Cloud Controller API

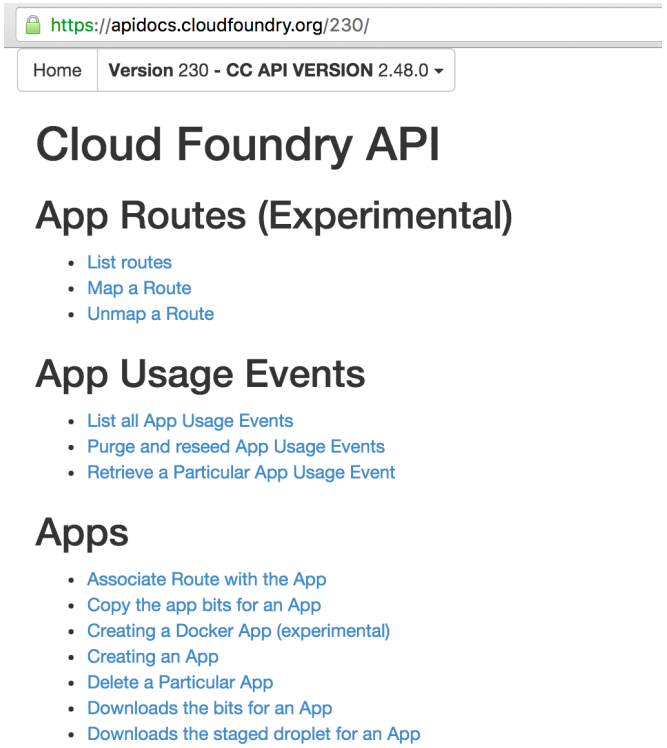
Using the API, Tracing and GUIDs

Topics

- **Cloud Controller API calls**
- cf CLI tracing and GUIDs

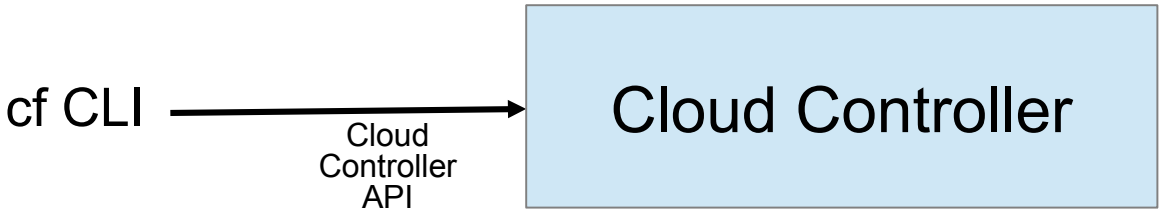
Why the Cloud Controller API?

- The Cloud Controller API is used to:
  - obtain information about the platform
  - make changes to the platform
- Calls from clients and scripts, including custom ones, often include Cloud Controller API calls
- Logs often contain results of the API calls and help with troubleshooting



Cloud Controller API

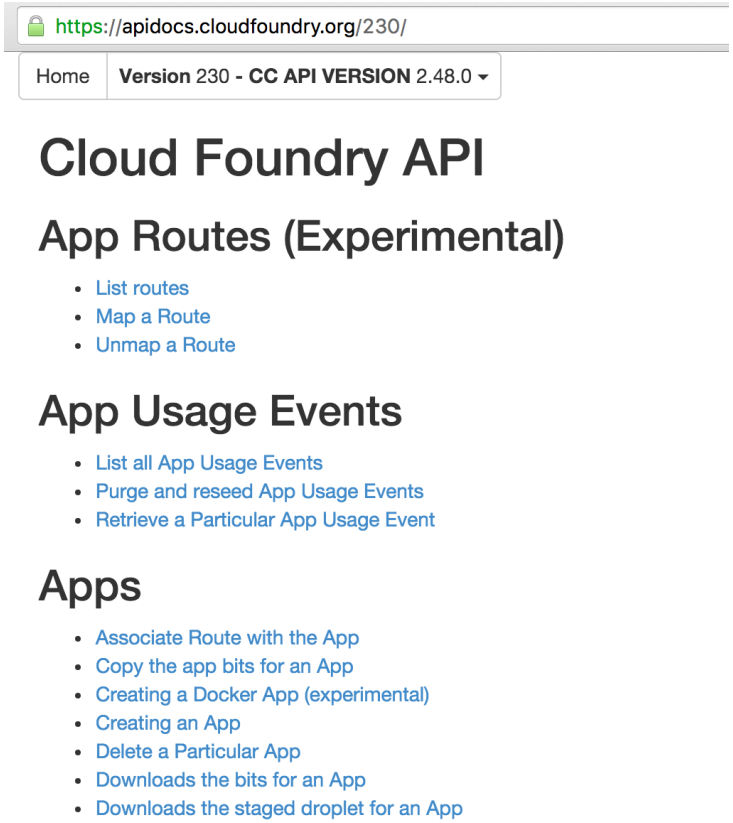
- When you set a target, you are connecting to a component of Cloud Foundry called the Cloud Controller
- The Cloud Controller has a REST API
- The commands of the cf CLI and other clients like Apps Manager directly call this API
- You can also call this API directly



