



I/O stack configuration for SAP HANA

NetApp Solutions

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Starting with SAP HANA 1.0 SPS10, SAP introduced parameters to adjust the I/O behavior and optimize the database for the file and storage system used.

NetApp conducted performance tests to define the ideal values. The following table lists the optimal values as inferred from the performance tests.

Parameter	Value
max_parallel_io_requests	128
async_read_submit	on
async_write_submit_active	on
async_write_submit_blocks	all

For SAP HANA 1.0 up to SPS12, these parameters can be set during the installation of the SAP HANA database as described in SAP Note [2267798 – Configuration of the SAP HANA Database during Installation Using hdbparam](#).

Alternatively, the parameters can be set after the SAP HANA database installation using the `hdbparam` framework.

```
SS3adm@stlrx300s8-6:/usr/sap/SS3/HDB00> hdbparam --paramset
fileio.max_parallel_io_requests=128
SS3adm@stlrx300s8-6:/usr/sap/SS3/HDB00> hdbparam --paramset
fileio.async_write_submit_active=on
SS3adm@stlrx300s8-6:/usr/sap/SS3/HDB00> hdbparam --paramset
fileio.async_read_submit=on
SS3adm@stlrx300s8-6:/usr/sap/SS3/HDB00> hdbparam --paramset
fileio.async_write_submit_blocks=all
```

Starting with SAP HANA 2.0, `hdbparam` is deprecated and the parameters have been moved to the `global.ini` file. The parameters can be set by using SQL commands or SAP HANA Studio. For more information, see SAP Note [2399079 - Elimination of hdbparam in HANA 2](#). The parameters can be also set within the `global.ini` file.

```
SS3adm@stlrx300s8-6:/usr/sap/SS3/SYS/global/hdb/custom/config> cat
global.ini
...
[fileio]
async_read_submit = on
async_write_submit_active = on
max_parallel_io_requests = 128
async_write_submit_blocks = all
...
```

With SAP HANA 2.0 SPS5 and later, you can use the `setParameter.py` script to set the parameters mentioned above.

```
fc5adm@sapcc-hana-tst-03:/usr/sap/FC5/HDB00/exe/python_support>
python setParameter.py
-set=SYSTEM/global.ini/fileio/max_parallel_io_requests=128
python setParameter.py -set=SYSTEM/global.ini/fileio/async_read_submit=on
python setParameter.py
-set=SYSTEM/global.ini/fileio/async_write_submit_active=on
python setParameter.py
-set=SYSTEM/global.ini/fileio/async_write_submit_blocks=all
```

Next: [SAP HANA software installation](#).

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