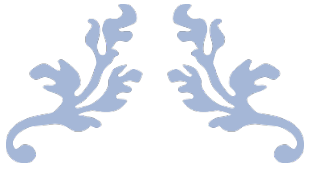

TECHNOLOGY APPLICATION PROJECT (COS80029)

XC3 - PROJECT BREAKDOWN USER MANUAL

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Table of Contents

1. Introduction

Welcome to the user guide of XC3'S Project Breakdown Cost feature enhanced by Team 15 of Technology Application Project unit. This guide will take you through the workflow of the feature deployed in cloud environment.

2. What is Project Breakdown Cost feature?

Project Breakdown Cost is a feature enhancement proposed by XGRID for the XC3 tool. This enhancement to XC3 allows users to gain insights into their cost allocation across different services within a particular project. While the current feature of XC3 only permits users to access cost details for entire projects, users often desire to understand the specific services contributing to their costs. This is where the new feature comes into play, enabling a detailed breakdown of project costs at the service level.

3. How to use Project Breakdown Cost feature?

3.1. Cloning the git repo

The first step to start using this feature is to get the code which is available at: https://github.com/prakriti-neupane/tap-xc3 in **featureTeam15-ProjectCostBreakdown** branch.
After cloning the repo to start using XC3 we need to understand the system requirements, process of integrating and the flow which is described below:

3.2. System Requirements

To begin using this feature, ensure that your system meets the following requirements:

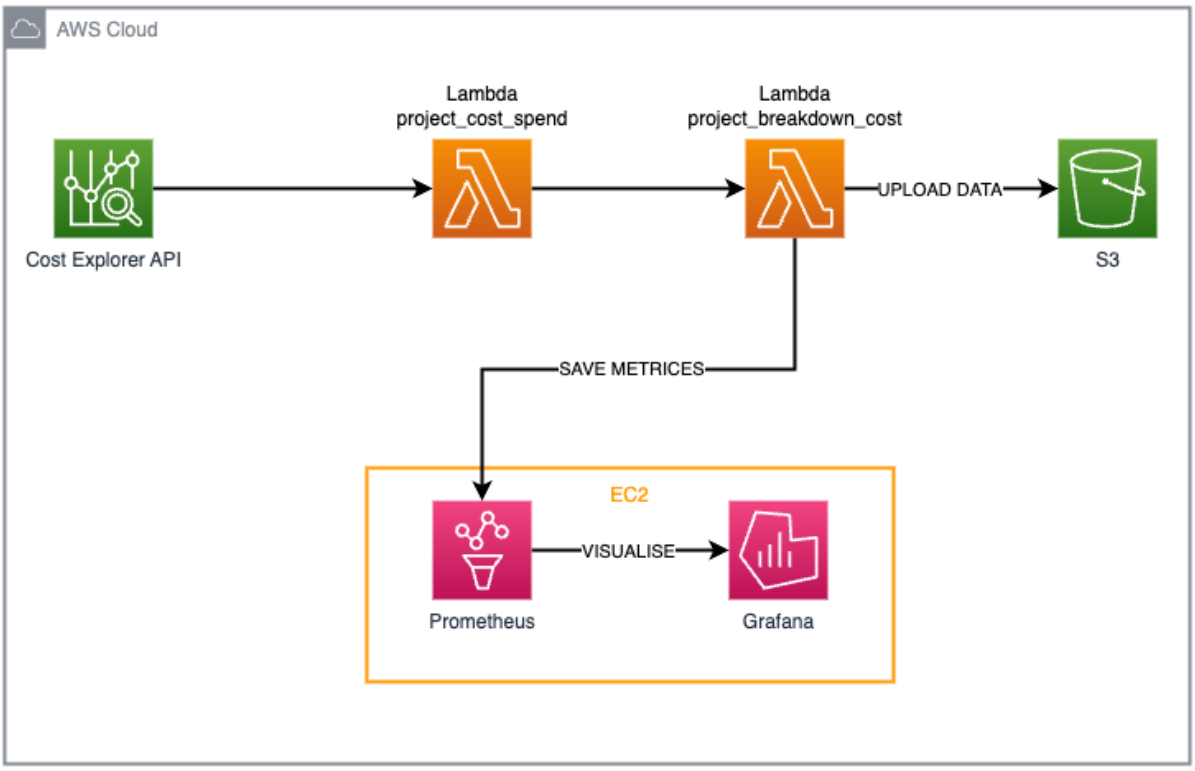
- Terraform 1.0+
- Python 3.9
- AWSCLI
- Cloud Custodian
- Prometheus/Grafana/Pushgateway
- checkov 2.0.574 or later
- shellcheck 0.7.1 or later

