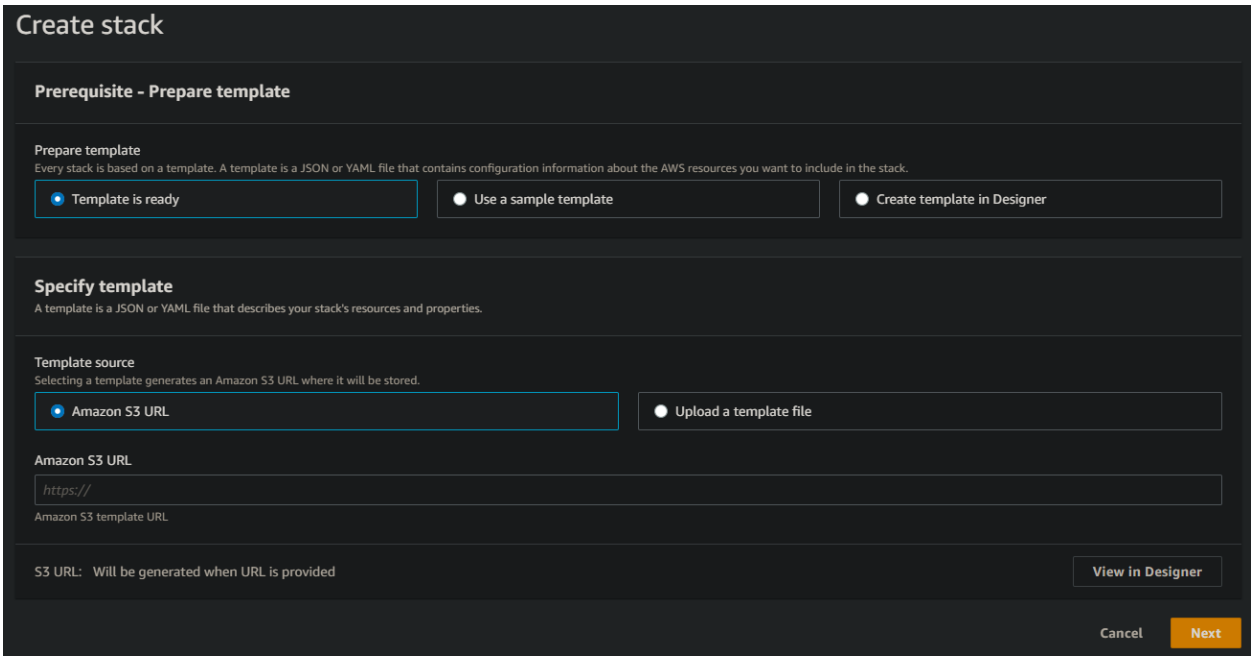
Getting Started with CloudFormation.

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.

Creating Stack

1. Once logged into AWS console go to CloudFormation and click create stack.

Figure 1-1



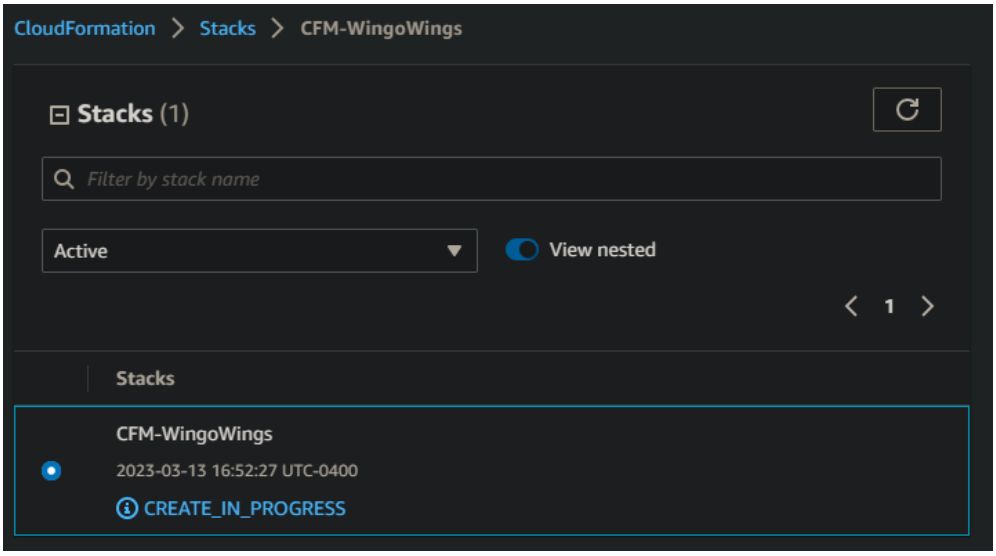
2. Since we have a template ready, we simply select “Template is ready”.
    a. And since we don’t have it in S3 we select “Upload a template file”.

