



# CVE-2023-20593

[MITRE](#)[NVD](#)[CVE.ORG](#)[Print: PDF](#)

## Summary

<b>CVE</b>	CVE-2023-20593
<b>State</b>	PUBLIC
<b>Assigner</b>	psirt@amd.com
<b>Source Priority</b>	CVE Program / NVD first with legacy fallback
<b>Published</b>	2023-07-24 20:15:00 UTC
<b>Updated</b>	2023-09-25 21:15:00 UTC
<b>Description</b>	An issue in "Zen 2" CPUs, under specific microarchitectural circumstances, may allow an attacker to potentially access sen:

## Risk And Classification

**Problem Types:** NVD-CWE-Other

## NVD Known Affected Configurations (CPE 2.3)

Type	Vendor	Product	Version	Update	Edition	Language
Hardware	<a href="#">Amd</a>	<a href="#">Athlon Gold 7220u</a>	-	All	All	All
Operating System	<a href="#">Amd</a>	<a href="#">Athlon Gold 7220u Firmware</a>	-	All	All	All
Hardware	<a href="#">Amd</a>	<a href="#">Epyc 7232p</a>	-	All	All	All
Operating System	<a href="#">Amd</a>	<a href="#">Epyc 7232p Firmware</a>	-	All	All	All
Hardware	<a href="#">Amd</a>	<a href="#">Epyc 7252</a>	-	All	All	All
Operating System	<a href="#">Amd</a>	<a href="#">Epyc 7252 Firmware</a>	-	All	All	All
Hardware	<a href="#">Amd</a>	<a href="#">Epyc 7262</a>	-	All	All	All
Operating System	<a href="#">Amd</a>	<a href="#">Epyc 7262 Firmware</a>	-	All	All	All
Hardware	<a href="#">Amd</a>	<a href="#">Epyc 7272</a>	-	All	All	All
Operating System	<a href="#">Amd</a>	<a href="#">Epyc 7272 Firmware</a>	-	All	All	All
Hardware	<a href="#">Amd</a>	<a href="#">Epyc 7282</a>	-	All	All	All
Operating System	<a href="#">Amd</a>	<a href="#">Epyc 7282 Firmware</a>	-	All	All	All
Hardware	<a href="#">Amd</a>	<a href="#">Epyc 7302</a>	-	All	All	All
Hardware	<a href="#">Amd</a>	<a href="#">Epyc 7302p</a>	-	All	All	All
Operating System	<a href="#">Amd</a>	<a href="#">Epyc 7302p Firmware</a>	-	All	All	All
Operating System	<a href="#">Amd</a>	<a href="#">Epyc 7302 Firmware</a>	-	All	All	All
Hardware	<a href="#">Amd</a>	<a href="#">Epyc 7352</a>	-	All	All	All

Operating System	Amd	Epyc 7352 Firmware	-	All	All	All
Hardware	Amd	Epyc 7402	-	All	All	All
Hardware	Amd	Epyc 7402p	-	All	All	All
Operating System	Amd	Epyc 7402p Firmware	-	All	All	All
Operating System	Amd	Epyc 7402 Firmware	-	All	All	All
Hardware	Amd	Epyc 7452	-	All	All	All
Operating System	Amd	Epyc 7452 Firmware	-	All	All	All
Hardware	Amd	Epyc 7502	-	All	All	All
Hardware	Amd	Epyc 7502p	-	All	All	All
Operating System	Amd	Epyc 7502p Firmware	-	All	All	All
Operating System	Amd	Epyc 7502 Firmware	-	All	All	All
Hardware	Amd	Epyc 7532	-	All	All	All
Operating System	Amd	Epyc 7532 Firmware	-	All	All	All
Hardware	Amd	Epyc 7542	-	All	All	All
Operating System	Amd	Epyc 7542 Firmware	-	All	All	All
Hardware	Amd	Epyc 7552	-	All	All	All
Operating System	Amd	Epyc 7552 Firmware	-	All	All	All
Hardware	Amd	Epyc 7642	-	All	All	All
Operating System	Amd	Epyc 7642 Firmware	-	All	All	All
Hardware	Amd	Epyc 7662	-	All	All	All
Operating System	Amd	Epyc 7662 Firmware	-	All	All	All
Hardware	Amd	Epyc 7702	-	All	All	All
Hardware	Amd	Epyc 7702p	-	All	All	All
Operating System	Amd	Epyc 7702p Firmware	-	All	All	All
Operating System	Amd	Epyc 7702 Firmware	-	All	All	All
Hardware	Amd	Epyc 7742	-	All	All	All
Operating System	Amd	Epyc 7742 Firmware	-	All	All	All
Hardware	Amd	Epyc 7f32	-	All	All	All
Operating System	Amd	Epyc 7f32 Firmware	-	All	All	All
Hardware	Amd	Epyc 7f52	-	All	All	All
Operating System	Amd	Epyc 7f52 Firmware	-	All	All	All
Hardware	Amd	Epyc 7f72	-	All	All	All
Operating System	Amd	Epyc 7f72 Firmware	-	All	All	All
Hardware	Amd	Epyc 7h12	-	All	All	All
Operating System	Amd	Epyc 7h12 Firmware	-	All	All	All

