

Google Cloud Status Dashboard

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Google Compute Engine Incident #18012

GCE instance creation errors in us-central1-a.

Incident began at **2018-11-05 04:58** and ended at **2018-11-05 09:46** (all times are **US/Pacific**).

DATE	TIME	DESCRIPTION
✓ Nov 09, 2018	10:33	<div>ISSUE SUMMARY</div> <p>On Wednesday 5 November 2018, Google Compute Engine (GCE) experienced new instance creation failures or elevated instance creation latency in us-central1-a for a duration of 5 hours. We apologize to our customers whose services or businesses were impacted during this incident, and we are taking immediate steps to avoid a recurrence.</p> <div>DETAILED DESCRIPTION OF IMPACT</div> <p>50% of new Google Compute Engine (GCE) instances failed to or were slow to create in us-central1-a on Wednesday 5 November 2018 from 04:58 - 09:46 PST. This also affected Google Kubernetes Engine (GKE) cluster creation, and instances used by Google Cloud SQL, Google Cloud Dataproc, and Google Cloud Shell in the same region. Additionally, instances that were live migrated or had operations [1] that were mutated by gcloud or from the Cloud Console during this period may have gotten into a bad state. This would have manifested as an instance being stuck and not being restartable.</p> <p>[1] https://cloud.google.com/sdk/gcloud/reference/compute/operations/list</p> <div>ROOT CAUSE</div> <p>Google's datacenters rely on sharded Access Control Lists (ACL) stored in a highly available lock service called Chubby [1] to perform operations in the data plane. The root cause was a standard ACL update, when a job crashed mid-write, leaving the ACL stored in Chubby in a corrupted state. After an automatic restart, faulty recovery logic was triggered which prevented the corrupted ACL from being correctly re-written.This caused any operations that attempted to read the ACL to fail. As a result, the permissions of affected instances were not verifiable and the requested control plane operation eventually timed out, causing the instance creation failure, or crash-looping of instances that were being live migrated to other hosts.</p> <p>[1] https://ai.google/research/pubs/pub27897</p> <div>REMEDIATION AND PREVENTION</div> <p>Automated alerts notified Google's engineering team to the event approximately 12 minutes after impact started, and they immediately began investigating. Multiple Google engineering teams were engaged, and the root cause was eventually discovered at 08:11. For mitigation, engineering took steps to ensure a thorough fix and to prevent a recurrence. By 09:46 the missing ACL had been re-written and operations immediately recovered.</p> <p>In addition to addressing the root cause, we will be implementing changes to prevent, more quickly detect, mitigate, and reduce the impact of this type of failure in the future. Specifically, we are adding additional monitoring and logging to surface failures in ACL checks. Furthermore, the libraries which read ACLs will be made resilient to failure during write, eliminating this failure mode entirely.</p> <p>We would again like to apologize for the impact that this incident had on our customers and their businesses in the us-central1-a zone. We are conducting a detailed post-mortem to ensure that all the root and contributing causes of this event are understood and addressed promptly.</p>
✓ Nov 05, 2018	11:24	<p>The issue with GCE instance creation, GKE cluster creation, Cloud SQL instance termination in us-central1 has been resolved for all affected users. 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>
✓ Nov 05, 2018	10:07	<p>Our Engineering team has identified the root cause and mitigation is in place. The rate of errors is decreasing. We will provide another status update by Monday, 2018-11-05 11:30 US/Pacific with current details.</p>
✓ Nov 05, 2018	09:54	<p>Our Engineering Team is investigating an issue with GCE instance creation in us-central1-a.</p> <p>Affected users may see errors in creating instances in us-central1-a. GKE cluster creation, VM creation/deletion is also affected. Affected customers may also see their Cloud SQL instances go down in us-central1 with inability to recreate these instances. This issue also affects Cloud shell availability in us-central1.</p> <p>We will provide more information by Monday, 2018-11-05 11:30 US/Pacific.</p>
✓ Nov 05, 2018	09:54	<p>GCE instance creation errors in us-central1-a.</p>