Figure 1-2

3. Once you save your file, upload the CloudFormation Template file and click next.
4. Name the Stack name.
5. You should be at configure stack options, but for right now you can click next.

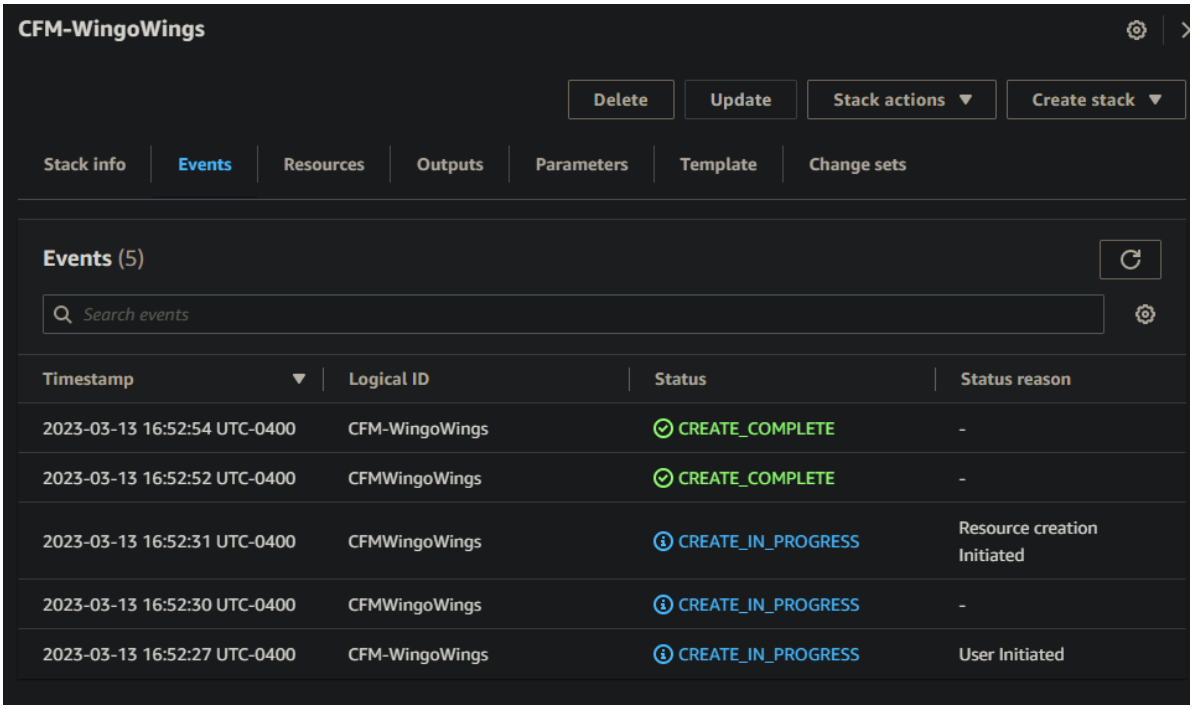
6. And once you review it you can click “Submit”.

Figure 1-3



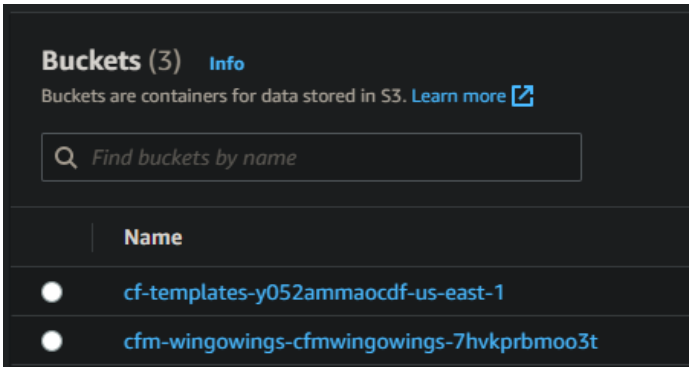
7. From time to time, refresh the events box to see it change from in progress to complete.

