
Instituto Superior de Engenharia de Lisboa

Área Departamental de Engenharia de Eletrónica e Telecomunicações e de Computadores

Mestrado em Engenharia Informática e de Computadores (MEIC)

Mestrado em Engenharia Informática e Multimédia (MEIM)

Computação Distribuída (inv 23/24)

INSTRUÇÕES PARA REGISTO NA *GOOGLE CLOUD PLATFORM (GCP)*

(Como aluno do ISEL, com crédito de \$50 oferecido pela Google)

Luís Assunção (lass@isel.ipl.pt ; luis.assuncao@isel.pt)

José Simão (jose.simao@isel.pt; jsimao@cc.isel.ipl.pt)

Instruções para usar créditos GCP

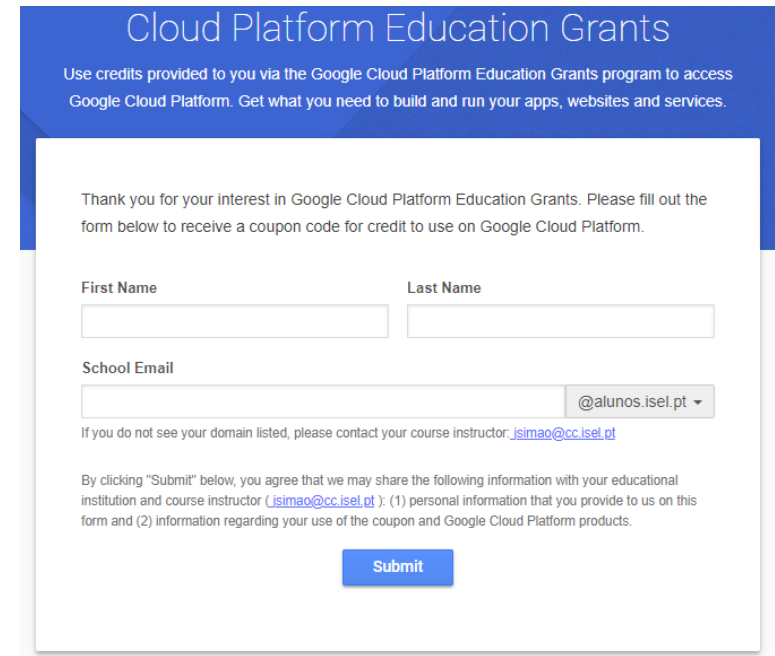
ATENÇÃO

- O processo descrito em seguida **NÃO** corresponde ao *free trial*: <https://cloud.google.com/free/>
- **NÃO** é necessário introduzir número de cartão de crédito

As instruções neste slide são feitas apenas por 1 dos alunos de cada grupo

- A partir do URL indicado no Moodle, cada grupo de alunos recebe 1 cupão com créditos *Google Cloud Platform* (GCP), no valor de 50\$ cada
- Os créditos só podem ser pedidos uma vez por cada endereço de e-mail (com domínio @alunos.isel.pt ou @alunos.isel.ipl.pt)
- Cada grupo de alunos pede **apenas 1 cupão** (escolhendo o aluno que o faz)

Nota: a Google mantém a lista de endereços já utilizados e disponibiliza-a ao docente, caso seja pedido



The screenshot shows the 'Cloud Platform Education Grants' registration page. It has a blue header with the title and a brief description. The main content area is white and contains a thank-you message, input fields for 'First Name' and 'Last Name', a 'School Email' field with a dropdown menu showing '@alunos.isel.pt', and a 'Submit' button. There is also a small note about domain selection and a disclaimer at the bottom.

Cloud Platform Education Grants

Use credits provided to you via the Google Cloud Platform Education Grants program to access Google Cloud Platform. Get what you need to build and run your apps, websites and services.

Thank you for your interest in Google Cloud Platform Education Grants. Please fill out the form below to receive a coupon code for credit to use on Google Cloud Platform.

