

Google Apps Incident Report

Google Docs Outage - September 7, 2011

Prepared for Google Apps for Business customers

The following is the incident report for the Google Docs access issue experienced by Google Apps customers on September 7, 2011. We understand that this service outage has affected our valued customers and their users, and we sincerely apologize for the impact and disruption.

Issue Summary

All times listed in Pacific Daylight Savings Time

From 2:02 to 3:18 PM PDT, Wednesday, September 7, users could not access their Google Docs List, Documents, Spreadsheets, Drawings, and Apps Script within Google Docs. Users could access individual spreadsheets if they had the direct link, and we posted a workaround for users to access their list of spreadsheets. No Google Docs data was affected during this incident; however some edits made immediately before the incident may not have been saved.

Actions and Root Cause Analysis

The root cause was the interaction between several issues, which led to a high load on a key Google Docs infrastructure service. On September 7, we released a configuration update to the Google Docs List that placed additional load on the service that manages the distribution of Docs processing. While the increase in load was expected, an additional memory management issue accelerated and compounded the load on the infrastructure service. Because requests could not be processed, Docs became inaccessible to users.

At 2:03 PM, Google Engineering was notified through automatic monitoring of a spike in failures to access Google Docs. To restore users' access, Google Engineering analyzed the issue, reverted the update at 2:26 PM, and deployed additional capacity to the service through Google's flexible capacity server systems. At 2:50 PM, the reversion was complete, and service access began to return to normal at 2:55 PM.

The Engineering team conducted a review and analysis, and established the following actions to help address the underlying causes of the issues and prevent recurrence:

- Increase memory capacity and deploy additional servers well beyond peak demand estimates.
- Address the behavior of the document list service to reduce the likelihood that a localized issue has a broad impact to all Docs applications.
- Increase the resiliency of the document list service so it remains responsive under similar load conditions.
- Fix the configuration update so it doesn't increase load to the document list service.
- Fix the memory management issue—this action has been completed.

We are dedicated to making these improvements, all of which are now in progress. We understand that this issue has impacted and frustrated customers. Google is committed to continually and quickly improving our technology and operational processes to help prevent service disruptions.