

# 2774105 - Kernel Panic With Hardware Transactional Memory on Linux on Power

<b>Version</b>	8	<b>Type</b>	SAP Note
<b>Language</b>	English	<b>Master Language</b>	English
<b>Priority</b>	Correction with high priority	<b>Category</b>	Program error
<b>Release Status</b>	Released for Customer	<b>Released On</b>	08.11.2019
<b>Component</b>	HAN-DB ( SAP HANA Database )		

Please find the original document at <https://launchpad.support.sap.com/#/notes/2774105>

## Symptom

You are running SAP HANA on Linux on Power and recognize that it shuts down or hangs.

When you try to log in while it hangs, you see the following message:

```
login: Oops: Kernel access of bad area, sig: 11
[...]
```

Instruction dump:  
<list\_of\_hex\_values>  
Unable to handle kernel paging request for data at address 0x<hex\_value>  
Faulting instruction address: 0x<hex\_value>

## Other Terms

IBM PPC, IBM Power

## Reason and Prerequisites

### Reason:

By default, SAP HANA does not use hardware transactional memory (HTM) on Linux on Power platforms.

Due to a programming error, a component of SAP HANA disregards the default configuration of not leveraging HTM and always uses HTM.

Due to a bug in the Linux kernel for Linux on Power, using HTM can lead to a kernel panic.

### Affected Releases:

- SAP HANA 2:
  - Revisions 024.04 - 024.09 (SPS02)
  - Revisions 031.00 - 037.00 (SPS03)
  - Revisions = 040.00 (SPS04)

### Prerequisites:

- You are using SAP HANA on Linux on Power
- You are using on of the following OS versions
  - SLES 12
  - SLES 12 SP1

- SLES 12 SP2 Kernel < 4.4.121-92.109.2 or if ppc\_tm=on
- SLES 12 SP3 Kernel < 4.4.178-94.91.2 or if ppc\_tm=on
- SLES 12 SP4 Kernel < 4.12.14-95.13.1
- SLES 15 Kernel < 4.12.14-150.14.1
- RHEL 7

## Solution

Apply one of the following SAP HANA Revisions:

- SAP HANA 2:
  - Revisions >= 024.10 (SPS02)
  - Revisions >= 037.01 (SPS03)
  - Revisions >= 041.00 (SPS04)
  - or higher
- or higher

With these revisions, all components adhere to the default configuration of not using HTM.

As the kernel panic caused by the Linux kernel bug can only occur when using HTM, this measure avoids that the Linux kernel bug affects your SAP HANA system.

Still, please refer to the remarks below and the information and documentation from your OS vendor to resolve the Linux kernel bug on OS-level.

### Remarks:

- The following kernel versions disable HTM by default with parameter ppc\_tm=off:
  - SLES12 SP2 Kernel >= 4.4.121-92.109.2
  - SLES12 SP3 Kernel >= 4.4.178-94.91.2
- The following kernel versions contain OS side fixes:
  - SLES12 SP4 Kernel >= 4.12.14-95.13.1
  - SLES15 Kernel >= 4.12.14-150.14.1
  - RHEL >= 7.6

## Software Components

Software Component	Release
HDB	2.00 - 2.00

## Support Package Patches

Software Component Version	Support Package	Patch Level
SAP HANA DATABASE 2.0	SP024	000010
SAP HANA DATABASE 2.0	SP037	000001

SAP HANA DATABASE 2.0	SP041	000000
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## This document refers to

SAP Note/KBA	Title
2628684	Known issues detected in SAP HANA 2 SPS03
2525424	Known issues detected in SAP HANA 2 SPS02
2380229	SAP HANA Platform 2.0 - Central Note

## This document is referenced by

SAP Note/KBA	Title
2801533	SAP HANA 2.0 SPS 02 Database Maintenance Revision 024.10
2779784	SAP HANA 2 SPS04 Revision 041.00
2780510	SAP HANA 2 SPS03 Revision 037.01

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