Google

Responsibilities

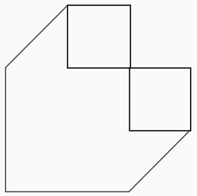
As part of my responsibilities as an interaction designer, I collaborated with the team PM’s to define CUJ’s, created high fidelity prototypes, supported the eng team, and also consulted on how to better use GCP's massive design system. I also worked closely with the UX team that was located in NY.

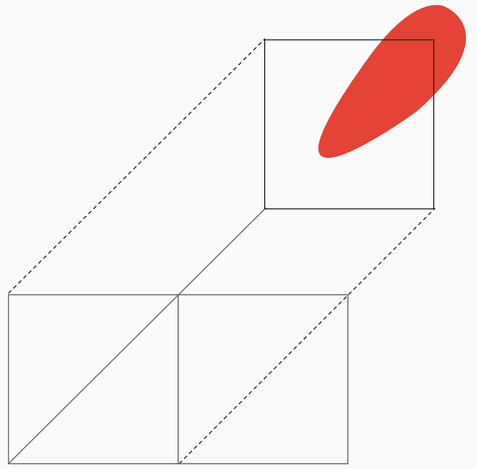
Year

2019-2020

Platform

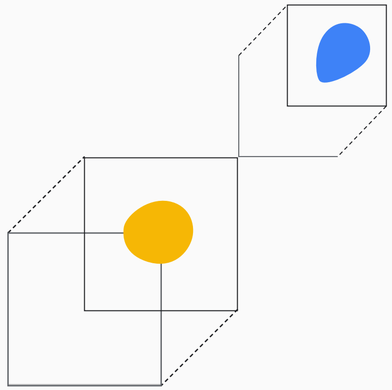
Web

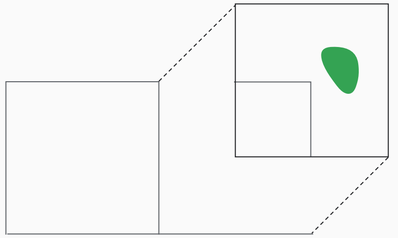






Google Cloud





Google Cloud

Database Migration Service

The Database Migration Service (DMS) is part of Google Cloud Platform (GCP). The service makes it easier for users to move their databases workloads into GCP. DMS streamlines networking workflow, manages the initial snapshot and ongoing replication, and provides status of the migration operation.

Overview

Problem definition

For businesses who are migrating their workloads to the cloud, there can be considerable friction in moving their on-premises and other cloud-based databases to the Google Cloud Platform. This can slow their ability to take advantage of the capabilities that GCP has to offer.

GCP has built a flourishing islands of database, data warehouse, and storage technologies, but getting onto that island is difficult and creates a level of friction that can inhibit adoption.

Our goal is to build bridges that enable migrating the bulk of customer database workloads to the island.

Product Overview

The product has two core functions:
creating a new migration and **monitoring** it.



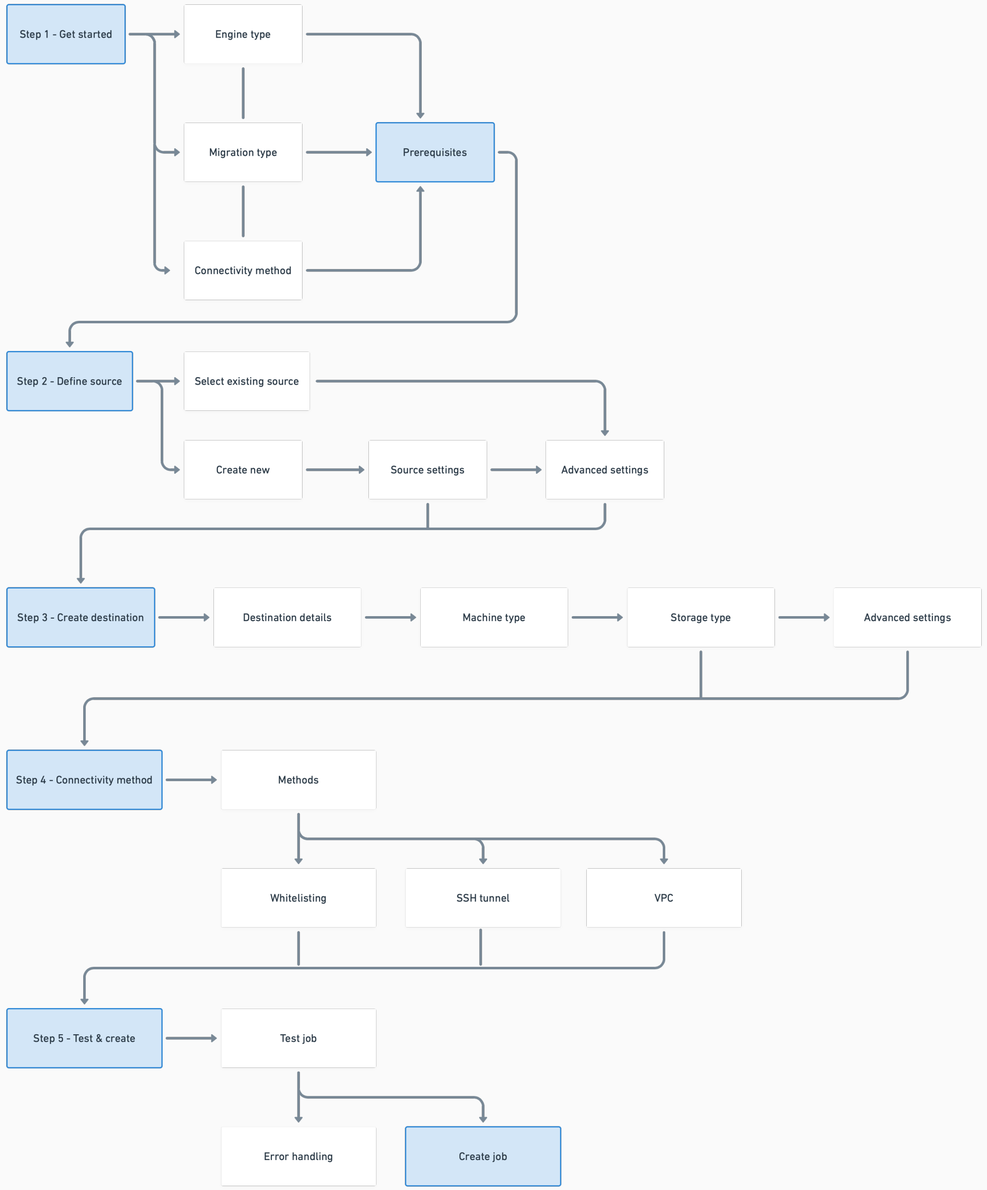
As I previously mentioned, the process of migrating data is complicated and may involve different team members. Our goal was to create a seamless creation flow with minimal exit points and friction.



Once the migration is up and running, our goal becomes to provide critical information about the migration process and thus ensure minimal downtime for the company applications.

