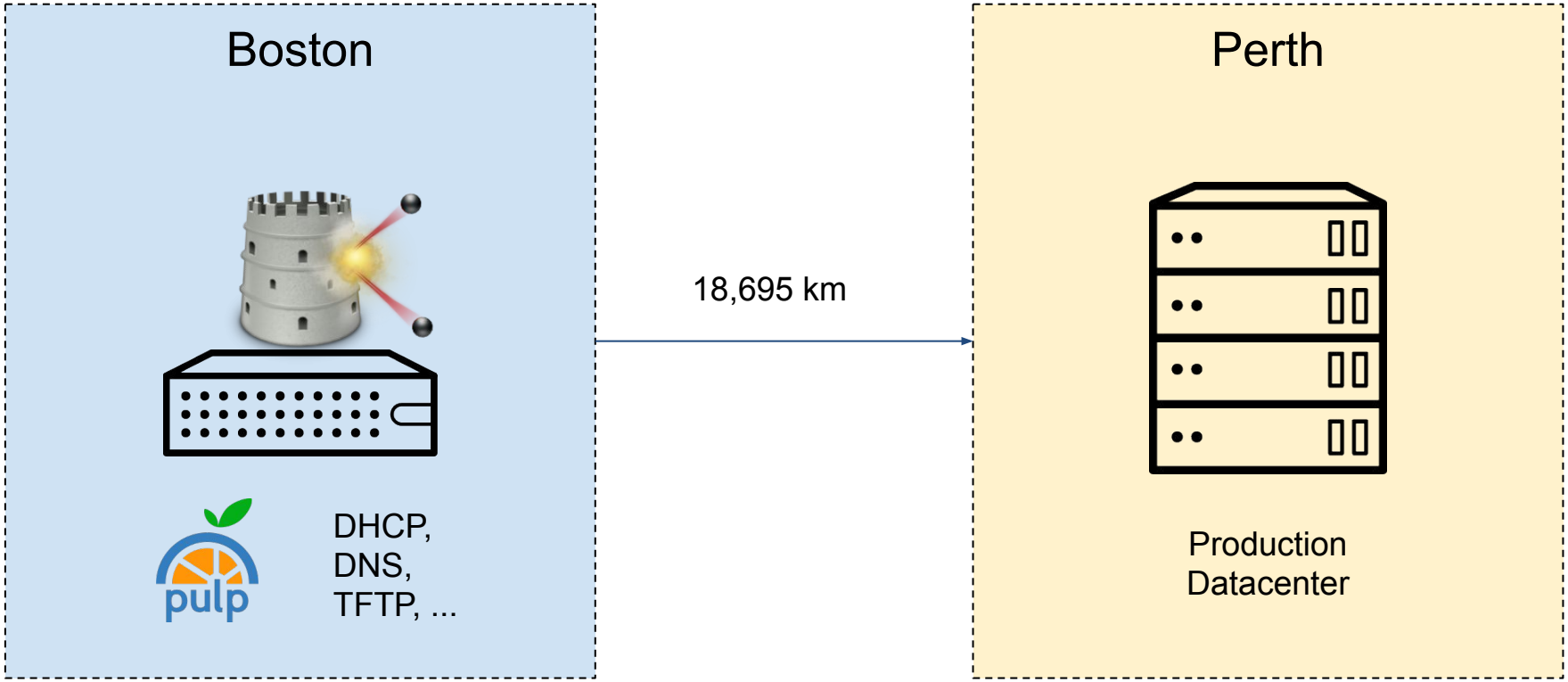
Library	Development	Testing	Production
My Content View v3.0	My Content View v3.0	My Content View v3.0	My Content View v3.0

