2391706 - Disable Transparent Huge Pages on Linux

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Component	BC-OP-LNX (Linux)	**Released On**	18.11.2016

Please find the original document at **https://launchpad.support.sap.com/#/notes/2391706**

Symptom

You want to disable Transparent Huge Pages (THP).

Environment

Linux

Resolution

Run following command to disable the usage of transparent huge pages (THP).
echo never > /sys/kernel/mm/transparent_hugepage/enabled

Afterwards, you can check the setting by cat this file. If it returns [never], it means now THP is disabled.
cat /sys/kernel/mm/transparent_hugepage/enabled
always madvise [never]

Note: The above command will stop only creation and usage of the new THP. The THP which were created and used at the moment, when the command was run, would not be disassembled into the regular memory pages. To get rid of the THP used, you need to restart the corresponding process.

To check system-wide THP usage:
OS> grep AnonHugePages /proc/meminfo
---> If this command returns a non zero size of AnonHugePages, it means some size of THP is still used.

To check which processes are using THP:
OS> grep -e AnonHugePages /proc/*/smaps | awk '{ if($2>4) print $0}' | awk -F "/" '{print $0; system("ps -fp " $3)}'

Please restart the returned processes to release the used THP.

To make this change permanent, you need to integrate this command line within your system boot scripts.
e.g. If you are using file /etc/init.d/boot.local as boot script, add the line "echo never > /sys/kernel/mm/transparent_hugepage/enabled" to this file.
Or you can add line "transparent_hugepage=never" to the kernel boot line in /boot/grub/grub.conf.
If you do not know which boot script is used by system, please contact the OS vendor.

See Also

2131662 - Transparent Huge Pages (THP) on SAP HANA Servers
2031375 - SAP HANA: Transparent HugePages (THP) setting on Linux
1871318 - Linux: Disable Transparent HugePages for Oracle Database

Keywords

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THP
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enabled
AnonHugePages
/proc/meminfo
/sys/kernel/mm/transparent_hugepage/enabled