

A Change to the SMT Mode Default in POWER9

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There's a rather significant change with [the default SMT mode](#) in AIX 7.2 TL3 running on POWER9 servers:

“For POWER9 technology-based servers, the default SMT setting for AIX 7.2 TL 3 has been changed to SMT8 to provide the best out-of-the-box performance experience. For POWER8 technology-based servers, the default SMT setting remains SMT4.”

The first thing to understand is that this is a welcome change. IBM has found that [running more threads](#) benefits most POWER9 workloads. Naturally any system will perform differently at SMT-8 than SMT-4, so awareness is the key here. Administrators like to know what to expect from their operating system, and they can ill afford to be the last to know how the system is performing. You never want users alerting you to a change in performance.

Of course, if the old setting works best in your environment, you can adjust the SMT level post-upgrade by running [the smtctl command](#):

Each individual Simultaneous Multi-threading (SMT) thread of a physical processor core is treated as an independent logical processor by AIX. The AIX operating system limits the combination of physical processor cores assigned and SMT modes in order to maintain symmetry across all of the physical processor cores assigned to AIX.

When booting a P8 Logical Partition (LPAR), the default number of SMT thread is 4. To increase the default number of SMT threads dynamically, enter:

```
smtctl -m on  
smtctl -t 8
```

The change to SMT-8 is effective immediately and reboot is not required. If you want the setting to persist after rebooting, then you must rebuild the boot image with the bosboot command. The default

SMT-4 is intended for better performance for an existing applications that are not designed or compiled for more than 4 threads.

While this information deals with POWER8 and upping the default, you get the idea.

If you're moving to POWER9 hardware and AIX 7.2 TL3 in the near future, be sure to keep this change in mind.

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