

Providing support in **SuperQuota**

AGENDA

CASE 01 **Internal management quota requests**

CASE 02 **Org level advanced warnings**

CASE 03 **Solving short term rate quotas**

CASE 04 **Safe override**

Foundational **Research**



SuperQuota's mission is to provide a **central infrastructure** for **viewing, managing, and understanding quota usage** across all **Google APIs** and **services** for the **Google Cloud Platform**.

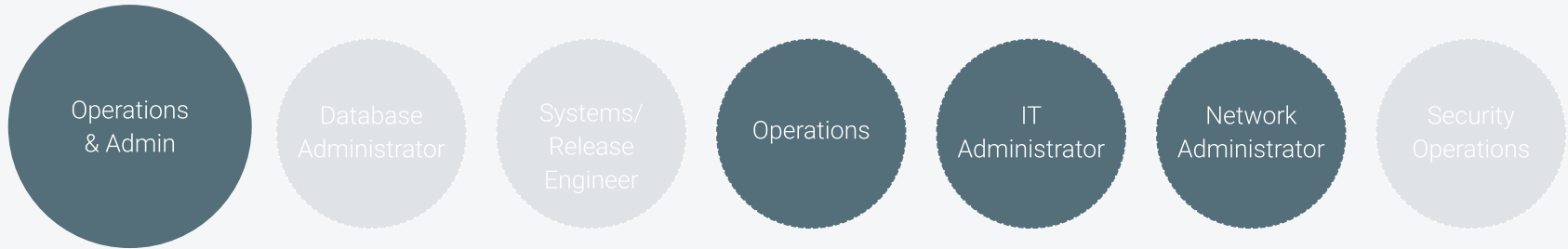


A quota is defined as having a **metric**, **unit**, **region** and **zone** combination.

USER ROLES

Tracks **infrastructure** and **resources**.

Responds to problems such as **quotas** reaching their **limits**.



CASE 01. Internal management quota requests

How can we **provide** a way for organizations (who are using services through adoption of org-level quotas) to handle **internal requests for quota increases** for **projects**?

Why is this a problem?

Today, **project owners** can only see a message telling them to “**contact your organization’s quota administrator**”.

But in a **large org**, that person **might not know** who to contact.

This is a **blocker** for adoption of org-level quotas and a **pain** for **Cloud Support** (they don’t know contact info for quota admins and don’t want to file support tickets).

There needs to be a **mechanism** to notify those in the **organization** with **adequate permissions** that a **project** needs **more quotas**.

CONSTRAINTS

* **AVOID AVOID AVOID** building a ticketing system.

SOLUTION INTEGRATING CLOUD FEED

What is Cloud Feed?

Comprehensive repository of all GCP events and activities

Easy fan-in for GCP teams to share activities with users

Human-understandable schema, including call to action

Human-driven configuration with notification and opt-in/out control

Why Cloud Feed?

1. Cloud Feed does not require **sender** (project owner) to know who the **recipients** (i.e. quota admins) are

2. Project owner can request several quota increases

Google Cloud Platform

Quota [+ EDIT QUOTAS](#) [VIEW REQUESTS](#)

Quotas for project "foo-bar"

View, manage and understand all your quota usages across all APIs and services. Filter by quota type, service, metric and region and their zones.

Quota type: All quotas Service: All services Metric: All metrics Region: All regions

<input type="checkbox"/> Service	Location	Current Usage & 7 Day Peak Usage	Current Usage	7 Day Peak
<input type="checkbox"/> Firewall rules Compute Engine API	us-west-1a	<div><div></div></div>	48	95
<input checked="" type="checkbox"/> Networks Compute Engine API	us-west-1	<div><div></div></div>	4	4
<input checked="" type="checkbox"/> Routes Compute Engine API	Global	<div><div></div></div>	100	120
<input type="checkbox"/> Number of indexes per day App Engine	us-west-1b	<div><div></div></div>	20	120
<input type="checkbox"/> Operation read requests per 100 seconds per use Compute Engine API	us-east-1	<div><div></div></div>	0	1,600
<input type="checkbox"/> Queries per day	us-east-1a	<div><div></div></div>	80	800

2 quotas selected

* This quota requires admin approval for any increases above the limit. [Learn more](#)