3.3. Cloud requirement

- Login to the cloud account and ensure that it has the necessary permissions granted.
- The user has to enable the CostExplorer API in their AWS Account.
- XC3 should be deployed properly in cloud using IaC (Terraform).

3.4. Architecture Diagram

This is the flow of how our feature can work in AWS cloud.



4. Getting Started with Project Breakdown Cost

After going through the requirements, we can get started with Project Breakdown feature.

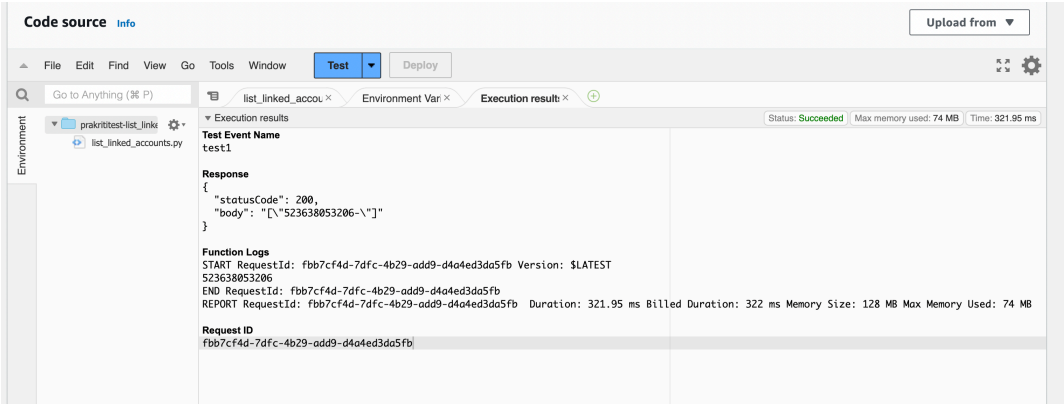
4.1. Testing Lambda Function

To see our feature working after deployment of XC3 infrastructures, we need to test some lambda functions that is there in cloud where infrastructures are deployed.

a) List_linked_accounts

Function Name: “{namespace}-list_linked_accounts”

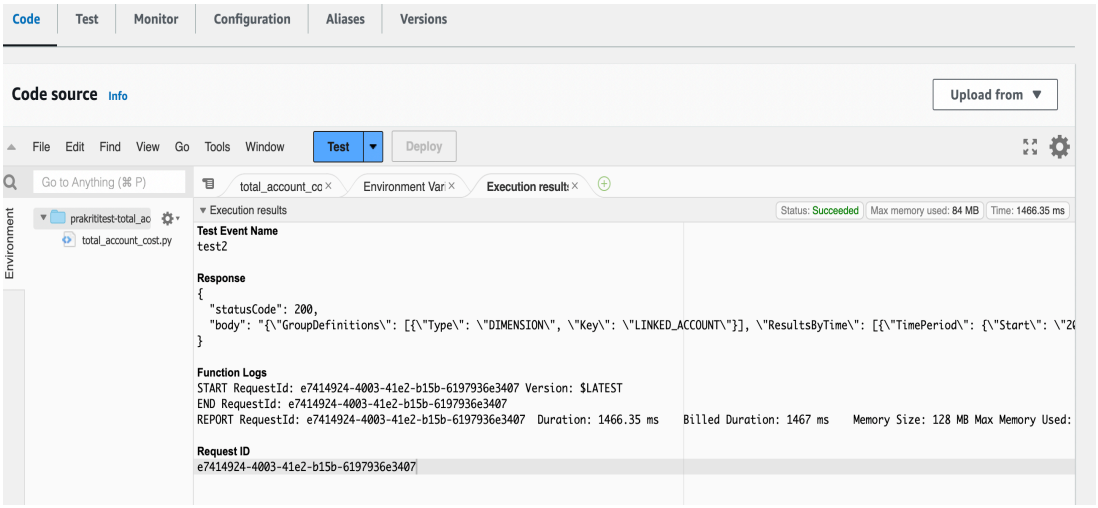
Click on the "Test" button and configure a test using the default test JSON. Provide a name for your test, and then proceed to run it.