Creation process

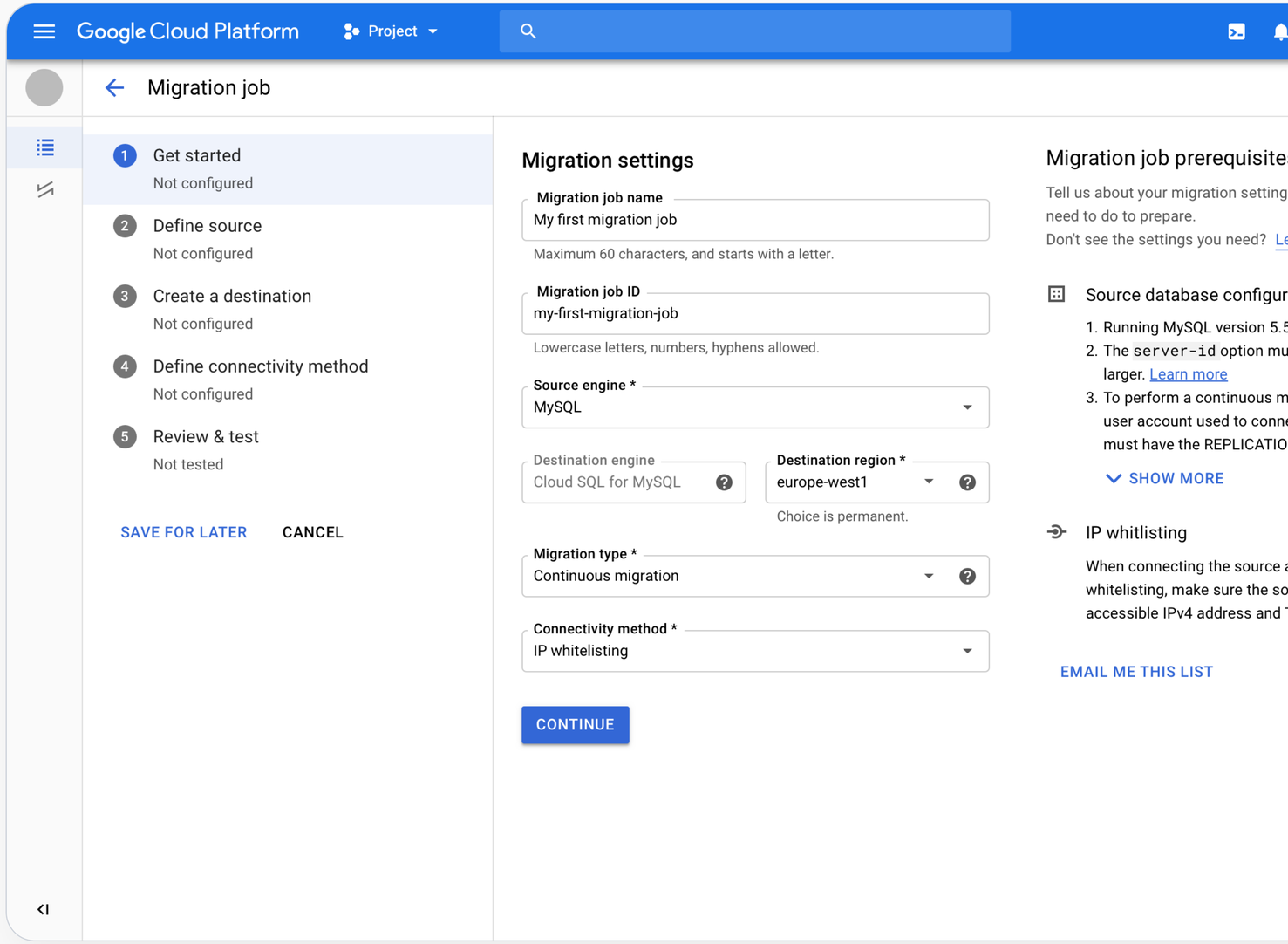
The creation process Consists of 5 steps, in which the user is informed about prerequisites settings, defines a source and a destination, a connectivity method, and finally tests the migration job to verify that everything works properly.



Step 1

Packing up

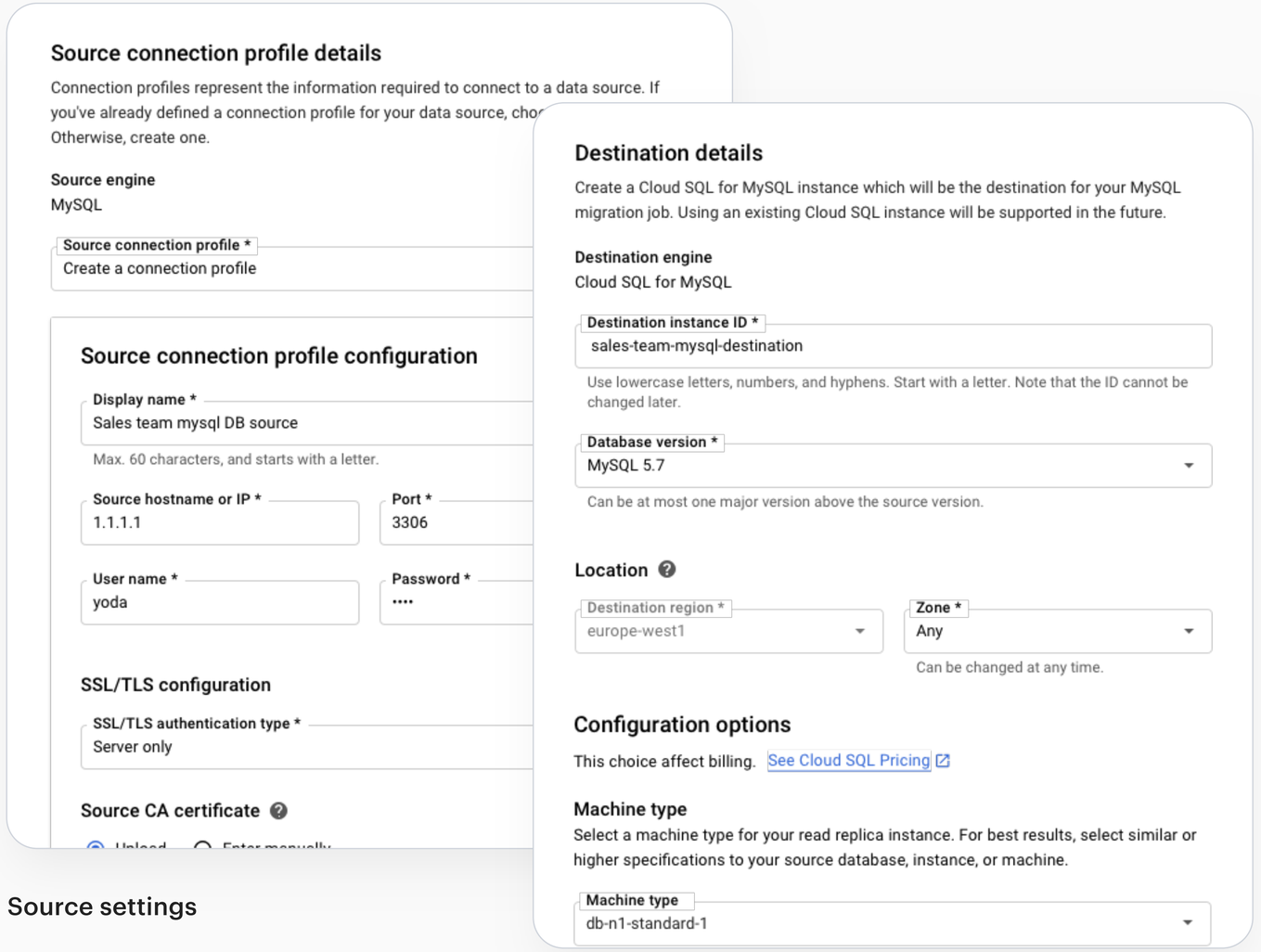
We wanted to make sure that all required tasks that the users need to do before starting the migration are done, so we created a quick wizard that shows relevant info for each migration type.



Step 2 & 3

Providing route details

In this step the user defines and set where the data source is coming from and where it needs to arrive. This is not an easy task, but since the user already did the prerequisites in the previous step, it’s supposed to be much smoother process by now.



