Building an AAP cluster
Design decisions and implementation

Ton Kersten

Velp / The Netherlands / 2023

AT COMPUTING
ATYPICAL OPEN SOURCE GURUS

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$ who am i

Name: Ton Kersten

From: Groesbeek / The Netherlands

- UNIX/Linux consultant and Trainer @ AT Computing
- UNIX freak (started in 1986 with SunOS)
- Linux Geek (started in 1992 with 0.96α)
- Configuration Management Addict
- Red Hat Certified System Engineer
- Red Hat Acceler ator 2023 member
- Ansible user and contributor since 2012
- Member of the Ansible Organization on Github
- Ansible Ambassador since 2015
- Co-organizer of the Ansible Benelux Meetup Group
- Free and Open Source Software Enthusiast

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Ansible Automation Platform

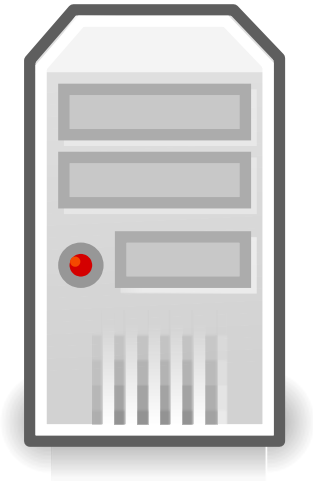
What Red Hat says:

Red Hat® Ansible® Automation Platform elevates automation across your organization, expanding your possibilities. It's a flexible, security-focused foundation to build and deploy automation that helps your business accelerate, orchestrate, and innovate.

What I say:

Red Hat® Ansible® Automation Platform is a webgui and tools around Ansible to help automate tasks. It supports RBAC for fine grained control and a scheduler to automate tasks.

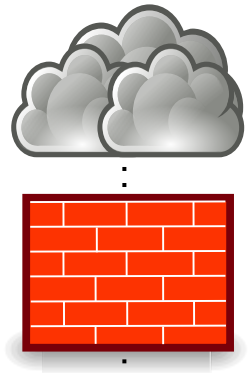
$BIGCORP wants AAP



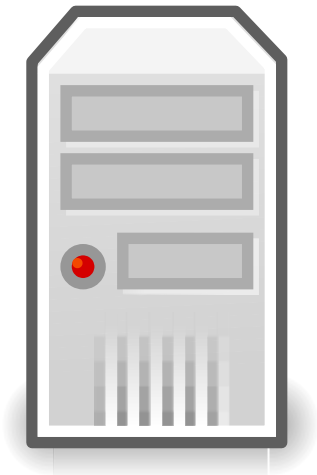
aap.ansilab.nl

$BIGCORP wants AAP Cluster – Step 1

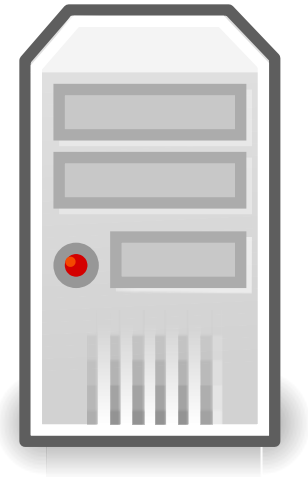
dc1 – baluchitherium
192.168.x.x



dc2 – c'mon everybody
172.16.x.x



aap01.ansilab.nl



aap02.ansilab.nl

Baluchitherium – Van Halen
Ansible 0.3.0 – April 23, 2012
First release

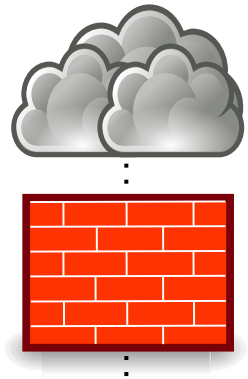
C'mon Everybody – Led Zeppelin
Ansible 2.14 – AAP 2.3 version

