Google Apps Incident Report

Google Calendar - April 28, 2010

Prepared for Google Apps Customers

The following is the incident report for the calendar performance and availability issues experienced by some Google Apps customers on April 28, 2010. We understand that this service issue has affected our valued customers and their users, and we apologize for the impact.

Issue Summary

From 10:00 AM PT | 18:00 GMT to 10:53 AM PT | 18:53 GMT, Wednesday April 28, an unusually large number of calendar synchronization requests from Android put Google Calendar into auto-failover mode, resulting in increased network traffic that caused affected users' calendars to perform poorly or appear unavailable. No data was lost.

Actions and Root Cause Analysis

Google Calendar received an increased number of requests to synchronize user calendars with the calendar storage server. The requests consumed network bandwidth, causing Google Calendar for many users to auto-failover to a new calendar storage server. As part of the failover, the calendar storage server issued numerous updates to the Google account management system. The Google Calendar frontend servers subscribe to updates from the account management system, and the combined number of network updates overwhelmed the network threads to the frontend servers. This issue caused the performance problems.

To resolve the issue, the Engineering team diagnosed the problem and temporarily unsubscribed the frontend servers from the account management system updates. The issues with Google Calendar were resolved at 10:53 AM PT | 18:53 GMT, Wednesday April 28. Some performance problems persisted for about 20 minutes after the incident while the system recovered.

Corrective and Preventative Measures

The Engineering team conducted an internal review and analysis, and is performing the following actions to help address the underlying causes of the problem and help prevent recurrence:

- Reduce the amount of network bandwidth consumed by Android calendar synchronization requests.
- Change the subscription model by which Google Calendar frontend servers keep apprised of changes from the Google account management system so that the servers are not overwhelmed by unnecessary updates.
- Improve the means by which the Google Calendar frontend servers deal with high volumes of traffic.
- Apply additional rigor to evaluating all production activity performed during core business hours.

We appreciate your patience and again apologize for the impact to your organization. We thank you for your business and continued support during this time.

Sincerely,

The Google Apps Team