Cloud Controller API

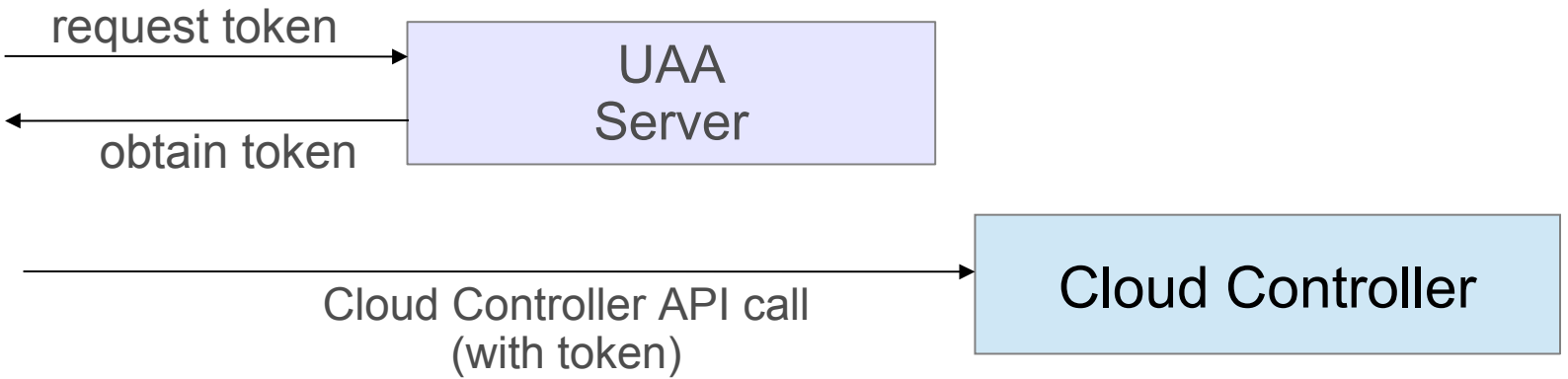
- View the reference documentation
- This API does the actual work on the platform
  - creates spaces, apps, routes, service instances, etc.

http://apidocs.cloudfoundry.org



But first...

- Before making a Cloud Controller API request, you must get an access token from a component called the User Authentication and Authorization (UAA) server
- Obtain the access token, then pass it with each Cloud Controller API call