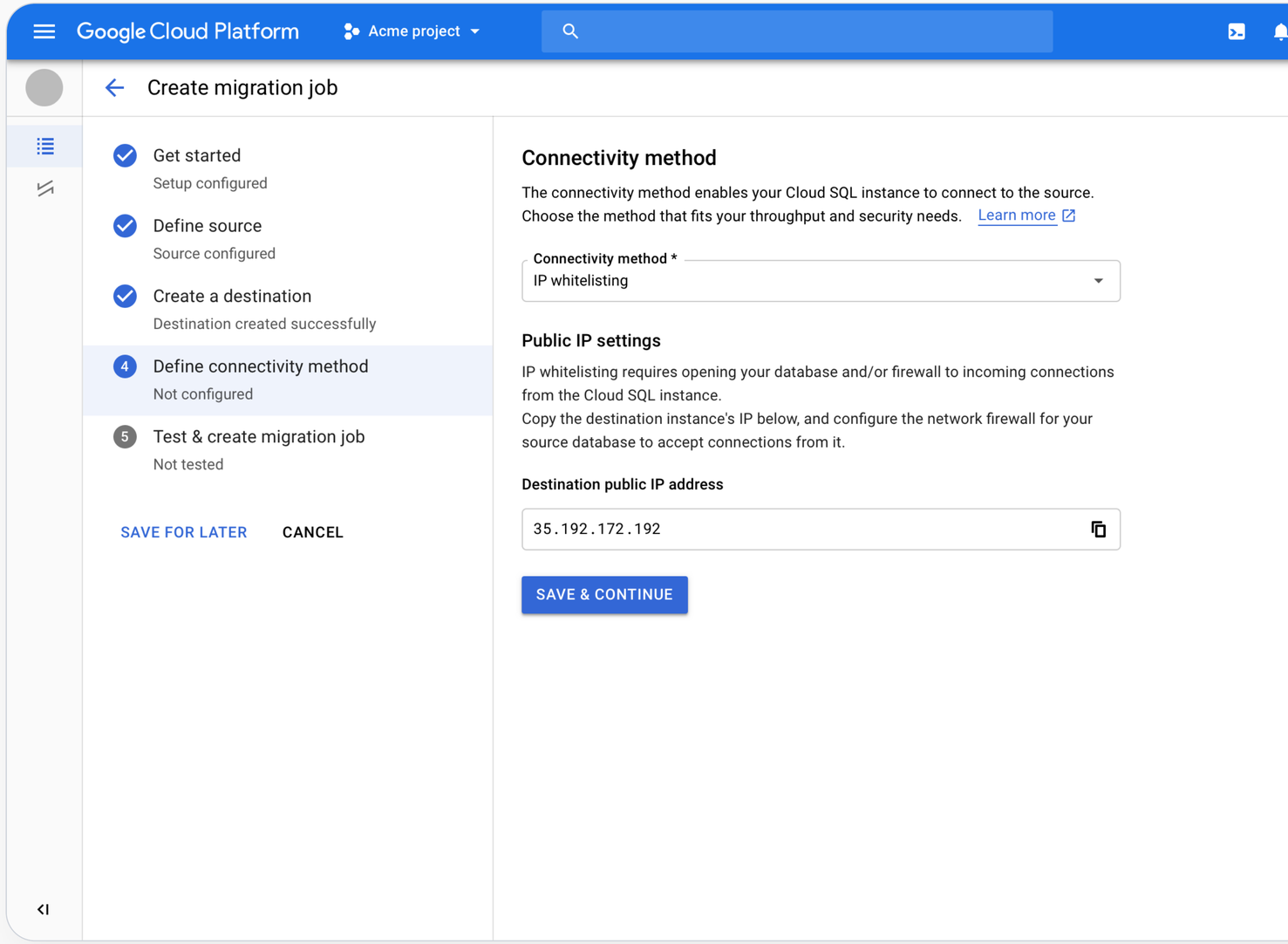
Source settings

Destination settings

Step 4

Connecting the dots

In this step the user should define a connectivity method, sometimes it may get tricky because of security requirement an org might have, so we tried to supply the most secured options Google has to offer.