First Name

Last Name

School Email @alunos.isel.pt ▼

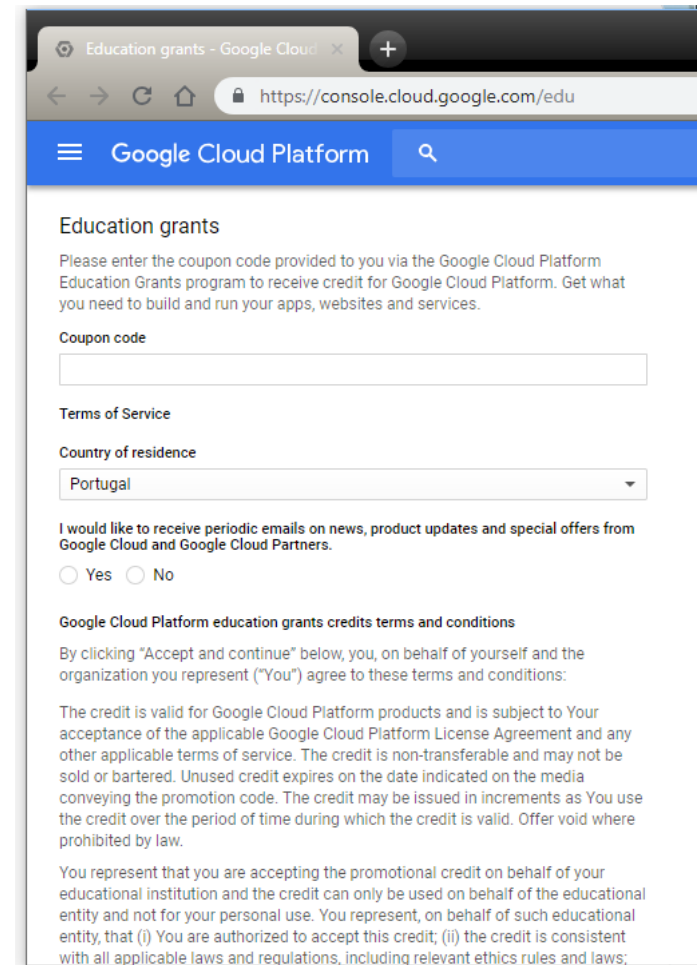
If you do not see your domain listed, please contact your course instructor: jsimao@cc.isel.pt

By clicking "Submit" below, you agree that we may share the following information with your educational institution and course instructor (jsimao@cc.isel.pt): (1) personal information that you provide to us on this form and (2) information regarding your use of the coupon and Google Cloud Platform products.

Instruções para usar créditos GCP

As restantes instruções são feitas em conjunto pelos elementos do grupo

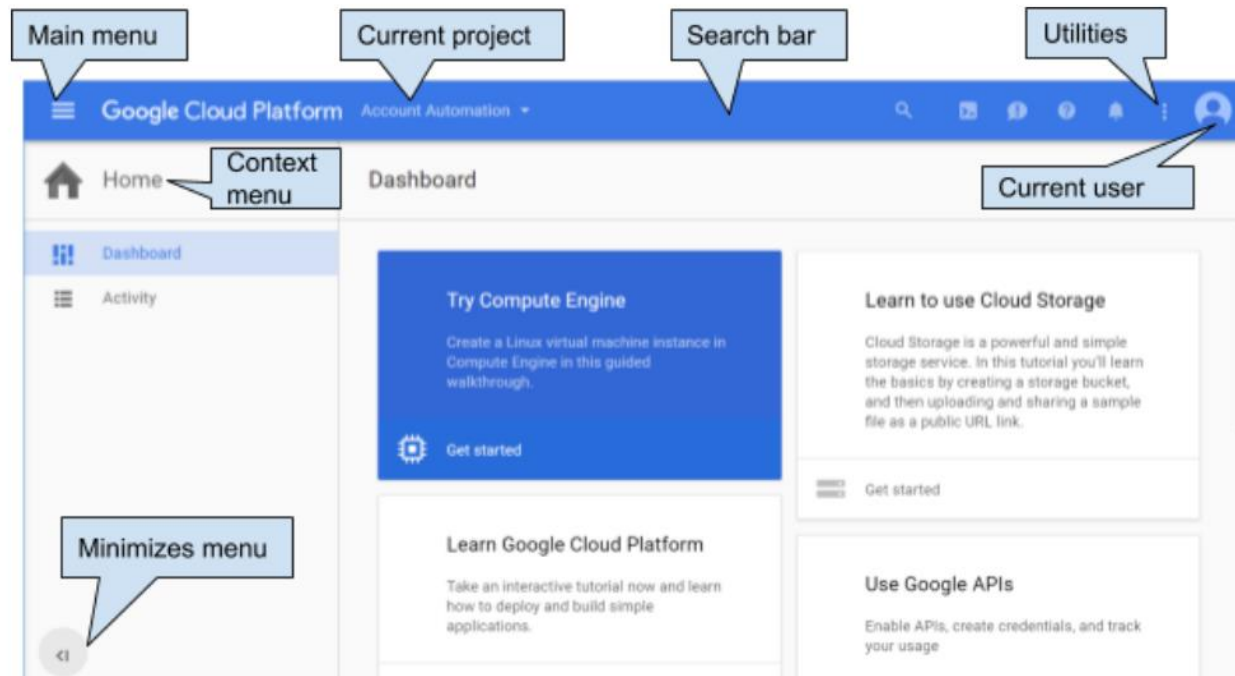
- Todos os alunos, criam e/ou verificam o correto acesso à sua respetiva conta Google:
<https://myaccount.google.com/>
 - **Note que todos os alunos precisam de ter uma conta Google com domínio @gmail.com**
- O aluno que preencheu o formulário anterior recebe na conta de *email* do ISEL as instruções para associar o cupão a uma conta Google, em
<https://console.cloud.google.com/education>
Nota: Caso tenha várias contas Google, verifique se está autenticado no browser com o utilizador pretendido para aceder ao GCP