Hardware	Amd	Ryzen 3 3100	-	All	All	All
Operating System	Amd	Ryzen 3 3100 Firmware	-	All	All	All
Hardware	Amd	Ryzen 3 3300x	-	All	All	All
Operating System	Amd	Ryzen 3 3300x Firmware	-	All	All	All
Hardware	Amd	Ryzen 3 4300g	-	All	All	All
Hardware	Amd	Ryzen 3 4300ge	-	All	All	All
Operating System	Amd	Ryzen 3 4300ge Firmware	-	All	All	All
Operating System	Amd	Ryzen 3 4300g Firmware	-	All	All	All
Hardware	Amd	Ryzen 3 5300u	-	All	All	All
Operating System	Amd	Ryzen 3 5300u Firmware	-	All	All	All
Hardware	Amd	Ryzen 3 7320u	-	All	All	All
Operating System	Amd	Ryzen 3 7320u Firmware	-	All	All	All
Hardware	Amd	Ryzen 3 Pro 4200g	-	All	All	All
Operating System	Amd	Ryzen 3 Pro 4200g Firmware	-	All	All	All
Hardware	Amd	Ryzen 3 Pro 4350g	-	All	All	All
Hardware	Amd	Ryzen 3 Pro 4350ge	-	All	All	All
Operating System	Amd	Ryzen 3 Pro 4350ge Firmware	-	All	All	All
Operating System	Amd	Ryzen 3 Pro 4350g Firmware	-	All	All	All
Hardware	Amd	Ryzen 3 Pro 4450u	-	All	All	All
Operating System	Amd	Ryzen 3 Pro 4450u Firmware	-	All	All	All
Hardware	Amd	Ryzen 5 3500	-	All	All	All
Hardware	Amd	Ryzen 5 3500x	-	All	All	All
Operating System	Amd	Ryzen 5 3500x Firmware	-	All	All	All
Operating System	Amd	Ryzen 5 3500 Firmware	-	All	All	All
Hardware	Amd	Ryzen 5 3600	-	All	All	All
Hardware	Amd	Ryzen 5 3600x	-	All	All	All
Hardware	Amd	Ryzen 5 3600xt	-	All	All	All
Operating System	Amd	Ryzen 5 3600xt Firmware	-	All	All	All
Operating System	Amd	Ryzen 5 3600x Firmware	-	All	All	All
Operating System	Amd	Ryzen 5 3600 Firmware	-	All	All	All
Hardware	Amd	Ryzen 5 4600g	-	All	All	All
Hardware	Amd	Ryzen 5 4600ge	-	All	All	All
Operating System	Amd	Ryzen 5 4600ge Firmware	-	All	All	All
Operating System	Amd	Ryzen 5 4600g Firmware	-	All	All	All
Hardware	Amd	Ryzen 5 5500u	-	All	All	All