Google Compute Engine

Quota group for Routes *

Change to
Enter a number between 0 and 100,000
Current limit: 100,000

Justification
Required

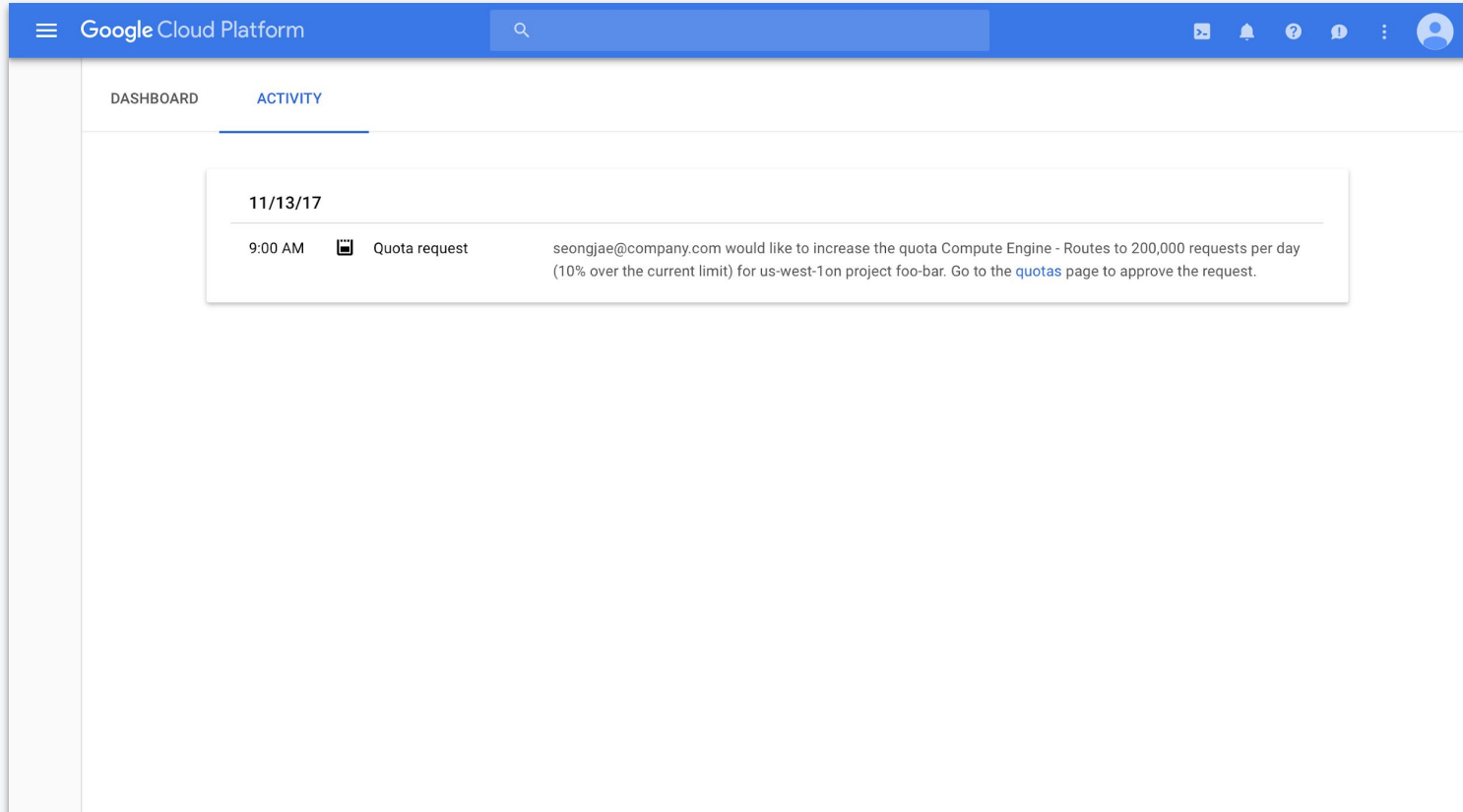
Quota group for Networks

Change to
Enter a number between 0 and 100,000
Current limit: 100,000

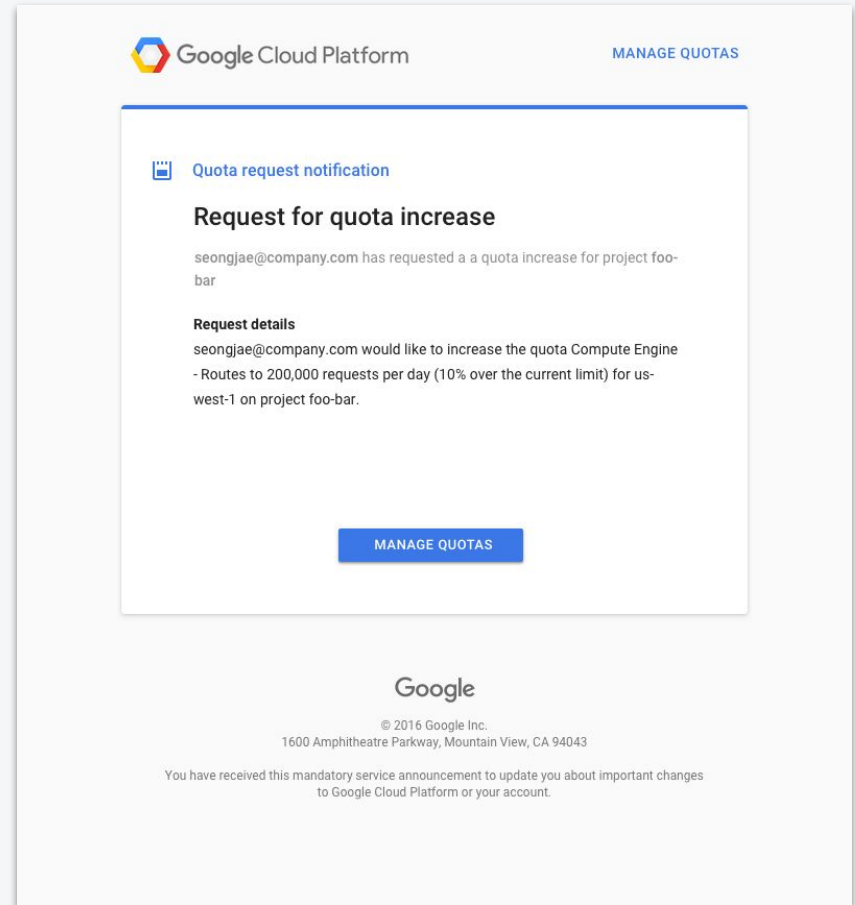
Next Cancel

SUBMIT REQUEST BACK

3. Provides a **time-stamp** + **message** to attach to it (view from admin side)



4. Supports **email notifications** at project-level



CASE 02. Org level advanced warnings

How can we **inform** users when their **quota usage** is being (or about to be) **limited** due to its **ancestor's quota limit**?

Why is this a problem?

Example

- 1 The folder's limit caps off at 48 VMs
- 2 The project limit caps off at 100 VMs
- 3 The folder only has this project (no other sibling projects)

Then further quota requests will be limited for this project.

...however, in this project scope view, **the user won't know** if it is being limited.

Provide **warning icon + banner**, with follow-up action to admin

Google Cloud Platform

Quota

+ EDIT QUOTAS

VIEW REQUESTS

Quotas for project "foo-bar"

View, manage and understand all your quota usages across all APIs and services. Filter by quota type, service, metric and region and their zones.

⚠️