Figure 1-4



8. Now that it is completed, navigate to the S3 console into a new tab.

Figure 1-5



Notice in ***Figure 1-5*** that the "cfm-wingowings…" has a longer name. That is because it has to be globally unique names, hence on the access column it says "Objects can be public".

Updating Stack

9. So now that we have verified the stack we go back to the CloudFormation Template we created and edit it.

Before:

After:

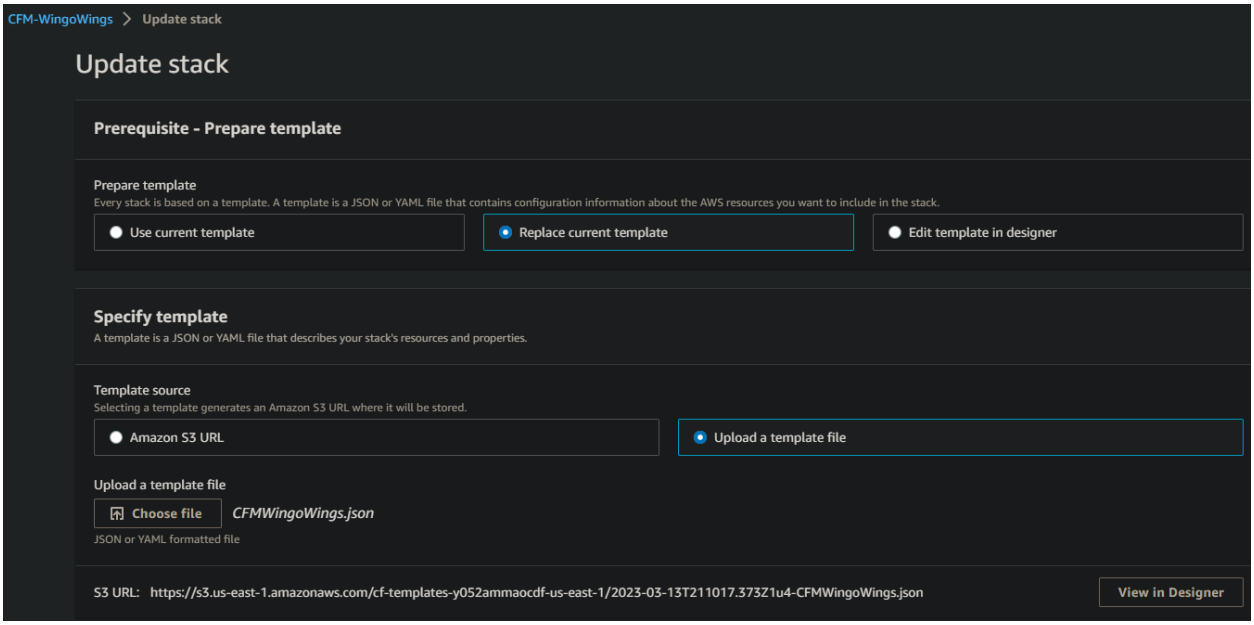
We are going to copy and paste the same thing from lines 3-4. But notice the red circle I have put in there make sure that the comma is implemented. If not, you will receive an error expecting a comma.

10. I noticed my tree/lines were not lined up on line 6-7 to match 3-4 so I corrected that.
11. Notice the yellow lines under the resource names, we can't have 2 of the same names so we can change it to "CFMWingosPizza".

So now we will have two S3 buckets that will be created.

12. After saving the CloudFormation Template file go back to the CloudFormation Stacks in AWS console.
13. Once you're there, select the one you want to update, and simply click update.