b) **Total-Account-cost**

Function Name: “{namespace}-total_account_cost”

Click on the "Test" button and configure a test using the default test JSON. Provide a name for your test, and then proceed to run it.

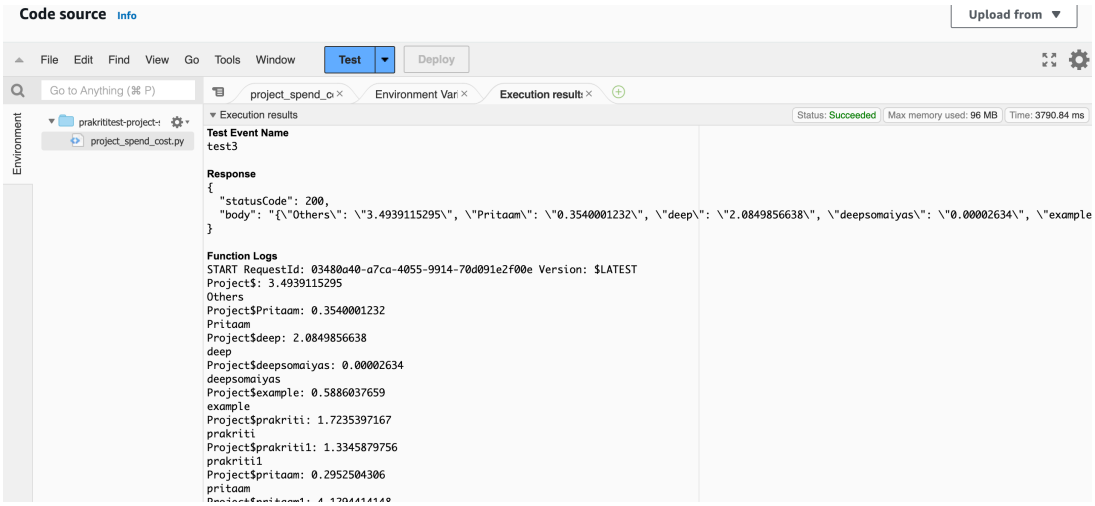


c) Projects-Spend-cost

Function Name: “{namespace}-project-spend-cost”

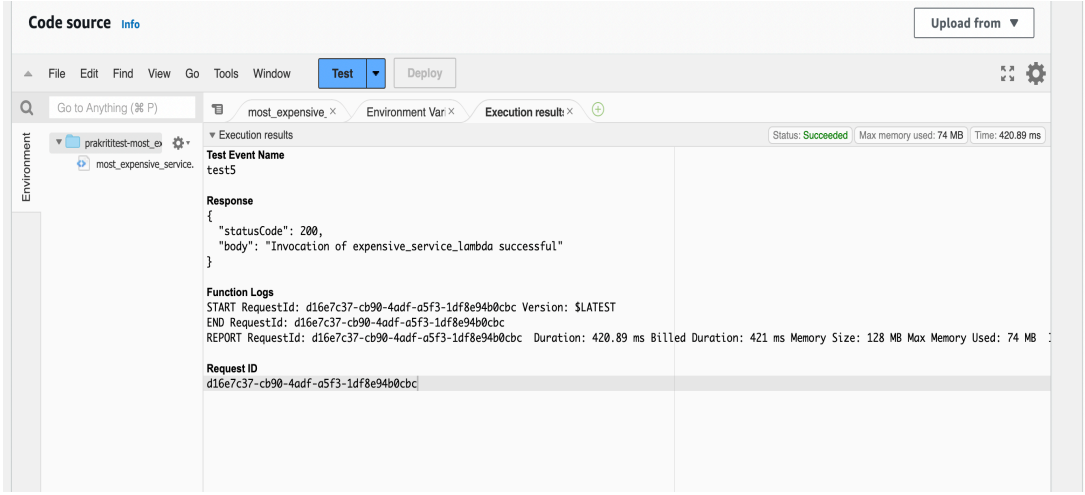
Click on the "Test" button and configure a test using the default test JSON. Provide a name for your test, and then proceed to run it.