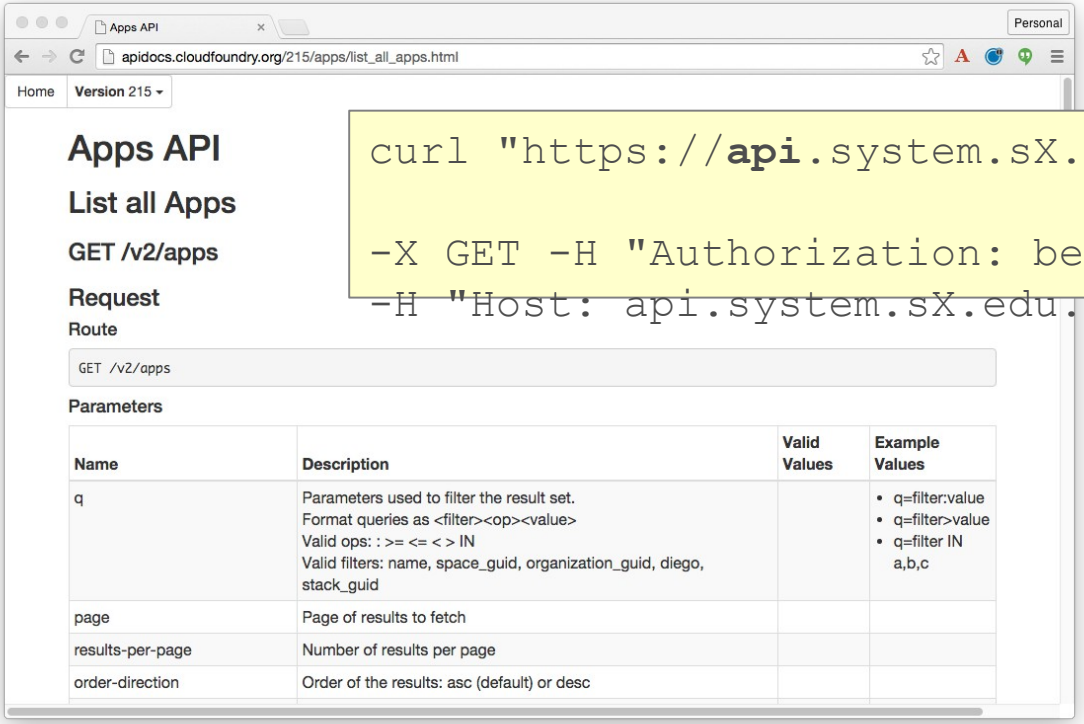
UAA API

- The UAA has an API
- To obtain an access token, use the /oauth/token endpoint

```
curl -k -H 'AUTHORIZATION: Basic Y2Y6'
-d 'username=[username]&
password=[password]&grant_type=password'
https://uaa.[path to system domain]/oauth/token
```

Example Cloud Controller API- List All Apps

- Lists all apps in the Cloud Foundry foundation

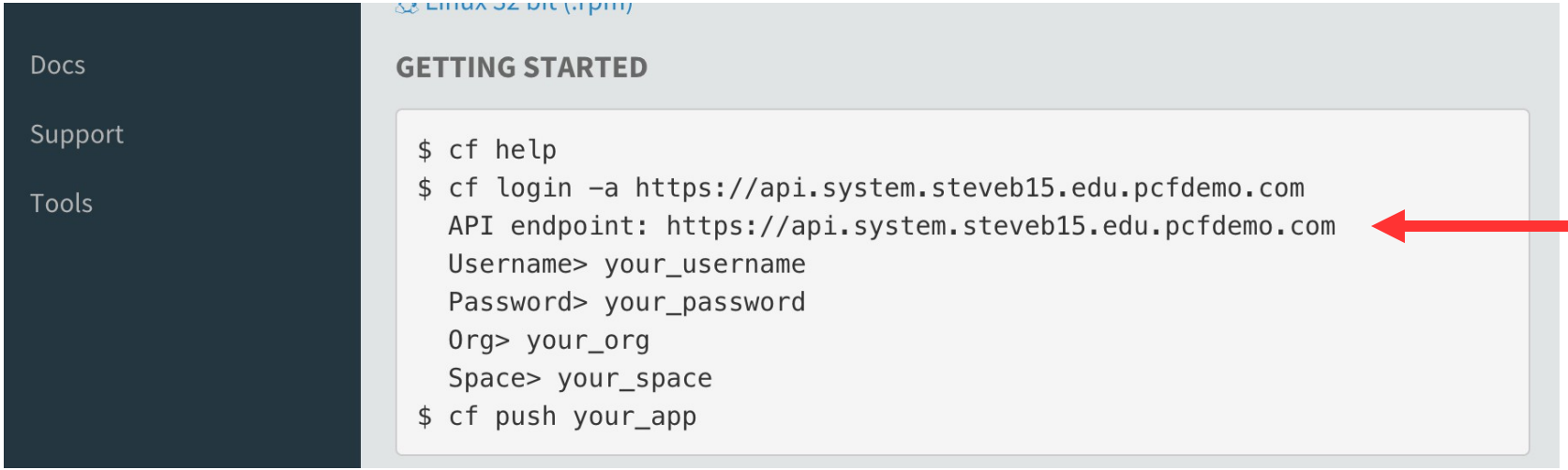



```
curl "https://api.system.sX.edu.pcfdemo.com/v2/apps" -k

-X GET -H "Authorization: bearer [access_token]"
-H "Host: api.system.sX.edu.pcfdemo.com" -H "Cookie: "
```