Two quotas are being limited by other quotas in this project's folder. Click on 'view hierarchy' to learn more or notify an admin to let them know your concern.

CONTACT ADMIN

Quota type

Service

Metric

Region

All quotas

All services

All metrics

All regions

Clear

<input type="checkbox"/>	Service	Location	Current Usage & 7 Day Peak Usage	Current Usage	7 Day Peak Usage	Limit	
<input type="checkbox"/>	Firewall rules Compute Engine API	us-west-1a	<div><div></div></div>	48	95	100	View hierarchy
<input type="checkbox"/>	Networks Compute Engine API	us-west-1	<div><div></div></div> ⚠️	4	5	5	View hierarchy
<input type="checkbox"/>	Routes Compute Engine API	Global	<div><div></div></div>	100	120	200	View hierarchy
<input type="checkbox"/>	Number of indexes per day App Engine	us-west-1b	<div><div></div></div> ⚠️	20	120	200	View hierarchy
<input type="checkbox"/>	Operation read requests per 100 seconds per use	us-east-1	<div><div></div></div>	0	1,600	2,000	View hierarchy

Contact admin panel appears

Google Cloud Platform

Quota

EDIT QUOTAS

VIEW REQUESTS

Quotas for project "foo-bar"

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Two quotas are being limited by other quotas in this project's folder. Click on 'view hierarchy' to learn more or notify an admin to let them know your concern.

