

Adfinis**sy**Group

Be smart. Think open source.

Operation

Buildpacks

Add custom buildpacks

`cf create-buildpack BUILDPACK_PATH POSITION`

Update buildpacks

`cf update-buildpack BUILDPACK`

Delete buildpacks

`cf delete-buildpack BUILDPACK`

Lock/unlock updates on buildpacks

```
cf update-buildpack BUILDPACK --lock/--unlock
```

Disable custom buildpacks

```
cc:disable_custom_buildpacks = true
```

Users

Managing Users

FUNCTION	COMMAND	EXAMPLE
Create a new user	cf create-user USERNAME PASSWORD	cf create-user Alice pa55w0rd
Create a new user, specifying LDAP as an external identity provider	cf create-user USERNAME --origin ORIGIN	cf create-user Aayah ldap
Create a new user, specifying SAML or OpenID Connect as an external identity provider	cf create-user USERNAME --origin ORIGIN	cf create-user Aiko provider-alias
Delete a user	cf delete-user USERNAME	cf delete-user Alice

Managing Org Roles

FUNCTION	COMMAND	EXAMPLE
View the organizations belonging to an account	cf orgs	<code>cf orgs</code>
View all users in an organization by role	cf org-users ORGANIZATION-NAME	<code>cf org-users my-example-org</code>
Assign an org role to a user	cf set-org-role USERNAME ORGANIZATION-NAME ROLE	<code>cf set-org-role Alice my-example-org OrgManager</code>
Remove an org role from a user	cf unset-org-role USERNAME ORGANIZATION-NAME ROLE	<code>cf unset-org-role Alice my-example-org OrgManager</code>

Managing App Space Roles

FUNCTION	COMMAND	EXAMPLE
View the spaces in an org	cf spaces	<code>cf spaces</code>
View all users in a space by role	cf space-users ORGANIZATION-NAME SPACE-NAME	<code>cf space-users my-example-org development</code>

Assign a space role to a user	<code>cf set-space-role USERNAME ORGANIZATION-NAME SPACE-NAME ROLE</code>	<code>cf set-space-role Alice my-example-org development SpaceAuditor</code>
Remove a space role from a user	<code>cf unset-space-role USERNAME ORGANIZATION-NAME SPACE-NAME ROLE</code>	<code>cf unset-space-role Alice my-example-org development SpaceAuditor</code>

Using the UUA CLI for adding admins

```
$ gem install cf-uaac
$ uaac target uaa.example.com
$ uaac token client get admin -s MyAdminSecret
$ uaac user add Adam -p newAdminSecretPassword --emails newadmin@example.com
$ uaac member add cloud_controller.admin Adam
$ uaac member add uaa.admin Adam
```

Quotas

Create quotas

```
cf create-quota QUOTA \  
[-m TOTAL-MEMORY] \  
[-i INSTANCE-MEMORY] \  
[-r ROUTES] \  
[-s SERVICE-INSTANCES]
```

List quotas

```
$ cf quotas
Getting quotas as admin@example.com...
OK
```

name	total memory limit	instance memory limit	routes	service instances	paid service plans
free	0	0	1000	0	disallowed
paid	10G	0	1000	-1	allowed
small	2G	0	10	10	allowed
trial	2G	0	1000	10	disallowed

Modify quota

```
$ cf update-quota small -i 2048M \  
-m 4096M -n medium -r 20 \  
-s 20 --allow-paid-service-plans
```

Space Quotas

- `cf space-quotas`
- `cf create-space-quotas`
- `cf update-space-quotas`

Application Security Groups

View ASG

Command	Output
<code>cf security-groups</code>	All ASGs
<code>cf staging-security-groups</code>	All ASGs applied to the platform-wide staging ASG set
<code>cf running-security-</code>	All ASGs applied to the platform-wide running ASG set

groups	
cf security-group SECURITY-GROUP	All rules in the ASG named SECURITY-GROUP, for example, cf security-group dns

Create ASG

```
[
  {
    "protocol": "icmp",
    "destination": "0.0.0.0/0",
    "type": 0,
    "code": 0
  },
  {
    "protocol": "tcp",
    "destination": "10.0.11.0/24",
    "ports": "80,443",
    "log": true,
    "description": "Allow http and https traffic from any"
  }
]
```

Create & Bind ASG

```
$ cf create-security-group my-asg my-asg.json  
$ cf bind-staging-security-group my-asg  
$ cf bind-running-security-group my-asg
```

Feature Flags

```
$ cf feature-flags
```

Features	State
user_org_creation	disabled
private_domain_creation	enabled
app_bits_upload	enabled
app_scaling	enabled
route_creation	enabled
service_instance_creation	enabled
diego_docker	disabled
set_roles_by_username	enabled
unset_roles_by_username	enabled
task_creation	enabled
env_var_visibility	enabled
space_scoped_private_broker_creation	enabled
space_developer_env_var_visibility	enabled
service_instance_sharing	disabled
hide_marketplace_from_unauthenticated_users	disabled

Enable/Disable features

```
$ cf enable-feature-flag user_org_creation  
$ cf disable-feature-flag user_org_creation
```