*Note: This is the lambda function which is related to project breakdown feature, and it invokes our main lambda **project_breakdown_lambda** function*



d) Most-expensive-service-lambda

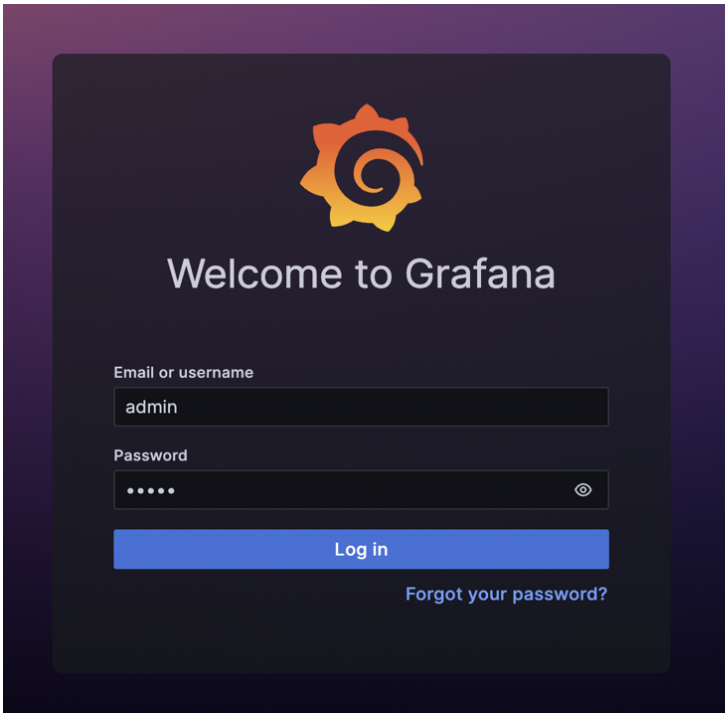
Function Name: “{namespace}-most_expensive_service_lambda”



4.2. Grafana Panel

Login:

- Go to the ec2 Public-ip:3000
- Use the HTTP Protocol
- Login to the dashboard with Grafana Default Credentials
- Enter Username: admin
- Enter Password: admin (by default)