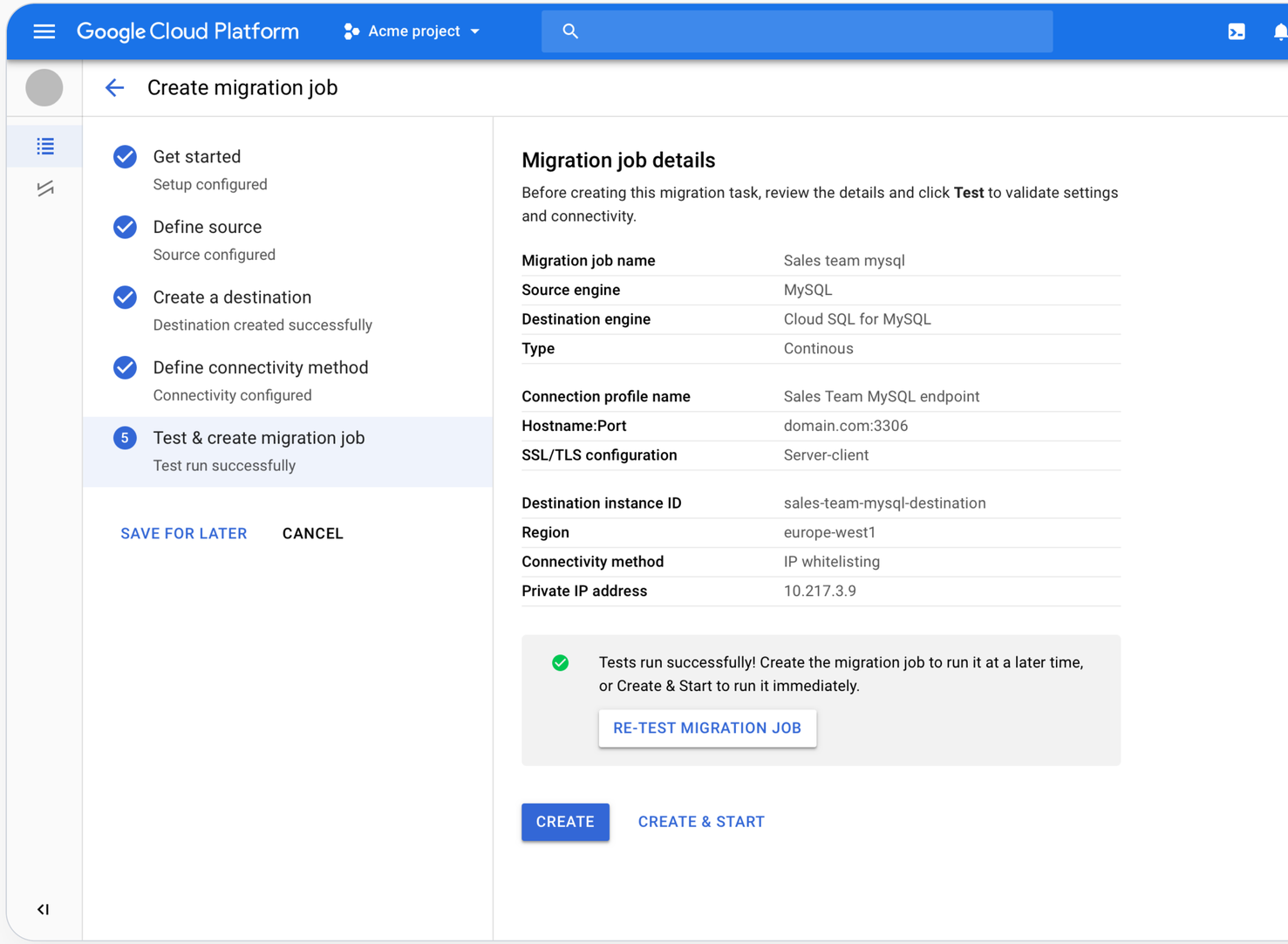


Step 5

Dry run

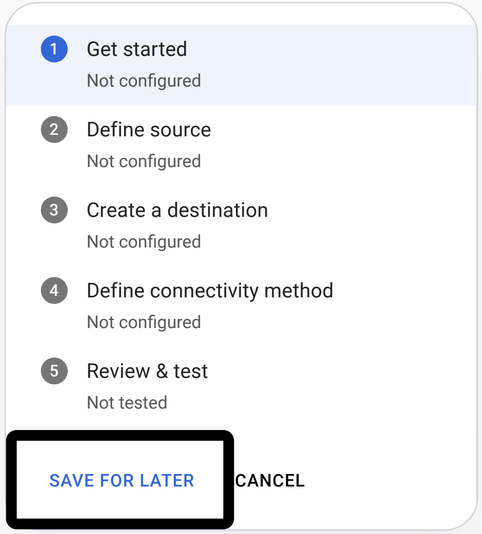
Creating and starting a migration job might take more than a few minutes to complete. During this time some elements in the process might break or become not relevant, may cause errors and even make the job fail.

We added this final step so the user can verify that the migration is good to go, the source and destination settings are correct, and that there aren’t any connection errors.



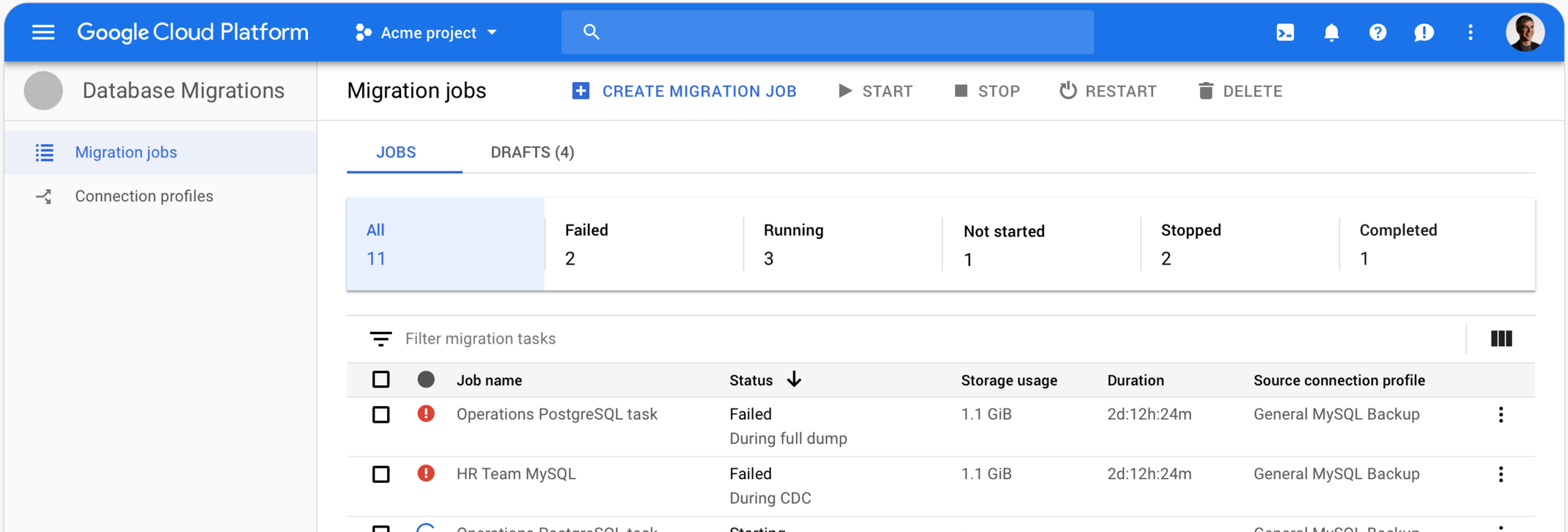
Save for later

We added an ability to save a draft job in a case where the user isn’t able to complete the creation flow right away. Since it’s not a familiar pattern in GCP, there was a technical and a UX effort to make it happen.



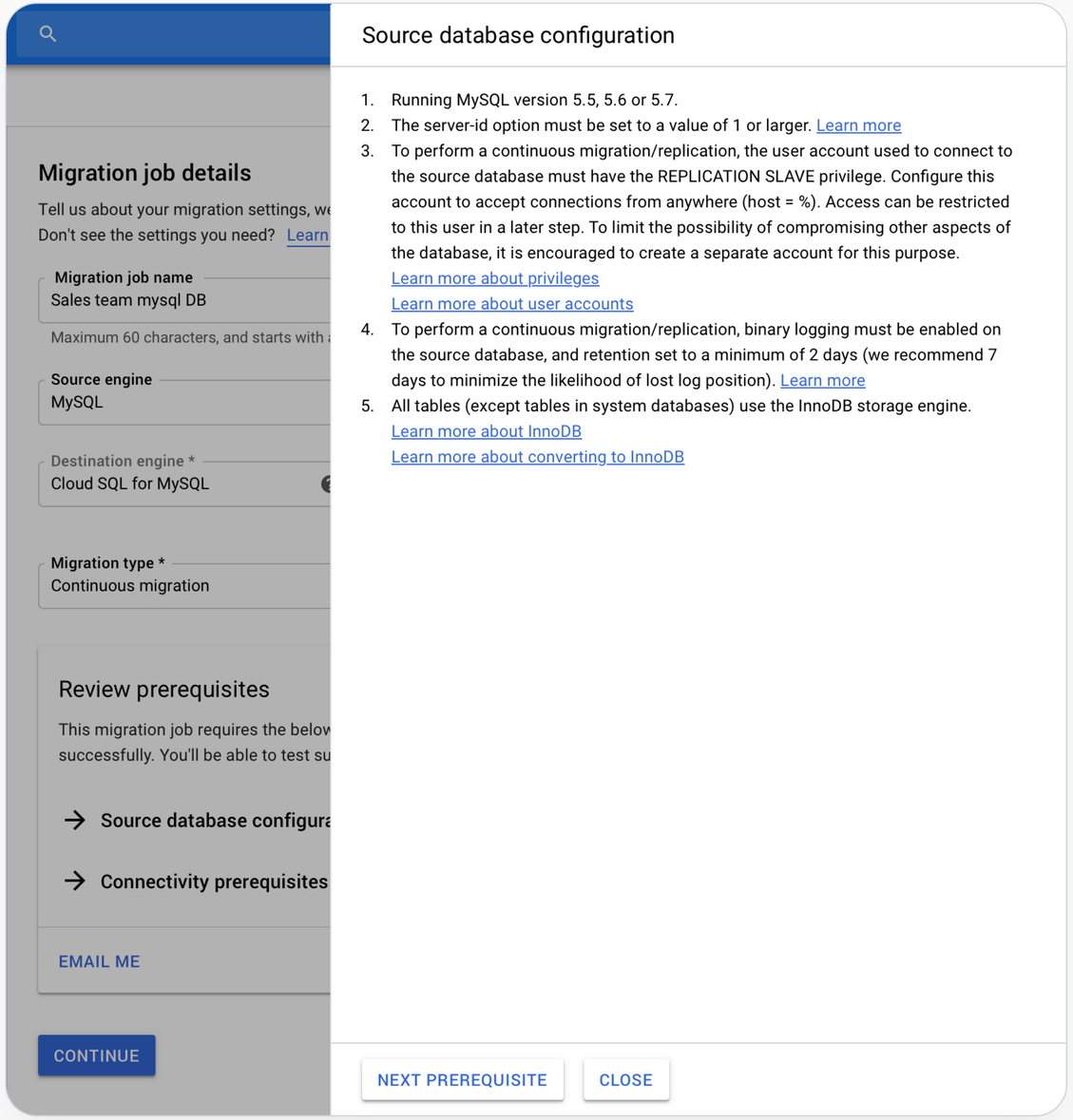
Monitoring migration jobs

Once the creation process is done, the user can monitor all the jobs that got created by any member of the team (depends on the permission type). The user can also do batch operations on several jobs in a single click. If the user wants to monitor a specific job, each job has a detailed page with all the relevant information in it.

