An introduction to BUCC

(BOSH, UAA, Credhub and Concourse)
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Organizations

Organizations
BUCC (BOSH, UAA, Credhub and Concourse)

The bucc command line utility allows for easy bootstrapping of the BUCC stack (Bosh Uaa Credhub and Concourse). Which is the starting point for many deployments.
Why BUCC

After seeing the awesome cf-deployment repo, I got excited about using it for a new green field client environment.

For me this meant consuming it in a pipeline, and using bosh config-server for generating secrets.

I could setup such an environment with bosh create-env but I was missing the usability of bosh-lite, which lead to the creating of the bucc cli wrapper.
**-deployment repo’s**

- new bosh cli
  - ops-files (build-in yaml composition)
  - vars-store (for generated variables)
  - vars-file (for environment specific variables)
- consuming/customizing deployment manifests with bosh cli
- bosh-deployment used in official BOSH documentation
- style-guide in cf-deployment
- cf-deployment will replace cf-release
BOSH compiled releases

- successor of compiled package cache
- specific for release and stemcell version
- currently does not work for bosh cpi releases
- skips compile phase during deploy
Variables & Secrets
BOSH Config Server - vars-store

```
bucc git/develop * 18s
> bsh int <<(echo "[ variables: [[ name: foo, type: password ]], properties: [ password: ((foo)) ] ]" --vars-store=creds.yml
properties:
  password: 93ypuzslaucmtzl8gi0n
variables: []

Succeeded

bucc git/develop
> cat creds.yml
foo: 93ypuzslaucmtzl8gi0n
```
BOSH Config Server - Credhub

https://github.com/cloudfoundry-community/docker-boshrelease/blob/master/manifests/swarm/docker-swarm.yml

```yaml
instance_groups:
  - name: docker
    instances: 3
    azs: [z1, z2, z3]
    vm_type: default
    stemcell: default
    networks: [{name: default}]
    update: {serial: true}
    jobs:
      - name: docker
        release: docker
        properties:
          tcp_address: 0.0.0.0
          tls_cacert: "((docker-tls.ca))"
          tls_cert: "((docker-tls.certificate))"
          tls_key: "((docker-tls.private_key))"

variables:
  - name: docker-ca
    type: certificate
    options:
      is_ca: true
      common_name: dockerCA
  - name: docker-tls
    type: certificate
    options:
      ca: docker-ca
      common_name: docker
      extended_key_usage:
      - client_auth
```
bucc git/develop+ 15s
> bosh deploy -n -d docker-swarm <(curl -s https://raw.githubusercontent.com/cloudfoundry-community/docker-boshrelease/master/manifests/swarm/docker-swarm.yml)
Using environment '18.218.8.10' as client 'admin'
Using deployment 'docker-swarm'

Release 'docker/3.0.1.9' already exists.

Task 193

Task 193 | 10:43:44 | Preparing deployment: Preparing deployment (00:00:01)
Task 193 | 10:43:45 | Preparing deployment packages compilation: Finding packages to compile (00:00:00)

Task 193 Started Mon Oct 2 18:43:44 UTC 2017
Task 193 Finished Mon Oct 2 18:43:46 UTC 2017
Task 193 Duration 00:00:02
Task 193 done

Succeeded

bucc git/develop+ 9s
> bosh variables -d docker-swarm
Using environment '18.218.8.10' as client 'admin'
Using deployment 'docker-swarm'

2 variables

Succeeded

bucc git/develop+
> credhub get -m /swbosh/docker-swarm/docker-ca
id: a8b62896-76dd-43fb-a79f-4c55b9ca086b
name: /sw-bosh/docker-swarm/docker-ca
type: certificate
value: ca:
  certificate: |
      -----BEGIN CERTIFICATE-----
      MIIDOAICAa8AwIBAgIcGEgBiIhUjEwOGQxETAxOTQwMF8wIEwYMB0GCCsGAQUFBzACh
      -----END CERTIFICATE-----

Cloud Foundry Summit 2017
Concourse Credential Manager - Credhub

```yaml
jobs:
  - name: test
    plan:
      - aggregate:
        - get: stemcell
        - get: bosh-deployment
        - put: deploy
          params:
            manifest: bosh-deployment/bosh.yml
            stemcells: [ stemcell/stemcell.tgz ]
            ops_files: [ bosh-deployment/misc/bosh-dev.yml ]
            vars: { internal_ip: 10.244.0.34 }
      resources:
        - name: bosh-deployment
          type: git
          source:
            url: https://github.com/cloudfoundry/bosh-deployment.git
            branch: master

  - name: stemcell
    type: bosh-to-stemcell
    source:
      name: bosh-warden-boshlite-ubuntu-trusty-go_agent

  - name: deploy
    type: bosh-deployment
    source:
      target: ((bosh_environment))
      client: ((bosh_client))
      client_id: ((bosh_client))
      client_secret: ((bosh_client_secret))
      ca_cert: ((bosh_ca_cert))
      deployment: bosh
```
test #1

- preparing build
  - checking pipeline is not paused
  - checking job is not paused
  - waiting for a suitable set of input versions
  - checking max-in-flight is not reached

stemcell

bosh-deployment

deploy

Expected to find variables: bosh_ca_cert, bosh_client, bosh_client_secret, bosh_environment
Solution: credhub-importer

```bash
bucc git/develop
  credhub find -p /concourse/main/ | grep 'name:'
- name: /concourse/main/concourse_ca_cert
- name: /concourse/main/concourse_password
- name: /concourse/main/concourse_username
- name: /concourse/main/concourse_url
- name: /concourse/main/credhub_ca_cert
- name: /concourse/main/credhub_password
- name: /concourse/main/credhub_username
- name: /concourse/main/credhub_url
- name: /concourse/main/bosh_client
- name: /concourse/main/bosh_client_secret
- name: /concourse/main/bosh_ca_cert
- name: /concourse/main/bosh_environment
- name: /concourse/main/bosh_name
```

using: [https://github.com/cloudfoundry-community/credhub-importer-boshrelease](https://github.com/cloudfoundry-community/credhub-importer-boshrelease)
Use cases

- Development environment for:
  - Bosh release
  - Concourse pipelines
  - *-deployment repo’s

- Production deploys
  - BUCC per environment
  - Bundled Concourse used for deployment jobs
Keeping bucc up to date

- Pipeline updates
  - bosh-deployment
  - concourse-release
  - credhub-cli

- Generates compiled releases for
  - concourse
  - credhub-importer
  - os-conf

https://ci.starkandwayne.com/teams/main/pipelines/bucc
Sharing in the BOSH community

- Sharing bosh-releases
- Sharing deployment manifest examples
- Sharing *-deployment repo’s (maintained by others genesis)
- Sharing *-deployment repo’s (maintained by core teams)
- Next sharing deployment pipelines
Questions?

Shameless self promotion:

Wednesday, October 11 • 17:05 - 17:15

Lightning Talk: Getting Started with the bucc cli - Ramon Makkelie & Ruben Koster, Stark & Wayne

http://sched.co/Bisj