The screenshot shows the 'Education grants' page in the Google Cloud Platform console. The page title is 'Education grants' and the URL is 'https://console.cloud.google.com/edu'. The page content includes a section for entering a 'Coupon code', a 'Terms of Service' section, a 'Country of residence' dropdown menu set to 'Portugal', and a section for accepting the 'Google Cloud Platform education grants credits terms and conditions'. The terms and conditions section includes a checkbox for 'I would like to receive periodic emails on news, product updates and special offers from Google Cloud and Google Cloud Partners.' and a checkbox for 'I agree to these terms and conditions:'. The terms and conditions text states: 'The credit is valid for Google Cloud Platform products and is subject to Your acceptance of the applicable Google Cloud Platform License Agreement and any other applicable terms of service. The credit is non-transferable and may not be sold or bartered. Unused credit expires on the date indicated on the media conveying the promotion code. The credit may be issued in increments as You use the credit over the period of time during which the credit is valid. Offer void where prohibited by law. You represent that you are accepting the promotional credit on behalf of your educational institution and the credit can only be used on behalf of the educational entity and not for your personal use. You represent, on behalf of such educational entity, that (i) You are authorized to accept this credit; (ii) the credit is consistent with all applicable laws and regulations, including relevant ethics rules and laws.'

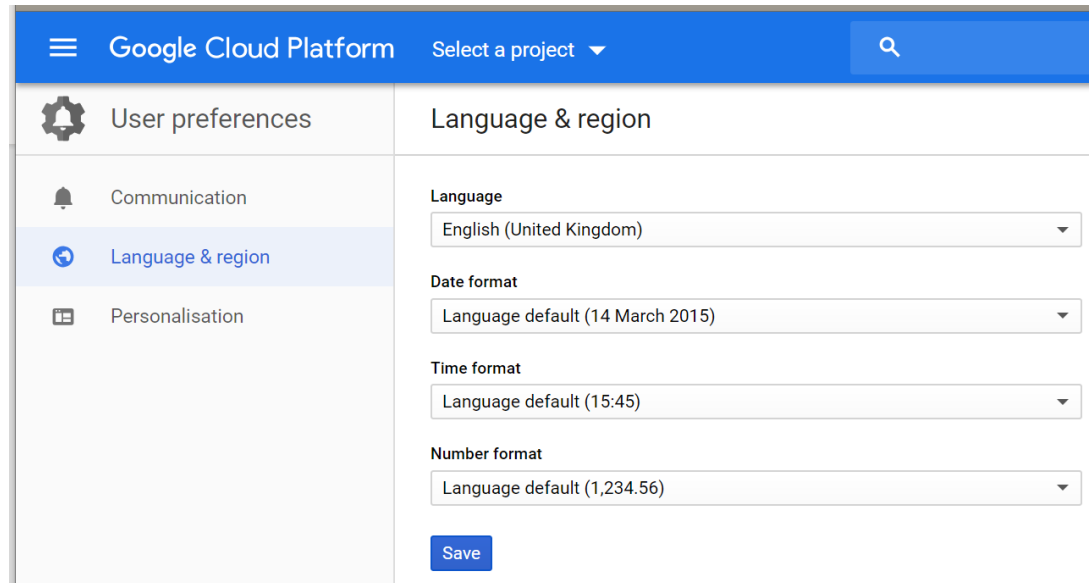
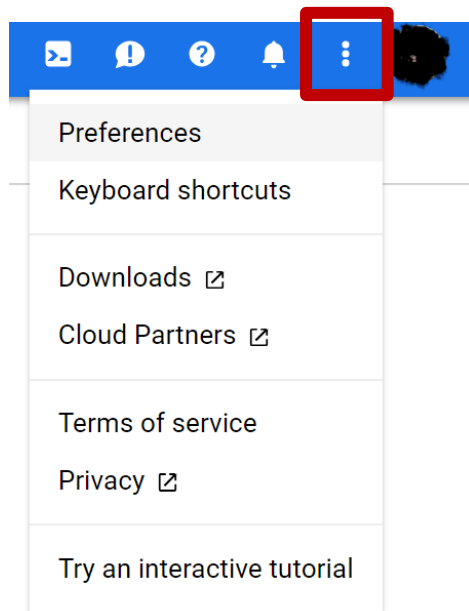
Consola Web