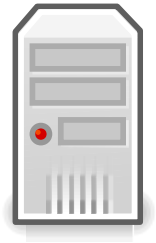
High availability is required

$BIGCORP wants AAP Cluster – Step 2

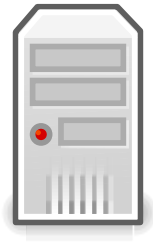
dc1 – baluchitherium
192.168.x.x

dc2 – c'mon everybody
172.16.x.x





aap01.ansilab.nl



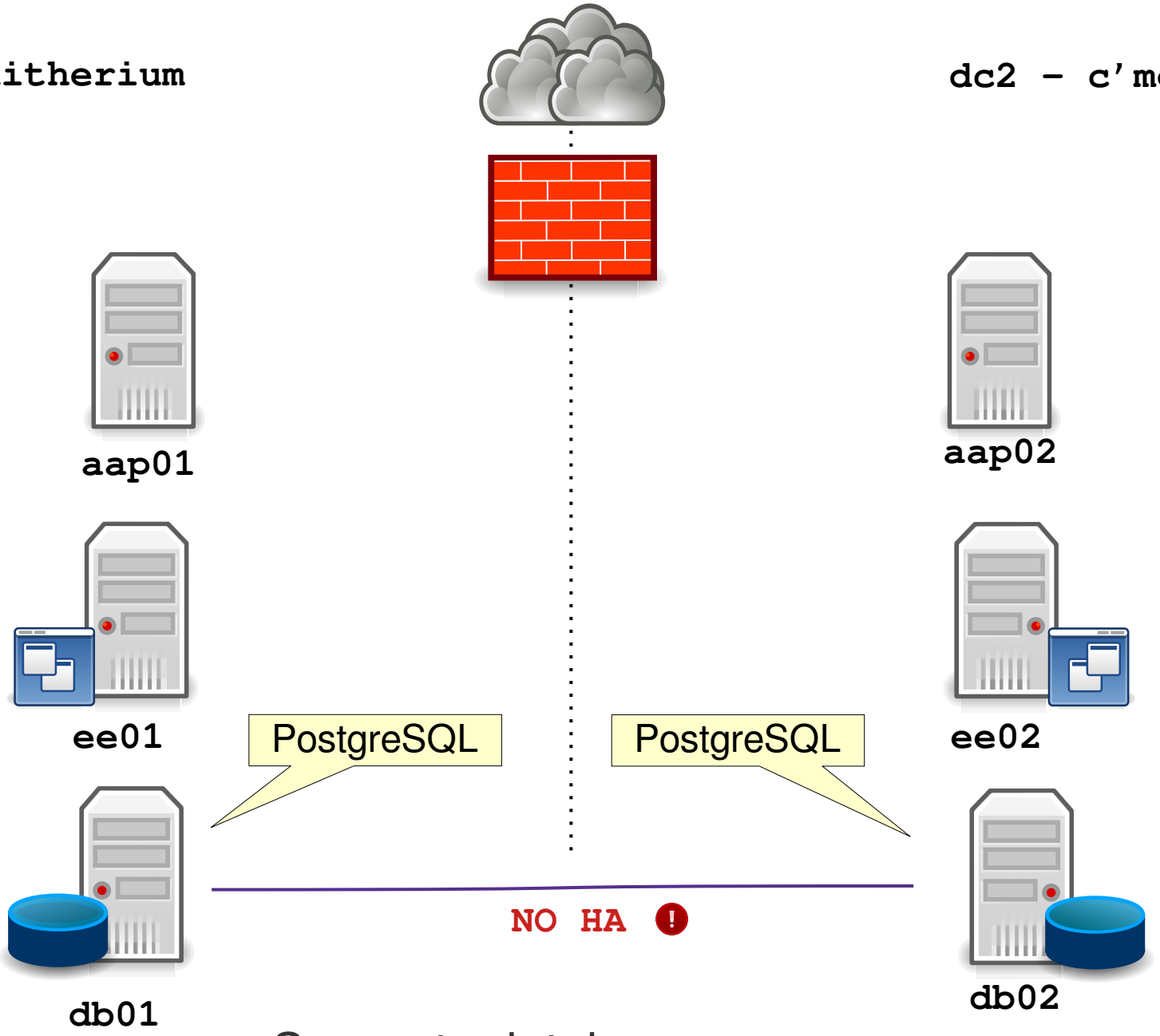
aap02.ansilab.nl

ee01.ansilab.nl

ee02.ansilab.nl

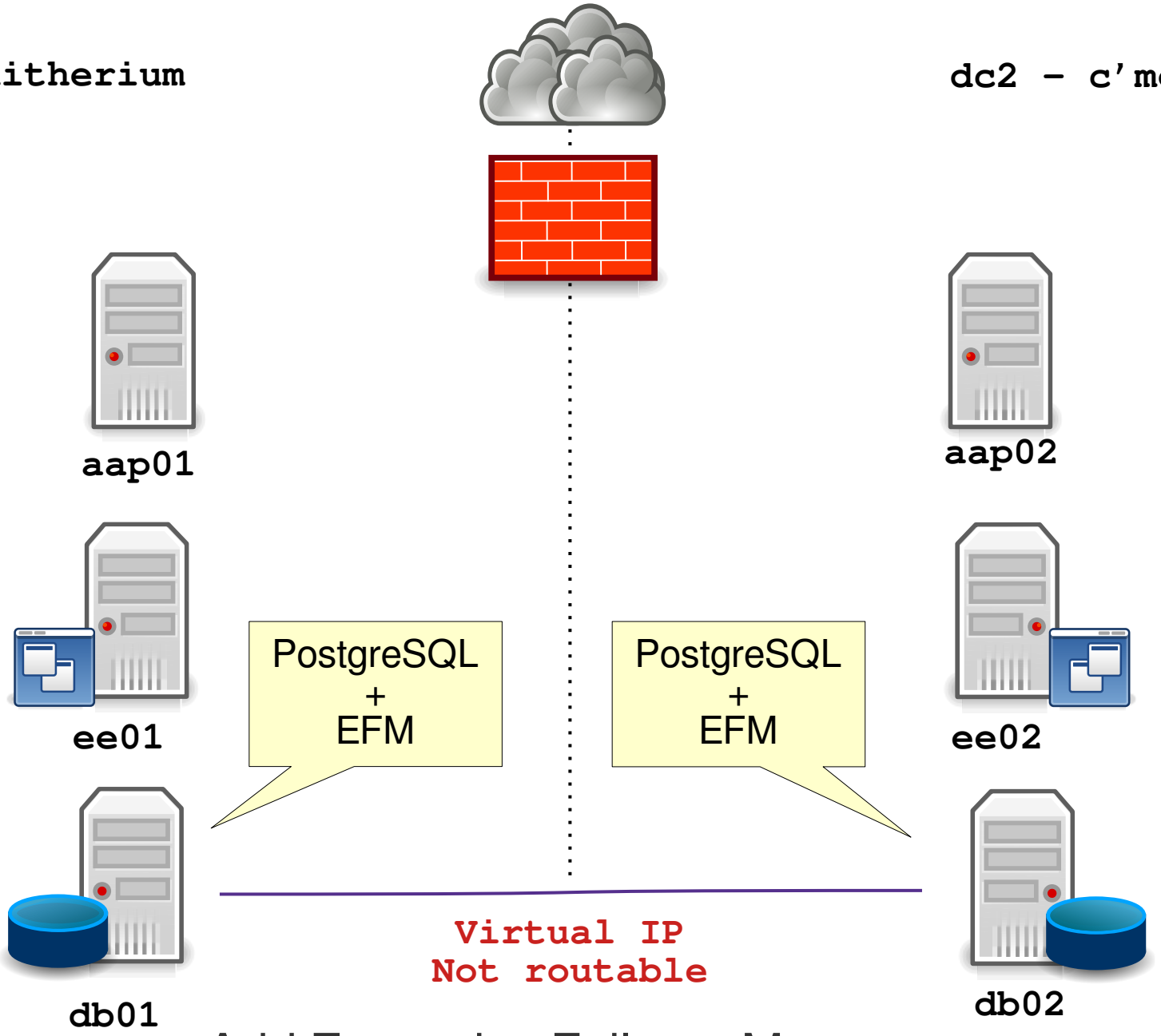
Separate execution environments

$BIGCORP wants AAP Cluster – Step 3



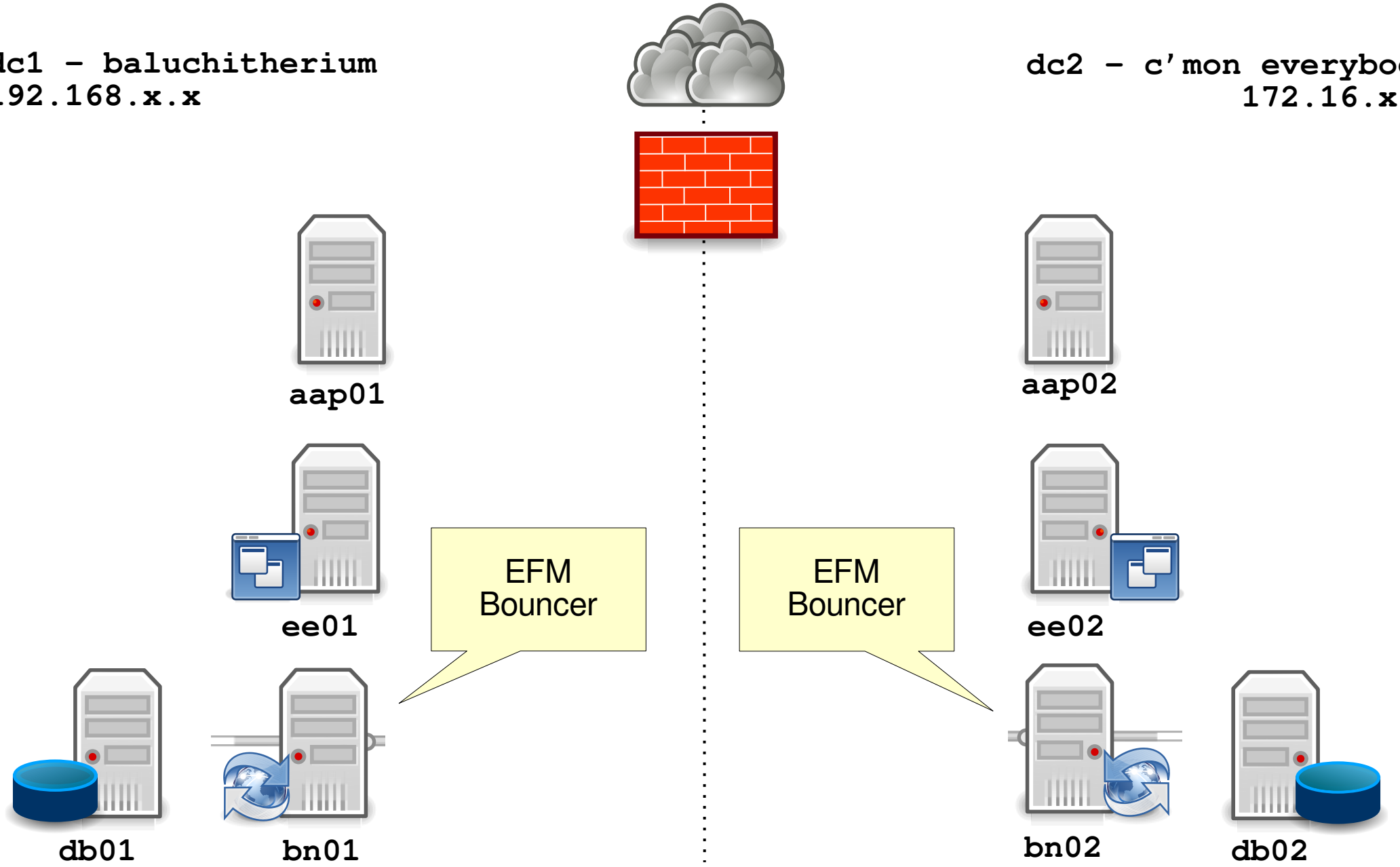
Separate database servers

$BIGCORP wants AAP Cluster – Step 4