Incremental Update

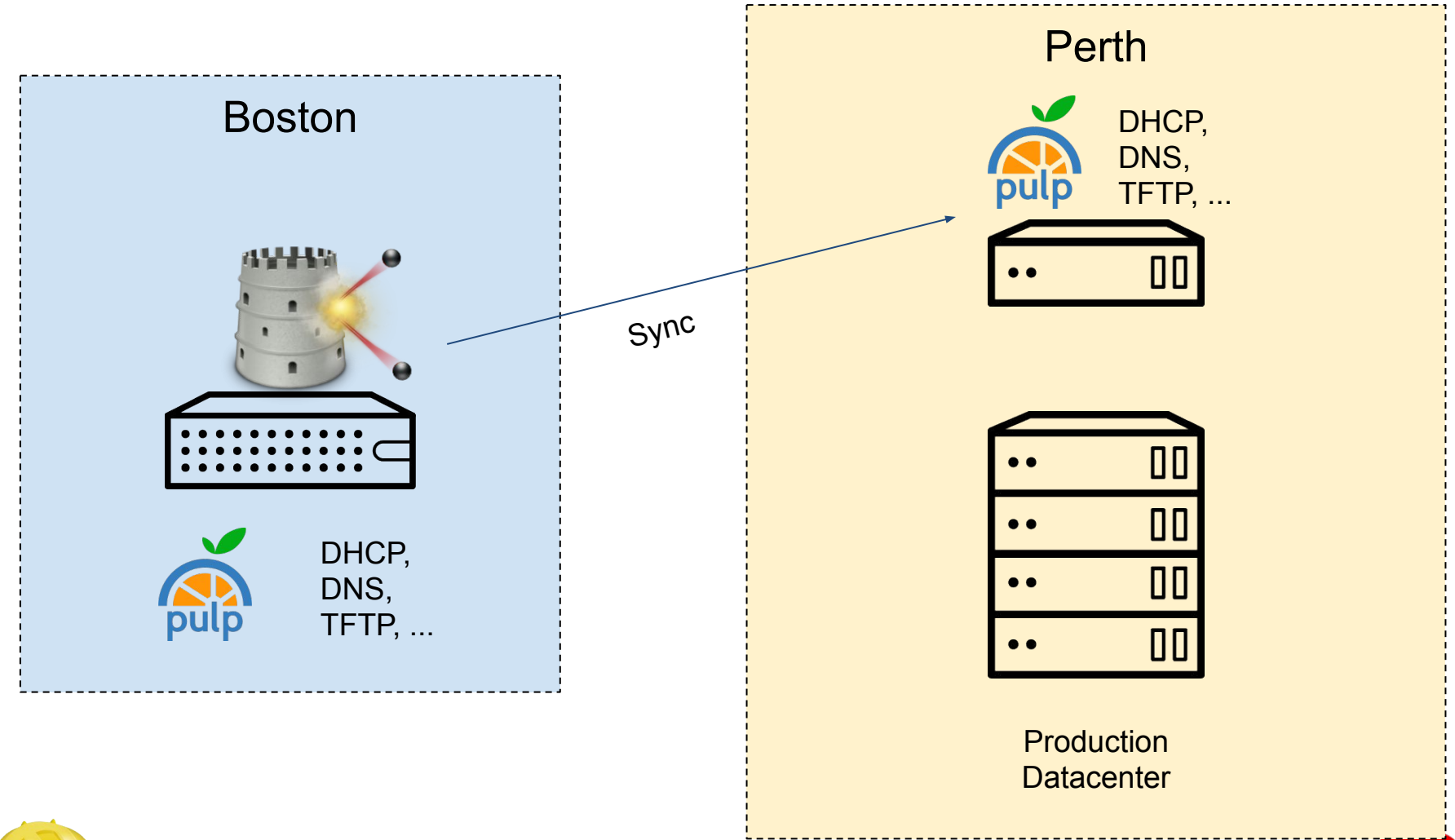


Katello + Your Infrastructure

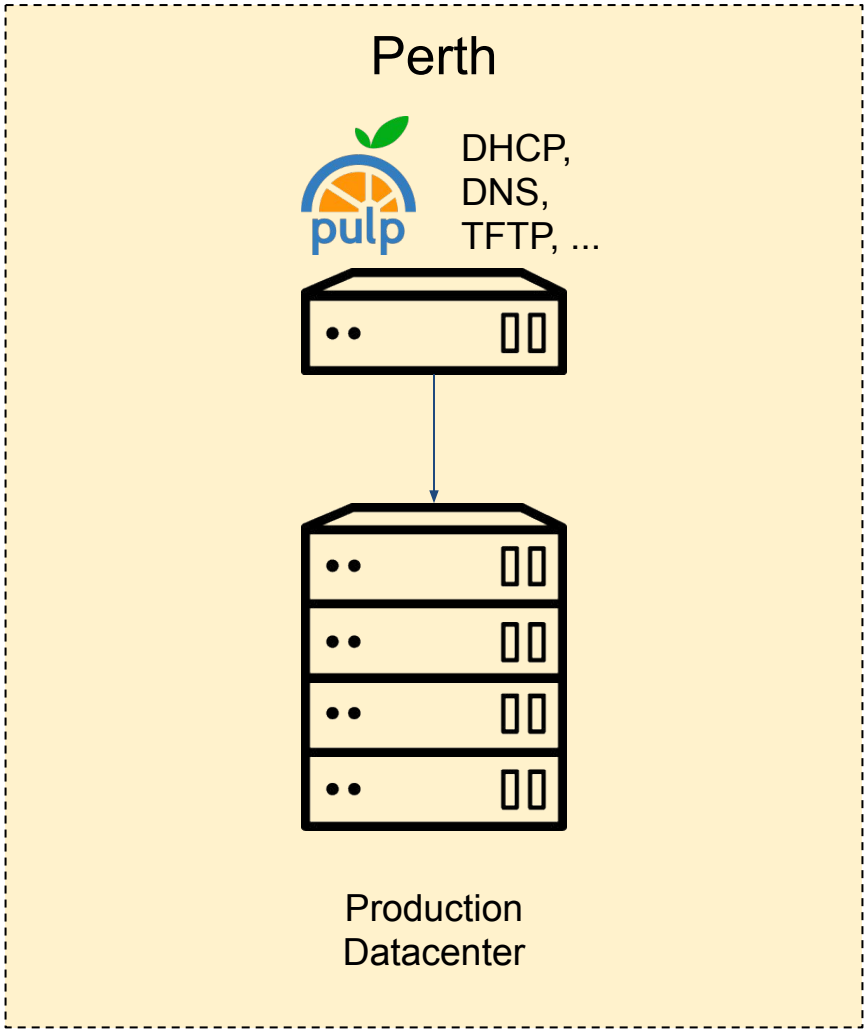
Scenario: Off-Site Hosts



Smart Proxies with Pulp

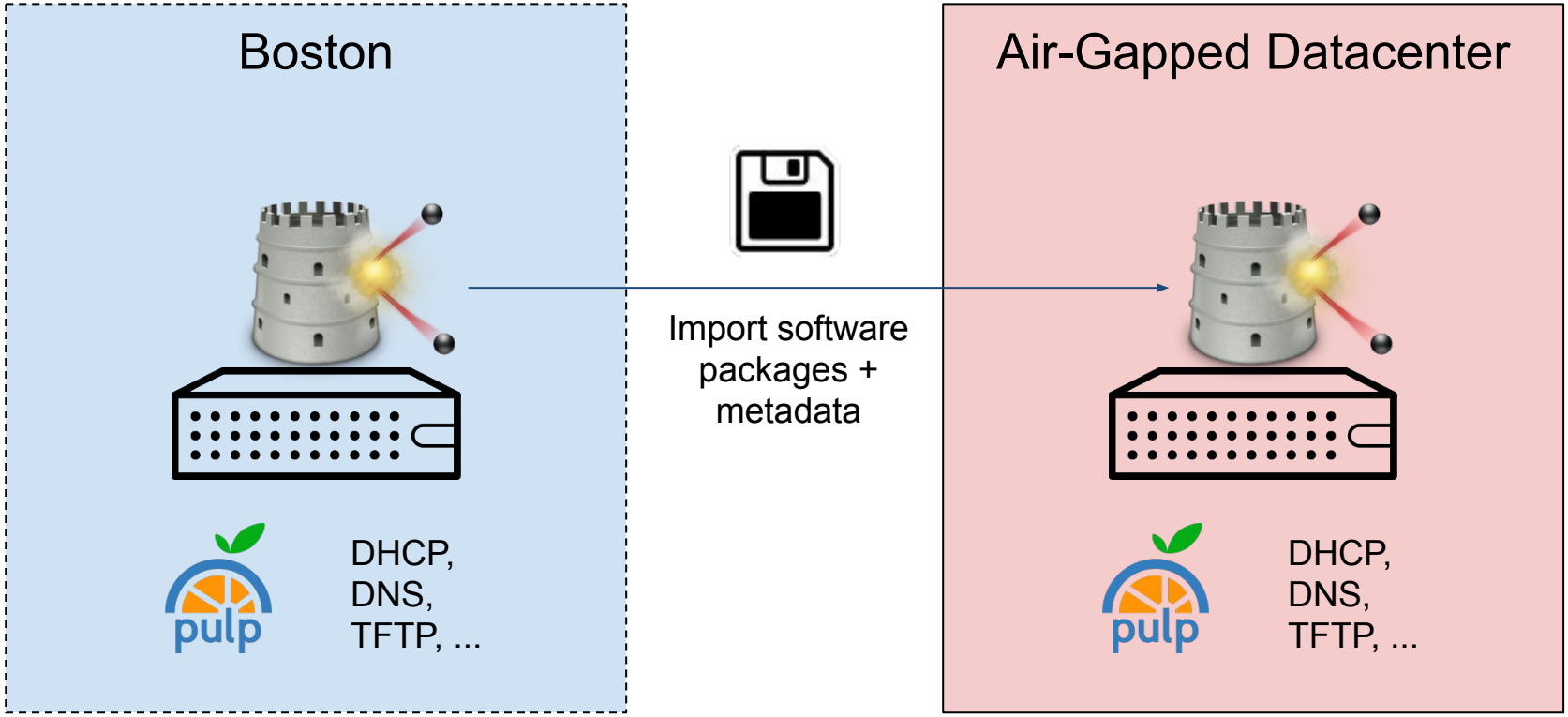