- Os serviços do GCP estão acessíveis através da consola web em <https://console.cloud.google.com>
- Todos os alunos devem verificar o correto acesso à consola



Consola Web

- Este manual assume que a língua configurada é *English (United Kingdom)*



Criação de projeto na consola web GCP

- A criação de instâncias dos diferentes serviços é feita no contexto de **projetos**
- **Unicamente o aluno** que associou o cupão à sua conta GCP deve criar o projeto do grupo:
 1. Aceder ao menu de navegação, opção *Select a project*
 2. Escolher a opção *NEW PROJECT*
 3. Atribuir um nome de projeto com formato **CD2324{D | N}-Gnn**
 - Por exemplo, para o grupo 01 da turma diurna, **CD2324D-G01** e para o grupo 01 da turma noturna , use **CD2324N-G01**

1

Google Cloud

Select a project ▼

Navigation menu

2

Select a project ▼

Search Products, resources, docs (/)

Select a project

NEW PROJECT

3

Project name *
CD2324D-G01

Project ID: cd2324d-g01. It cannot be changed later. [EDIT](#)

Billing account *
cd2324-billing

Any charges for this project will be billed to the account you select here.

Location *
No organization [BROWSE](#)

Parent organization or folder

[CREATE](#) [CANCEL](#)

Permissões do projeto

- Atribuir acesso aos colegas de grupo e aos docentes:
 - No menu de navegação, aceda a **IAM & admin** -> **IAM** -> **GRANT ACCESS**
 - Adicione ao projeto os novos membros (Add principals), com o e-mail Google e com o papel (*role*) de **owner**;
 - Adicione também o papel de **owner** para cada um dos docentes:
lassuncao.cn1920@gmail.com e jose.m.simao@gmail.com
 - Os alunos associados ao projeto vão receber no seu e-mail Google uma mensagem para confirmarem

IAM

PERMISSIONS RECOMMENDATIONS HISTORY

Permissions for project "CD2324-geral"

These permissions affect this project and all of its resources.

VIEW BY PRINCIPALS VIEW BY ROLES

+ GRANT ACCESS - REMOVE ACCESS

1

Add principals

Principals are users, groups, domains, or ser
[in IAM](#)

New principals *

! Enter at least one principal

Assign roles

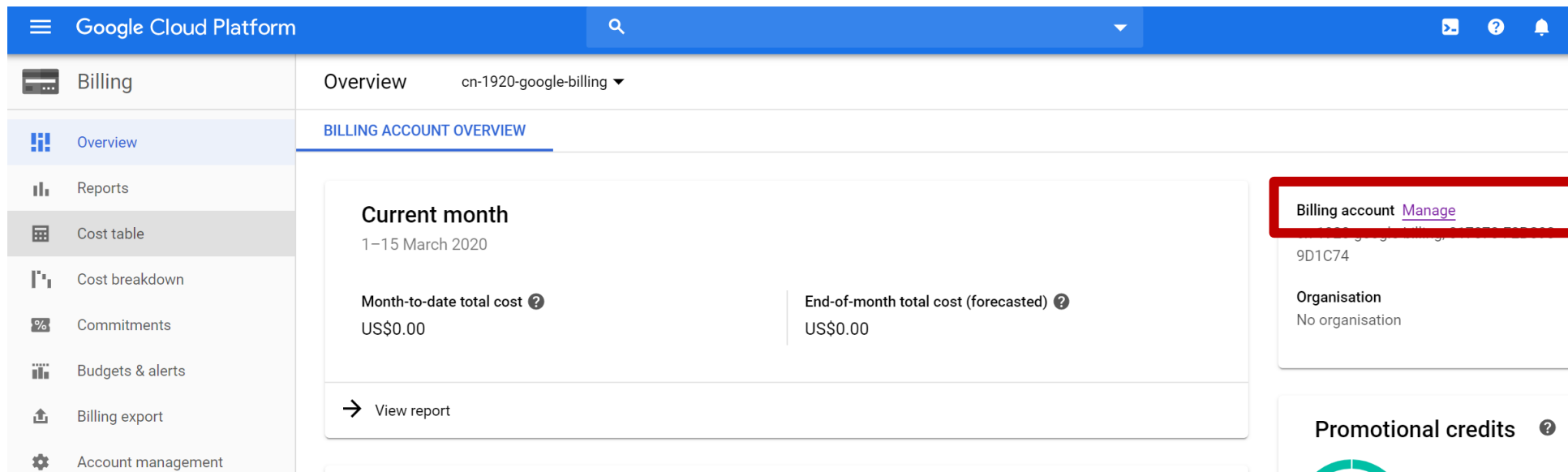
Roles are composed of sets of permissions
with this resource. [Learn more](#)