Operating System	Amd	Ryzen 5 5500u Firmware	-	All	All	All
Hardware	Amd	Ryzen 5 7520u	-	All	All	All
Operating System	Amd	Ryzen 5 7520u Firmware	-	All	All	All
Hardware	Amd	Ryzen 5 Pro 4400g	-	All	All	All
Operating System	Amd	Ryzen 5 Pro 4400g Firmware	-	All	All	All
Hardware	Amd	Ryzen 5 Pro 4650g	-	All	All	All
Hardware	Amd	Ryzen 5 Pro 4650ge	-	All	All	All
Operating System	Amd	Ryzen 5 Pro 4650ge Firmware	-	All	All	All
Operating System	Amd	Ryzen 5 Pro 4650g Firmware	-	All	All	All
Hardware	Amd	Ryzen 7 3700x	-	All	All	All
Operating System	Amd	Ryzen 7 3700x Firmware	-	All	All	All
Hardware	Amd	Ryzen 7 3800x	-	All	All	All
Hardware	Amd	Ryzen 7 3800xt	-	All	All	All
Operating System	Amd	Ryzen 7 3800xt Firmware	-	All	All	All
Operating System	Amd	Ryzen 7 3800x Firmware	-	All	All	All
Hardware	Amd	Ryzen 7 4700g	-	All	All	All
Hardware	Amd	Ryzen 7 4700ge	-	All	All	All
Operating System	Amd	Ryzen 7 4700ge Firmware	-	All	All	All
Operating System	Amd	Ryzen 7 4700g Firmware	-	All	All	All
Hardware	Amd	Ryzen 7 5700u	-	All	All	All
Operating System	Amd	Ryzen 7 5700u Firmware	-	All	All	All
Hardware	Amd	Ryzen 7 Pro 4750g	-	All	All	All
Hardware	Amd	Ryzen 7 Pro 4750ge	-	All	All	All
Operating System	Amd	Ryzen 7 Pro 4750ge Firmware	-	All	All	All
Operating System	Amd	Ryzen 7 Pro 4750g Firmware	-	All	All	All
Hardware	Amd	Ryzen 7 Pro 4750u	-	All	All	All
Operating System	Amd	Ryzen 7 Pro 4750u Firmware	-	All	All	All
Hardware	Amd	Ryzen 9 3900	-	All	All	All
Hardware	Amd	Ryzen 9 3900x	-	All	All	All
Hardware	Amd	Ryzen 9 3900xt	-	All	All	All
Operating System	Amd	Ryzen 9 3900xt Firmware	-	All	All	All
Operating System	Amd	Ryzen 9 3900x Firmware	-	All	All	All
Operating System	Amd	Ryzen 9 3900 Firmware	-	All	All	All
Hardware	Amd	Ryzen 9 3950x	-	All	All	All
Operating System	Amd	Ryzen 9 3950x Firmware	-	All	All	All
Hardware	Amd	Ryzen 9 Pro 3900	-	All	All	All

Operating System	Amd	Ryzen 9 Pro 3900 Firmware	-	All	All	All
Hardware	Amd	Ryzen Threadripper 3960x	-	All	All	All
Operating System	Amd	Ryzen Threadripper 3960x Firmware	-	All	All	All
Hardware	Amd	Ryzen Threadripper 3970x	-	All	All	All
Operating System	Amd	Ryzen Threadripper 3970x Firmware	-	All	All	All
Hardware	Amd	Ryzen Threadripper 3990x	-	All	All	All
Operating System	Amd	Ryzen Threadripper 3990x Firmware	-	All	All	All
Hardware	Amd	Ryzen Threadripper Pro 3945wx	-	All	All	All
Operating System	Amd	Ryzen Threadripper Pro 3945wx Firmware	-	All	All	All
Hardware	Amd	Ryzen Threadripper Pro 3955wx	-	All	All	All
Operating System	Amd	Ryzen Threadripper Pro 3955wx Firmware	-	All	All	All
Hardware	Amd	Ryzen Threadripper Pro 3975wx	-	All	All	All
Operating System	Amd	Ryzen Threadripper Pro 3975wx Firmware	-	All	All	All
Hardware	Amd	Ryzen Threadripper Pro 3995wx	-	All	All	All
Operating System	Amd	Ryzen Threadripper Pro 3995wx Firmware	-	All	All	All
Operating System	Debian	Debian Linux	10.0	All	All	All
Operating System	Debian	Debian Linux	11.0	All	All	All
Operating System	Debian	Debian Linux	12.0	All	All	All
Operating System	Xen	Xen	4.14.0	All	All	All
Operating System	Xen	Xen	4.15.0	All	All	All
Operating System	Xen	Xen	4.16.0	All	All	All
Operating System	Xen	Xen	4.17.0	All	All	All

