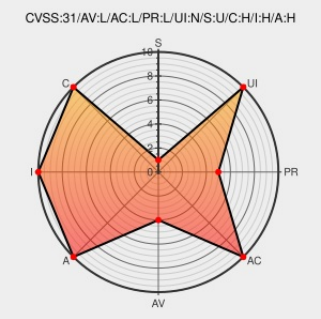
CVE-2021-37652

Published on: 08/12/2021 12:00:00 AM UTC

Last Modified on: 10/25/2022 04:03:00 PM UTC

CVE-2021-37652 - advisory for GHSA-m7fm-4jfh-jrg6

Source: Mitre | Source: NIST | CVE.ORG | Print: PDF



Certain versions of Tensorflow from Google contain the following vulnerability:

TensorFlow is an end-to-end open source platform for machine learning. In affected versions the implementation for `tf.raw_ops.BoostedTreesCreateEnsemble` can result in a use after free error if an attacker supplies specially crafted arguments. The [implementation](https://github.com/tensorflow/tensorflow/blob/f24faa153ad31a4b51578f8181d3aaab77a1ddeb/ uses a reference counted resource and decrements the refcount if the initialization fails, as it should. However, when the code was written, the resource was represented as a naked pointer but later refactoring has changed it to be a smart pointer. Thus, when the pointer leaves the scope, a subsequent `free`-ing of the resource occurs, but this fails to take into account that the refcount has already reached 0, thus the resource has been already freed. During this double-free process, members of the resource object are accessed for cleanup but they are invalid as the entire resource has been freed. We have patched the issue in GitHub commit 5ecec9c6fbdbc6be03295685190a45e7eee726ab. The fix will be included in TensorFlow 2.6.0. We will also cherrypick this commit on TensorFlow 2.5.1, TensorFlow 2.4.3, and TensorFlow 2.3.4, as these are also affected and still in supported range.

CVE-2021-37652 has been assigned by security-advisories@github.com to track the vulnerability - currently rated as HIGH severity.

Affected Vendor/Software: **tensorflow** - **tensorflow** version **>= 2.5.0, < 2.5.1**

Affected Vendor/Software: **tensorflow** - **tensorflow** version **>= 2.4.0, < 2.4.3**

Affected Vendor/Software: **tensorflow** - **tensorflow** version **< 2.3.4**

CVSS3 Score: 7.8 - HIGH

Attack Vector	Attack Complexity	Privileges Required	User Interaction
LOCAL	LOW	LOW	NONE

Scope	Confidentiality Impact	Integrity Impact	Availability Impact
UNCHANGED	HIGH	HIGH	HIGH

CVSS2 Score: 4.6 - MEDIUM

Access Vector	Access Complexity	Authentication
LOCAL	LOW	NONE

Confidentiality Impact	Integrity Impact	Availability Impact
PARTIAL	PARTIAL	PARTIAL

CVE References

Description	Tags	Link
Prevent use after free. · tensorflow/tensorflow@5ecec9c · GitHub	github.com text/html	MISC github.com/tensorflow/tensorflow/commit/5ecec9c6fbdbc6be03295685190a45e7eee726ab
Use after free in boosted trees creation · Advisory · tensorflow/tensorflow · GitHub	github.com text/html	CONFIRM github.com/tensorflow/tensorflow/security/advisories/GHSA-m7fm-4jfh-jrg6

Related QID Numbers

981521 Python (pip) Security Update for tensorflow-gpu (GHSA-m7fm-4jfh-jrg6)

Known Affected Configurations (CPE V2.3)

Type	Vendor	Product	Version	Update	Edition	Language
Application	Google	Tensorflow	All	All	All	All
Application	Google	Tensorflow	2.5.0	All	All	All
Application	Google	Tensorflow	2.6.0	rc0	All	All
Application	Google	Tensorflow	2.6.0	rc1	All	All
Application	Google	Tensorflow	2.6.0	rc2	All	All

cpe:2.3:a:google:tensorflow:*:*:*:*:*:*:*:*:

cpe:2.3:a:google:tensorflow:2.5.0:*:*:*:*:*:*:*:

cpe:2.3:a:google:tensorflow:2.6.0:rc0:*:*:*:*:*:*:

cpe:2.3:a:google:tensorflow:2.6.0:rc1:*:*:*:*:*:*:

cpe:2.3:a:google:tensorflow:2.6.0:rc2:*:*:*:*:*:*:

No vendor comments have been submitted for this CVE

Social Mentions

Source	Title	Posted (UTC)
@CVEreport	CVE-2021-37652 : TensorFlow is an end-to-end open source platform for machine learning. In affected versions the im… twitter.com/i/web/status/1…	2021-08-12 21:21:32

← Previous ID

Next ID→