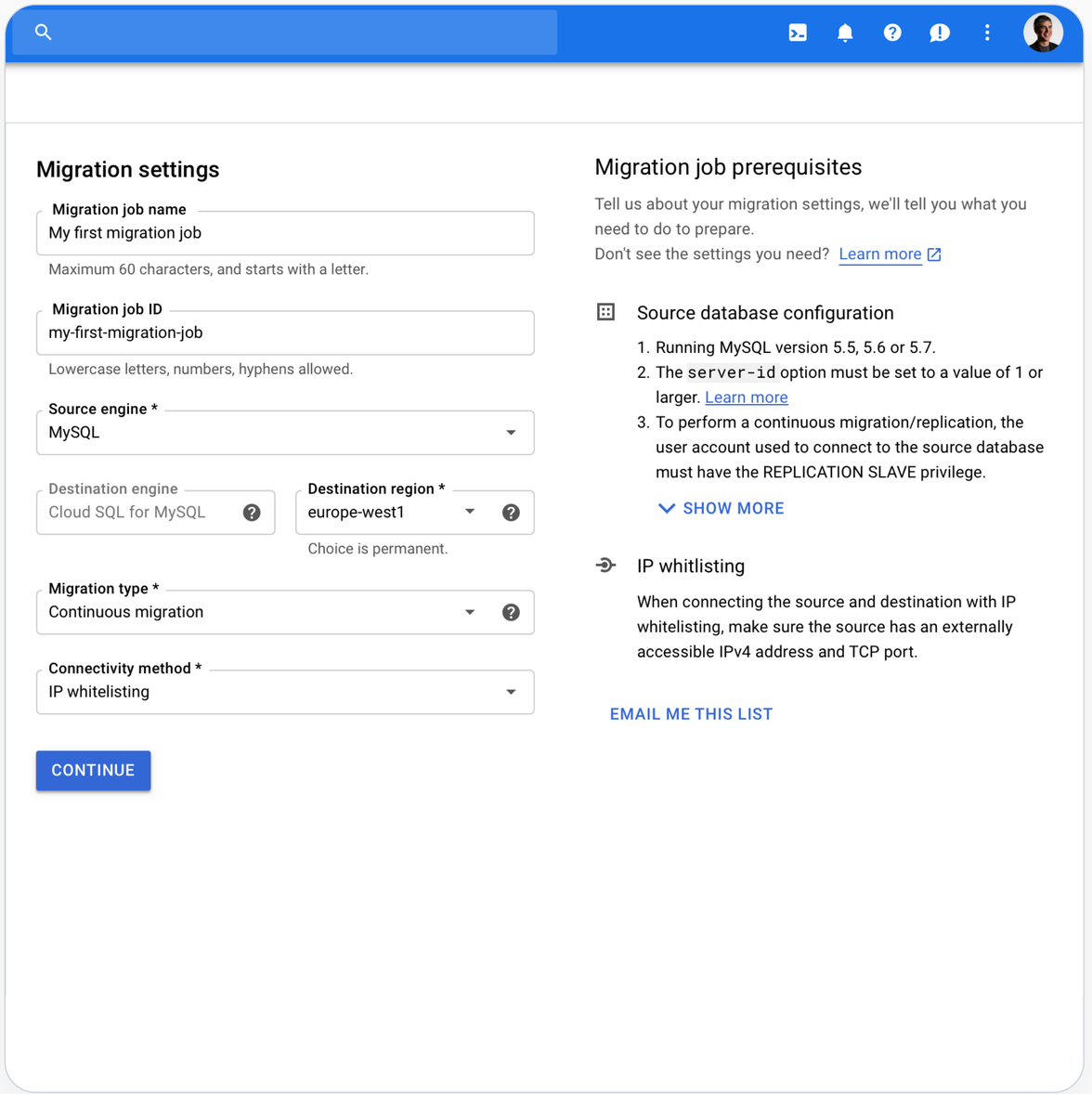


Improving the service communication

After analyzing the user testing we saw that we had a problem with the way we display important information for the user. My suggestion was to remove a subtask modal component we used and instead move to a different GCP pattern, that shows the relevant information for each specific selection.



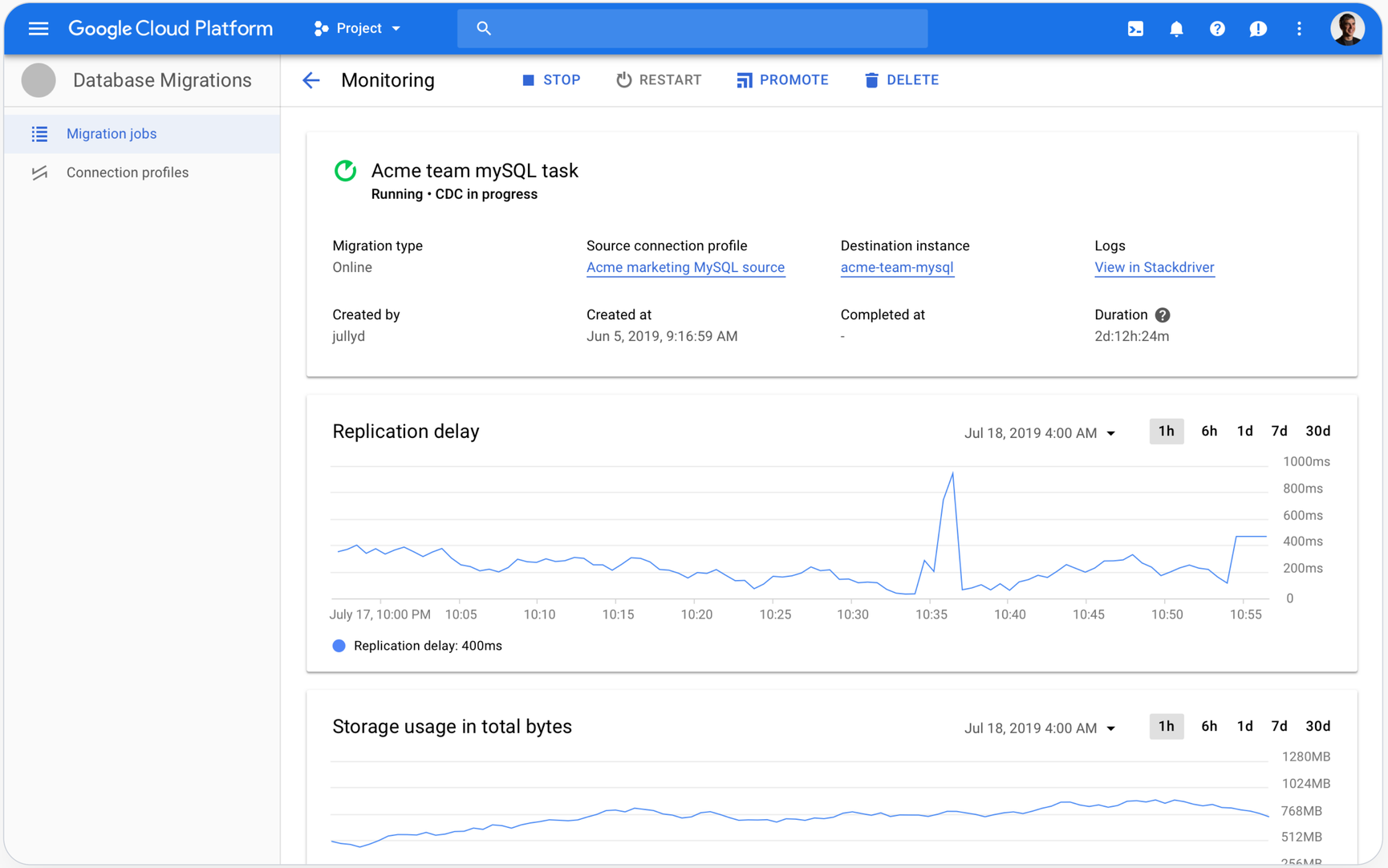
The first iteration had a side modal that was easy to miss.



