

ONIC2020

# タイトル調整中 ← 5G コンテナ基盤の事例紹介

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**Rakuten Mobile**

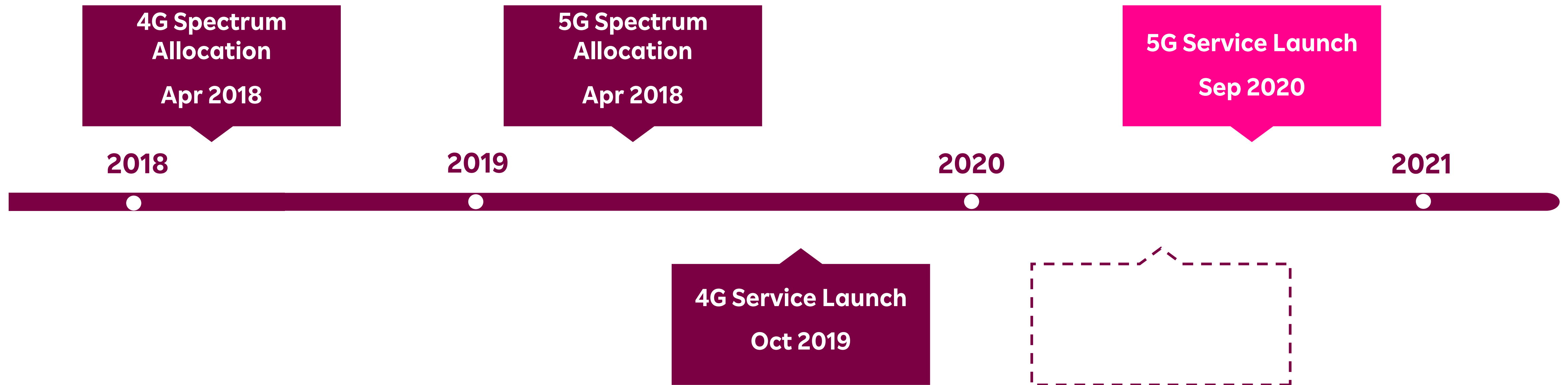
# Agenda

- ✓ 楽天モバイルのクラウド基盤の概要
- ✓ コンテナ基盤の構成
- ✓ vRANコンテナを乗せるために
- ✓ 構築、アップグレードのお話

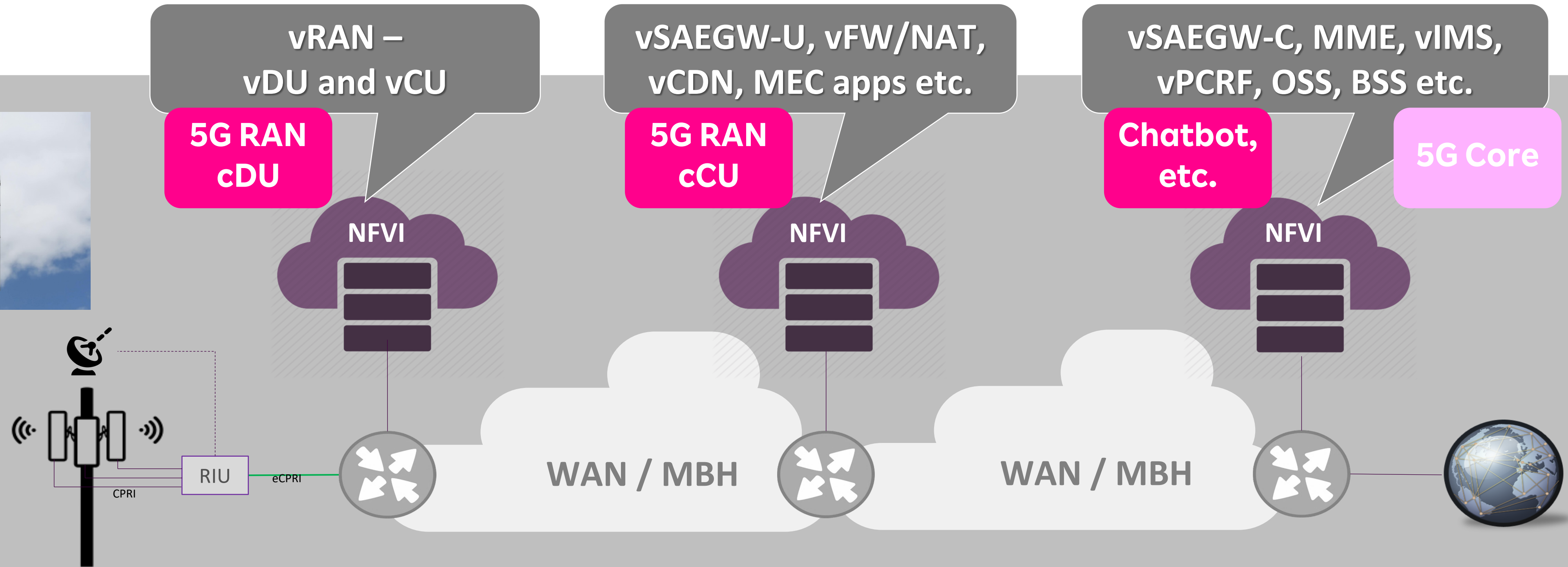
## Disclaimer

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# Rakuten 4G/5G Timeline