Cloud Controller API Endpoint in Apps Manager

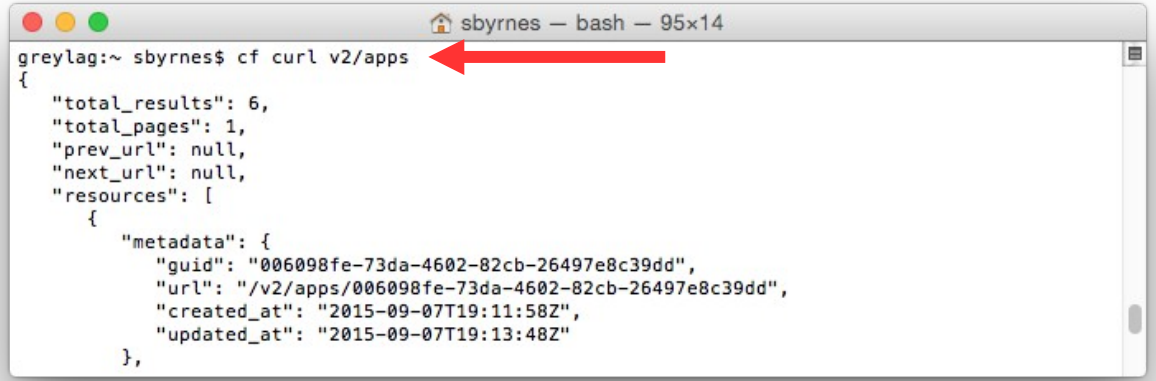
- The Cloud Controller API URL is listed in Apps Manager in the Tools section



cf curl

- The **`cf curl`** command simplifies making Cloud Controller API requests
  - The URL is relative
  - The access token is automatically passed
  - Default parameters are passed

with the cf CLI



without the cf CLI

```
curl "https://api.system.sX.edu.pcfdemo.com/v2/apps" -k
-X GET -H "Authorization: bearer [access_token]"
-H "Host: api.system.sX.edu.pcfdemo.com" -H "Cookie: "
```

Topics

- Cloud Controller API calls
- **cf CLI tracing and GUIDs**

cf CLI Tracing

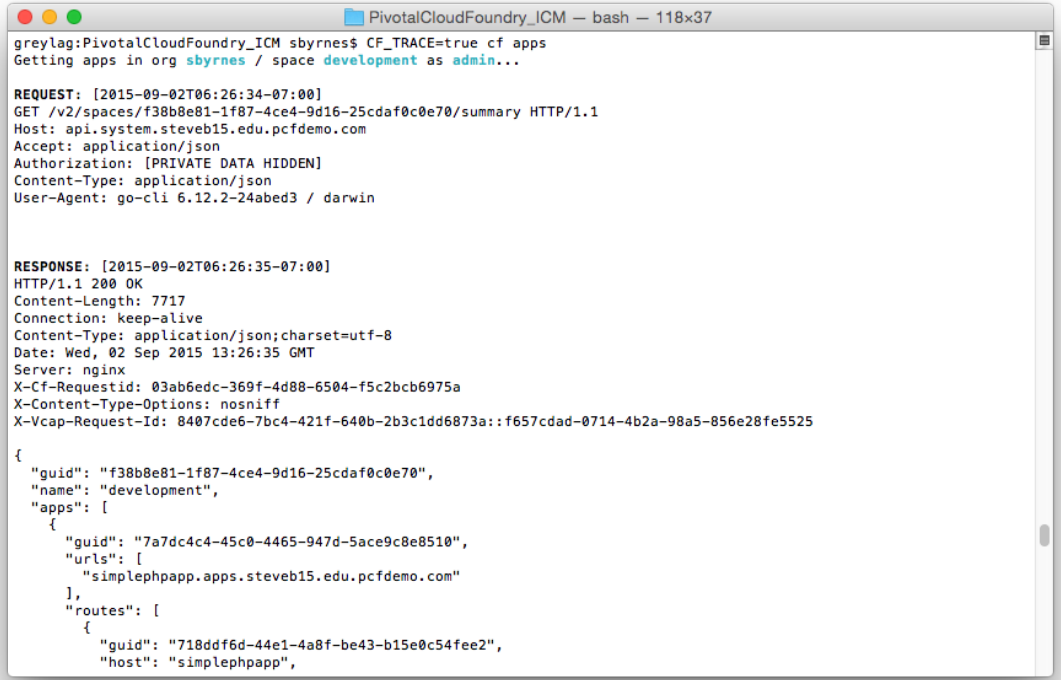
- The cf CLI makes Cloud Controller API requests behind the scenes
- CF_TRACE is an environment variable
- To see the Cloud Controller API requests and responses, turn on CF_TRACE
  - Set to **`true`** to log to console
  - Set to path and filename to log to a file

