CVE-2019-19339

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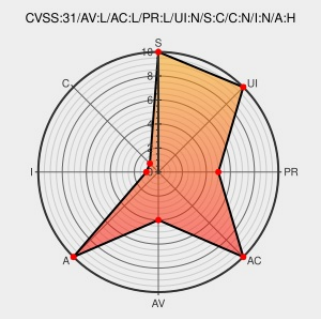

Certain versions of Enterprise Linux from Redhat contain the following vulnerability:

It was found that the Red Hat Enterprise Linux 8 kpatch update did not include the complete fix for CVE-2018-12207. A flaw was found in the way Intel CPUs handle inconsistency between, virtual to physical memory address translations in CPU's local cache and system software's Paging structure entries. A privileged guest user may use this flaw to induce a hardware Machine Check Error on the host processor, resulting in a severe DoS scenario by halting the processor. System software like OS OR Virtual Machine Monitor (VMM) use virtual memory system for storing program instructions and data in memory. Virtual Memory system uses Paging structures like Page Tables and Page Directories to manage system memory. The processor's Memory Management Unit (MMU) uses Paging structure entries to translate program's virtual memory addresses to physical memory addresses. The processor stores these address translations into its local cache buffer called - Translation Lookaside Buffer (TLB). TLB has two parts, one for instructions and other for data addresses. System software can modify its Paging structure entries to change address mappings OR certain attributes like page size etc. Upon such Paging structure alterations in memory, system software must invalidate the corresponding address translations in the processor's TLB cache. But before this TLB invalidation takes place, a privileged guest user may trigger an instruction fetch operation, which could use an already cached, but now invalid, virtual to physical address translation from Instruction TLB (ITLB). Thus accessing an invalid physical memory address and resulting in halting the processor due to the Machine Check Error (MCE) on Page Size Change.

CVE-2019-19339 has been assigned by secalert@redhat.com to track the vulnerability - currently rated as MEDIUM severity.

Affected Vendor/Software: **Red Hat** - **kpatch:** version **= n/a**

CVSS3 Score: 6.5 - MEDIUM

Attack Vector	Attack Complexity	Privileges Required	User Interaction

LOCAL	LOW	LOW	NONE
Scope	**Confidentiality Impact**	**Integrity Impact**	**Availability Impact**
CHANGED	NONE	NONE	HIGH

CVSS2 Score: 4.9 - MEDIUM

Access Vector	**Access Complexity**	**Authentication**
LOCAL	LOW	NONE
Confidentiality Impact	**Integrity Impact**	**Availability Impact**
NONE	NONE	COMPLETE

CVE References

Description	Tags	Link
1782199 – (CVE-2019-19339) CVE-2019-19339 kpatch: hw: incomplete fix for CVE-2018-12207	Issue Tracking Vendor Advisory bugzilla.redhat.com text/html	CONFIRM bugzilla.redhat.com/show_bug.cgi?id=CVE-2019-19339

There are currently no QIDs associated with this CVE

Known Affected Configurations (CPE V2.3)

Type	Vendor	Product	Version	Update	Edition	Language
Operating System	Redhat	Enterprise Linux	8.0	All	All	All
Operating System	Redhat	Enterprise Linux	8.0	All	All	All
Operating System	Redhat	Enterprise Linux Eus	8.1	All	All	All
Operating System	Redhat	Enterprise Linux Eus	8.1	All	All	All

cpe:2.3:o:redhat:enterprise_linux:8.0:*:*:*:*:*:*:*:

cpe:2.3:o:redhat:enterprise_linux:8.0:*:*:*:*:*:*:*:

cpe:2.3:o:redhat:enterprise_linux_eus:8.1:*:*:*:*:*:*:*:

cpe:2.3:o:redhat:enterprise_linux_eus:8.1:*:*:*:*:*:*:*:

No vendor comments have been submitted for this CVE

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