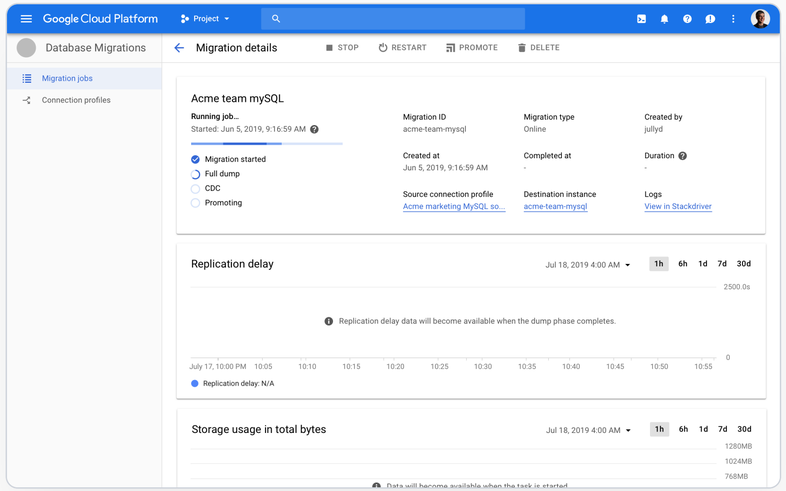
The improved experience has a smart content suggestion.

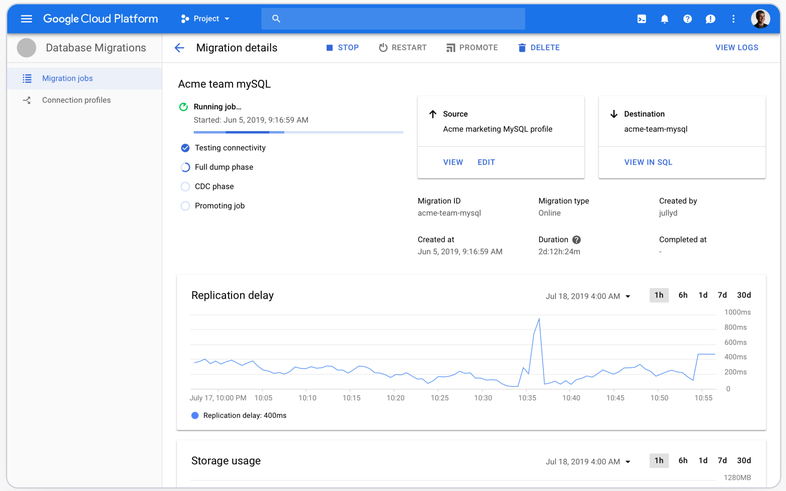
Showing valuable monitoring information

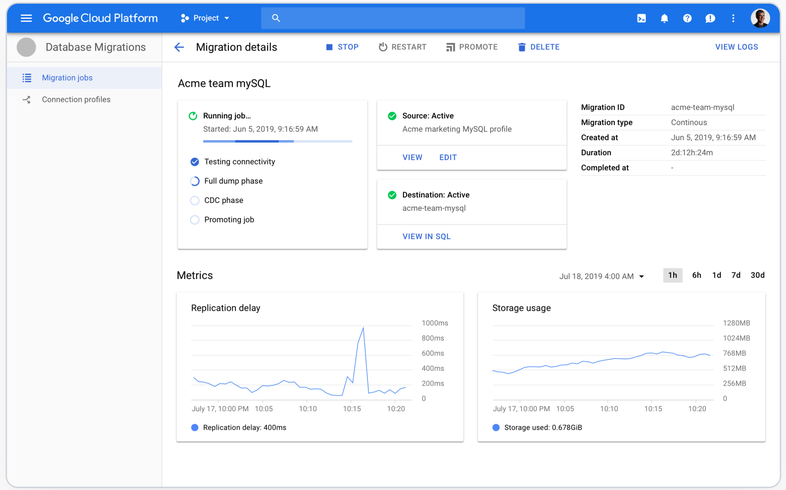
The migration detail page became a collection of information instead of showing the important things first. I made a few iteration and after some discussions with other team members I got to the following solution.