CONTACT ADMIN

Quota type

Service

Metric

Region

All quotas

All services

All metrics

All regions

<input type="checkbox"/> Service	Location	Current Usage & 7 Day Peak Usage	Current Usage	7 Day Peak
<input type="checkbox"/> Firewall rules Compute Engine API	us-west-1a	<div><div></div></div>	48	95
<input type="checkbox"/> Networks Compute Engine API	us-west-1	<div><div></div></div>		4
<input type="checkbox"/> Routes Compute Engine API	Global	<div><div></div></div>	100	120
<input type="checkbox"/> Number of indexes per day App Engine	us-west-1b	<div><div></div></div>	20	120
<input type="checkbox"/> Operation read requests per 100 seconds per use	us-east-1	<div><div></div></div>	0	1,600

Notify Admin

Two resources are being limited due to other quotas in this project's folder. [Learn more.](#)

Select any or all quotas below to notify your organization's quota administrator of your concern.

SELECT ALL

☐ Firewall rules
Compute Engine API

☐ Routes
Compute Engine API

NOTIFY ADMIN

BACK

Cloud Feed is deep linked from View Requests -- with quotas already filtered

The screenshot shows the Google Cloud Platform interface. At the top, a blue header bar contains the 'Google Cloud Platform' logo, a search bar, and various icons. Below the header, a navigation bar shows 'Quota' with a '+ EDIT QUOTAS' button and a 'VIEW REQUESTS' button highlighted with a pink rectangle. A 'Notify Admin' button is also visible. The main content area is titled 'Quotas for project "foo-bar"'. Below this, a 'View' dropdown menu is open, showing a list of quota categories with checkboxes. The 'ACTIVITY' tab is selected, displaying a list of quota usage impact events. The first event is dated '11/13/17' and shows a 'Quota usage impact' at '9:00 AM' for 'seongjae@company.com' regarding 'Compute Engine API for Networks for project foo-bar'. The second event is also dated '11/13/17' and shows a 'Quota usage impact' at '9:00 AM' for 'seongjae@company.com' regarding 'App Engine Number of indexes per day for project foo-bar'.

Google Cloud Platform

Quota + EDIT QUOTAS VIEW REQUESTS

Notify Admin

Quotas for project "foo-bar"

View

DASHBOARD ACTIVITY

11/13/17

9:00 AM Quota usage impact seongjae@company.com is concerned about quota limit impact on Compute Engine API for Networks for project foo-bar

9:00 AM Quota usage impact seongjae@company.com is concerned about quota limit impact on App Engine Number of indexes per day for project foo-bar

CASE 03. Solving short term rate quotas

How can we show **short-term rate quotas** (per minute, per 100 seconds) in the quotas page as it is the **most common** in **APIs/services**?

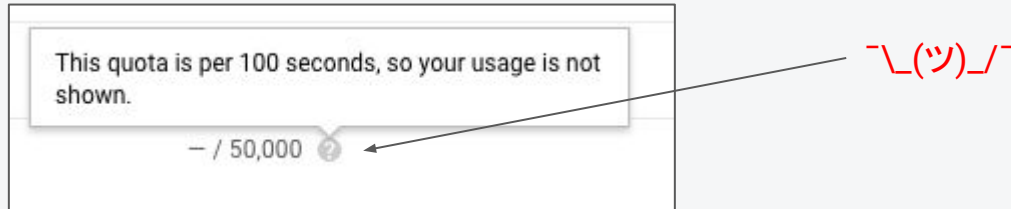
Why is this a problem?

Suppose a customer uses APIs/services with **only short-term quotas**, all Quotas page **won't** give the **customer** any **usage data**.

RIGHT NOW

We provide a **question mark** with an **explanation text**.

i.e. "This quota is per 100 seconds, so your usage is not shown."



