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POWER8 Processors and Simultaneous Multi-Threading (SMT) Levels with Cache'

The release of IBM POWER 8 processors with AIX 7.1 introduced up to 8 SMT threads per processor core (logical or physical). Which SMT level (1, 2, 4, or 8) to use can be confusing and varies based on multiple factors. This article is meant to help with a starting point for your specific application.

Firstly, if running on a version of 2014.x or older, it is advised to use SMT 4 or lower. SMT 8 with those older versions of Cache' has shown a decline in performance and scaling in benchmarking applications.

Starting with the release of 2015.1 and newer, included in those releases are Cache' optimizations that allow for more effective use SMT 8. The benefits and/or gains will be dependant on your specific application and usage patterns. If in doubt, stress testing your application is highly recommended. First start with SMT 4 and then again with SMT 8 to compare the results for both transaction response times and overall throughput or scaling.

Please share any specific stories or experiences you may have regarding SMT levels with your application.

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