Content Enabled Smart Proxies

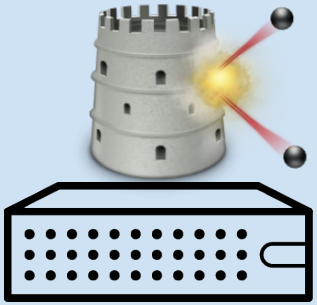


Can operate on its own until needing another sync

Infrastructure Flexibility



Boston



pulp

DHCP,
DNS,
TFTP, ...

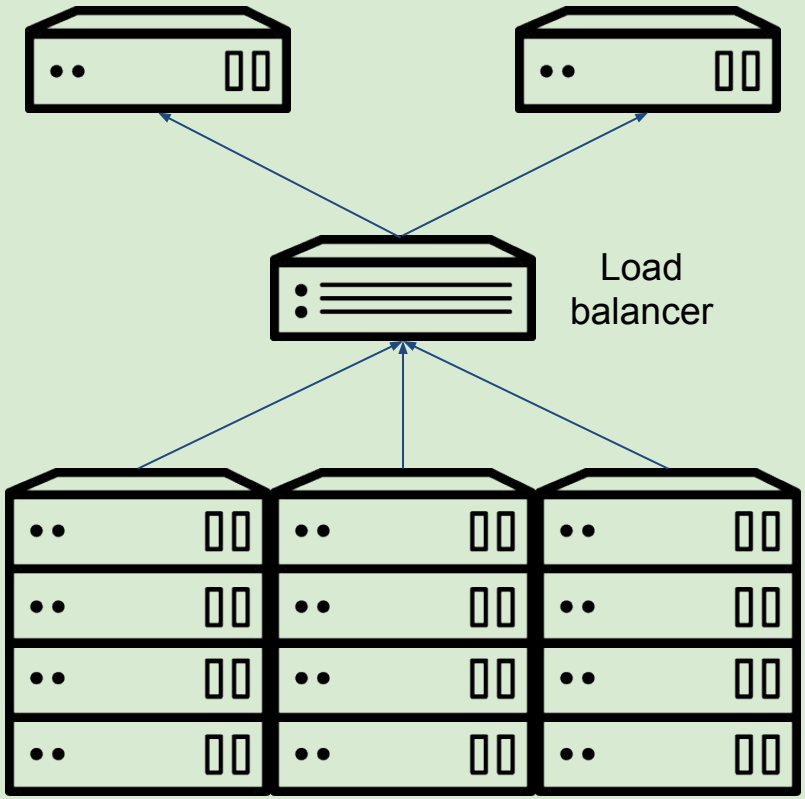
Wales

pulp

DHCP,
DNS,
TFTP, ...

pulp

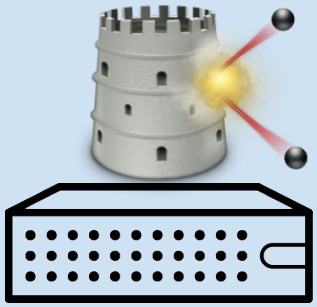
DHCP,
DNS,
TFTP, ...



Load
balancer

Demo Prep

centos8-stream-katello-4.11

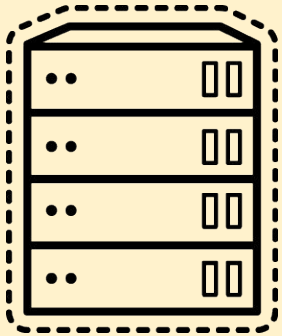


pulp

DHCP,
DNS,
TFTP, ...