Select a role *

2

Permissões da conta de faturação (I)

- Dar acesso de administração da conta de faturação (*billing*) aos membros do grupo e aos dois docentes
 - Aceda ao menu de *Billing*
 - Escolha a opção *Go to linked Billing Account*
 - No lado direito do ecrã, escolha **Manage**



Google Cloud Platform

Billing

Overview

cn-1920-google-billing

BILLING ACCOUNT OVERVIEW

Current month
1–15 March 2020

Month-to-date total cost ?
US\$0.00

End-of-month total cost (forecasted) ?
US\$0.00

→ View report

Billing account [Manage](#)

9D1C74

Organisation
No organisation

Promotional credits ?

Permissões da conta de faturação (II)

Billing Account management cn-1920-google-billing RENAME BILLING ACCOUNT SHOW INFO PANEL

Billing account ID: 017878-F2BC93-9D1C74

Projects linked to this billing account

Project name	Project ID
cn1920-demos	cn1920-demos

cn-1920-google-billing

PERMISSIONS

Add members

Search members

Filter by name or role

Billing Account Administrator (1 member)
Authorised to see and manage all aspects of billing ac

- Mude o nome da conta de faturação, **Rename Billing Account**, e use o esquema do nome do projeto seguido de **billacc** (ex: **CD2324D-G01-billacc**)
- Com a opção **Add members**, adicione os elementos anteriores (**alunos e docentes**) com o papel de **Billing – Billing Account Administrator**

Avisos de consumo

- Para monitorizar o consumo dos créditos é recomendado que sejam configurados alertas
- No menu de *Billing*, escolha *Budgets & alerts*
- Escolha *Create Budget*
- Nos três ecrãs seguintes:
 1. Indique um nome para o orçamento
 2. Escolha um *target ammount* de \$50
 3. Termine o processo

Billing

- Overview
- Reports
- Cost table
- Cost breakdown
- Commitments
- Budgets & alerts**
- Billing export
- Account management

Create budget

✓ Scope — ✓ Amount — 3 Actions

Set alert threshold rules

Send email alert notifications to billing admins and users when the actual or forecast spend exceeds a percentage of the budget or a specified amount. [Learn more.](#)

Percentage of budget	Amount	Trigger on ?
50 %	\$ 25	Actual ▼
90 %	\$ 45	Actual ▼
100 %	\$ 50	Actual ▼

[+ ADD THRESHOLD](#)

