

Getting Started with CloudFormation

Introduction

CloudFormation is a powerful automation service within AWS. It can be used to create simple or complex sets of infrastructure any number of times. This hands-on lab provides a gentle introduction to CloudFormation, using it to create and update a number of S3 buckets. By the end of this hands-on lab, you will be comfortable using CloudFormation and can begin experimenting with your own templates.

Solution

Log in to the live AWS environment using the credentials provided, and make sure you are in the `us-east-1` (N. Virginia) region.

The CloudFormation templates and other hands-on lab files can be found [here](#). You can navigate to the needed file and choose the `RAW` view in GitHub. You can save them from there by using the Save As... functionality in your browser.

A list of AWS resources and what happens when updates occur can be found [here](#).

Create a CloudFormation Stack

1. Download the `createstack.json` file by right-clicking and selecting Save As functionality.
2. In the AWS console, navigate to CloudFormation.
3. Click Create stack > With new resources (standard).
4. Select Template is ready.
5. Select Upload a template file.
6. Click Choose file.
7. Locate `createstack.json` in the AWS browser window that popped up.
8. Select and upload it, and click Next.
9. Name the stack "cfnlab".
10. Click Next > Next.
11. Accept the remaining defaults, and click Create stack.
12. Refresh the page to watch the progress.
13. Navigate to S3. We didn't specify a name in the `json` file for this bucket, so AWS names it with the `--` format. Yours will be: `cfnlab-catpics-`.

Update the CloudFormation Stack

1. Save the `updatestack1.json` and `updatestack2.json` files like we did for `createstack.json`.

Update #1

1. Navigate to CloudFormation.

2. Select the `cfnlab` stack, and click Update.
3. Select Replace current template.
4. Select Upload a template file.
5. Click Choose file, and select and upload `updatestack1.json`.
6. Click Next > Next > Next.
7. Click Update stack.
8. Once it's finished updating, navigate to S3. We should see the new `dogpics` bucket.

Remove the Update

1. Navigate back to CloudFormation.
2. Select the `cfnlab` stack, and click Update.
3. Select Replace current template.
4. Select Upload a template file.
5. Click Choose file, and select and upload `createstack.json` again.
6. Click Next > Next > Next.
7. Click Update stack.
8. Once it's finished updating, navigate to S3. We should see the `dogpics` bucket is now gone.

Update #2

1. Open the `updatestack2.json` file.
2. Change the `123` characters in `catsareawesome123` to something unique (e.g., your birthday and today's date).
3. Save the file.
4. In the CloudFormation console, select the `cfnlab` stack, and click Update.
5. Select Replace current template.
6. Select Upload a template file.
7. Click Choose file, and select and upload `updatestack2.json`.
8. Click Next > Next > Next.
9. Click Update stack.
10. Once it's finished updating, navigate to S3. We should see two changes: The `dogpics` bucket is back, and our bucket name is updated to the new value.

Add CloudFormation Stacks

Create a Stack with `updatestack2.json`

1. Navigate to CloudFormation.
2. Click Create stack > With new resources (standard).
3. Select Template is ready.
4. Choose to Upload a template and Choose file.
5. Select and upload `updatestack2.json`.
6. Click Next.
7. Name the stack "cfnlab2".
8. Click Next > Next.

9. Accept the remaining defaults, and click Create stack.
10. Refresh the page to watch the progress.
11. Note it eventually fails — we can't have another S3 bucket with the same name.

Create a Stack with `updatestack1.json`

1. Navigate to CloudFormation.
2. Click Create stack > With new resources (standard).
3. Select Template is ready.
4. Choose to Upload a template and Choose file.
5. Select and upload `updatestack1.json`.
6. Click Next.
7. Name the stack "cfnlab3".
8. Click Next > Next.
9. Accept the remaining defaults, and click Create stack.
10. Refresh the page to watch the progress.
11. Once it's complete, navigate to S3, where we should see two new buckets:
`cfnlab3-catpics-<RANDOM_STRING>` and `cfnlab3-dogpics-<RANDOM_STRING>`.

Delete CloudFormation Stacks

1. Navigate to CloudFormation.
2. Select `cfnlab`.
3. Click Delete.
4. In the dialog, click Delete stack.
5. Click the stack, and then click the Events tab to see the resources being deleted.
6. Select `cfnlab2`.
7. Click Delete.
8. In the dialog, click Delete stack.
9. Select `cfnlab3`.
10. Click Delete.
11. In the dialog, click Delete stack.
12. Once it's all done, navigate to S3. We should see all the `cfnlab` buckets are gone, as well as our `catsareawesome` bucket.

Conclusion

We've managed to use templates to create stacks and related resources, and we were able to get things cleaned up when we were done with them in pretty short order. Congratulations!