

## 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 Cloud Networking Incident #18013

We are investigating issues with Internet access for VMs in the europe-west4 region.

Incident began at **2018-07-27 18:27** and ended at **2018-07-27 19:31** (all times are **US/Pacific**).

	DATE	TIME	DESCRIPTION
✓	Aug 07, 2018	14:51	<div>ISSUE SUMMARY</div> <p>On Friday 27 July 2018, for a duration of 1 hour 4 minutes, Google Compute Engine (GCE) instances and Cloud VPN tunnels in europe-west4 experienced loss of connectivity to the Internet. The incident affected all new or recently live migrated GCE instances. VPN tunnels created during the incident were also impacted. 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>All Google Compute Engine (GCE) instances in europe-west4 created on Friday 27 July 2018 from 18:27 to 19:31 PDT lost connectivity to the Internet and other instances via their public IP addresses. Additionally any instances that live migrated during the outage period would have lost connectivity for approximately 30 minutes after the live migration completed. All Cloud VPN tunnels created during the impact period, and less than 1% of existing tunnels in europe-west4 also lost external connectivity. All other instances and VPN tunnels continued to serve traffic. Inter-instance traffic via private IP addresses remained unaffected.</p> <div>ROOT CAUSE</div> <p>Google's datacenters utilize software load balancers known as Maglevs [1] to efficiently load balance network traffic [2] across service backends. The issue was caused by an unintended side effect of a configuration change made to jobs that are critical in coordinating the availability of Maglevs. The change unintentionally lowered the priority of these jobs in europe-west4. The issue was subsequently triggered when a datacenter maintenance event required load shedding of low priority jobs. This resulted in failure of a portion of the Maglev load balancers. However, a safeguard in the network control plane ensured that some Maglev capacity remained available. This layer of our typical defense-in-depth allowed connectivity to extant cloud resources to remain up, and restricted the disruption to new or migrated GCE instances and Cloud VPN tunnels.</p> <div>REMEDIATION AND PREVENTION</div> <p>Automated monitoring alerted Google's engineering team to the event within 5 minutes and they immediately began investigating at 18:36. At 19:25 the team discovered the root cause and started reverting the configuration change. The issue was mitigated at 19:31 when the fix was rolled out. At this point, connectivity was restored immediately.</p> <p>In addition to addressing the root cause, we will be implementing changes to both prevent and reduce the impact of this type of failure by improving our alerting when too many Maglevs become unavailable, and adding a check for configuration changes to detect priority reductions on critical dependencies.</p> <p>We would again like to apologize for the impact that this incident had on our customers and their businesses in the europe-west4 region. 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> <p>[1] <a href="https://ai.google/research/pubs/pub44824">https://ai.google/research/pubs/pub44824</a></p> <p>[2] <a href="https://cloudplatform.googleblog.com/2016/03/Google-shares-software-network-load-balancer-design-powering-GCP-networking.html">https://cloudplatform.googleblog.com/2016/03/Google-shares-software-network-load-balancer-design-powering-GCP-networking.html</a></p>
✓	Jul 27, 2018	19:44	The issue with Internet access for VMs in the europe-west4 region has been resolved for all affected projects as of Friday, 2018-07-27 19:45 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.
✓	Jul 27, 2018	19:40	Mitigation work is currently underway by our Engineering Team. We will provide another status update by Friday, 2018-07-27 20:30 US/Pacific with current details.
✗	Jul 27, 2018	19:28	Our Engineering Team believes they have identified the root cause of the issue and is working to mitigate. We will provide another status update by Friday, 2018-07-27 20:15 US/Pacific with current details.
✗	Jul 27, 2018	19:25	Investigation is currently underway by our Engineering Team. We will provide another status update by Friday, 2018-07-27 20:15 US/Pacific with current details.
✗	Jul 27, 2018	18:55	We are investigating an issue with Google Cloud Networking for VM instances in the europe-west4 region. We will provide more information by Friday, 2018-07-27 19:30 US/Pacific.

