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This lab goes through two common BOSH tasks:

1. Extracting cloud configuration from a release. This makes it easier to share configuration across multiple deployments within a BOSH-lite environment. It also minimizes the deployment manifest, making it more portable to other IaaS environments.

2. Scaling a release horizontally (in other words, spinning up more instances of the application)

Setup

Ensure you are in the root of the `platform-acceleration-bosh-code` directory.

Checkout the `v1` tag and make sure the repository is clean of any revisions.

Take a look at the `articulate.yml` file.

What information in this file is *not* specific to your `articulate` deployment?

Extract Cloud Configuration

Create a new file called `cloud-config.yml`. You will extract your environmnet specific configuration from `articulate.yml` to this file.

Extract the `networks` block.

```
networks:
  - name: articulate
    type: manual
    subnets:
    - range: 10.244.9.0/24
      gateway: 10.244.9.1
      static: [10.244.9.2 - 10.244.9.10]
```

(For your BOSH-lite environment, you don't have to do any manual networking setup. If you were using AWS, you would need to configure the IP range and subnets yourself).

Extract the `resource_pools` block.

```
resource_pools:
  - name: articulate
    network: articulate
    cloud_properties: {}
    stemcell:
      name: bosh-warden-boshlite-ubuntu-trusty-go_agent
      version: latest
```

All of the VMs we deployed via our BOSH-lite directory will need to use the `bosh-warden-boshlite-ubuntu-trusty-go_agent`. In other words, this information is not deployment specific.

Extract the `compilation` block.

```
compilation:
  workers: 3
  network: articulate
  cloud_properties: {}
```

It will be easier to specify the number of VMs and networks available to use for compilation once and not have to worry about it again. (This may not be true for all deployments)

Pushing Cloud Configuration to the Director

From the `platform-acceleration-bosh-code` repository, check out the `v2` tag.

This will pull down a new `cloud-config.yml.` Compare this to what you extracted (above).

Examine at your revised `articulate.yml` manifest.

Upload the cloud config it to the BOSH director.

```
bosh update cloud-config cloud-config.yml
```

Once the cloud config has been updated, point your BOSH cli at the new `aritculate.yml` and redeploy articulate.

Verify that the deployment worked by curling the articulate application.

Scaling the Articulate Release

Open `articulate.yml`.

Increment the number of instances defined for the `articulate` instance group.

(An instance group correlates to a single VM, and it can run multiple jobs. If we want to scale a particular job, we need to scale the instance group it's a part of.)

Attempt to redeploy your application.

```
bosh -n deploy
```

This deployment should fail (assuming you only changed the instance count as instructed).

Why? BOSH was asked to deploy a second instance of the `articulate` instance group, but the instance groups block has only one static ip.

Notice how BOSH detects this issue before running the deployment.

Add a second static ip (`10.244.9.6`) to the `instance groups` block in the manifest and deploy again.

Verifying the Deployment

Check that you now have two articulate VMS.

```
bosh vms
```

The returned vms should look something like the following:

```
+-------------------------------------------------------+---------+-----+------------+------------+
| VM                                                    | State   | AZ  | VM Type    | IPs        |
+-------------------------------------------------------+---------+-----+------------+------------+
| articulate/0 (c7a82b35-03ad-4e63-ae2b-66ffbb9973fe) | running | n/a | articulate | 10.244.9.5 |
| articulate/1 (b25c890e-3885-4387-80c8-b6f3e0066c10) | running | n/a | articulate | 10.244.9.6 |
+-------------------------------------------------------+---------+-----+------------+------------+
```

Make sure you can successfully curl both instances of the app.

```
curl -H 'Accept: application/json' http://10.244.9.5:9000/info
curl -H 'Accept: application/json' http://10.244.9.6:9000/info
```

(https://pivotal.io)

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