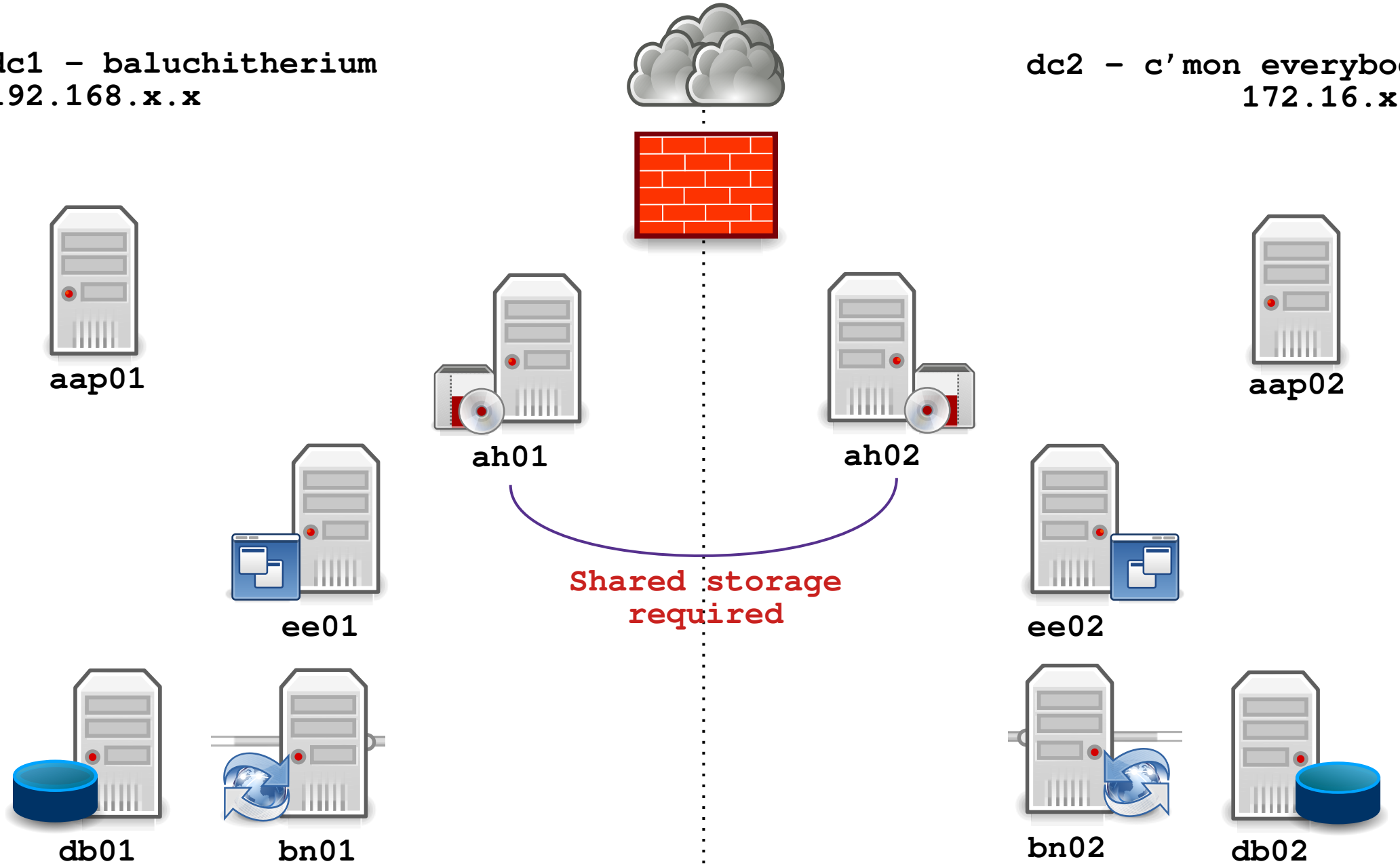
Add Enterprise Failover Manager

$BIGCORP wants AAP Cluster – Step 5



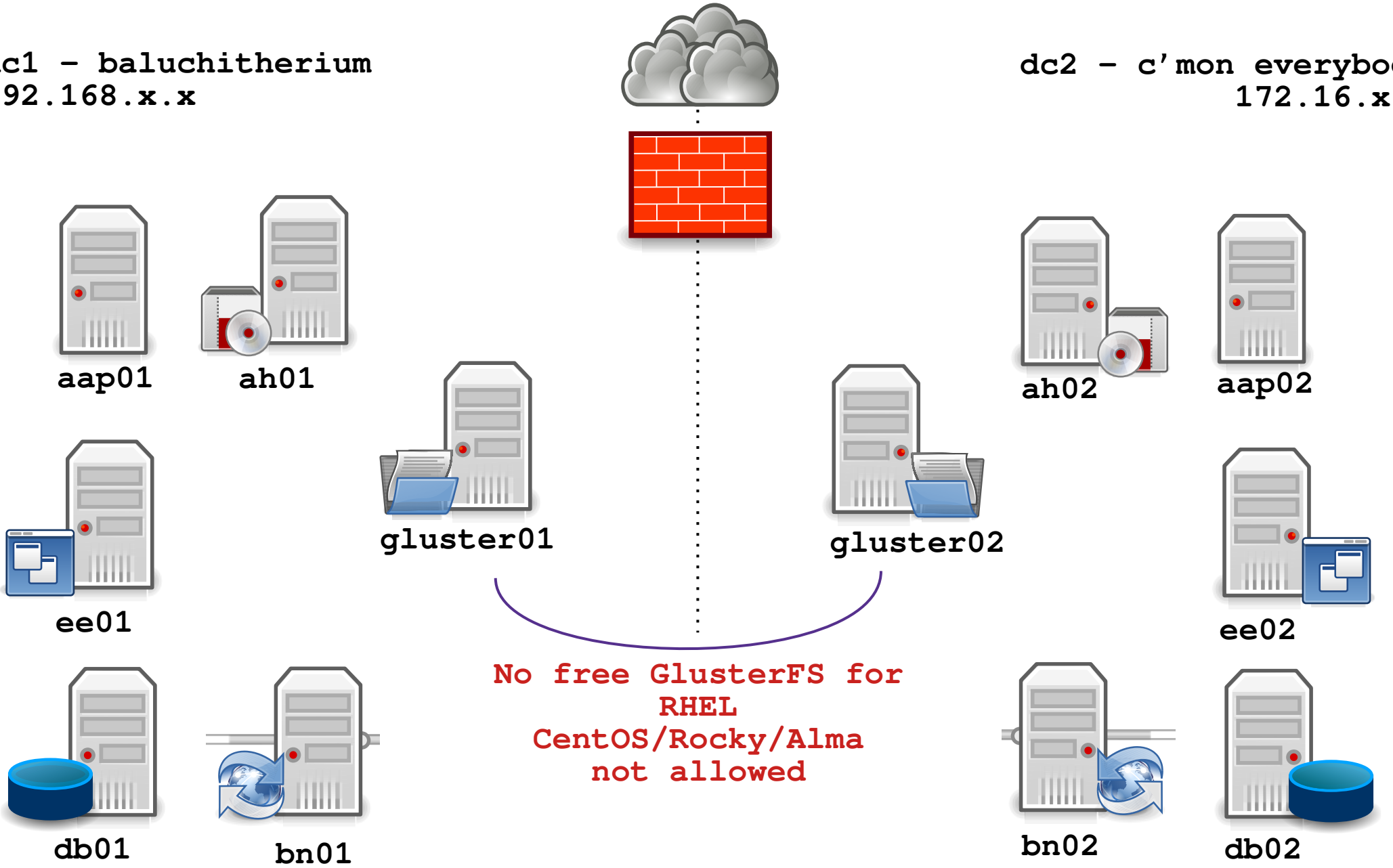
Add Bouncer nodes

$BIGCORP wants AAP Cluster – Step 6

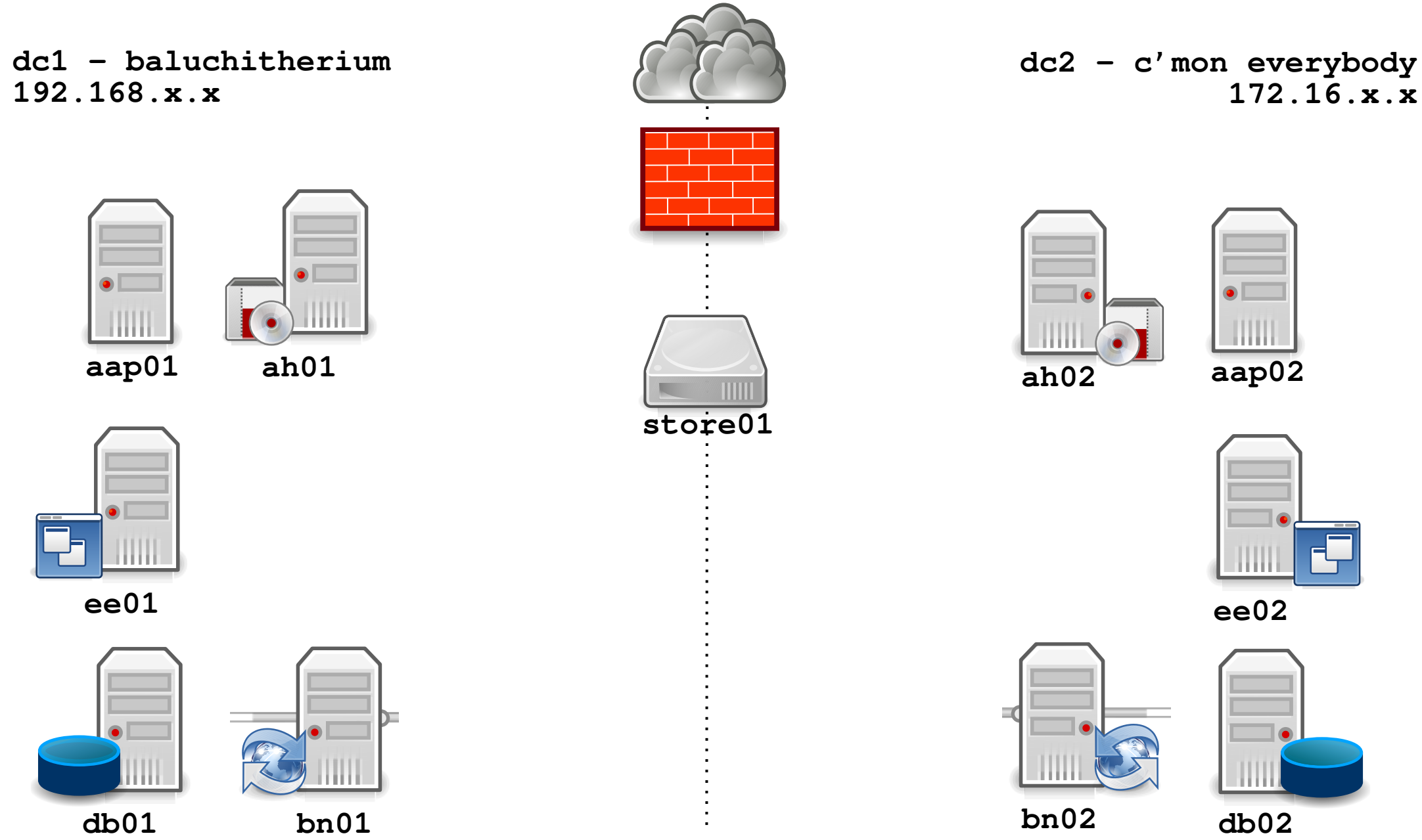


Split AAP into CN and AH

$BIGCORP wants AAP Cluster – Intermezzo



$BIGCORP wants AAP Cluster – Final



Use shared storage from other department

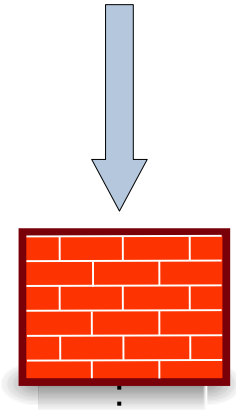
$BIGCORP IP addresses

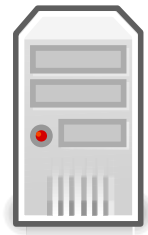
dc1 – baluchitherium
192.168.x.x

https://aap.ansilab.nl