It's still **not** clear to our customers what this means.

CONSTRAINTS

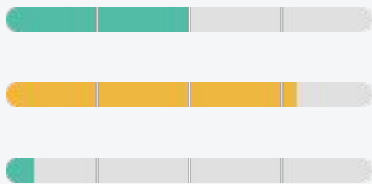
It's **impossible** to show short-term usage because it is **constantly changing** -- the user will have to **refresh the page** every second // minute //etc to continue to see its **changing state**.

It's also not as meaningful, since the window shown is so short.

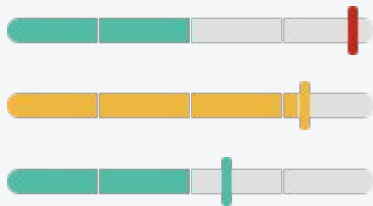
Users care more about **trends** rather than **snapshots**.

INTRODUCE 7 DAY PEAK AS AN ADDITIONAL INDICATOR

Pill usage component today:



Usage + 7 day peak usage:



Current usage Good | **7 Day Peak** Danger

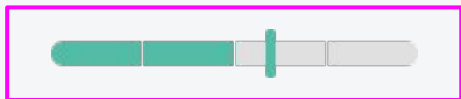
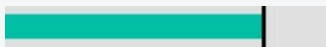
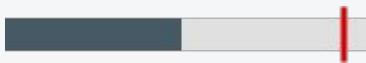
Current usage Warning | **7 Day Peak** Warning

Current usage Good | **7 Day Peak** Good

W: 5px
H: 24px
Radius: 2

USER FEEDBACK

[Link to study results](#)



EXPLORATIONS

Bar & Line makes a little more sense. As I'm looking at them side by side I'm liking Bar & Line more.

P1

Google is pretty good at keeping things simple and I think it's simple and intuitive and easy to read and something that is actually useful and is not something that I have to learn how to use before looking at it.

P2







I think that one is the easiest to quickly look at and interpret your stats.

P10

All quotas page

Sortable by current usage or 7 day peak

Google Cloud Platform



Quota

[+ EDIT QUOTAS](#)

[VIEW REQUESTS](#)

Quotas for project "foo-bar"

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Quota type

All quotas

Service

All services






Metric

All metrics

Region

All regions

Clear

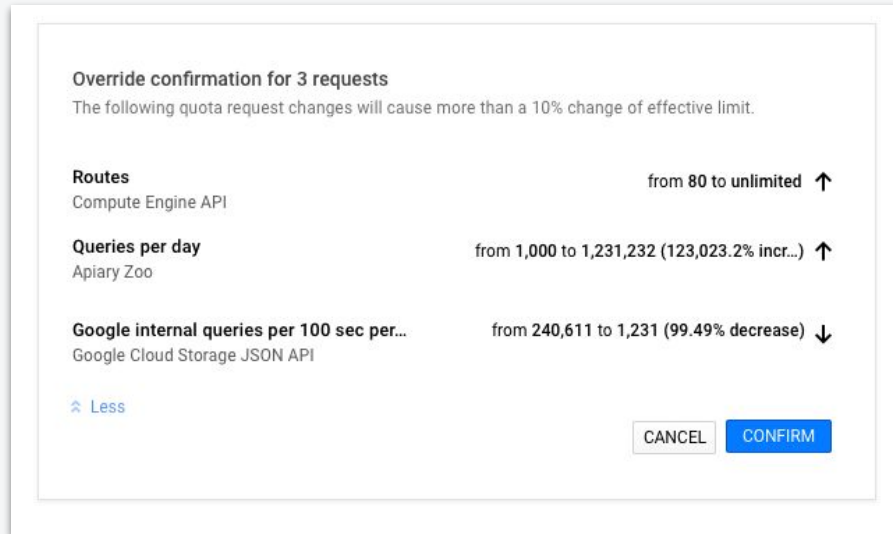
<input type="checkbox"/> Service	Location	Current Usage & 7 Day Peak Usage	Current Usage	7 Day Peak Usage	Limit	
<input type="checkbox"/> Firewall rules Compute Engine API	us-west-1a		48	95	100	View hierarchy
<input type="checkbox"/> Networks Compute Engine API	us-west-1		4	4	5	View hierarchy
<input type="checkbox"/> Routes Compute Engine API	Global		100	120	200	View hierarchy
<input type="checkbox"/> Number of indexes per day App Engine	Current usage: 20%		20	120	200	View hierarchy
<input type="checkbox"/> Operation read requests per 100 seconds per use Compute Engine API	us-east-1	 <div>7 Day Peak Usage: 70%</div>	0	1,600	2,000	View hierarchy

CASE 04. Safe override

How can we ensure that **high risk quota** changes be **safely** applied (> 10% increase)?