## References

Reference	Source	Link
oss-security - Re: CVE-2023-20593: A use-after-free in AMD Zen2 Processors	MISC	<a href="#">www.open</a>
oss-security - Re: CVE-2023-20593: A use-after-free in AMD Zen2 Processors	MISC	<a href="#">www.open</a>
oss-security - Re: Xen Security Advisory 433 v3 (CVE-2023-20593) - x86/AMD: Zenbleed	MISC	<a href="#">www.open</a>
oss-security - Re: CVE-2023-20593: A use-after-free in AMD Zen2 Processors	MISC	<a href="#">www.open</a>
[SECURITY] Fedora 37 Update: xen-4.16.5-1.fc37 - package-announce - Fedora Mailing-Lists	MISC	<a href="#">lists.fedora</a>
oss-security - Re: CVE-2023-20593: A use-after-free in AMD Zen2 Processors	MISC	<a href="#">www.open</a>
Debian -- Security Information -- DSA-5459-1 amd64-microcode	MISC	<a href="#">www.debian</a>
oss-security - Re: CVE-2023-20593: A use-after-free in AMD Zen2 Processors	MISC	<a href="#">www.open</a>
[SECURITY] [DLA 3508-1] linux security update	MISC	<a href="#">lists.debian</a>
oss-security - Re: CVE-2023-20593: A use-after-free in AMD Zen2 Processors	MISC	<a href="#">www.open</a>
oss-security - Re: CVE-2023-20593: A use-after-free in AMD Zen2 Processors	MISC	<a href="#">www.open</a>

oss-security - Re: CVE-2023-20593: A use-after-free in AMD Zen2 Processors	MISC	<a href="http://www.open">www.open</a>
[SECURITY] [DLA 3511-1] amd64-microcode security update	MISC	<a href="http://lists.debian">lists.debian</a>
oss-security - Re: CVE-2023-20593: A use-after-free in AMD Zen2 Processors	MISC	<a href="http://www.open">www.open</a>
oss-security - Re: Xen Security Advisory 433 v3 (CVE-2023-20593) - x86/AMD: Zenbleed	MISC	<a href="http://www.open">www.open</a>
oss-security - Re: CVE-2023-20593: A use-after-free in AMD Zen2 Processors	MISC	<a href="http://www.open">www.open</a>
[SECURITY] Fedora 38 Update: spectre-meltdown-checker-0.46-1.fc38 - package-announce - Fedora Mailing-Lists	MISC	<a href="http://lists.fedora">lists.fedora</a>
Debian -- Security Information -- DSA-5461-1 linux	MISC	<a href="http://www.debian">www.debian</a>
oss-security - Re: Xen Security Advisory 433 v3 (CVE-2023-20593) - x86/AMD: Zenbleed	MISC	<a href="http://www.open">www.open</a>
oss-security - Re: illumos (or at least danmcd) membership in the distros list	MISC	<a href="http://www.open">www.open</a>
[SECURITY] [DLA 3512-1] linux-5.10 security update	MISC	<a href="http://lists.debian">lists.debian</a>
Zenbleed	MISC	<a href="http://cmpxchg8b">cmpxchg8b</a>
oss-security - Re: Xen Security Advisory 433 v3 (CVE-2023-20593) - x86/AMD: Zenbleed	MISC	<a href="http://www.open">www.open</a>
oss-security - Xen Security Advisory 433 v2 (CVE-2023-20593) - x86/AMD: Zenbleed	MISC	<a href="http://www.open">www.open</a>
<a href="http://www.amd.com/en/corporate/product-security/bulletin/AMD-SB-7008">www.amd.com/en/corporate/product-security/bulletin/AMD-SB-7008</a>	MISC	<a href="http://www.amd">www.amd</a>
Debian -- Security Information -- DSA-5462-1 linux	MISC	<a href="http://www.debian">www.debian</a>
oss-security - Re: Xen Security Advisory 439 v1 (CVE-2023-20588) - x86/AMD: Divide speculative information leak	MISC	<a href="http://www.open">www.open</a>
oss-security - Xen Security Advisory 433 v3 (CVE-2023-20593) - x86/AMD: Zenbleed	MISC	<a href="http://www.open">www.open</a>
SecLists.Org Security Mailing List Archive	MISC	<a href="http://seclists.org">seclists.org</a>
XSA-433 - Xen Security Advisories	MISC	<a href="http://xenbits.xen">xenbits.xen</a>
oss-security - Re: Xen Security Advisory 433 v3 (CVE-2023-20593) - x86/AMD: Zenbleed	MISC	<a href="http://www.open">www.open</a>
oss-security - Re: Xen Security Advisory 439 v1 (CVE-2023-20588) - x86/AMD: Divide speculative information leak	MISC	<a href="http://www.open">www.open</a>
oss-security - Re: CVE-2023-20593: A use-after-free in AMD Zen2 Processors	MISC	<a href="http://www.open">www.open</a>
[SECURITY] Fedora 38 Update: xen-4.17.1-9.fc38 - package-announce - Fedora Mailing-Lists	MISC	<a href="http://lists.fedora">lists.fedora</a>
oss-security - Re: illumos (or at least danmcd) membership in the distros list	MISC	<a href="http://www.open">www.open</a>
CVE Program record	CVE.ORG	<a href="http://www.cve.c">www.cve.c</a>
NVD vulnerability detail	NVD	<a href="http://nvd.nist.gc">nvd.nist.gc</a>

