# Domains and Routes

Version 1.6.a

# Topics

- **Domains and Routes**
- Blue-green Deployment using Routes

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# Domains

- Each Cloud Foundry installation has a default *app domain*
  - PWS uses cfapps.io
  - Can use custom domains: mycompany.com
  - App domains can include a subdomain: apps.mycompany.com
- Hosts
  - Each application can have a unique host
    - Its URL is therefore *host.app-domain*
    - Example: an app named *myapp:* http://myapp.cfapps.io

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# Domains and Subdomains- Behind the Scenes

- A CNAME wildcard entry (*) is added to DNS for the app domain
- That DNS entry points to a load balancer (or Cloud Foundry's *HA Proxy*), which points to Cloud Foundry's *router*
- The router uses the host to map to application instance(s)

*.cfapps.io

Load Balancer

Router

app1.cfapps.io

myapp.cfapps.io

…

city.cfapps.io

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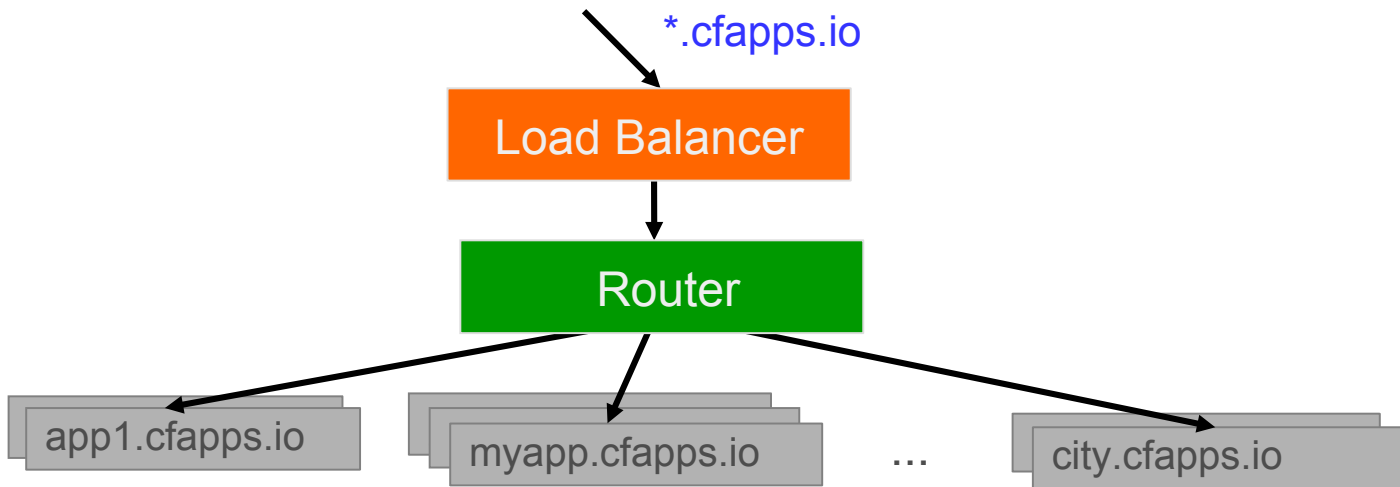
# Routes (1 of 2)

- A URL to an application is called a *route*
  - *Notice that host + domain = route*
- An application can be assigned one or more routes
- myapp.cfapps.io  and cities.cfapps.io can both point to the exact same application
- Routes do not have to include the application name

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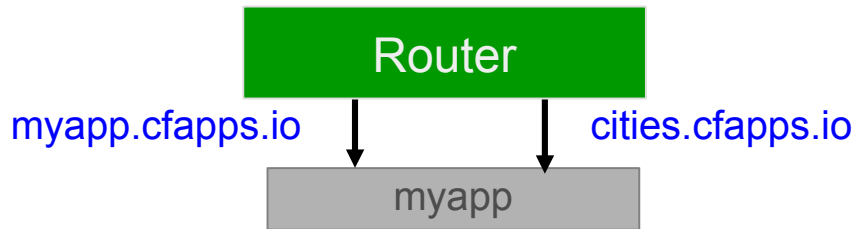
# Routes (2 of 2)

- A route can only be used in a single space
  - Example: if myapp.cfapps.io is in use in a space, an application in another space can not use it
  - This is why you often see unique identifiers on PWS hosted applications (e.g. myapp_654.cfapps.io)

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# Routes in Apps Manager

- View, add and modify routes for an application using the Routes tab in Apps Manager
    - Here http://my-php-app88.cfapps.io and http://my-php-app88**a**.cfapps.io both point to the same application