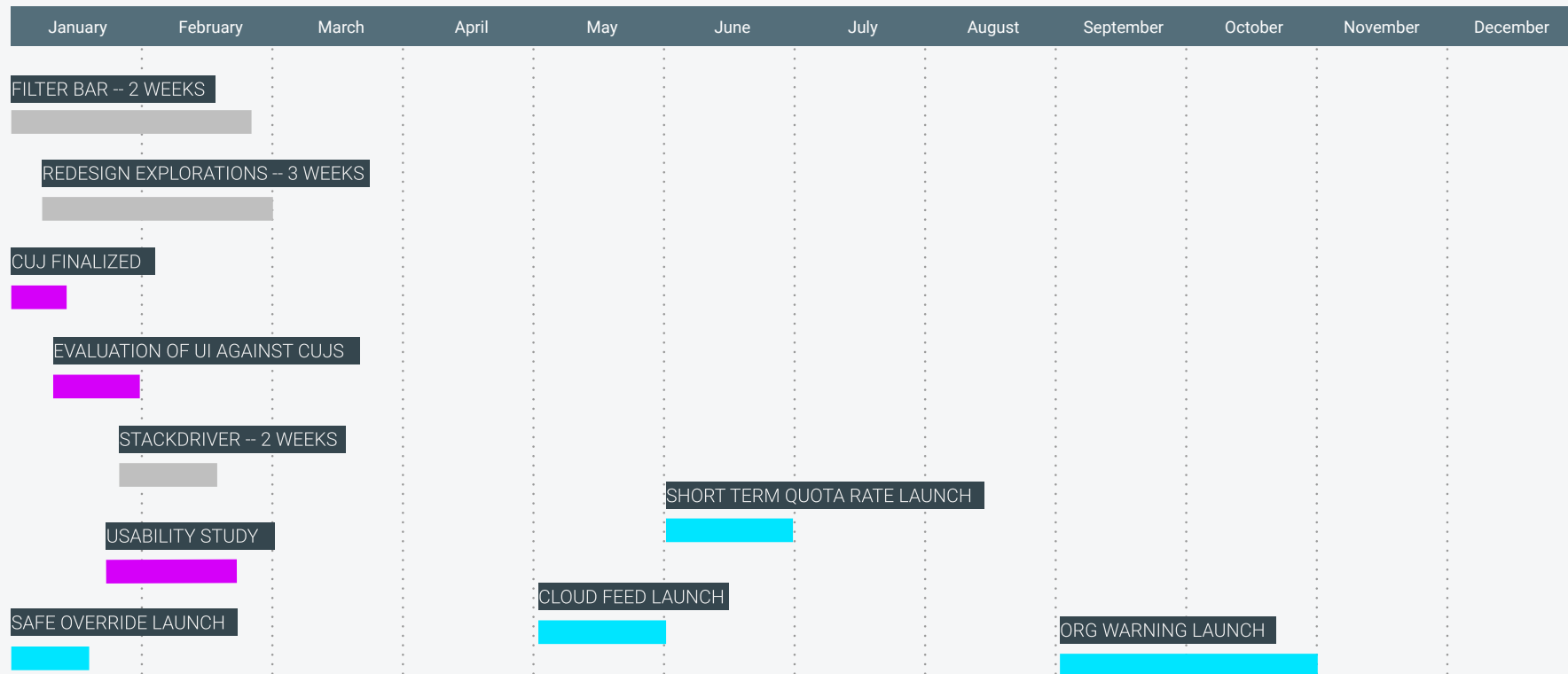
Modal dialog that acts as an extra **safeguard** for the user

Background research shows that users want to see **both % and #** when it comes to viewing and understanding their quotas.



NEXT STEPS

UX DESIGN 
RESEARCH 
ENG 



THANK YOU