https://ah.ansilab.nl
bn.ansilab.nl:6432

dc2 – c'mon everybody
172.16.x.x

aap01 – 10.10





aap02 – 10.10

ee01 – 10.20

ah01 – 10.40

ah02 – 10.40

ee02 – 10.20

db01 – 10.30

bn01 – 10.50

bn02 – 10.50

db02 – 10.30

Configuration - Database servers

postgresql.conf

```
listen_addresses = '*'
```

pg_hba.conf

```
# Ansble AAP Cluster - Control nodes
host    awx             awx             192.168.10.10/32        md5
host    awx             awx             172.16.10.10/32         md5


# Ansible AAP Cluster -  Automation Hubs
host    autohub         autohub         192.168.10.40/32        md5
host    autohub         autohub         172.16.10.40/32         md5


# Database replication - Needed for EFM HA
host    replication     replica         192.168.10.30/32        md5
host    replication     replica         172.16.10.30/32         md5


# PostgreSQL EFM cluster check
host    clustcheckdb    clustchecker    192.168.10.30/32        trust
host    clustcheckdb    clustchecker    172.16.10.30/32         trust
```

Configuration - Database servers - EFM

efm.nodes

```
192.168.10.30
172.168.10.30
```

pg_hba.conf

```
db.user=clustchecker
db.password.encrypted=xxxxxx
db.port=5432
db.database=clustcheckdb
db.service.owner=postgres
db.config.dir=/var/lib/pgsql/13/data
bind.address=192.168.10.30:7800
admin.port=7809

is.witness=false

local.period=10
local.timeout=60
local.timeout.final=10
```

Configuration - Bouncer nodes

edb-pgbouncer-databases.ini

```
[databases]
awx=                host=192.168.10.30
autohub=            host=192.168.10.30
```

Active database node

Generate **userlist.txt**

```
psql -Atq -U postgres  d postgres -c \
   "SELECT concat('\"', usename, '\" \"', passwd, '\"') FROM pg_shadow"
```

userlist.txt

```
"awx" "SCRAM-SHA-256$xxxxxx"
"autohub" "SCRAM-SHA-256$4096:xxxxxx"
```

Configuration - AAP Inventory - Part 1

inventory

```
[automationcontroller]
aap01.ansilab.nl        node_type=control
aap02.ansilab.nl        node_type=control

[automationcontroller:vars]
peers=execution_nodes

[execution_nodes]
ee01.ansilab.nl         node_type=execution
ee02.ansilab.nl         node_type=execution

[automationhub]
ah01.ansilab.nl
ah02.ansilab.nl

[automationcatalog]

[database]

[sso]
```