Delete Buildpack cache through blobstore API

```
$ cf curl -X DELETE /v2/blobstores/buildpack_cache
{
  "metadata": {
    "guid": "acdb8e1d-aeaf-4f13-963e-81839532766f",
    "created_at": "2019-02-15T15:29:16Z",
    "url": "/v2/jobs/acdb8e1d-aeaf-4f13-963e-81839532766f"
  },
  "entity": {
    "guid": "acdb8e1d-aeaf-4f13-963e-81839532766f",
    "status": "queued"
  }
}
```

Kubernetes

Fissile translation

Because of fissile, CloudFoundry is just "translated" to K8s and not a native application running on it

This means

- Logs of components are not accessible via `kubectl logs`
- A lot of `kubectl exec bash`

Container structure

- Entrypoint: `jump-init /opt/roster/run.sh`
- Starts monit
- MonitRC under `/etc/monit/monitrc`
- Monit starts cf packages according to configuration

using monit for status check

- `monit status`

monit status

```
routing-api/0:/var/vcap/jobs# monit status
The Monit daemon 5.2.5 uptime: 6d 22h 37m
```

Process 'crond'

```
status          running
monitoring status  monitored
pid             244
parent pid      1
uptime         6d 22h 36m
children        0
memory kilobytes 2836
memory kilobytes total 2836
memory percent   0.0%
memory percent total 0.0%
cpu percent      0.0%
cpu percent total 0.0%
data collected   Fri Feb 15 13:26:41 2019
```

Pod Readiness Check

Example mysql POD

```
readinessProbe:  
  exec:  
    command:  
    - /opt/fissile/readiness-probe.sh  
    - curl --silent --fail --head http://${HOSTNAME}:9200/  
    - curl --silent --fail --head http://${HOSTNAME}:1936/
```

Pod Readiness Check

readiness-probe.sh

```
# Check that monit thinks everything is ready
curl -s -u admin:${MONIT_PASSWORD} http://127.0.0.1:${monit_port}/_status | gawk '
BEGIN
    { status = 0 }
$1 == "status" && $2 != "running" && $2 != "accessible" { print ; status = 1 }
END
    { exit status }
'
```

Logs

Can be found inside the container under `/var/log/containers/`

Garden

How to access a single garden instance

```
$ cf app cf-spring --guid  
2020d982-a170-4cdf-8e1d-1127fc659edf
```

Get into the diego-cell

```
$ kubectl exec -it diego-cell-0 /bin/bash
diego-cell/0:~# su - vcap
diego-cell/0:~$
```


Ask BBS for instance_id for App

```
diego-cell/0:~$ cfdot actual-lrp-groups | grep 2020d982-a170-4cdf-8e1d-1127fc659edf | jq '.instance.instance_guid'  
"1990a00c-42ae-4477-5557-af9f"  
"63c9b0ee-ce2d-45c4-57ab-3934"  
"1ff186b2-c244-41ee-662b-bd13"
```

List runc instances with root user

```
diego-cell/0:/# /var/vcap/packages/runc/bin/runc list
ID                PID    STATUS  BUNDLE                CREATED                OWNER
06e51ab2-727c-441b-5ad1-1d5b 2322136 running /var/vcap/data/garden/depot/06e51ab2-727c-441b-5ad1-1d5b 2019-02-14T08:48:11.410755101Z root
1990a00c-42ae-4477-5557-af9f 6888   running /var/vcap/data/garden/depot/1990a00c-42ae-4477-5557-af9f 2019-02-08T15:31:58.350017751Z root
1ff186b2-c244-41ee-662b-bd13 2948443 running /var/vcap/data/garden/depot/1ff186b2-c244-41ee-662b-bd13 2019-02-15T15:01:37.875633518Z root
63c9b0ee-ce2d-45c4-57ab-3934 2948438 running /var/vcap/data/garden/depot/63c9b0ee-ce2d-45c4-57ab-3934 2019-02-15T15:01:37.779775766Z root
```

Access container with runc exec

```
s/runc/bin/runc exec -t 1ff186b2-c244-41ee-662b-bd13 /bin/bash

Z  RSS TTY  STAT START  TIME COMMAND
?   Ss  15:01  0:00 /tmp/garden-init
?   Ss  15:01  0:00 bash /home/vcap/app/.java-buildpack/spring_boot_cli/bin/spring run -cp /home/vcap/app/.java-buildpack/client_certificate_mapper/client_certificate_mapper-1.3.0_RELEASE.jar app.groovy
?   Ssl 15:01  0:00 /tmp/lifecycle/diego-sshd --allowedKeyExchanges= --address=0.0.0.0:2222 --allowUnauthenticatedClients=false --inheritDaemonEnv=true --allowedCiphers= --allowedMACs= --logLevel=fatal --debugAddr=
4536 ? Sl  15:01  0:17 /home/vcap/app/.java-buildpack/open_jdk_jre/bin/java -agentpath:/home/vcap/app/.java-buildpack/open_jdk_jre/bin/jvmskill-1.11.0_RELEASE=printHeapHistogram=1 -Djava.io.tmpdir=/home/vcap/tmp -Djava.ext.dirs=/ho
0 pts/0 Ss  15:19  0:00 /bin/bash
6 pts/0 R+  15:19  0:00 ps axu
```

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