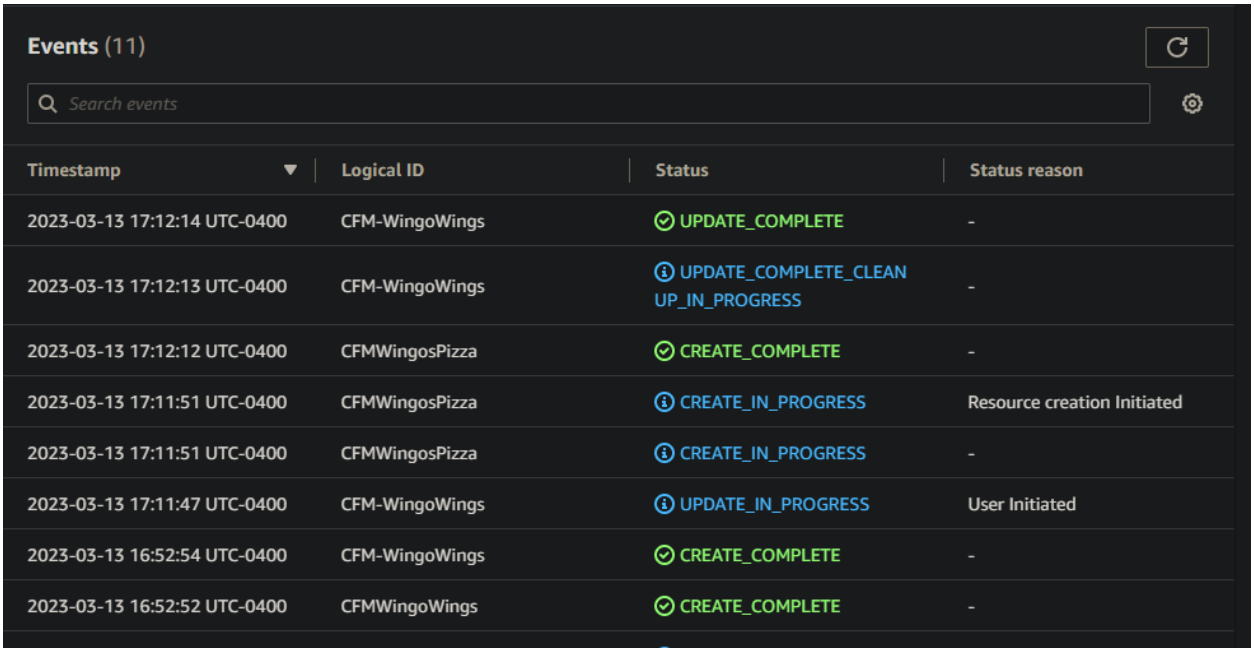
Figure 2-1



Here you can see that I have selected "Replace current template" And uploaded the updated file.

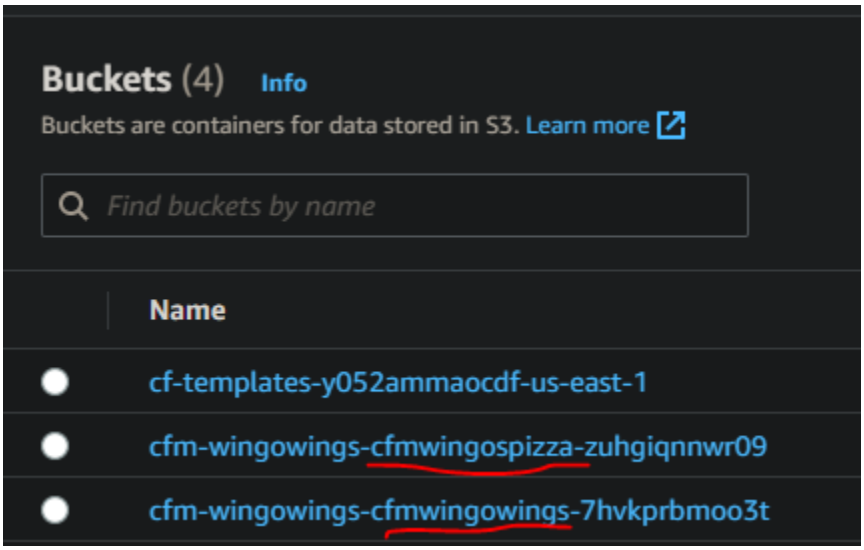
14. Everything from here is about the same except in the review section we see the "Change" section.

Figure 2-2



We see that the newly S3 bucket is created, so go back to the S3 management console tab and hit refresh.