Do not specify database nodes

Configuration - AAP Inventory - Part 2

inventory

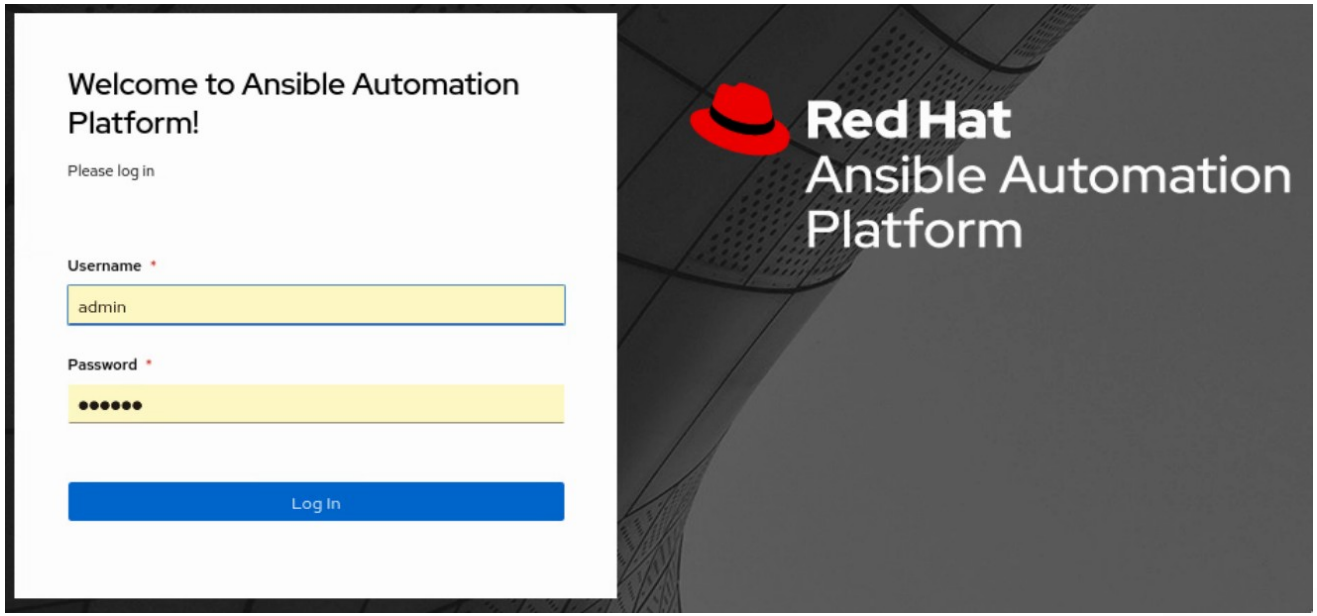
```
[all:vars]
admin_password='salami'
#
pg_host='bn.ansilab.nl'
pg_port=6432
pg_database='awx'
pg_username='awx'
pg_password='salami'
pg_sslmode='prefer'
#
registry_url='https://registry.redhat.io'
registry_username='RedHatAccount'
registry_password='salami'
receptor_listener_port=27199
#
automationhub_admin_password='salami'
automationhub_pg_host='bn.ansilab.nl'
automationhub_pg_port=6432
automationhub_pg_database='autohub'
automationhub_pg_username='autohub'
automationhub_pg_password='salami'
automationhub_pg_sslmode='prefer'
```

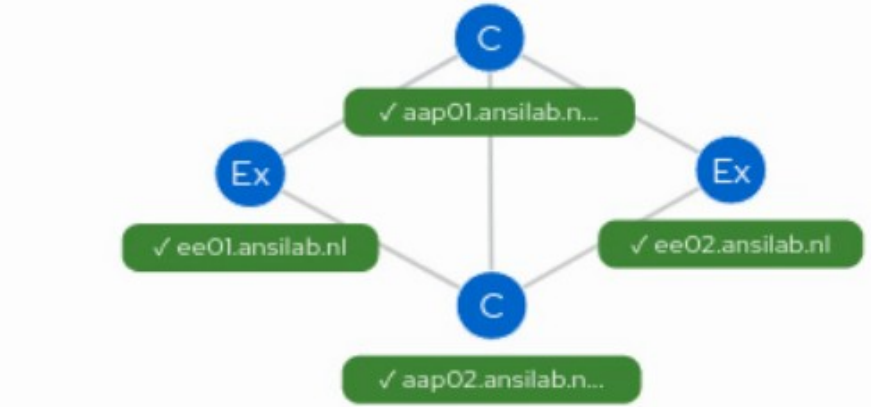
Install AAP

```
./setup.sh
```

And wait!!!

AAP Cluster overview





Questions

Where to find me

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- https://www.tonkersten.com

- https://github.com/tonk
- https://speakerdeck.com/tonk

- @TonKersten on Twitter
- @tonk@mastodon.social on Mastodon
- TKersten on IRC

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