

Kernel Live Patch Security Notice LSN-0086-1

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It was discovered that a race condition existed in the network scheduling subsystem of the Linux kernel, leading to a use-after-free vulnerability. A local attacker could use this to cause a denial of service (system crash) or possibly execute arbitrary code. Yiqi Sun and Kevin Wang discovered that the cgroups implementation in the Linux kernel did not properly restrict access to the cgroups v1 release\_agent feature. A local attacker could use this to gain administrative privileges. Various other issues were also addressed.

tags | advisory, denial of service, arbitrary, kernel, local

systems | linux

advisories | CVE-2021-39713, CVE-2022-0492, CVE-2022-1055, CVE-2022-1116, CVE-2022-21499, CVE-2022-29581, CVE-2022-30594, SHA-256 | d764344ffd074691e5125e0c7ecb9972329d587b004cdad9acfe1fafabfb0253 Download | Favorite | View

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Linux kernel vulnerabilities

A security issue affects these releases of Ubuntu and its derivatives:

- Ubuntu 20.04 LTS
- Ubuntu 18.04 LTS
- Ubuntu 16.04 ESM
- Ubuntu 22.04 LTS
- Ubuntu 14.04 ESM

Summary

Several security issues were fixed in the kernel.

Software Description

- linux - Linux kernel
- linux-aws - Linux kernel for Amazon Web Services (AWS) systems
- linux-azure - Linux kernel for Microsoft Azure Cloud systems
- linux-gcp - Linux kernel for Google Cloud Platform (GCP) systems
- linux-gke - Linux kernel for Google Container Engine (GKE) systems
- linux-keep - Linux kernel for Google Container Engine (GKE) systems
- linux-ibm - Linux kernel for IBM cloud systems
- linux-oem - Linux kernel for OEM systems

Details

It was discovered that a race condition existed in the network scheduling subsystem of the Linux kernel, leading to a use-after-free vulnerability. A local attacker could use this to cause a denial of service (system crash) or possibly execute arbitrary code. (CVE-2021-39713)

Tiqi Sun and Kevin Wang discovered that the cgroups implementation in the Linux kernel did not properly restrict access to the cgroups v1 release\_agent feature. A local attacker could use this to gain administrative privileges. (CVE-2022-0492)

It was discovered that the network traffic control implementation in the Linux kernel contained a use-after-free vulnerability. A local attacker could use this to cause a denial of service (system crash) or possibly execute arbitrary code. (CVE-2022-1055)

Bing-Zhong Billy Jheng discovered that the io\_uring subsystem in the Linux kernel contained an integer overflow. A local attacker could use this to cause a denial of service (system crash) or execute arbitrary code. (CVE-2022-1116)

It was discovered that the Linux kernel did not properly restrict access to the kernel debugger when booted in secure boot environments. A privileged attacker could use this to bypass UEFI Secure Boot restrictions. (CVE-2022-21499)

Kyle Seng discovered that the Network Queuing and Scheduling subsystem of the Linux kernel did not properly perform reference counting in some situations, leading to a use-after-free vulnerability. A local attacker could use this to cause a denial of service (system crash) or execute arbitrary code. (CVE-2022-29581)

Jann Horn discovered that the Linux kernel did not properly enforce seccomp restrictions in some situations. A local attacker could use this to bypass intended seccomp sandbox restrictions. (CVE-2022-30594)

Update instructions

The problem can be corrected by updating your kernel livepatch to the following versions:

Ubuntu 20.04 LTS

- aws - 86.3
- azure - 86.3
- gcp - 86.3
- generic - 86.3
- gke - 86.3
- gkeop - 86.3
- ibm - 86.3
- lowlatency - 86.3

Ubuntu 18.04 LTS

- aws - 86.3
- azure - 86.3
- gcp - 86.3
- generic - 86.3
- gke - 86.3
- gkeop - 86.3
- ibm - 86.3
- lowlatency - 86.3
- oem - 86.3

Ubuntu 16.04 ESM

- aws - 86.3
- azure - 86.3
- gcp - 86.3
- generic - 86.3
- lowlatency - 86.3

Ubuntu 22.04 LTS

- gcp - 86.4
- generic - 86.4
- gke - 86.4
- ibm - 86.4
- lowlatency - 86.4

Ubuntu 14.04 ESM

- generic - 86.3
- lowlatency - 86.3

Support Information

Kernels older than the levels listed below do not receive livepatch updates. If you are running a kernel version earlier than the one listed below, please upgrade your kernel as soon as possible.

Ubuntu 20.04 LTS

- linux-aws - 5.4.0-1009
- linux-aws - 5.4.0-1061

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17					
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24					
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JavaScript (821)	Cisco (1,917)
Kernel (6,291)	Debian (6,634)
Local (14,201)	Fedora (1,690)
Magazine (586)	FreeBSD (1,242)
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Perl (1,418)	HPUX (878)
PHP (5,093)	IOS (330)
Proof of Concept (2,291)	iPhone (108)
Protocol (3,435)	IRIX (220)
Python (1,467)	Juniper (67)
Remote (30,044)	Linux (44,315)
Root (3,504)	Mac OS X (684)
Ruby (594)	Mandriva (3,105)
Scanner (1,631)	NetBSD (255)
Security Tool (7,777)	OpenBSD (479)
Shell (3,103)	RedHat (12,469)
Shellcode (1,204)	Slackware (941)
Sniffer (886)	Solaris (1,607)

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linux-azure - 5.4.0-1010
linux-gcp - 5.4.0-1009
linux-gke - 5.4.0-1033
linux-gkeop - 5.4.0-1009
linux-hwe - 5.15.0-0
linux-lbm - 5.4.0-1009
linux-oem - 5.4.0-26
linux - 5.4.0-26

Ubuntu 18.04 LTS
linux-aws-5.4 - 5.4.0-1069
linux-aws - 4.15.0-1054
linux-azure-4.15 - 4.15.0-1115
linux-azure-5.4 - 5.4.0-1069
linux-gcp-4.15 - 4.15.0-1121
linux-gcp-5.4 - 5.4.0-1069
linux-gke-4.15 - 4.15.0-1076
linux-gke-5.4 - 5.4.0-1009
linux-gkeop-5.4 - 5.4.0-1007
linux-hwe-5.4 - 5.4.0-26
linux-lbm-5.4 - 5.4.0-1009
linux-oem - 4.15.0-1063
linux - 4.15.0-69

Ubuntu 16.04 ESM
linux-aws-hwe - 4.15.0-1126
linux-aws - 4.4.0-1098
linux-aws - 4.4.0-1129
linux-azure - 4.15.0-1063
linux-azure - 4.15.0-1078
linux-azure - 4.15.0-1114
linux-gcp - 4.15.0-1118
linux-hwe - 4.15.0-143
linux-hwe - 4.15.0-69
linux - 4.4.0-168
linux - 4.4.0-211

Ubuntu 22.04 LTS
linux-aws - 5.15.0-1000
linux-azure - 5.15.0-1000
linux-gcp - 5.15.0-1000
linux-gke - 5.15.0-1000
linux-lbm - 5.15.0-1000
linux - 5.15.0-24
linux - 5.15.0-25

Ubuntu 14.04 ESM
linux-lts-xenial - 4.4.0-168

References
- CVE-2021-39713
- CVE-2022-0492
- CVE-2022-1055
- CVE-2022-1116
- CVE-2022-21499
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