No vendor comments have been submitted for this CVE.

### Legacy QID Mappings

160810 Oracle Enterprise Linux Security Update for linux-firmware (ELSA-2023-12654)

160811 Oracle Enterprise Linux Security Update for linux-firmware (ELSA-2023-12656)

160813 Oracle Enterprise Linux Security Update for linux-firmware (ELSA-2023-12657)

160814 Oracle Enterprise Linux Security Update for linux-firmware (ELSA-2023-12655)

160819 Oracle Enterprise Linux Security Update for linux-firmware (ELSA-2023-12692)

160820 Oracle Enterprise Linux Security Update for linux-firmware (ELSA-2023-12689)
160821 Oracle Enterprise Linux Security Update for linux-firmware (ELSA-2023-12691)
160822 Oracle Enterprise Linux Security Update for linux-firmware (ELSA-2023-12690)
160943 Oracle Enterprise Linux Security Update for kernel (ELSA-2023-12836)
160948 Oracle Enterprise Linux Security Update for kernel (ELSA-2023-12839)
161023 Oracle Enterprise Linux Security Update for linux-firmware (ELSA-2023-5068)
199609 Ubuntu Security Notification for AMD Microcode Vulnerability (USN-6244-1)
199764 Ubuntu Security Notification for Linux kernel (OEM) Vulnerabilities (USN-6385-1)
199784 Ubuntu Security Notification for Linux kernel (BlueField) Vulnerabilities (USN-6397-1)
199979 Ubuntu Security Notification for Linux kernel Vulnerabilities (USN-6532-1)
242070 Red Hat Update for kernel security (RHSA-2023:5244)
242075 Red Hat Update for kernel-rt (RHSA-2023:5255)
242078 Red Hat Update for linux-firmware (RHSA-2023:5245)
242145 Red Hat Update for linux-firmware (RHSA-2023:5591)
242156 Red Hat Update for linux-firmware (RHSA-2023:5607)
242481 Red Hat Update for kernel (RHSA-2023:7382)
242483 Red Hat Update for kernel-rt (RHSA-2023:7389)
242515 Red Hat Update for kernel (RHSA-2023:7557)
242528 Red Hat Update for kernel-rt (RHSA-2023:7551)
242548 Red Hat Update for linux-firmware (RHSA-2023:7665)
242579 Red Hat Update for linux-firmware (RHSA-2023:7513)
242606 Red Hat Update for linux-firmware (RHSA-2023:7401)
242762 Red Hat Update for kernel (RHSA-2024:0403)
242832 Red Hat Update for linux-firmware (RHSA-2024:0561)
242862 Red Hat Update for kernel-rt (RHSA-2024:0402)
257254 CentOS Security Update for kernel
257272 CentOS Security Update for linux-firmware
257284 CentOS Security Update for linux-firmware (CESA-2023:7513)