# Distributed Telco Cloud

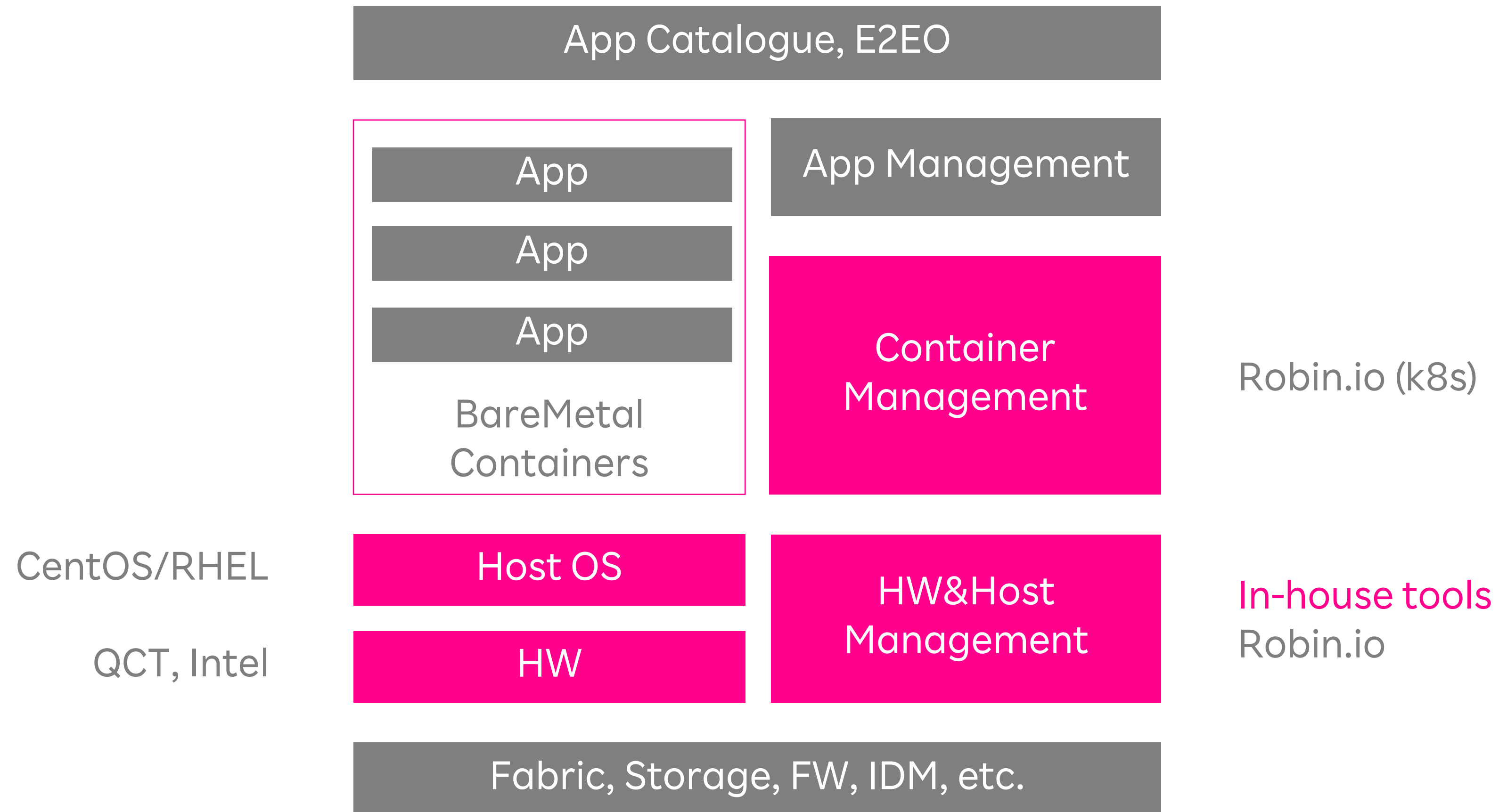


**GC**  
1000's

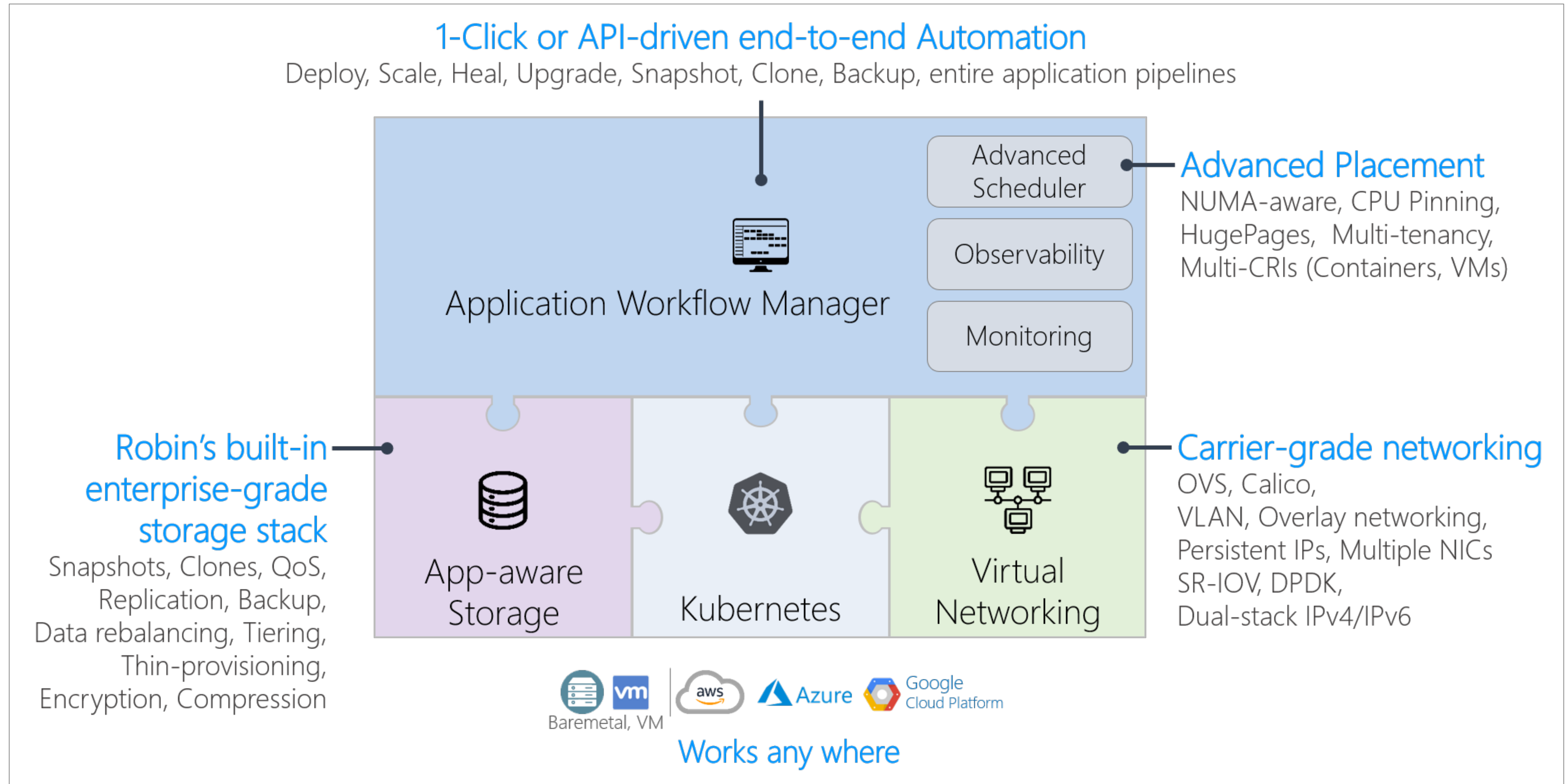
**Regional DC**  
~50

**Central DC**  
2+

# Rakuten Communications Platform (RCP) - Container Platform



# Robin Platform Overview

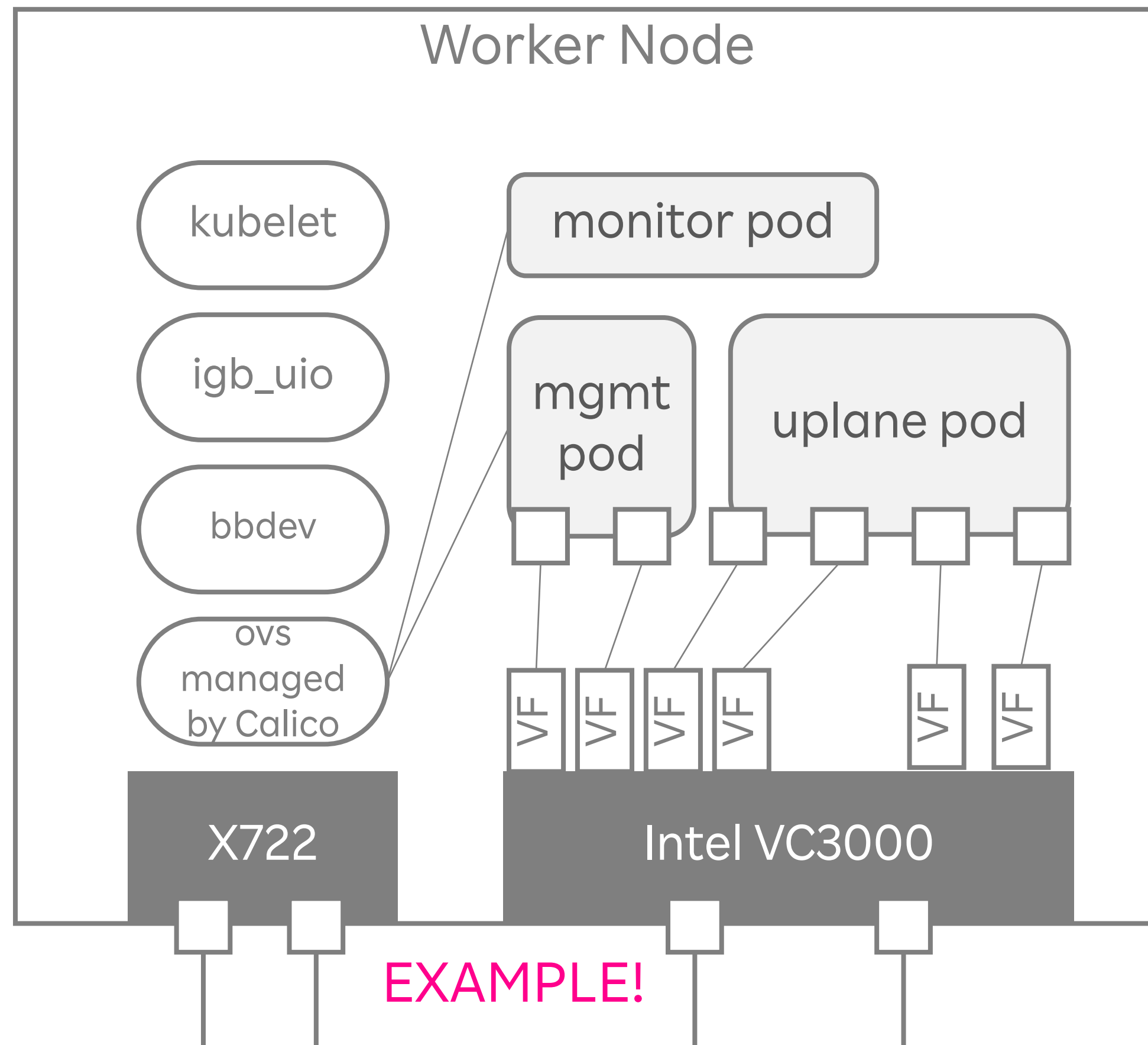


