

GOOGLE INCIDENT REPORT

All dates/times relative to US/Pacific

Summary

On Monday, 12 April 2021 at 05:41 US/Pacific, Google Docs, Drive, Classroom, Sheets, and Slides experienced issues with document related actions like creating, copying and accessing documents on web, mobile, and offline for a duration of 3 hours and 39 minutes. Most of the issues were mitigated by 08:30 US/Pacific, and the remaining offline issues were resolved by 09:20 US/Pacific the same day.

On Tuesday, 13 April 2021 at 10:25 US/Pacific, a second occurrence with much narrower scope and impact took place. The second occurrence happened for a duration of 56 minutes and was limited to Google Docs and Classroom in which users were unable to create new documents, as well as save and access documents created within 26 hours before the issue began. The issue was mitigated at 11:21 US/Pacific the same day.

We understand that this issue has impacted our valued customers and users, and we apologize to those who were affected.

Root Cause

As part of an ongoing roll out to modernize Google Docs' back end systems, a replica of the back end database was being migrated from one zone to another to meet resource demands. During this migration, the database resources available for the creation of new documents was insufficient, causing the new document creations to fail.

During the first occurrence, Google Engineering initially mitigated the issue by adding database instances and redistributing traffic across additional instances. But as more and more load accumulated, these additional instances got overloaded, causing a second occurrence of the issue.

Remediation and Prevention

Google engineers were automatically alerted to the first occurrence on 12 April 2021 at 05:41 US/Pacific and immediately started an investigation. Once the nature and scope of the issue became clear, Google engineers quickly stopped the replica migration at 06:41. After further investigation, more database instances were created to handle the additional load at 08:15. These actions fully mitigated the first occurrence by 09:20 on 12 April 2021.

On 13 April 2021 at 10:25 US/Pacific, there was a second occurrence that was much narrower in scope, requiring Google engineers to further increase the number of database instances. This fully mitigated the second occurrence at 11:21 on the same day.

To guard against the issue recurring and to reduce the impact of similar events, we are taking the following actions:

- Increase partitioning in the Docs back end database design to limit the impact radius between Docs editor services.
- Configure additional alerting to easily detect the problematic services to reduce the troubleshooting time.
- Explore redundancy options to make the Google Docs back end database design more resilient.

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

Detailed Description of Impact

On Monday, 12 April 2021 at 05:54 US/Pacific, Google Docs, Drive, Classroom, Sheets and Slides experienced issues with document related actions on web, mobile and offline for a duration of 3 hours and 39 minutes.

On Tuesday, 13 April 2021 at 10:25 US/Pacific, a second occurrence with much narrower scope and impact took place. The second occurrence happened for a duration of 56 minutes and was limited to Google Docs and Classroom.

Impact on 12 April 2021:

Google Docs:

Google Docs was the most affected service. Below are the operations that failed for Google Docs on 12 April 2021.

- At peak, creating new documents and copying documents failed nearly 100% for a significant portion of the incident.
- Opening documents encountered up to 2.5% failure rate
- Saving documents peaked at less than 1% error rate.
- Offline documents creation had a 20% failure rate.
- Mobile offline document creation had failure rates up to 90%

Google Sheets:

Google Sheets had a similar failure rate for creates but far fewer unique users were affected.

- At peak, Create, and Copy experienced up to 55% failure rate
- Offline sheet creation had up to 100% failure rate intermittently.

- Opening sheets had less than 2% failure rate
- Saving sheets had less than 1% failure rate

Google Slides:

- At peak, Create and Copy were both affected up to 100% failure rate
- Offline Slide creation had up to 70% failure rate.
- Opening and Saving slides had up to 1% failure rate.

Classroom:

Classroom experienced issues with features that involve creating new documents and copying assignments. At peak, up to 80% of requests to create new documents were failing.

Google Drawings and Forms:

Drawing and Forms had negligible error rates.

Impact on 13 April 2021:

The number of users impacted on 13 April 2021 were less than 25% of the number of users that got impacted on 12 April 2021. During this occurrence, attempts to create new documents and edit the documents created within the past 26 hours from the time of the incident were impacted.

Google Docs:

Below are the operations that failed for Google Docs on 13 April 2021.

- Creating new documents and copying had up to 80% failure rate for the first 30 minutes of the outage.
- Opening documents peaked at a 3.5% error rate.
- Saving documents encountered up to 0.5% error rate for up to 20 minutes.
- Mobile Offline document creation reached up to 90% failure rate.

Classroom:

Classroom experienced issues with features which required creation of docs, copying assignments or saving and opening the documents created in the previous 26 hours from the time of the issue. At peak up to 40% of attempts were failing.