Google Cloud Issue Summary
Drive - 2020-09-08 & 2020-09-15
All dates/times relative to US/Pacific

On September 8th, 2020, from 07:46 to 10:33 and September 15th, 2020, from 06:40 to 09:10, users saw elevated error rates and latency when accessing Google Drive for a duration of 167 and 150 minutes respectively. Affected users were unable to complete tasks that required accessing a Drive folder, including loading the Drive home page. However, items with a pre-existing URL such as documents and spreadsheets could be accessed individually. About 873k total users were impacted on September 8th, and about 911k users were impacted on September 15th. The peak impact for both dates was about 50K users in a ten minute period. US educational domains saw the most impact. We understand that this issue has impacted our valued customers and users, and we apologize to those who were affected.

ROOT CAUSE
Drive uses specialized indexing technology to improve efficiency for common operations, including listing folders and items visible to a user. This index shards items based on several factors, including users who have accessed a file. On September 8, 2020, and September 15, 2020, there was a large spike of traffic to some of these shards, causing them to be overloaded and unable to serve requests. The end user effect was users saw elevated error rates and latency when completing tasks that required accessing a Drive folder, including loading the Drive home page.

REMEDIATION AND PREVENTION
The Drive engineering team detected, root caused, and began mitigation efforts within 10 minutes for both incidents. In each case, error rates began to decrease within an hour of detection and mitigation was achieved in under 3 hours.

In an effort to prevent this issue from recurring, Drive engineering is taking the following actions:
- Add hotspot protections to the shard servers in order to reduce query latency and failure in the event of high traffic volume
- Improve tooling to mitigate and detect these incidents more quickly
- Find large index shards and take mitigations before there is a traffic spike
- Investigate product changes to reduce the likelihood of shard traffic overloads

Google is committed to quickly and continually improving our technology and operations to prevent service disruptions. We appreciate your patience and apologize again for any impact to your organization. We thank you for your business.

Sincerely,

The G Suite Team