<a href="#">284364</a> Fedora Security Update for xen (FEDORA-2023-0d6aa10621)
<a href="#">284431</a> Fedora Security Update for spectre (FEDORA-2023-7228464f28)
<a href="#">355772</a> Amazon Linux Security Advisory for linux-firmware : ALAS2-2023-2190
<a href="#">355796</a> Amazon Linux Security Advisory for kernel : ALAS2KERNEL-5.15-2023-025
<a href="#">355798</a> Amazon Linux Security Advisory for kernel : ALAS2KERNEL-5.4-2023-050
<a href="#">355815</a> Amazon Linux Security Advisory for kernel : ALAS2023-2023-285
<a href="#">355817</a> Amazon Linux Security Advisory for linux-firmware : ALAS2023-2023-284
<a href="#">378928</a> Alibaba Cloud Linux Security Update for linux-firmware (ALINUX3-SA-2023:0123)
<a href="#">379043</a> Alibaba Cloud Linux Security Update for cloud-kernel (ALINUX3-SA-2023:0136)
<a href="#">379090</a> IBM QRadar SIEM Multiple Security Vulnerabilities (7070736)
<a href="#">379274</a> Alibaba Cloud Linux Security Update for linux-firmware (ALINUX2-SA-2023:0049)
<a href="#">379435</a> Alibaba Cloud Linux Security Update for cloud-kernel (ALINUX2-SA-2024:0012)
<a href="#">503055</a> Alpine Linux Security Update for xen
<a href="#">503056</a> Alpine Linux Security Update for xen
<a href="#">503147</a> Alpine Linux Security Update for xen
<a href="#">505968</a> Alpine Linux Security Update for xen
<a href="#">6000008</a> Debian Security Update for linux (DSA 5461-1)
<a href="#">6000111</a> Debian Security Update for amd64-microcode (DLA 3511-1)
<a href="#">6000130</a> Debian Security Update for linux-5.10 (DLA 3512-1)
<a href="#">6000136</a> Debian Security Update for linux (DLA 3508-1)
<a href="#">6000198</a> Debian Security Update for linux (DSA 5462-1)
<a href="#">6000201</a> Debian Security Update for amd64-microcode (DSA 5459-1)
<a href="#">6140183</a> AWS Bottlerocket Security Update for microcode (GHSA-rjpv-g34v-wqch)
<a href="#">6140353</a> AWS Bottlerocket Security Update for kernel (GHSA-r4q9-f8pr-hw82)
<a href="#">673644</a> EulerOS Security Update for kernel (EulerOS-SA-2023-3336)
<a href="#">673848</a> EulerOS Security Update for kernel (EulerOS-SA-2023-3217)
<a href="#">673899</a> EulerOS Security Update for linux-firmware (EulerOS-SA-2023-3137)
<a href="#">754219</a> SUSE Enterprise Linux Security Update for kernel-firmware (SUSE-SU-2023:3001-1)
<a href="#">754221</a> SUSE Enterprise Linux Security Update for kernel-firmware (SUSE-SU-2023:3020-1)

754221 SUSE Enterprise Linux Security Update for kernel-firmware (SUSE-SU-2023:3207-1)
754254 SUSE Enterprise Linux Security Update for kernel-firmware (SUSE-SU-2023:3206-1)
754281 SUSE Enterprise Linux Security Update for the Linux Kernel (SUSE-SU-2023:3349-1)
754997 SUSE Enterprise Linux Security Update for xen (SUSE-SU-2023:3895-1)
754998 SUSE Enterprise Linux Security Update for xen (SUSE-SU-2023:3894-1)
754999 SUSE Enterprise Linux Security Update for xen (SUSE-SU-2023:3903-1)
755000 SUSE Enterprise Linux Security Update for xen (SUSE-SU-2023:3902-1)
755983 SUSE Enterprise Linux Security Update for spectre-meltdown-checker (SUSE-SU-2024:0885-1)
755984 SUSE Enterprise Linux Security Update for spectre-meltdown-checker (SUSE-SU-2024:0884-1)
941249 AlmaLinux Security Update for kernel (ALSA-2023:5069)
941254 AlmaLinux Security Update for kernel-rt (ALSA-2023:5091)
941276 AlmaLinux Security Update for kernel (ALSA-2023:5244)
941280 AlmaLinux Security Update for linux-firmware (ALSA-2023:5245)
941286 AlmaLinux Security Update for linux-firmware (ALSA-2023:5068)
961015 Rocky Linux Security Update for kernel-rt (RLSA-2023:5091)
961022 Rocky Linux Security Update for kernel (RLSA-2023:5244)

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