<https://docs.robin.io/latest/overview.html>

# For vRAN Containers

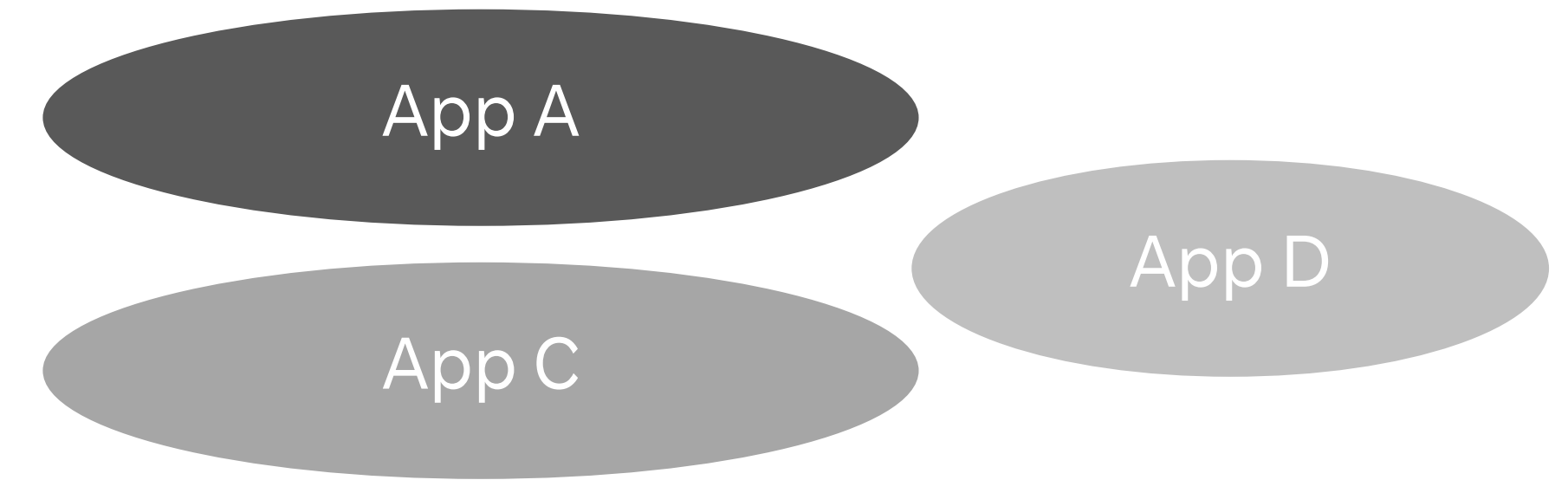
Realtime kernel, Enhanced Platform Awareness (CPU Pinning, SR-IOV, DPDK/PMD), FPGA, IPv6, PTP, Link aggregation and Source Based Routing

## Single CPU Socket BBU SKU



# Deployment & Operation

- ✓ Application Review & Certificate Process
- ✓ Large Resource Pool
- ✓ Faulty parts replacement once a week



## Cluster 1

Worker 7	Worker 14	Worker 21
Worker 6	Worker 13	Worker 20
Worker 5	Worker 12	Worker 19
Worker 4	Worker 11	Worker 18
Worker 3	Worker 10	Worker 17
Worker 2	Worker 9	Worker 16
Worker 1	Worker 8	Worker 15
Master 1	Master 2	Master 3

