BOSH Manifest Sanity
Let's back up a little
BOSH Director

Distributed Software
(VMs, Machines, Containers)
Let's Listen
"The Cloud Foundry BOSH manifest is __ __ __ __."
"The CF manifest is ______."
"The CF manifest is ____."
"The CF manifest is ____.___."
"The CF manifest is _____."
"The CF manifest is _____."

Insane?
Why?
A mental state in which a person cannot distinguish between **good** and **evil** 🧑‍⚖️ 😷 👹
Right tool for the job

Wrong tool for the job
YAML
- Human Readable ✔
- Machine Readable ✔

XML
- Human Readable ❌
- Machine Readable ✔
Encapsulatio

Global State
Manifest

- Release info
- Stemcell info
- Networking
- Storage
- Resource Pools (Profiles)
- Config Properties

5591 lines!
Cloud Config
- AZ Definition
- Resource Definition
- Storage Definition
- Networks

BOSH 2

Manifest
- Release info
- OS info
- Config properties
- Instance Groups

Runtime Config
- Global machine settings
Don't Repeat Yourself

Write Everything Twice
why nats and not rabbit

About 629,000 results (0.69 seconds)

BunSpace.com Forum: gnat again!!! they won't go away!
www.bunspace.com/forum/thread?id=15232&posts_tgp_no=last
Jun 21, 2012 - 8 posts - 7 authors
we have gnat all over the house and i cleaned out the bunny cages ... crawled inside their bunny and ate it from the inside. not sure if that's ...

Tips for getting rid of gnats? - Rabbits Online
www.rabbitsonline.net/showthread.php?t=77412
Oct 9, 2013 - 10 posts
And be sure that there are no bad potatoes anywhere, gnats love ... sure you put them up high and no where that your rabbit can get to them!

Ugh! GNATS! - BinkyBunny.com - House Rabbit Information Forum ...
www.binkybunny.com › BINKYBUNNY FORUMS › HOUSE RABBIT Q & A
Aug 23, 2008 - 9 posts - 6 authors
I have not heard of a similar problem with gnats like flies, but I'd imagine you probably want to keep any kinds of bugs away from the buns just ...

Cleaning bunny cage, tiny flies/gnats in cage? | Yahoo Answers
https://answers.yahoo.com/question/?qid=20100206021644AAiuebH
Feb 6, 2010 - the gnats come from the food source, not the bunny. the best way to get rid of them is get rid of the old foodstuffs and suck the bugs up with a ...

Immunological evidence for N-acetyltransferase isozymes in the rabbit.
www.ncbi.nlm.nih.gov/pubmed/1987451 National Center for Biotechnology Information
by PT Reeves - 1991 - Cited by 7 - Related articles.
Polyclonal antibodies to hepatic NAT isolated from rapid acetylator rabbits were ... No immunoreactivity was observed for lung or kidney cytosols from either ...
BOSH Links

Provides:
NATS

Consumes:
NATS

NATS Release

CAPI Release

BOSH 2

Dry!
The Dryer!
Our public communications may contain "forward-looking statements" – that is, statements related to future, not past, events. In this context, forward-looking statements often contain words such as "expect," "anticipate," "intend," "plan," "believe," "seek," "see," "will," "would," or "target." Forward-looking statements by their nature address matters that are, to different degrees, uncertain, such as statements about our announced plan to reduce the size of our financial services businesses, including expected cash and non-cash charges associated with this plan and earnings per share of...
Extracting Secrets
A New Place for Secrets

**Old Manifest**

- seeded_databases:
  - name: ccdb
    username: e6bc4e302dfe09c50821
    password: c6b956f4c6f28
  - name: b8395aa6e9e6c304
    username: 01f01558b045e3a3e
    password: 54b916c33635
  - name: uaa
    username: {uaadb.username}
    password: {uaadb.password}

**Via Manifest**

- name: ccdb
  username: {{ccdb.username}}
  password: {{ccdb.password}}
- name: uaa
  username: {{uaadb.username}}
  password: {{uaadb.password}}

**Via BOSH Links**

- Provides: Secret
- Consumes: Secret

**Config Server**
Packaging / Bundling / Easier-ing
Deploying Cloud Foundry

1. Download Stuff
2. Edit a YAML Template
3. BOSH-Init
4. Edit a YAML Template
5. BOSH Deploy
Deployment - Forward Looking

1. Download Stuff
2. BOSH-Init
3. BOSH Deploy
Bundles - Forward Looking

Download Stuff

BOSH Bundle
- bosh
- syslog
- mysql
- config-server
- uaa
- cpi's

Cloud Foundry Bundle
- capi
- etcd
- consul
- uaa
- diego
- ...
A base manifest

Download Stuff

BOSH Bundle
bosh
syslog
mysql
config-server
uaa
cpi’s

Manifest Included!

base.yml

Cloud Foundry Bundle
capi
etcd
consul
uaa
diego
...

base.yml
Cloud Config
- AZ Definition
- Resource Definition
- Storage Definition
- Networks

Runtime Config
- Global machine settings

Base Manifest
- Release Info
- Stemcell

Extended Manifest
- Config Properties
- Instance Groups

BOSH 2+
What bundle UX might look like

Bundle (includes base.yml)

```
$ bosh upload bundle cloud-foundry-latest.tgz
$ bosh deploy cloud-foundry -o small.yml -o set-ips.yml
```

An override with a "topology" (instance groups settings)

An override with the ips we plan to use for specific jobs
$ bosh target my.bosh.net
  We targetz bosh

$ bosh update cloud-config my-gcp-region-zone-settings.yml
  BOSH knows about region, zone, networking for deploying stuff later

$ bosh upload stemcell gcp-stemcell-latest.tgz
  We haz latest patched os

$ bosh upload bundle cloud-foundry-latest.tgz
  All the releases, and a base manifest, are now ready to go

$ bosh deploy cloud-foundry -o small.yml -o set-ips.yml
  Overrides (-o) the base.yml with a topology (sm, med, large)
  Also overrides base.yml with static ip settings

$ __
Rappin' it up
BOSH as a set of concentric circles.
"Once I understood BOSH I fell in love with it."
Final Final Thoughts

**Encapsulation**
Here.
Boundaries between *Cloud Config* (IaaS) and Deployment Manifest.

**DRY. Abstractions.**
Here.
Repetitive and verbose stanzas replaced by *BOSH Links*, created by release author, and absent from manifest.

**Simplicity. Security**
Coming.
Secrets, and other configs, are stored and encrypted in *config server*.

**Packaging. Delivery.**
Coming.
A *bundle* of releases contains a base manifest, which takes care of everything but properties and sizing.
Thanks!

Matt Reider
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cf-bosh at http://lists.cloudfoundry.org