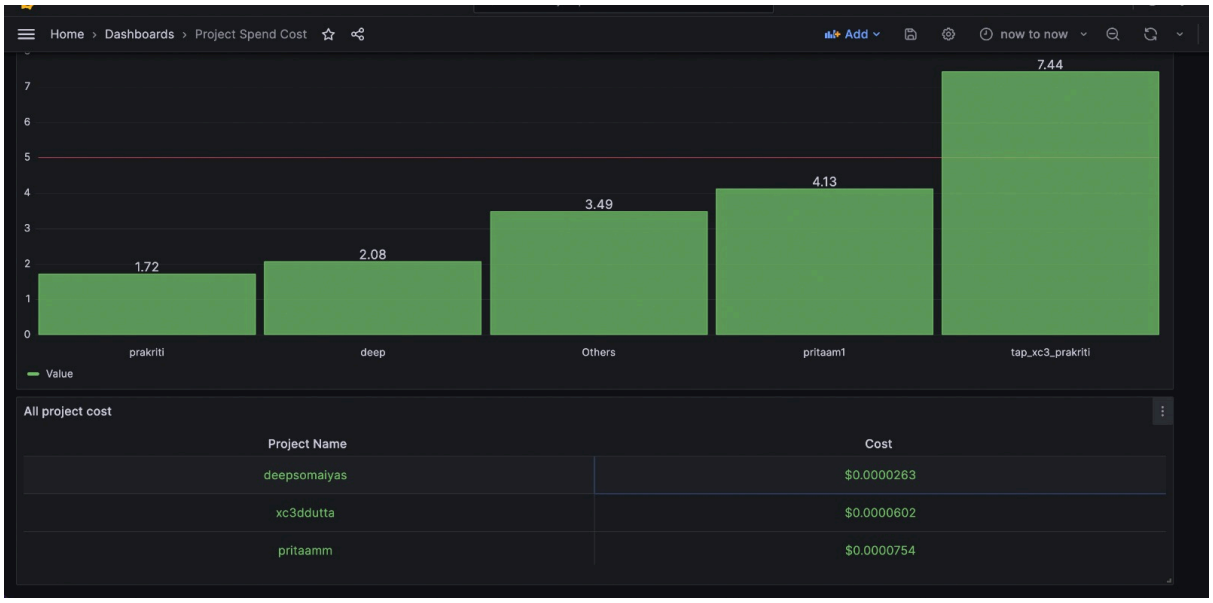


Home Dashboard:

After you logged in you can see the home dashboard with different panels. The panel we worked on for project breakdown cost in Project spend cost. This panel is showing some projects in home dashboard and there is link to go to another dashboard which is Project Spend Cost.

Project Spend Cost:

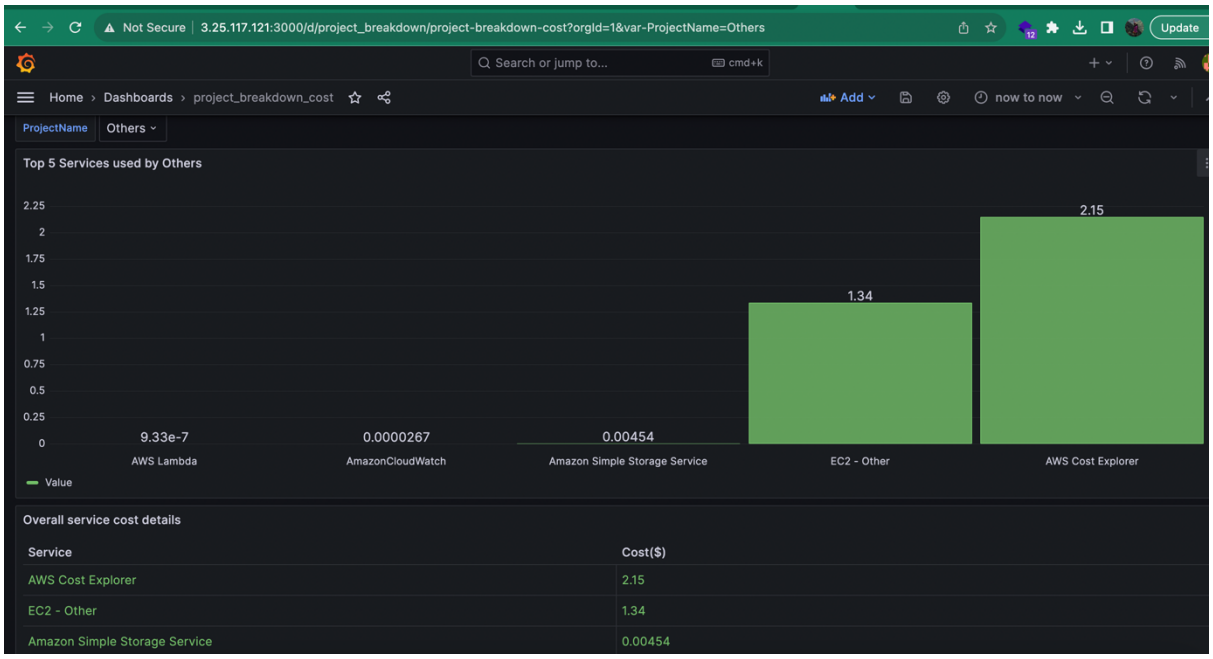
Project Spend cost dashboard shows top 5 most expensive projects in graph and also shows the threshold bar as shown in the figure. The bottom part of the project is showing the overall projects and cost.