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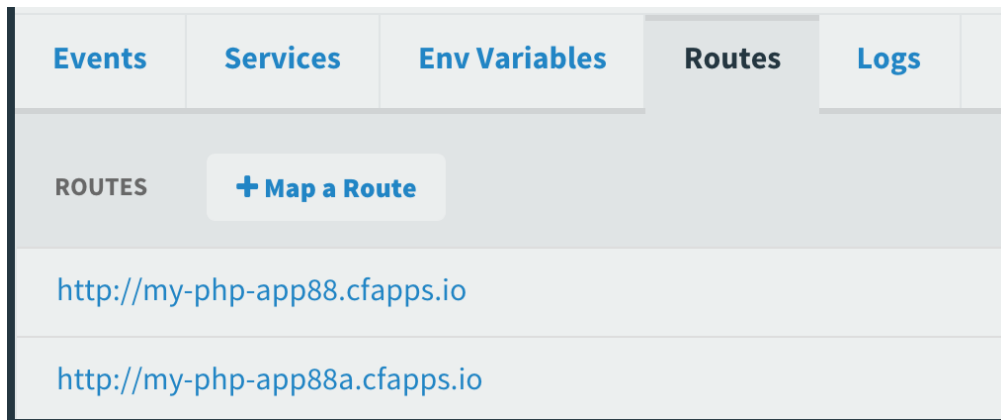
# Routes and the cf CLI

**`cf help`** shows the route-related commands:

```
● ● ●                      📁 my-php-app88 — bash — 127×10
                                                                                  ▤
ROUTES:
   routes, r                           List all routes in the current space or the current organization
   create-route                        Create a url route in a space for later use
   check-route                         Perform a simple check to determine whether a route currently exists or not.
   map-route                           Add a url route to an app
   unmap-route                         Remove a url route from an app
   delete-route                        Delete a route
   delete-orphaned-routes              Delete all orphaned routes (e.g.: those that are not mapped to an app)
```

```
● ● ●                      📁 my-php-app88 — bash — 81×12
                                                                          ▤
greylag:my-php-app88 sbyrnes$ cf r
Getting routes as sbyrnes@pivotal.io ...

space          host                             domain        apps
development    spring-music-burned-dogey        cfapps.io     spring-music
development    spring-music-nasopalatine-zayin  cfapps.io     spring-music
development    springmusic234                   cfapps.io
development    my-php-app87                     cfapps.io     my-php-app87
development    phpmyadmin87                      cfapps.io     phpmyadmin
development    my-php-app88                      cfapps.io     my-php-app88
development    my-php-app88a                     cfapps.io     my-php-app88
greylag:my-php-app88 sbyrnes$ ▮
```
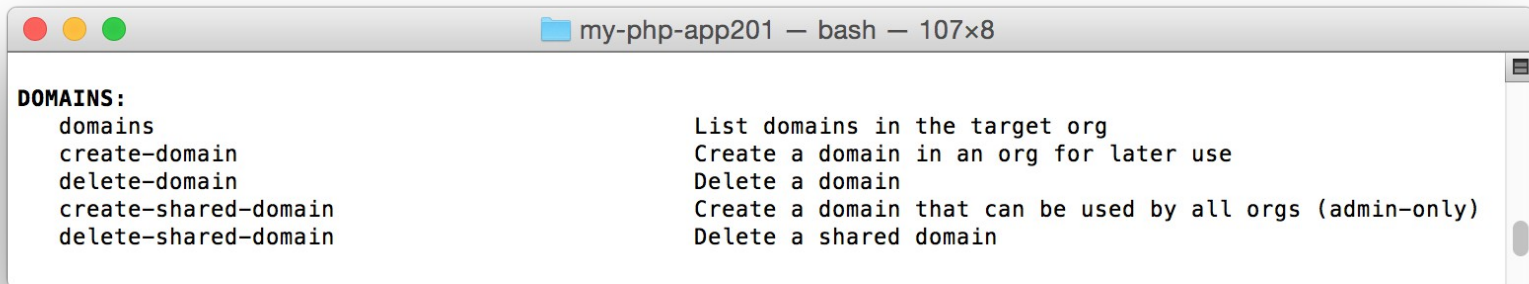
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# Domains in Apps Manager

- Domains are usually defined during installation time
- You can add domains using the cf CLI or Apps Manager
- This allows the same application to be accessed from multiple domains (cfapps.io, mycompany.com, etc.)
- You must also set a DNS entry for your added domain, pointing traffic from your added domain to the domain specified during installation