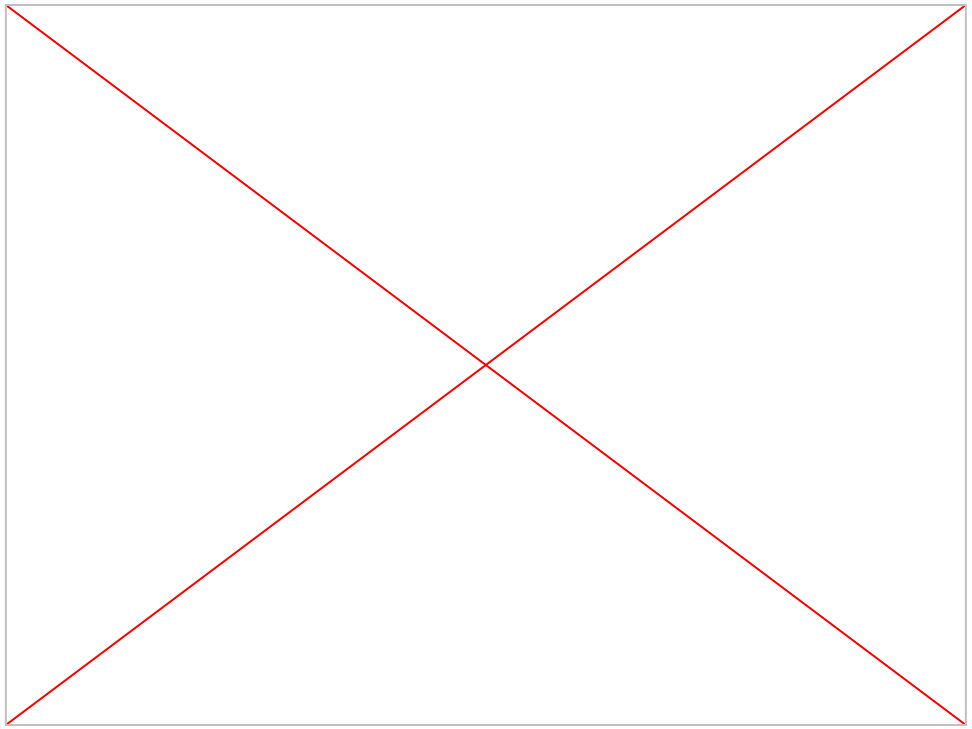
centos8-stream-katello-4.11.
cannolo.example.com

waffle-test
waffle-prod1
waffle-prod2

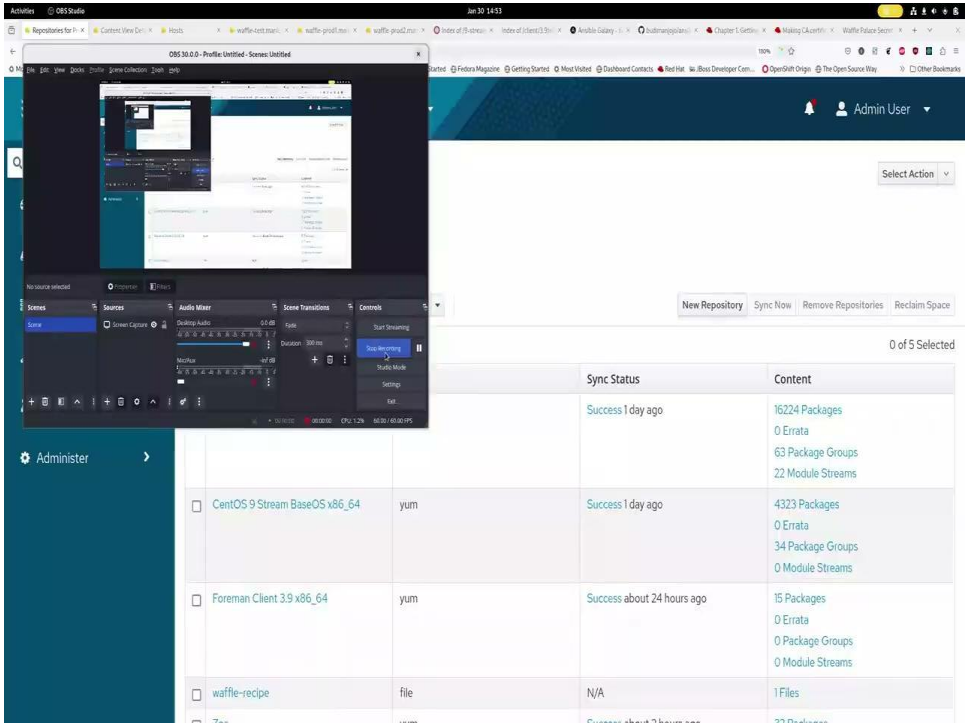


Apache Tomcat
“Waffle Palace”
Application

Demo



Incremental Update Demo



Thanks!

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