

The Consortium

Demonware data centre management and
configuration tool

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About DemonWare

Full subsidiary of Activision Blizzard

Creates and provides the online services behind some of the world's most popular video game franchises.



CALL OF DUTY
BLACK OPS III

ULTIMATE EVIL EDITION™

The logo features a central, ornate, dark-colored sword or dagger pointing upwards. The blade is highly detailed with intricate patterns. The hilt is also ornate, with curved, wing-like or horn-like structures on either side. The entire central emblem is set against a dark, circular background with faint, glowing lines. The background of the entire image is a dark, stormy sky with swirling clouds. The text is rendered in a classic, serif font with a metallic, golden-yellow color and a slight glow.

DIABLO

REAPER OF SOULS™

In China, we do



CALL OF DUTY™

使命召喚

ONLINE

Demonware Tech



django

The Django logo is the word 'django' in a large, bold, dark green, lowercase, sans-serif font.

elasticsearch.

The Elasticsearch logo is the word 'elasticsearch.' in a large, bold, green, lowercase, sans-serif font.

The unpleasant background

Working with traditional datacenter

Dealing with a lot of different backends

Everybody has their own way to do automation

Nobody knows what are the correct choices

so we want to pave a vm

Input hosts information manually into CMDB
use virt-manage to create virtual machines
use cobbler and input the system information
Then use virt-manager to boot it up

Those(and more) were *killing*
everyone in liveops team

Everybody has their own script to
automate

Provision should be simple as one
command

The Goal of Consortium

Provide a central API for
liveops operations

Core concepts

Everything is a kind of node, *like host, vip, vlan, subnet* etc.

Each kind of node has a set of attributes.

For host, it has *hostname, subcluster, datacenter, puppet_roles, hwspec, interfaces* etc

Modify node attributes can trigger a set of operations

API design

Access node object through its name

- ⌘ Get a host `GET /api/inventory/host/{HOSTNAME}`
- ⌘ Modify host `PATCH /api/inventory/host/{$HOSTNANE}`

Pre compiled schema based API which can be easily used for client

#TODO insert pic here

Consortium V1

Tornado + Redis

Redis is used to cache node information from CMDB by a cronjob for fast query

Tornado is used to nonblockingly talk with different backends

Consort

The shell client talk with consortium

#todo insert pic here

Problems

Predefined workflow

Talking to different backends synchronous, no way to track jobs

Code for different backends are integrated into the base repo directly

#TODO: Add more here

Consortium V2

Core + plugin based

Consortium core as a finite state machine, propose changes to different plugins

Replace redis with etcd and arangodb

The new plugin system

Each plugin can provide different NodeProviders, like `CobblerHostNodeProvider`

NodeProvider is essentially provide attributes for a node kind

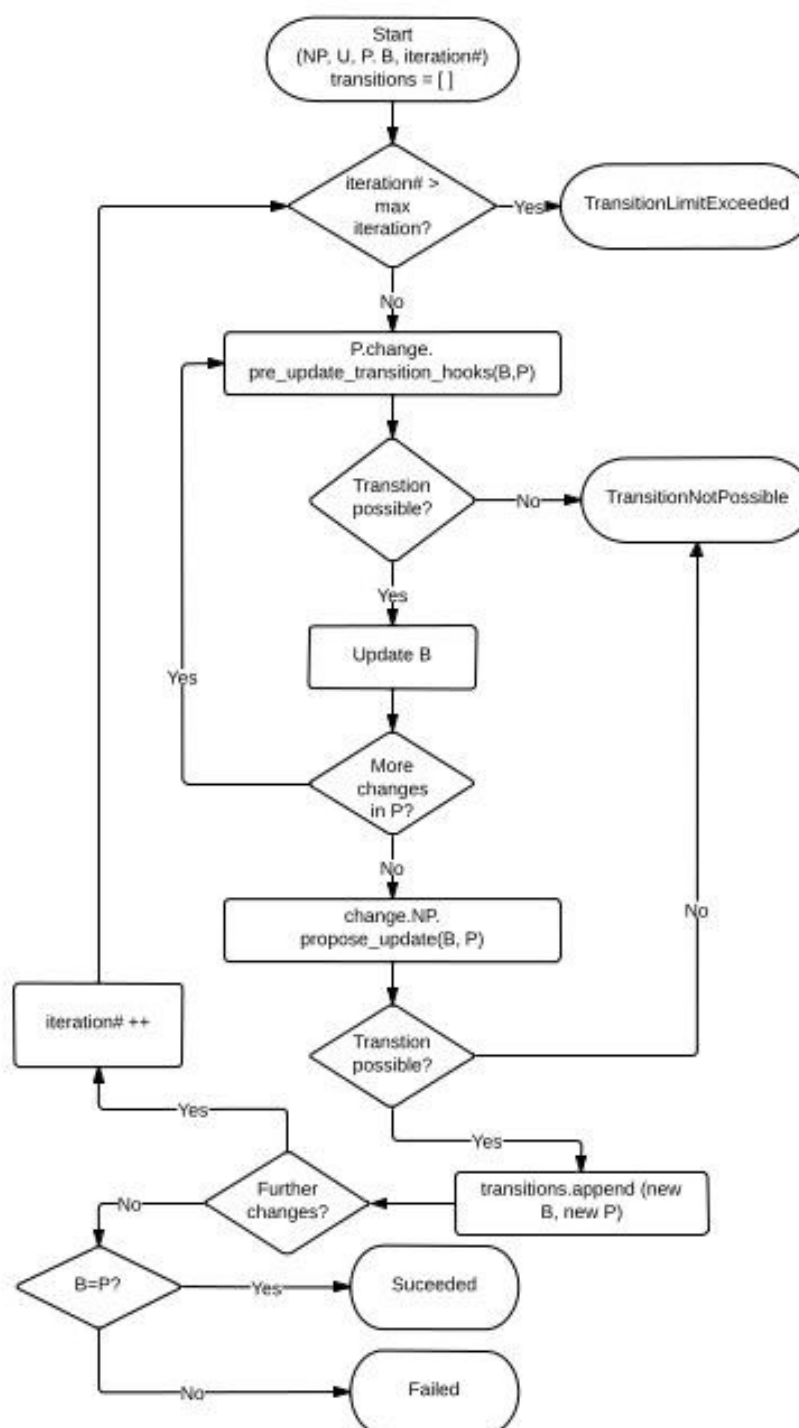
Different NodeProvider can claim attributes of the same node kind

NodeProvider also claim the authority to some node attributes.

Consortium core is responsible merging those nodes

The ζ

nner



It is not that scary

User sends a set of ProposedUpdates

NodeProvider define a function accept all updates, do some operations and return what ProposedUpdates are accepted.

NodeProvider can also tell transitionPlanner to propose some new updates, which will be merged to ProposedUpdates

TransitionPlanner merge the accepted ProposedUpdates to current node, compare with desired state.

If not satisfied, continue the loop until 1)succeeded 2)failed by exceptions 3)tll expired.

Show me the code

`#todo insert some code here`

Workers in Consortium

Master worker

Web worker: main http interface

Queue worker: workers who run tasks

Etcd and Arangodb

Etcd: LockManager, Queue

Arangodb A great graph store just works, for jobs and inventory cache

Show me a work example

#todo, insert a Consort Gif here

The Search Engine

#Todo: show me the example

Other cool thing

#todo how consortium handle list attributes
Explain mode

The future

We are planning to opensource consortium and
consort with a example plugin
Watch us at <https://github.com/Demonware>

Questions?