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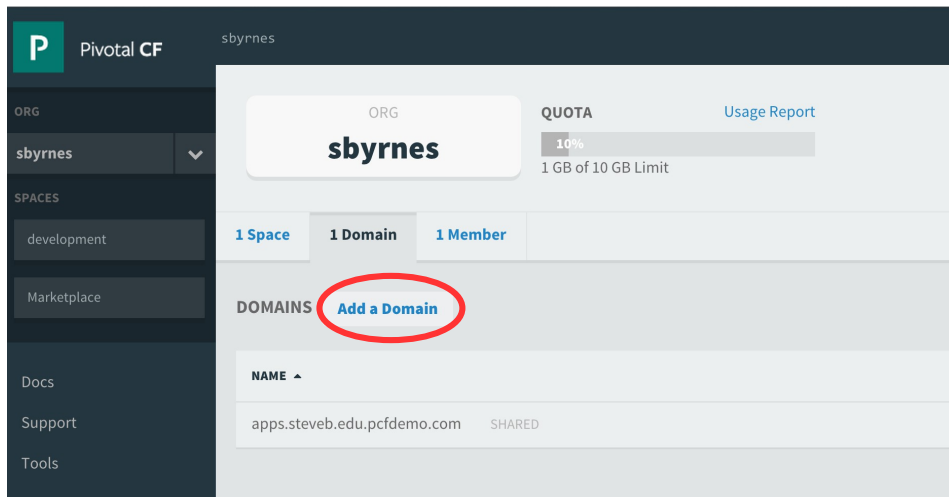
# Domains and the cf CLI

- Use **`cf create-domain`** to create a domain for use inside of an organization

- Use **`cf create-shared-domain`** to create a domain for the entire Cloud Foundry installation (must be logged in as the administrator)

```
                          my-php-app201 — bash — 107×8

DOMAINS:
   domains                              List domains in the target org
   create-domain                        Create a domain in an org for later use
   delete-domain                        Delete a domain
   create-shared-domain                 Create a domain that can be used by all orgs (admin-only)
   delete-shared-domain                 Delete a shared domain
```

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# Topics

- Domains and Routes
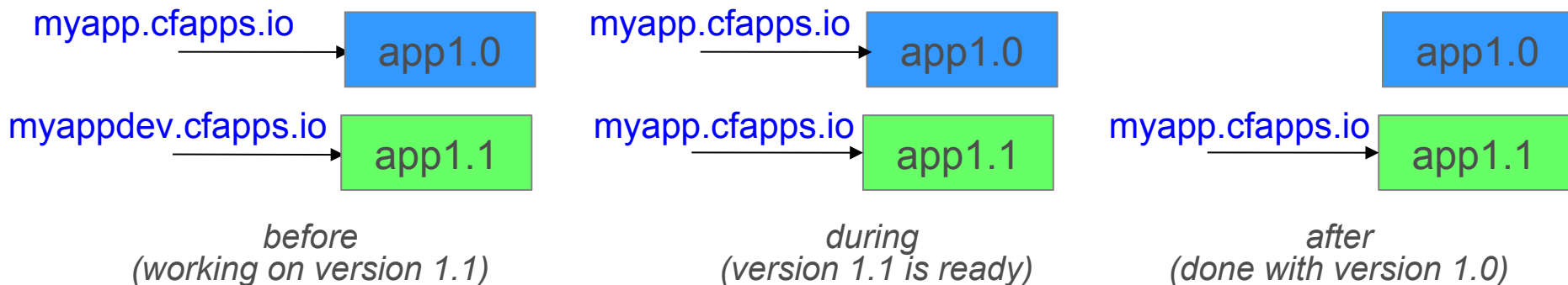- **Blue-green Deployment using Routes**

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# Blue-Green Deployments

- Blue-green deployment is an approach to upgrading applications with minimal downtime

- It also enables easy rollback to the old version if the new version experiences problems

- It works by keeping both versions online, and switching from the old version to the new version

live
traffic → app 1.0

app 1.1

*before*

app 1.0

live
traffic → app 1.1

*after*

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# Blue-Green Deployment using Routes

- Main idea: you always want myapp.cfapps.io to be good
- Use routes to achieve this
- Because you are in a single space, multiple applications can use the same route

myapp.cfapps.io → app1.0

myapppdev.cfapps.io → app1.1

*before*
*(working on version 1.1)*

myapp.cfapps.io → app1.0

myapp.cfapps.io → app1.1

*during*
*(version 1.1 is ready)*

app1.0

myapp.cfapps.io → app1.1

*after*
*(done with version 1.0)*

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# Slowly Turning on Traffic using Instances

- Start with four instances of blue, one instance of green
  - 80 percent of traffic will use version 1.0
- Decrease blue instance, increase green instances as confidence builds

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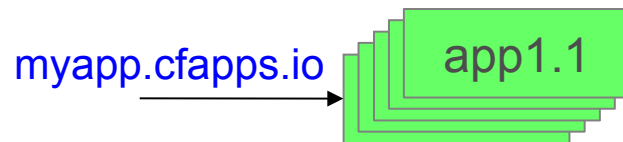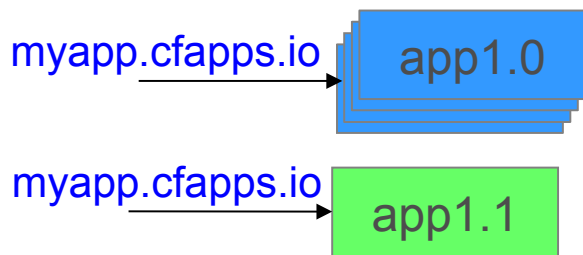
# Lab

Perform a simple blue-green deployment using routes

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