**Intel Xeon Ice Lake Platinum 8380 – The 3rd-Gen 10nm Data Centre Processor**

Intel's third-generation 10nm datacenter processor, the Ice Xeon Lake Xeon Platinum8380, was unveiled early in this year. The company's long-awaited 10nm third generation Xeon Scalable processors is a major step in its efforts to compete against AMD's third-generation 64 core 7nm EPYC Milan chip, which has a significant advantage over Intel’s current 28-core 14nm Cascade Lake CPUs.

The Xeon Platinum 8380 is the flagship model of Intel's redesigned range. It maxes at 40 cores and has a 20 percent increase in IPC - thanks to the Sunny Cove microarchitecture and 10nm technology. These chips are designed for Intel's Whitley dual socket server systems. The Cooper Lake series, however, is designed for quad- or octo socket server platforms.

There are many upgrades to the new Xeon Scalable range. It can accommodate up to eight RAM channels and two 3200-DDR4 DIMMs. This gives Ice Lake an advantage over Cascade Lake which can only support six channels at DDR4-2933. You can use 4TB DRAM and 4TBOptane Permanent Memory per socket. Ice Lake CPUs offer full RAM capacity for all models, unlike Intel's past. The PCIe 3.0 support is another major improvement, with 64 lanes per socket. These servers have 128 lanes total, as they are dual-socket. This improves I/O bandwidth, and allows processors to reach AMD's 128-lane level.

These enhancements, together with a number of SoC-level improvements, improved power management, and support for new instructions, Intel says, result in a 46 percent performance boost across a wide range of data centre workloads. The business also claims a 50% performance improvement in latency-sensitive applications like MySQL, Java, WordPress, and HammerDB, as well as up to a 57 percent performance boost in multi-threaded workloads like NAMD, indicating that the company might retake a competitive position.

**Specifications**

Intel has a range of SKUs that are suitable for specific SGX enclaves. They are liquid-cooled, optimized for virtual machines VMs, cloud-optimized, durable, and thermal-friendly. The 40-core Xeon Platinum 80380 is faster than its predecessors (which peaked at 28 cores) and makes it higher in AMD’s Milan stack. The highest clock speed of the 8380 is 3.2 GHz, which is lower than that of the older 6258R with 28 cores. Even the new Ice Lake 6448 with 28 cores has a peak clock speed of 3.5GHz. This is slower than Cascade Lake-era CPUs. Intel hopes that other improvements such as better IPC, power management and thermal management will compensate for slower clock speeds.

At that point, Ice Lake's single core clock speeds are limited to 3.7GHz. You'll need to upgrade to the eight-core version to achieve these speeds. Comparatively, the Intel's older-generation 8-core 6250 clocks in at 4.5 GHz, which is the fastest clock rate of any Cascade Lake stack.

**Conclusive Thoughts:**

Although AMD's EPYC Milan processors have consistently beaten Intel's flagship models in multi-threaded workloads, slowly reducing Intel's revenues, the Xeon family's third-generation Ice Lake CPU portfolio is a significant success. In addition, Intel continues to have a competitive advantage over the competition in terms of pre-configured Select Solutions and technical support, both of which are critical in the corporate market. This, paired with major price reductions, has allowed Intel to mitigate the effect of its fiercely competitive rivals. We could expect Ice Lake to further up its efforts as it moves into the larger data centre server market. Look at our website [Subserve](https://subserve.co.uk/) if you want to buy our high-quality processor.