CVE-2020-15207

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CVE-2020-15207 - advisory for GHSA-q4qf-3fc6-8x34

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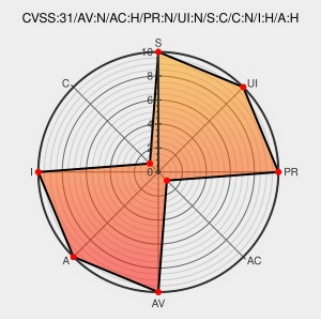

Certain versions of Tensorflow from Google contain the following vulnerability:

In tensorflow-lite before versions 1.15.4, 2.0.3, 2.1.2, 2.2.1 and 2.3.1, to mimic Python's indexing with negative values, TFLite uses `ResolveAxis` to convert negative values to positive indices. However, the only check that the converted index is now valid is only present in debug builds. If the `DCHECK` does not trigger, then code execution moves ahead with a negative index. This, in turn, results in accessing data out of bounds which results in segfaults and/or data corruption. The issue is patched in commit 2d88f470dea2671b430884260f3626b1fe99830a, and is released in TensorFlow versions 1.15.4, 2.0.3, 2.1.2, 2.2.1, or 2.3.1.

CVE-2020-15207 has been assigned by security-advisories@github.com to track the vulnerability - currently rated as CRITICAL severity.

Affected Vendor/Software: **tensorflow** - **tensorflow** version **< 1.15.4**

Affected Vendor/Software: **tensorflow** - **tensorflow** version **>= 2.0.0, < 2.0.3**

Affected Vendor/Software: **tensorflow** - **tensorflow** version **>= 2.1.0, < 2.1.2**

Affected Vendor/Software: **tensorflow** - **tensorflow** version **>= 2.2.0, < 2.2.1**

Affected Vendor/Software: **tensorflow** - **tensorflow** version **>= 2.3.0, < 2.3.1**

CVSS3 Score: 9 - CRITICAL

Attack Vector	Attack Complexity	Privileges Required	User Interaction
NETWORK	HIGH	NONE	NONE
Scope	**Confidentiality Impact**	**Integrity Impact**	**Availability Impact**
CHANGED	HIGH	HIGH	HIGH

CVSS2 Score: 6.8 - MEDIUM

Access Vector	Access Complexity	Authentication
NETWORK	MEDIUM	NONE
Confidentiality Impact	**Integrity Impact**	**Availability Impact**
PARTIAL	PARTIAL	PARTIAL

CVE References

Description	Tags	Link
[tflite] Ensure `ResolveAxis` properly handles negative inputs. · tensorflow/tensorflow@2d88f47 · GitHub	Patch, Third Party Advisory, github.com, text/html	MISC github.com/tensorflow/tensorflow/commit/2d88f470dea2671b430884260f3626b1fe998
Release TensorFlow 2.3.1 · tensorflow/tensorflow · GitHub	Third Party Advisory, github.com, text/html	MISC github.com/tensorflow/tensorflow/releases/tag/v2.3.1
[security-announce] openSUSE-SU-2020:1766-1: moderate: Security update f	lists.opensuse.org, text/html	SUSE openSUSE-SU-2020:1766
Segfault and data corruption caused by negative indexing in TFLite · Advisory · tensorflow/tensorflow · GitHub	Exploit, Third Party Advisory, github.com, text/html	CONFIRM github.com/tensorflow/tensorflow/security/advisories/GHSA-q4qf-3fc6-8

Related QID Numbers

980057 Python (pip) Security Update for tensorflow-gpu (GHSA-q4qf-3fc6-8x34)

Known Affected Configurations (CPE V2.3)

Type	Vendor	Product	Version	Update	Edition	Language
Application	Google	Tensorflow	All	All	All	All
Operating System	Opensuse	Leap	15.2	All	All	All
Application	Tensorflow	Tensorflow	All	All	All	All
Application	Tensorflow	Tensorflow	All	All	All	All

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

cpe:2.3:o:opensuse:leap:15.2:*:*:*:*:*:*:*:

cpe:2.3:a:tensorflow:tensorflow:*:*:*:*:lite:*:*:*:

cpe:2.3:a:tensorflow:tensorflow:*:*:*:*:lite:*:*:*:

No vendor comments have been submitted for this CVE

Social Mentions

Source	Title	Posted (UTC)
@LinInfoSec	Tensorflow - CVE-2020-15207: github.com/tensorflow/ten…	2021-08-17 14:46:21

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