Manage notifications

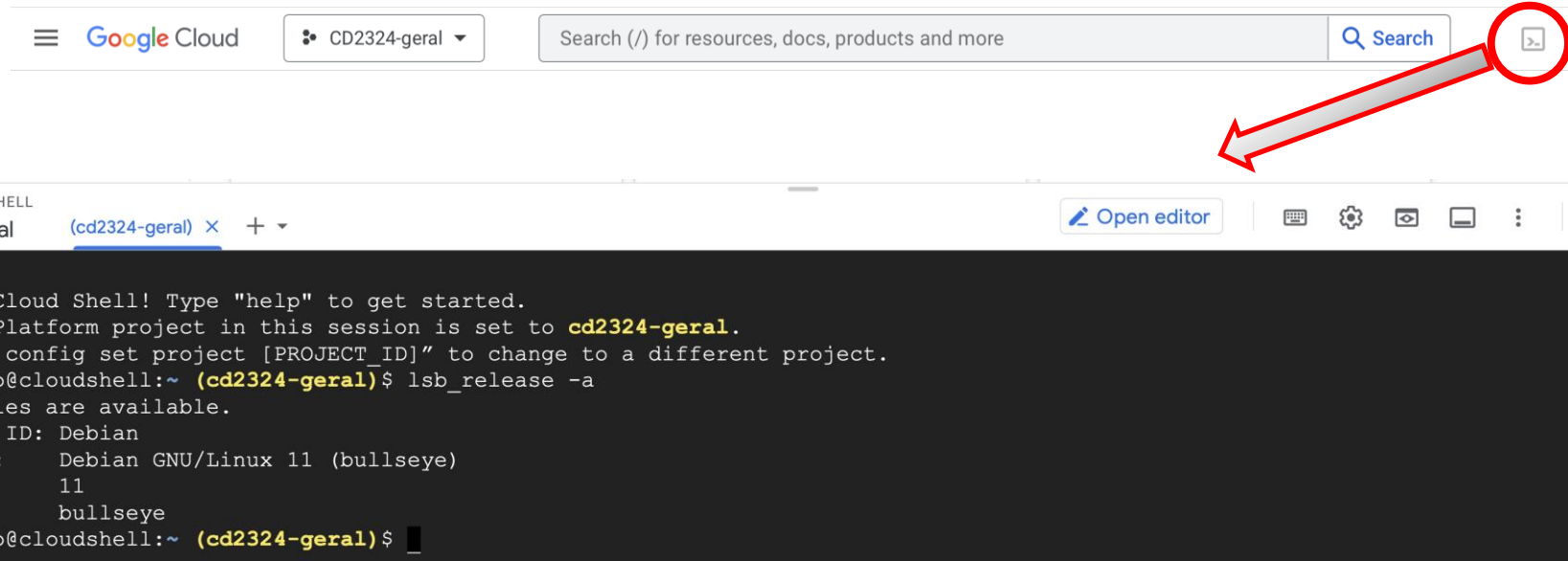
Use Pub/Sub notifications to programmatically receive spend updates about this budget.

☐ Connect a Pub/Sub topic to this budget

Select a project and Pub/Sub topic. Anyone who can view this budget will also be able to view the project ID and the topic name.

FINISH CANCEL

Testar conta com a *Google Cloud shell*



Execute no *Cloud shell* os seguintes comandos:

- `gcloud projects list`
- `gcloud projects describe <id do projeto>`
- `gcloud projects get-iam-policy <id do projeto>`

Cálculo de custos

- A simulação de custos pode ser feita com a ferramenta <https://cloud.google.com/products/calculator/>
- **Todos os serviços têm um custo.** Por exemplo, 2 máquinas virtuais com 2 CPU e 4GB de memória, ao fim de 1 mês de utilização 24h por dia, custam perto de \$50 (créditos atribuídos a cada grupo)

- **É importante:**
 - adequar os recursos às operações a realizar,
 - desligar os serviços que não estão a ser usados

The screenshot shows the Google Cloud Calculator interface. At the top, there are icons for various services: COMPUTE ENGINE, APP ENGINE, KUBERNETES ENGINE, CLOUD STORAGE, NETWORKING, BIGQUERY, and BIGQUI ML. Below these is a search bar with the text "Search for a product you are interested in." The main configuration area is titled "Instances" and includes the following fields:

- Number of instances ***: A dropdown menu with a question mark icon.
- What are these instances for?**: A dropdown menu with a question mark icon.
- Operating System / Software**: A dropdown menu with the text "Free: Debian, CentOS, CoreOS, Ubuntu, or other User Provided OS" and a question mark icon.
- VM Class**: A dropdown menu with the text "Regular" and a question mark icon.
- Instance type**: A dropdown menu with the text "n1-standard-1 (vCPUs: 1, RAM: 3.75 GB)" and a green question mark icon.

The screenshot shows the "Estimate 1" section of the Google Cloud Calculator. It displays the configuration for the Compute Engine instances and the resulting costs:

- Compute Engine**: 2 x (with edit and delete icons)
- 1,460 total hours per month**
- VM class: regular**
- Instance type: n1-standard-1**
- Region: Iowa**
- Sustained Use Discount: 30%** (with a question mark icon)
- Effective Hourly Rate: USD 0.033**
- Estimated Component Cost: USD 48.55 per 1 month**
- Total Estimated Cost: USD 48.55 per 1 month**
- Estimate Currency: USD - US Dollars** (with a dropdown arrow)