

## Google Cloud Status Dashboard

This page provides status information on the services that are part of Google Cloud Platform. Check back here to view the current status of the services listed below. If you are experiencing an issue not listed here, please [contact Support](#). Learn more about what's posted on the dashboard in [this FAQ](#). For additional information on these services, please visit [cloud.google.com](#).

### Google App Engine Incident #17006

Network issue in asia-northeast1

Incident began at **2017-06-08 08:51** and ended at **2017-06-08 10:00** (all times are **US/Pacific**).

DATE	TIME	DESCRIPTION
✓ Jun 17, 2017	07:17	<div><div>ISSUE SUMMARY</div><p>On Thursday 8 June 2017, from 08:24 to 09:26 US/Pacific Time, datacenters in the asia-northeast1 region experienced a loss of network connectivity for a total of 62 minutes. We apologize for the impact this issue had on our customers, and especially to those customers with deployments across multiple zones in the asia-northeast1 region. We recognize we failed to deliver the regional reliability that multiple zones are meant to achieve.</p><p>We recognize the severity of this incident and have completed an extensive internal postmortem. We thoroughly understand the root causes and no datacenters are at risk of recurrence. We are at work to add mechanisms to prevent and mitigate this class of problem in the future. We have prioritized this work and in the coming weeks, our engineering team will complete the action items we have generated from the postmortem.</p><div>DETAILED DESCRIPTION OF IMPACT</div><p>On Thursday 8 June 2017, from 08:24 to 09:26 US/Pacific Time, network connectivity to and from Google Cloud services running in the asia-northeast1 region was unavailable for 62 minutes. This issue affected all Google Cloud Platform services in that region, including Compute Engine, App Engine, Cloud SQL, Cloud Datastore, and Cloud Storage. All external connectivity to the region was affected during this time frame, while internal connectivity within the region was not affected.</p><p>In addition, inbound requests from external customers originating near Google's Tokyo point of presence intended for Compute or Container Engine HTTP Load Balancing were lost for the initial 12 minutes of the outage. Separately, Internal Load Balancing within asia-northeast1 remained degraded until 10:23.</p><div>ROOT CAUSE</div><p>At the time of incident, Google engineers were upgrading the network topology and capacity of the region; a configuration error caused the existing links to be decommissioned before the replacement links could provide connectivity, resulting in a loss of connectivity for the asia-northeast1 region. Although the replacement links were already commissioned and appeared to be ready to serve, a network-routing protocol misconfiguration meant that the routes through those links were not able to carry traffic.</p><p>As Google's global network grows continuously, we make upgrades and updates reliably by using automation for each step and, where possible, applying changes to only one zone at any time. The topology in asia-northeast1 was the last region unsupported by automation; manual work was required to be performed to align its topology with the rest of our regional deployments (which would, in turn, allow automation to function properly in the future). This manual change mistakenly did not follow the same per-zone restrictions as required by standard policy or automation, which meant the entire region was affected simultaneously.</p><p>In addition, some customers with deployments across multiple regions that included asia-northeast1 experienced problems with HTTP Load Balancing due to a failure to detect that the backends were unhealthy. When a network partition occurs, HTTP Load Balancing normally detects this automatically within a few seconds and routes traffic to backends in other regions. In this instance, due to a performance feature being tested in this region at the time, the mechanism that usually detects network partitions did not trigger, and continued to attempt to assign traffic until our on-call engineers responded. Lastly, the Internal Load Balancing outage was exacerbated due to a software defined networking component which was stuck in a state where it was not able to provide network resolution for instances in the load balancing group.</p><div>REMEDICATION AND PREVENTION</div><p>Google engineers were paged by automated monitoring within one minute of the start of the outage, at 08:24 PDT. They began troubleshooting and declared an emergency incident 8 minutes later at 08:32. The issue was resolved when engineers reconnected the network path and reverted the configuration back to the last known working state at 09:22. Our monitoring systems worked as expected and alerted us to the outage promptly.</p><p>The time-to-resolution for this incident was extended by the time taken to perform the rollback of the network change, as the rollback had to be performed manually. We are implementing a policy change that any manual work on live networks be constrained to a single zone. This policy will be enforced automatically by our change management software when changes are planned and scheduled. In addition, we are building automation to make these types of changes in future, and to ensure the system can be safely rolled back to a previous known-good configuration at any time during the procedure.</p><p>The fix for the HTTP Load Balancing performance feature that caused it to incorrectly believe zones within asia-northeast1 were healthy will be rolled out shortly.</p><div>SUPPORT COMMUNICATIONS</div><p>During the incident, customers who had originally contacted Google Cloud Support in Japanese did not receive periodic updates from Google as the event unfolded. This was due to a software defect in the support tooling — unrelated to the incident described earlier.</p><p>We have already fixed the software defect, so all customers who contact support will receive incident updates. We apologize for the communications gap to our Japanese-language customers.</p><div>RELIABILITY SUMMARY</div><p>One of our biggest pushes in GCP reliability at Google is a focus on careful isolation of zones from each other. As we encourage users to build reliable services using multiple zones, we also treat zones separately in our production practices, and we enforce this isolation with software and policy. Since we missed this mark—and affecting all zones in a region is an especially serious outage—we apologize. We intend for this incident report to accurately summarize the detailed internal post-mortem that includes final assessment of impact, root cause, and steps we are taking to prevent an outage of this form occurring again. We hope that this incident report demonstrates the work we do to learn from our mistakes to deliver on this commitment. We will do better.</p><p>Sincerely,</p><p>Benjamin Lutch   VP Site Reliability Engineering   Google</p></div>
✓ Jun 08, 2017	10:05	<p>Network connectivity in asia-northeast1 has been restored for all affected users as of 10:00 US/Pacific. We will conduct an internal investigation of this issue and make appropriate improvements to our systems to help prevent or minimize future recurrence. We will provide a more detailed analysis of this incident once we have completed our internal investigation.</p>
⚠ Jun 08, 2017	09:20	<p>Google Cloud Platform services in region asia-northeast1 are experiencing connectivity issues. We will provide another status update by 10:00 US/Pacific with current details.</p>
⚠ Jun 08, 2017	09:04	<p>Google Cloud Platform services in region asia-northeast1 are experiencing connectivity issues. We will provide another status update by 9:30 US/Pacific with current details.</p>
⚠ Jun 08, 2017	08:51	<p>Google Cloud Platform services in region asia-northeast1 are experiencing connectivity issues. We will provide another status update by 10:00 US/Pacific with current details.</p>