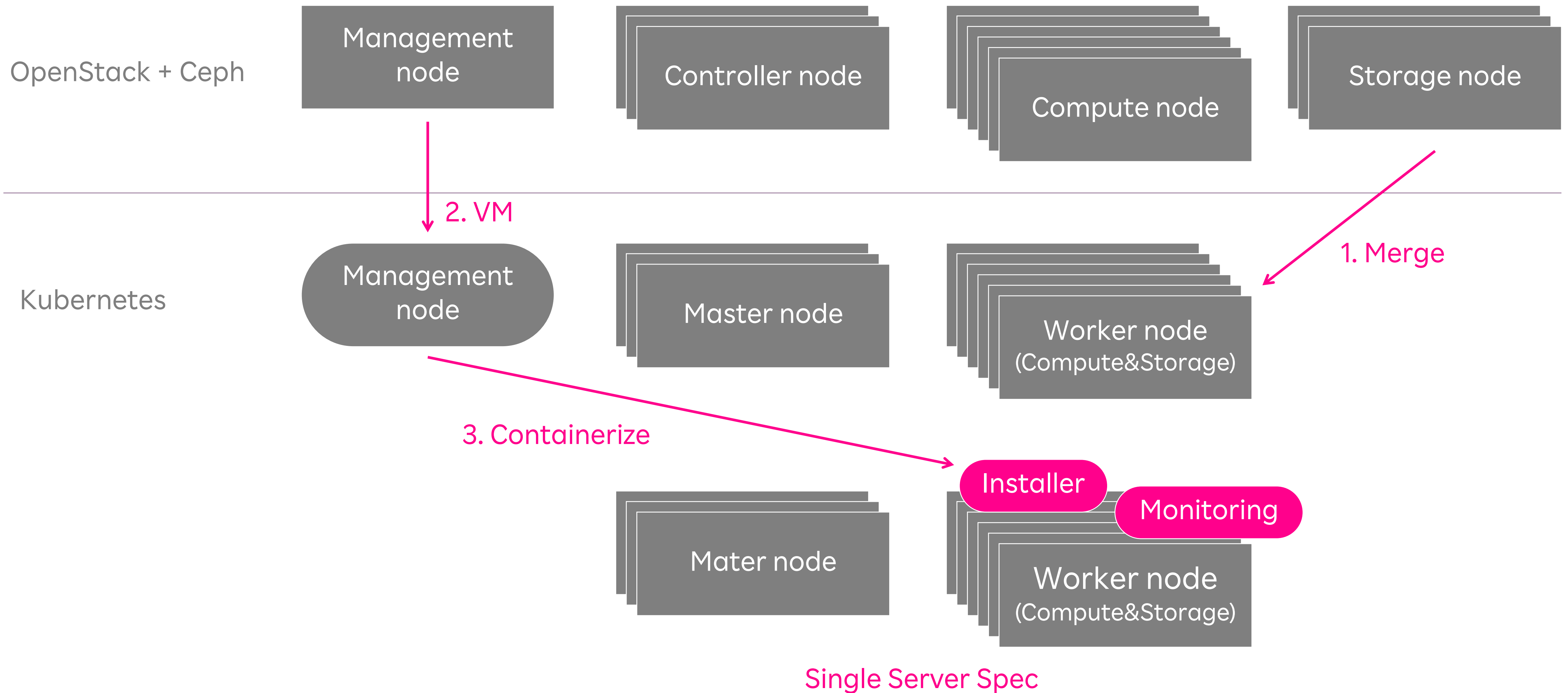
Rack

## Cluster 2

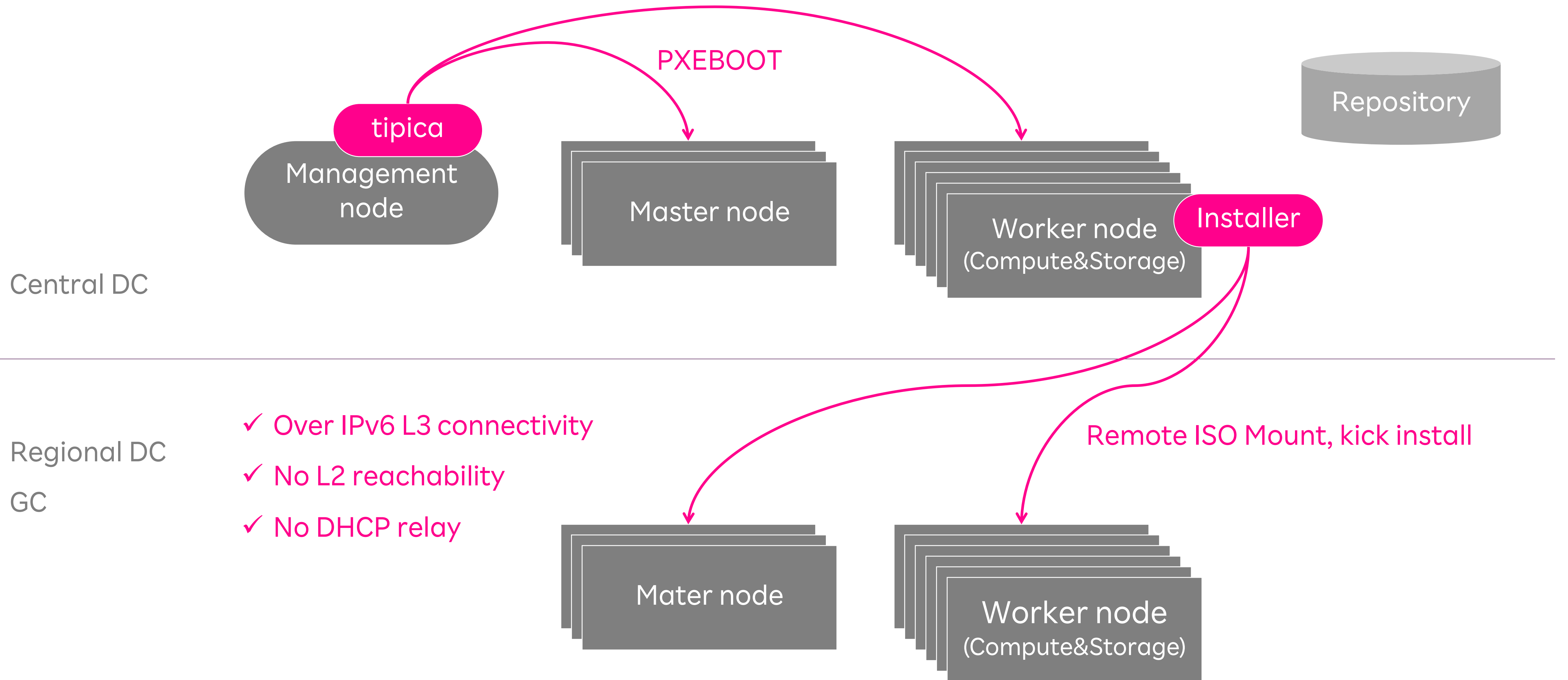
Worker 7	Worker 14	Worker 21
Worker 6	Worker 13	Worker 20
Worker 5	Worker 12	Worker 19
Worker 4	Worker 11	Worker 18
Worker 3	Worker 10	Worker 17
Worker 2	Worker 9	Worker 16
Worker 1	Worker 8	Worker 15
Master 1	Master 2	Master 3