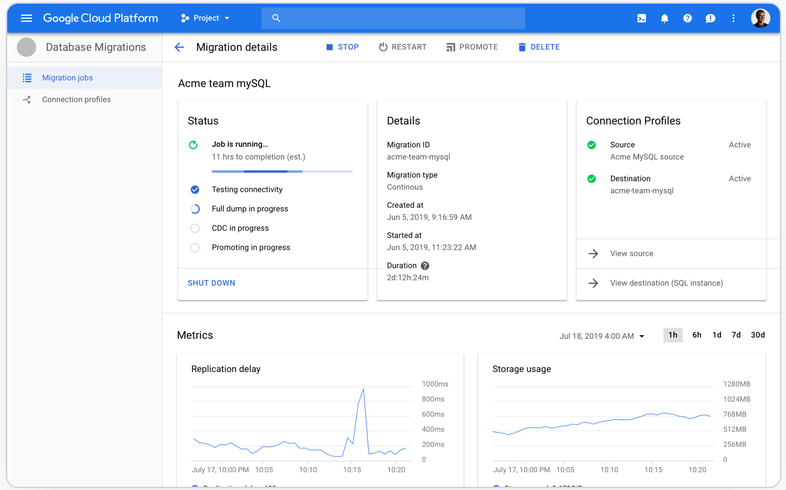


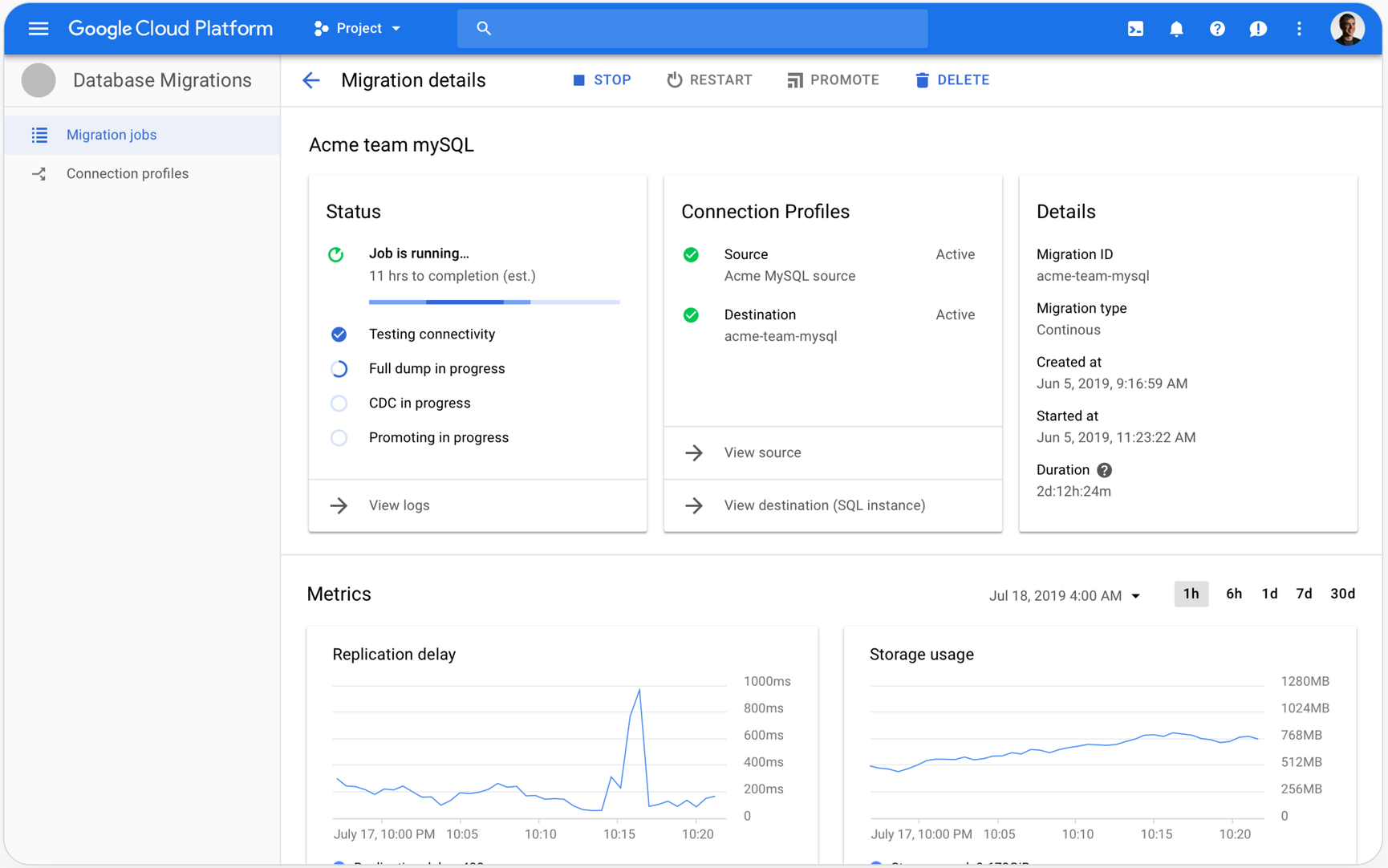
Alpha version


Google Cloud Platform
Project
Database Migrations
Migration details
STOP
RESTART
PROMOTE
DELETE
Migration jobs
Connection profiles
Acme team mySQL
Running job...
Started: Jun 5, 2019, 9:16:59 AM
Migration started
Full dump
CDC
Promoting
Migration ID
acme-team-mysql
Migration type
Online
Created by
jullyd
Created at
Jun 5, 2019, 9:16:59 AM
Completed at
-
Duration
-
Source connection profile
Acme marketing MySQL so...
Destination instance
acme-team-mysql
Logs
View in Stackdriver
Replication delay
Jul 18, 2019 4:00 AM
1h
6h
1d
7d
30d
2500.0s
Replication delay data will become available when the dump phase completes.
0
July 17, 10:00 PM
10:05
10:10
10:15
10:20
10:25
10:30
10:35
10:40
10:45
10:50
10:55
Replication delay: N/A
Storage usage in total bytes
1280MB
1024MB
768MB


Google Cloud Platform
Project
Database Migrations
Migration details
STOP
RESTART
PROMOTE
DELETE
VIEW LOGS
Migration jobs
Connection profiles
Acme team mySQL
Running job...
Started: Jun 5, 2019, 9:16:59 AM
Testing connectivity
Full dump phase
CDC phase
Promoting job
Source
Acme marketing MySQL profile
VIEW
EDIT
Destination
acme-team-mysql
VIEW IN SQL
Migration ID
acme-team-mysql
Migration type
Online
Created by
jullyd
Created at
Jun 5, 2019, 9:16:59 AM
Duration
2d:12h:24m
Completed at
-
Replication delay
Jul 18, 2019 4:00 AM
1h
6h
1d
7d
30d
1000ms
800ms
600ms
400ms
200ms
0
July 17, 10:00 PM
10:05
10:10
10:15
10:20
10:25
10:30
10:35
10:40
10:45
10:50
10:55
Replication delay: 400ms
Storage usage
1280MB


Google Cloud Platform
Project
Database Migrations
Migration details
STOP
RESTART
PROMOTE
DELETE
VIEW LOGS
Migration jobs
Connection profiles
Acme team mySQL
Running job...
Started: Jun 5, 2019, 9:16:59 AM
Testing connectivity
Full dump phase
CDC phase
Promoting job
Source: Active
Acme marketing MySQL profile
VIEW
EDIT
Destination: Active
acme-team-mysql
VIEW IN SQL
Migration ID
acme-team-mysql
Migration type
Continous
Created at
Jun 5, 2019, 9:16:59 AM
Duration
2d:12h:24m
Completed at
-
Metrics
Jul 18, 2019 4:00 AM
1h
6h
1d
7d
30d
Replication delay
1000ms
800ms
600ms
400ms
200ms
0
July 17, 10:00 PM
10:05
10:10
10:15
10:20
Replication delay: 400ms
Storage usage
1280MB
1024MB
768MB
512MB
256MB
0
July 17, 10:00 PM
10:05
10:10
10:15
10:20
Storage used: 0.678GiB

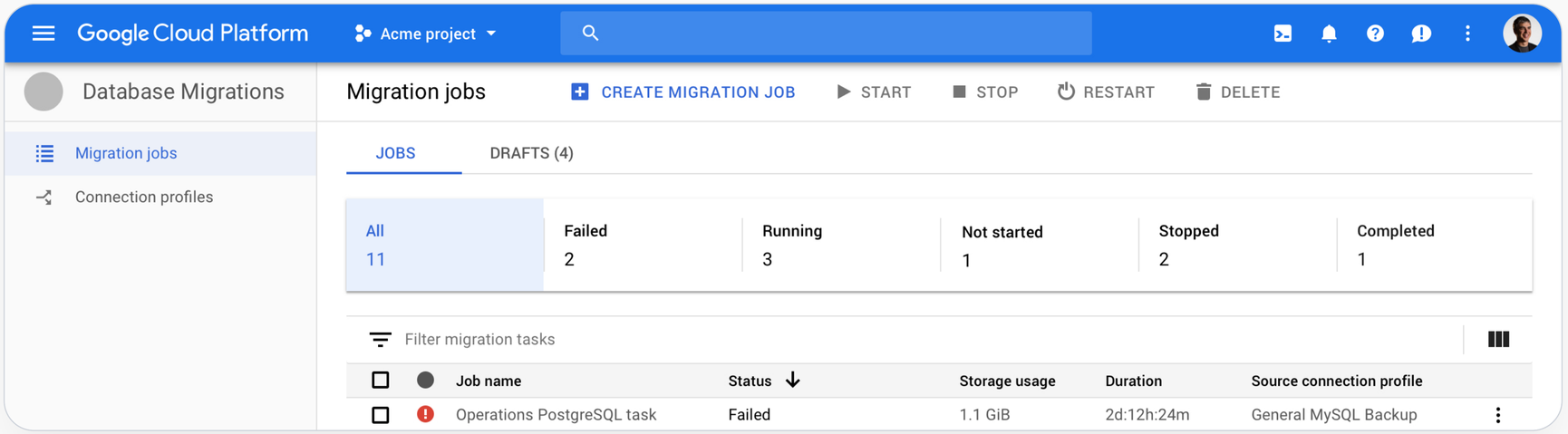

Google Cloud Platform
Project
Database Migrations
Migration details
STOP
RESTART
PROMOTE
DELETE
Migration jobs
Connection profiles
Acme team mySQL
Status
Job is running...
11 hrs to completion (est.)
Testing connectivity
Full dump in progress
CDC in progress
Promoting in progress
SHUT DOWN
Details
Migration ID
acme-team-mysql
Migration type
Continous
Created at
Jun 5, 2019, 9:16:59 AM
Started at
Jun 5, 2019, 11:23:22 AM
Duration
2d:12h:24m
Connection Profiles
Source
Active
Acme MySQL source
Destination
Active
acme-team-mysql
View source
View destination (SQL instance)
Metrics
Jul 18, 2019 4:00 AM
1h
6h
1d
7d
30d
Replication delay
1000ms
800ms
600ms
400ms
200ms
0
July 17, 10:00 PM
10:05
10:10
10:15
10:20
Storage usage
1280MB
1024MB
768MB
512MB
256MB
0
July 17, 10:00 PM
10:05
10:10
10:15
10:20