Figure 2-3



Above I underlined the bucket names because you can see similarities to these two. Just be careful on selecting the correct one you want.

15. If you want to delete this file you can simply select the bucket you want and select delete. Or you can go back into the CloudFormation Template file and simply remove it from there. And then follow the steps to update the bucket again.

So now lets modify existing resources in our CLOUDFORMATION TEMPLATE file.

16. So I am going to go back to the CloudFormation Template file and edit the actual name so I don't have to have a random ID we are going to specify the bucket name.

Figure 2-4

```
{
    "Resources": {
        "CFMWingoWings": {
            "Type": "AWS::S3::Bucket",
            "Properties":{
                "BucketName": "WingoWings-122347"
            }
        },
        "CFMWingosPizza": {
            "Type": "AWS::S3::Bucket"
        }
    }
}
```

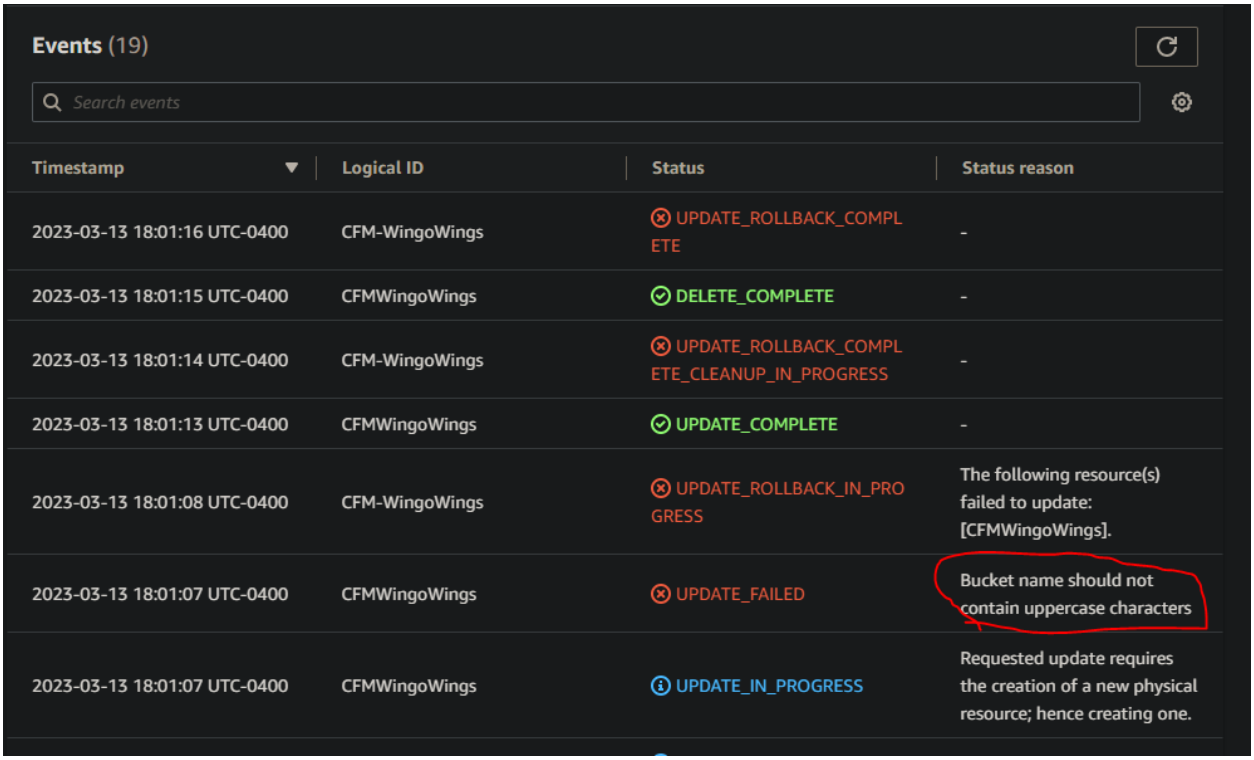
Above you can see I have added a properties and a bucket name. We are doing this so we don't have to have random string of numbers.

I did add numbers to the end of the bucket name, but it spells out "AWSCFM" from looking up and down from the keyboard.