# Container Platform Nodes



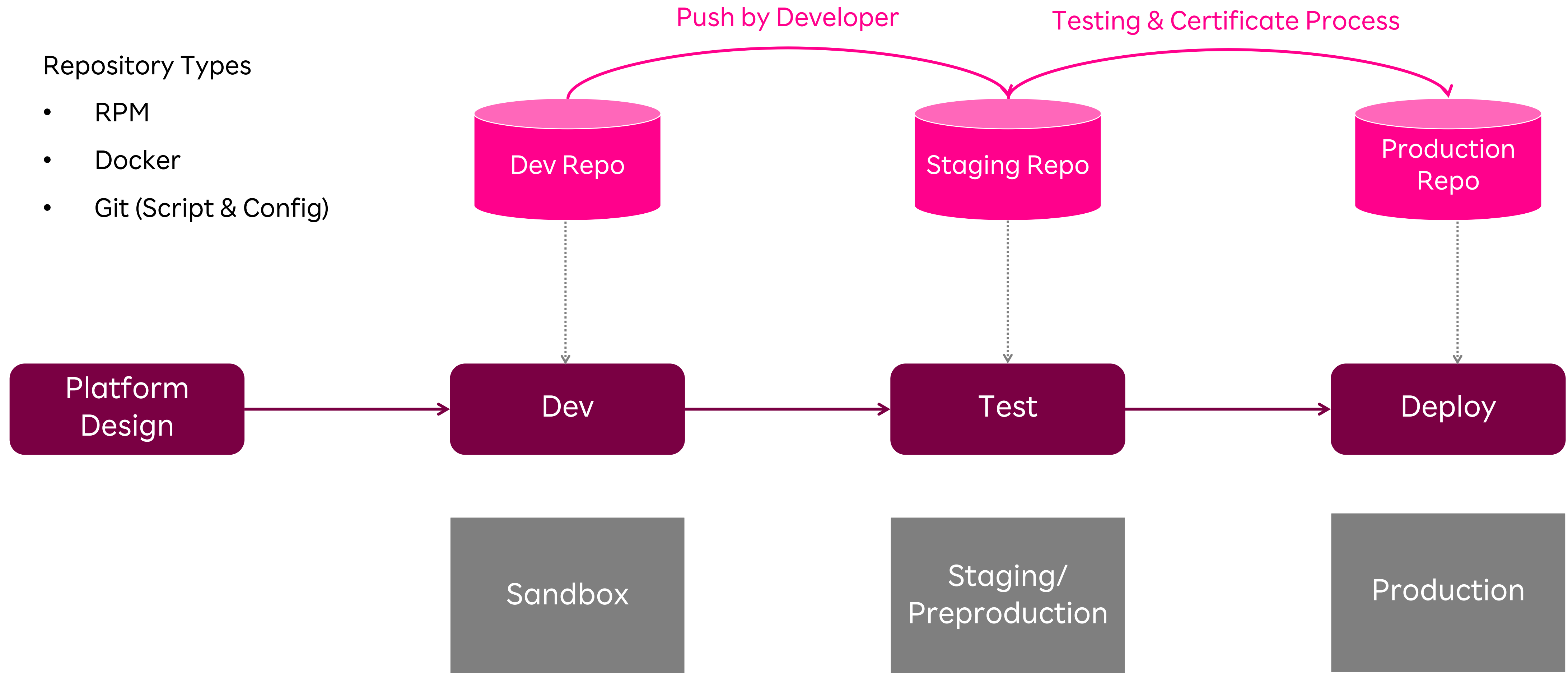
# OS Installation



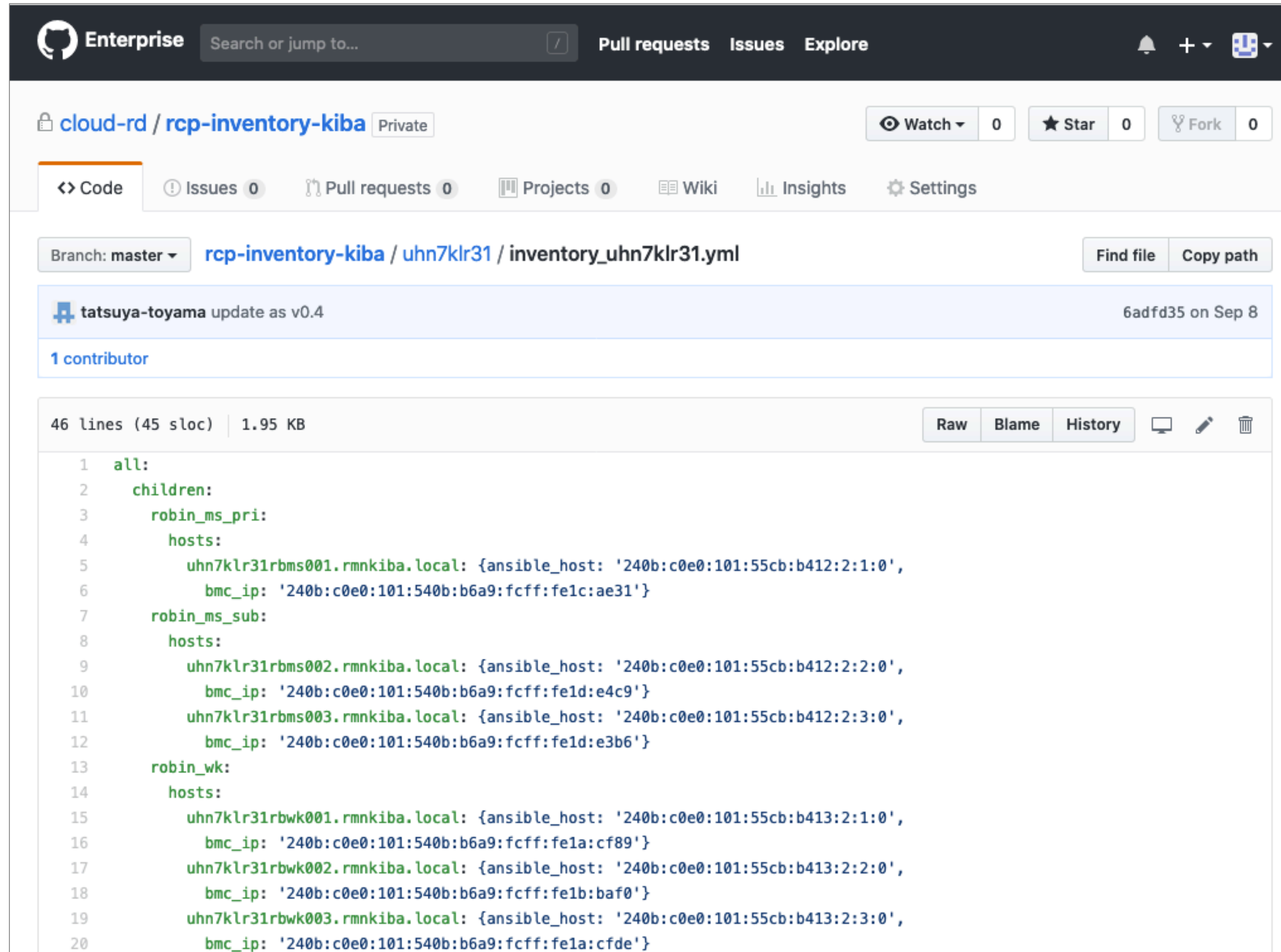
# Delivery Pipeline & Repositories

## Repository Types

- RPM
- Docker
- Git (Script & Config)