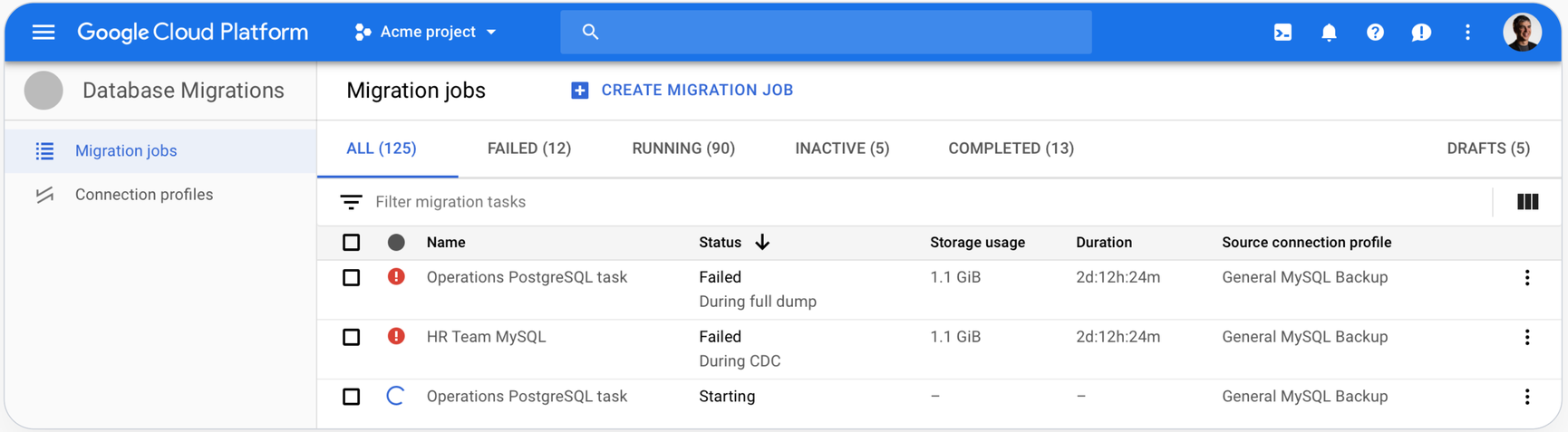
Second iteration

Reducing clutter

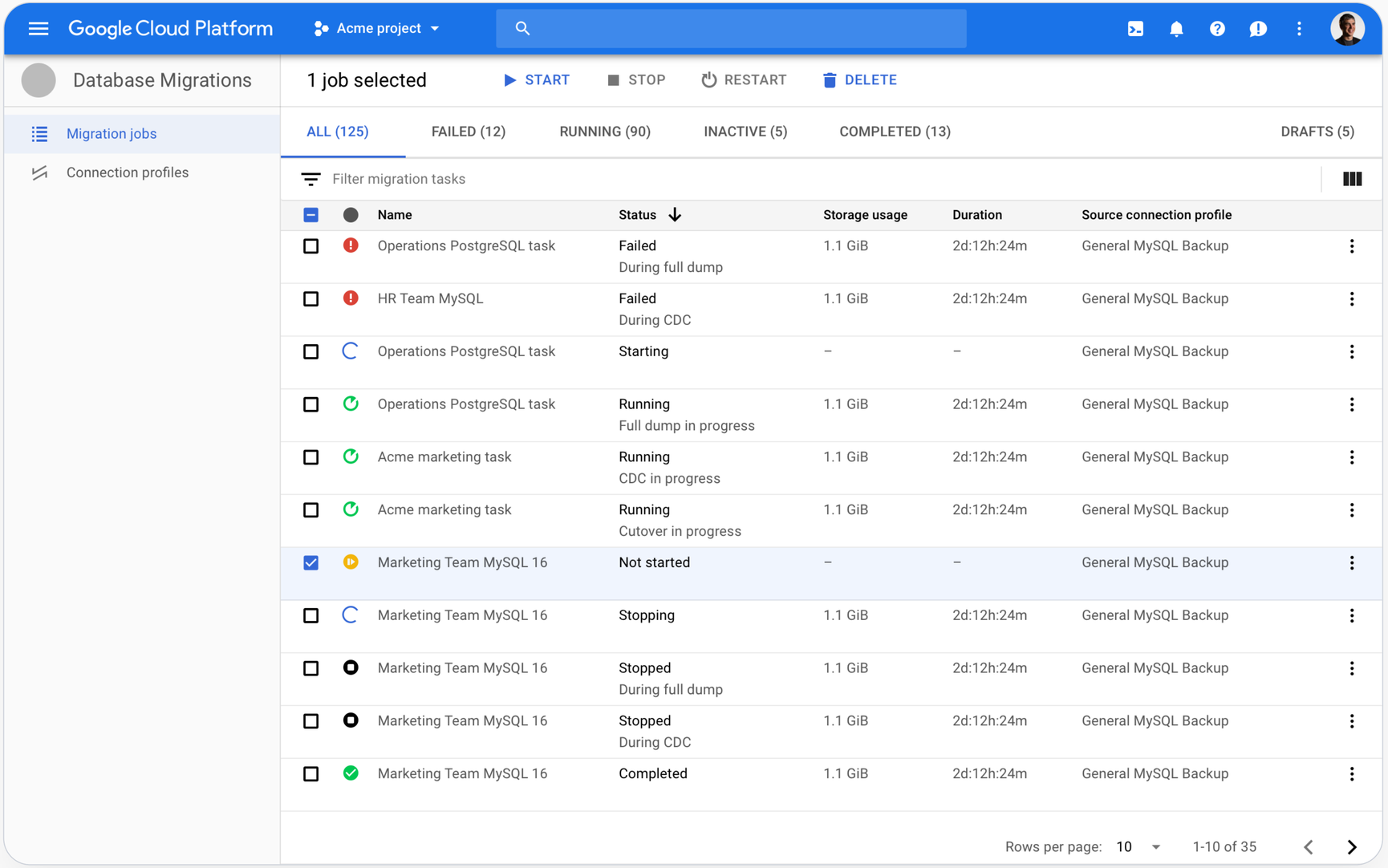
Once the drafts tab added following the “save for later” feature, it created another navigational hierarchy. I suggested a new solution without changing the functionality of the drafts tab. I also suggested another way to manage migration jobs in bulk.



First iteration



Second iteration



Selecting a job will expose the relevant actions

Conclusion

The product is still in its first stage and it’s too early to say which parts need improvement, but from what I can tell the internal feedback is promising and the team keeps working very hard to simplify those complicated user flows.