17. Once you have made the changes and saved it. Do the necessary steps to update the bucket once again.

Tip: in the changes section on the review portion. You can see it is set to "True" on the replacement portion. S3 buckets cannot be renamed once they're created. So in order to create a different S3 bucket, you actually have to delete the existing wingowings bucket and create a new one.

Figure 2-5: Troubleshooting



Events (19)

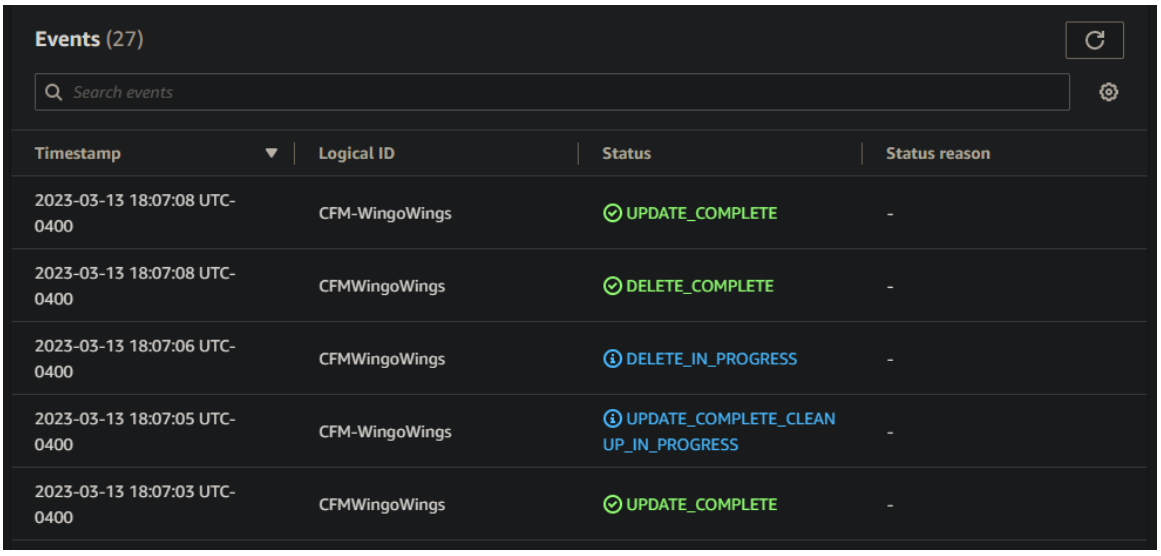
Search events

Timestamp	Logical ID	Status	Status reason
2023-03-13 18:01:16 UTC-0400	CFM-WingoWings	UPDATE_ROLLBACK_COMPLETE	-
2023-03-13 18:01:15 UTC-0400	CFMWingoWings	DELETE_COMPLETE	-
2023-03-13 18:01:14 UTC-0400	CFM-WingoWings	UPDATE_ROLLBACK_COMPLETE_CLEANUP_IN_PROGRESS	-
2023-03-13 18:01:13 UTC-0400	CFMWingoWings	UPDATE_COMPLETE	-
2023-03-13 18:01:08 UTC-0400	CFM-WingoWings	UPDATE_ROLLBACK_IN_PROGRESS	The following resource(s) failed to update: [CFMWingoWings].
2023-03-13 18:01:07 UTC-0400	CFMWingoWings	UPDATE_FAILED	Bucket name should not contain uppercase characters
2023-03-13 18:01:07 UTC-0400	CFMWingoWings	UPDATE_IN_PROGRESS	Requested update requires the creation of a new physical resource; hence creating one.

So, trying to update I see that it rollbacked because the update failed due to in the CloudFormation Template I included uppercase characters. Easy fix…

Some errors may come up saying the bucket name my already exist. But in this case, it was just the uppercase characters.

