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2779331 - HANA services use large SWAP memory

Version 1 Type SAP Knowledge Base Article

LanguageEnglishMaster LanguageEnglishRelease StatusReleased to CustomerCategoryProblemComponentHAN-DB (SAP HANA Database)Released On17.04.2019

Please find the original document at https://launchpad.support.sap.com/#/notes/2779331

Symptom

At OS level, there is sufficient memory for HANA database, but you find that the HANA services are using large Swap space.

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Environment

- SAP HANA Platform 1.0
- SAP HANA Platform 2.0

Cause

The SWAP is configured with a space size larger than the HANA recommended SWAP space of 2GB. Theoretically, the SWAP space should be only used when the memory is not sufficient for HANA DB, otherwise the system I/O performance will be impacted. But the situation can be different when the OS parameter vm.swapiness is configured with a high value.

Resolution

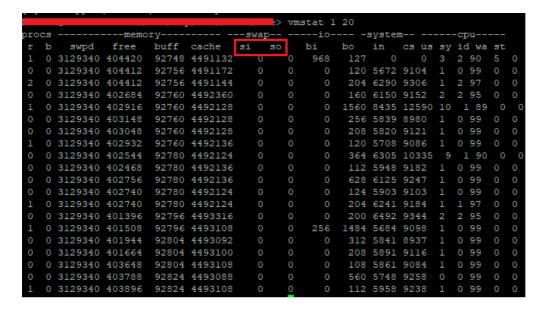
SAP recommends to configure SWAP for HANA DB as 2GB according to SAP note 1944799.

If you configure the SWAP with a larger value, it's very possible that HANA service will use SWAP space even though there is enough physical memory for HANA DB due the configured value of OS parameter vm.swapiness. The default value of vm.swapiness is 60%, which means that OS can assign SWAP space when there is 60% free RAM. In this situation, you can try to reduce the parameter value to a smaller value, like 10% to lower down the possibility of using SWAP space. At the same time, you can also monitor the system status with following OS command.

vmstat 1 20

You can monitor the column "SI" and "SO" in the result. If the value for "SI" and "SO" is "0", it means that there is no actual swapping activity, the impact to system should be the least.

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In case that you want to get more detail explanation about the OS swapping activities, you can raise incident to component "BC-OP-LNX".

See Also

1999997 - FAQ: SAP HANA Memory

1944799 - SAP HANA Guidelines for SLES Operating System Installation

Keywords

SWAP, Linux, HANA, memory, space, OS, swapiness

Products

SAP HANA 1.0, platform edition SAP HANA, platform edition 2.0

Other Components

Component	Description
BC-OP-LNX	Linux

This document refers to

SAP Note/KBA	Title
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1999997	FAQ: SAP HANA Memory
1944799	SAP HANA Guidelines for SLES Operating System Installation

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