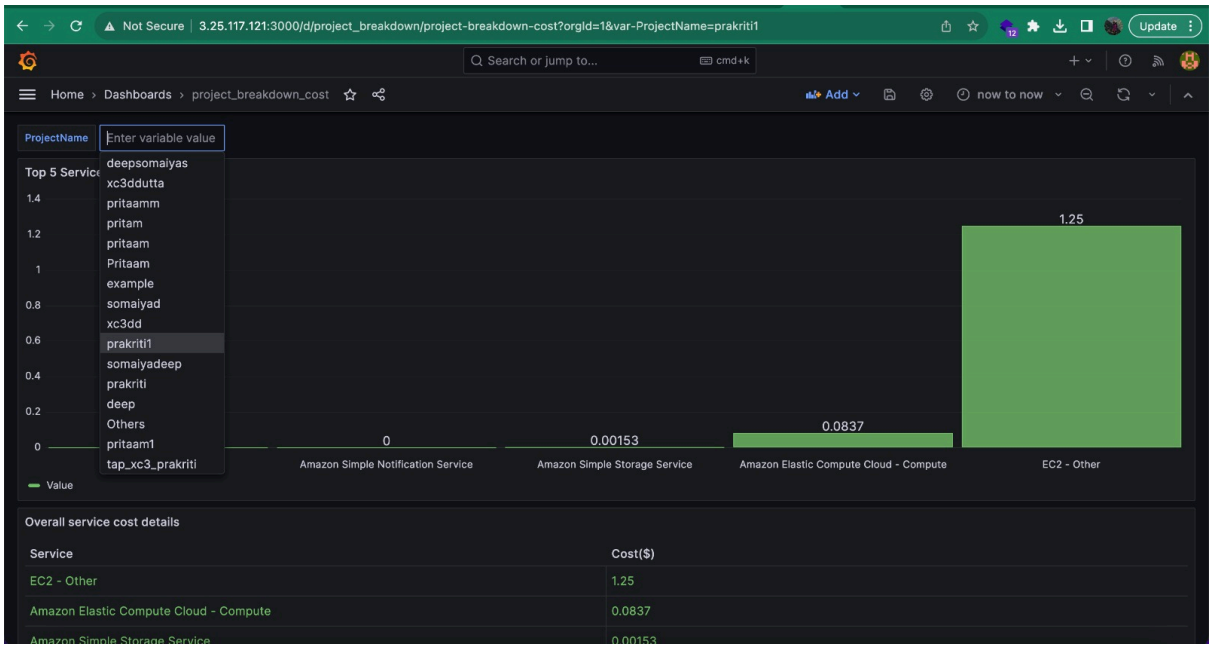
The data link is provided to go to another dashboard to see project breakdown service details. So, click on the link to see the project breakdown cost feature.

Project Breakdown Cost:

This dashboard displays a breakdown of the service level costs for the selected project. It comprises two distinct visualizations: a bar graph and a table. The bar graph highlights the top 5 most costly services, while the table presents an overview of all services used by the project along with their associated costs.



- You can also select different projects to see the result of different project.



5. Troubleshooting

Take the following steps if you encountered any issues while installing this feature.

- Make sure to enable cost explorer in the AWS account. You need to wait for 24 hours for this to work.
- Check the lambda functions and make sure project_breakdown_cost lambda is properly deployed.
- Ensure the metric named {project_name}_service_spend metrics is successfully pushed to Prometheus and can be seen in Grafana.
- If you didn't see any project, then reason could be that project hasn't cost anything yet or cost is 0.

6. Contacting Support

For further assistance or if you encounter any problems, please feel free to contact us at 103851544/103170391/103499821/103148194@student.swin.edu.au. Our team is dedicated to helping with any issues you may face.