Figure 2-6: Troubleshooting



Events (27)

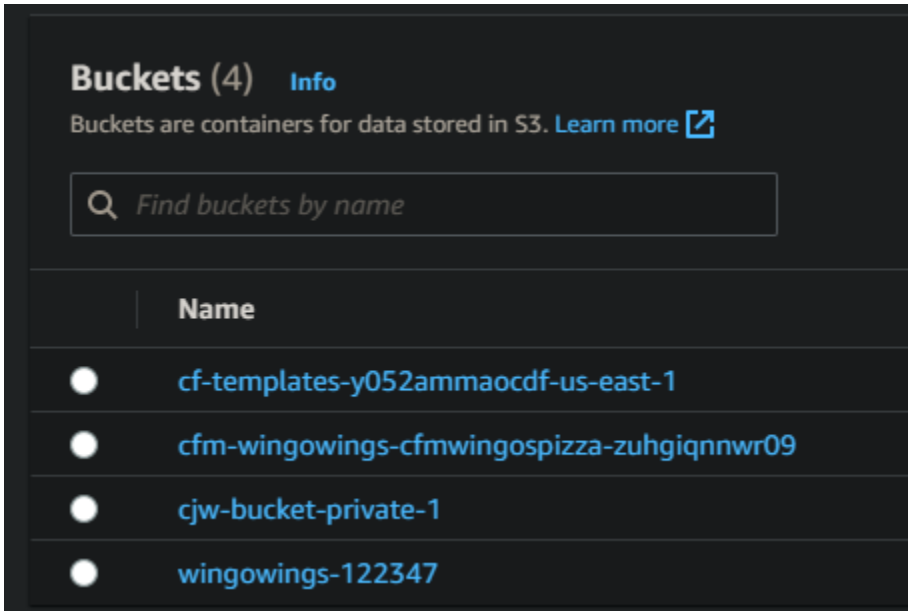
Search events

Timestamp	Logical ID	Status	Status reason
2023-03-13 18:07:08 UTC-0400	CFM-WingoWings	UPDATE_COMPLETE	-
2023-03-13 18:07:08 UTC-0400	CFMWingoWings	DELETE_COMPLETE	-
2023-03-13 18:07:06 UTC-0400	CFMWingoWings	DELETE_IN_PROGRESS	-
2023-03-13 18:07:05 UTC-0400	CFM-WingoWings	UPDATE_COMPLETE_CLEANUP_IN_PROGRESS	-
2023-03-13 18:07:03 UTC-0400	CFMWingoWings	UPDATE_COMPLETE	-

Resolved, as you can see it deleted the old bucket with the random characters.

18. Go back to your S3 Buckets tabs and hit refresh.

Figure 2-7



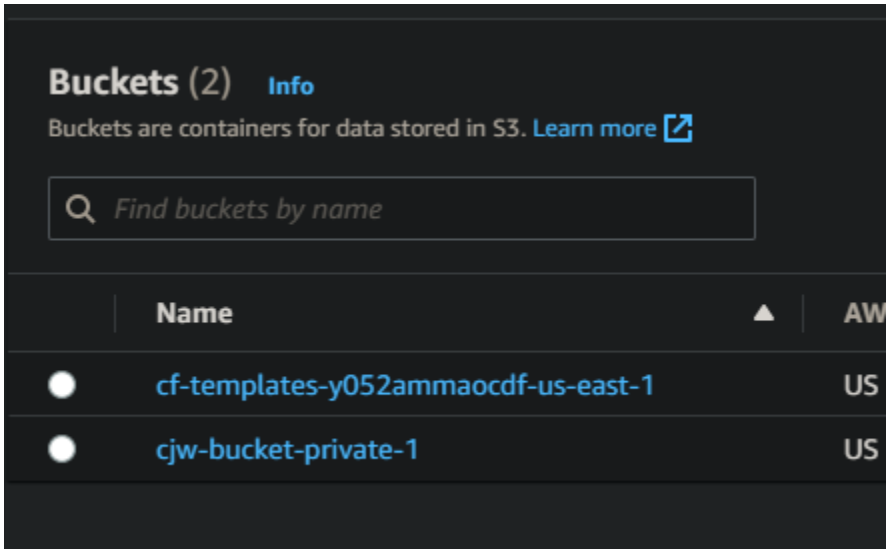
As you can see, our “wingowings-122347” was available from the public and there are no random strings.

Lastly, we can delete the stack.

Delete CloudFormation Stack

19. Go to the CloudFormation Stacks.
20. Select the stack that you want to delete and click delete > Delete Stack.
21. This will remove both buckets from S3.
22. Verify that both buckets are removed.

Figure 3-1



https://github.com/CamCam919