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12 January 2018

As the industry figures out how to fix Spectre and Meltdown-- the two security issues affecting the processors powering just about every PC, server and mobile device-- news emerges on how the fixes might negatively hit the performance of said devices.



In case anyone is in need of background, the ominously named Spectre (dubbed so because of the root cause, speculative execution) and Meltdown (since it melts security boundaries normally enforced by hardware) were discovered by security researchers in the early days of 2018. The discovery brought about a flurry of patches and updates, but soon afterwards reports emerged of performance taking a hit as a result of said updates. Initially the industry was hesitant to confirm the reports, but now both Microsoft and Intel admit that, yes, the Spectre and Meltdown fixes affect the performance of at least some machines.

A Microsoft blog by SVP Terry Myerson states Windows PCs running on "older silicon" (as in 2015-era Haswell or older CPUs) show "more significant slowdowns" when benchmarked, leading to "a decrease in system performance." Microsoft adds the slowdown should not be as bad on Windows 10 PCs running on 2016-era silicon, since benchmarks show single-digit slowdowns.

Meanwhile Windows Server on any silicon shows a "a more significant performance impact" post-patch, particularly during any IO-intensive applicaiton. As such, Microsoft recommends admins strike a balance between performance and security.

On the other hand Intel claims "the typical home and business PC user should not see significant slowdowns in common tasks such as reading email, writing a document or accessing digital photos." Chipzilla tests are based on the SYSmark 2014 SE benchmark, and show a 6%

or less performance impact on 8th generation Core platform with solid state storage.

But what's next in the Spectre and Meltdown situation? So far no one has managed to exploit the issues, and companies will continue to issue any number of updates and fixes. In the long term, one can expect Intel to tweak processor architecture appropriately, so watch this space.

Go Understanding the Performance Impact of Spectre and Meltdown Mitigations on Windows Systems

Go Intel Offers Security Issue Update