To turn on tracing for **`cf apps`**:

```
CF_TRACE=true cf apps
```

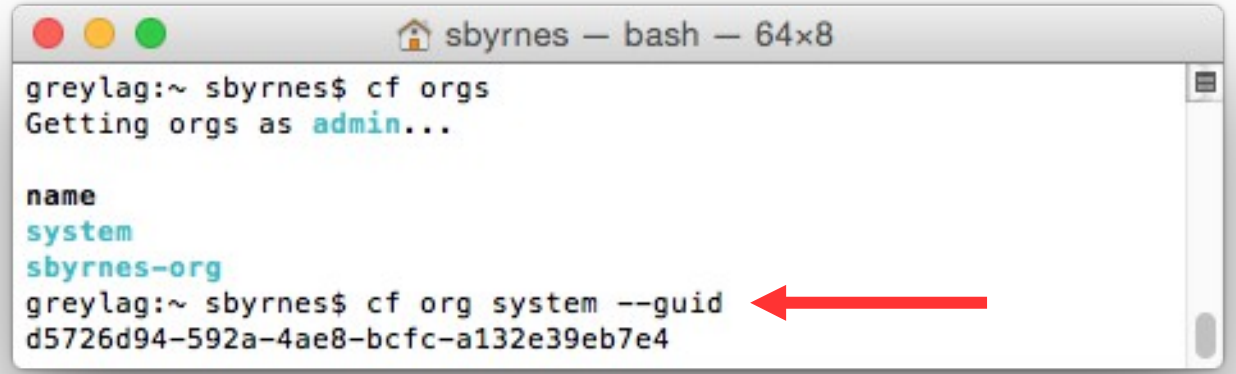
CF_TRACE Output

- View details of HTTP REQUESTs and RESPONSEs



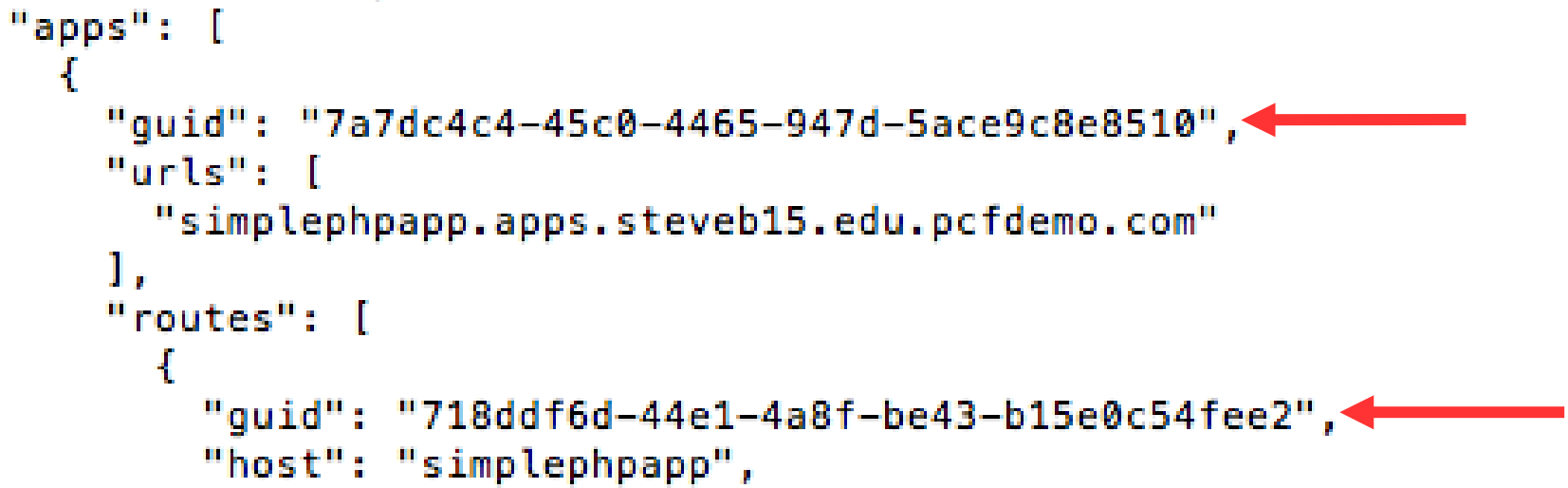
GUIDs- In the cf CLI

- Most resources in Cloud Foundry have a globally unique ID (GUID) associated with them
- The **`cf app`**, **`cf org`**, **`cf space`** and **`cf service`** commands have a --guid flag



GUIDs- In the Cloud Controller API

- You can also see GUIDs in the Cloud Controller API requests and responses



GUIDs- Calling the Cloud Controller API

- You can use the GUID to make Cloud Controller API calls directly