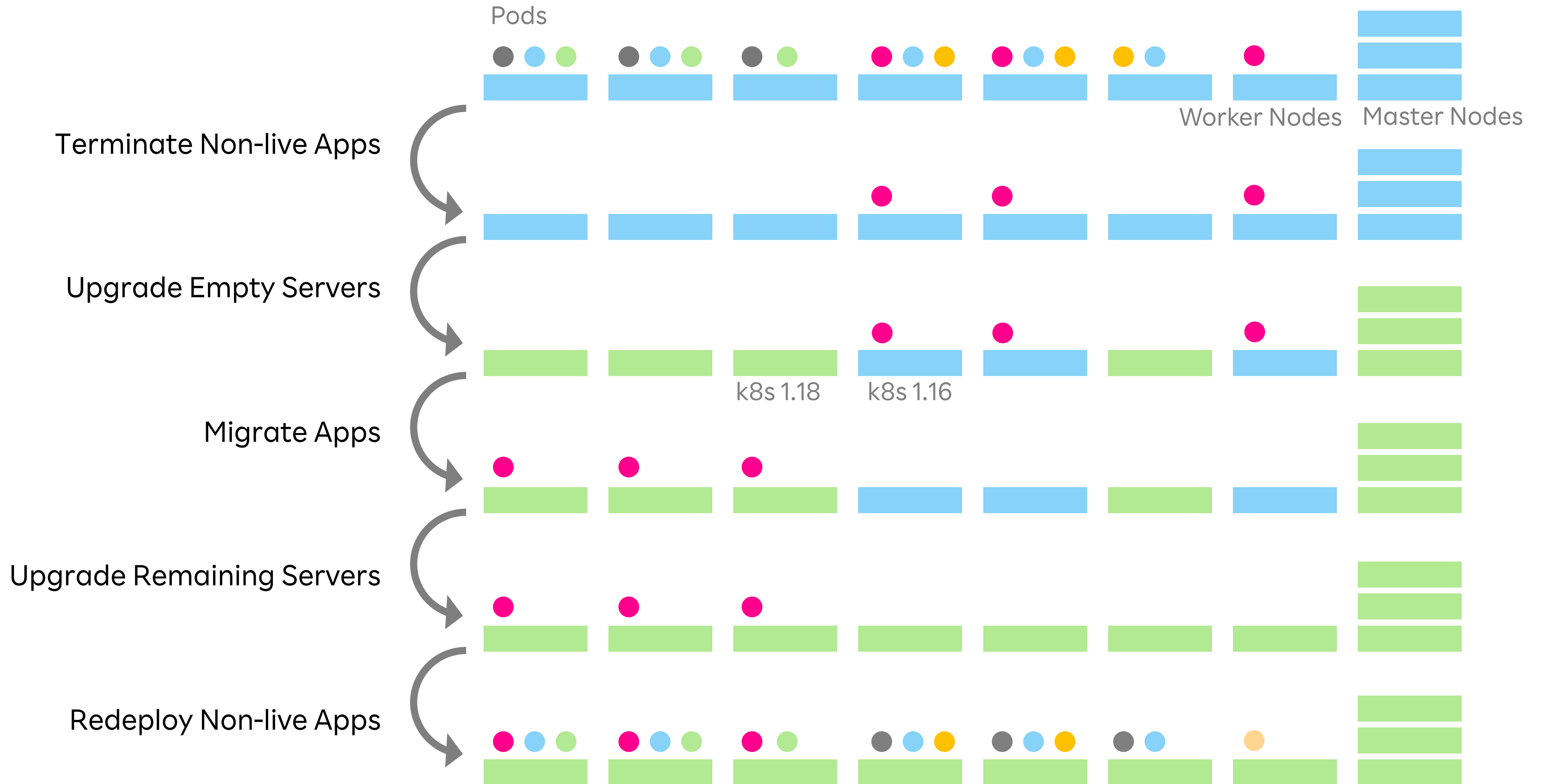
# Cluster Config in Git as a temporary solution



The screenshot shows a GitHub repository page for 'cloud-rd / rcp-inventory-kiba'. The file 'inventory\_uhn7klr31.yml' is displayed, containing an Ansible inventory configuration. The configuration is structured as follows:

```
1 all:
2   children:
3     robin_ms_pri:
4       hosts:
5         uhn7klr31rbms001.rmnkiba.local: {ansible_host: '240b:c0e0:101:55cb:b412:2:1:0',
6           bmc_ip: '240b:c0e0:101:540b:b6a9:fcff:fe1c:ae31'}
7     robin_ms_sub:
8       hosts:
9         uhn7klr31rbms002.rmnkiba.local: {ansible_host: '240b:c0e0:101:55cb:b412:2:2:0',
10          bmc_ip: '240b:c0e0:101:540b:b6a9:fcff:fe1d:e4c9'}
11         uhn7klr31rbms003.rmnkiba.local: {ansible_host: '240b:c0e0:101:55cb:b412:2:3:0',
12          bmc_ip: '240b:c0e0:101:540b:b6a9:fcff:fe1d:e3b6'}
13     robin_wk:
14       hosts:
15         uhn7klr31rbwk001.rmnkiba.local: {ansible_host: '240b:c0e0:101:55cb:b413:2:1:0',
16          bmc_ip: '240b:c0e0:101:540b:b6a9:fcff:fe1a:cf89'}
17         uhn7klr31rbwk002.rmnkiba.local: {ansible_host: '240b:c0e0:101:55cb:b413:2:2:0',
18          bmc_ip: '240b:c0e0:101:540b:b6a9:fcff:fe1b:baf0'}
19         uhn7klr31rbwk003.rmnkiba.local: {ansible_host: '240b:c0e0:101:55cb:b413:2:3:0',
20          bmc_ip: '240b:c0e0:101:540b:b6a9:fcff:fe1a:cfde'}
```

# Infra Upgrade (In-Place)



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