- Example: Deleting an application

1. Use the --guid flag to get the application GUID:

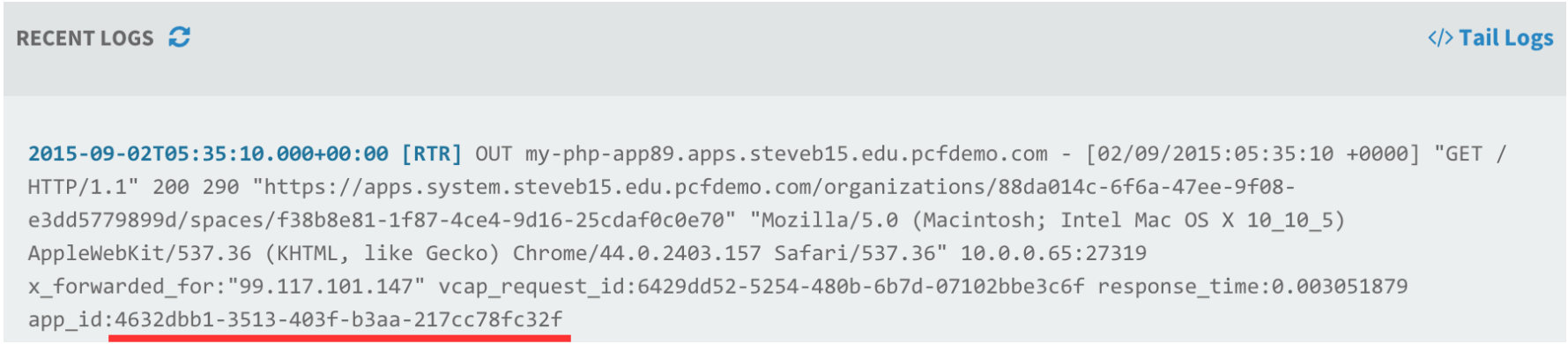
```
$ cf app my-php-app --guid
995c0b08-3ca8-404f-a49a-3ca991cde304
```

2. Use cf curl to make the API call to delete the app:

```
$ cf curl -X DELETE /v2/apps/995c0b08-3ca8-404f-a49a-
3ca991cde304
```

GUIDs- In the Logs

- GUIDs are very common in logs
- For example, an application has a GUID, and you can search for that GUID in the logs when troubleshooting



Lab

Use the following:

- cf curl
- Cloud Controller API
- cf CLI tracing
- Globally unique identifiers (GUIDs)