

## I. INTEL CPUs

### A. *Ice Lake*

Ice Lake is Intel's codename for the 10th generation Intel Core processors based on the new Sunny Cove microarchitecture. Ice Lake was expected to replace microprocessors based on the Skylake microarchitecture.

Features:

- 1) *Sunny Cove* micro-architecture,
- 2) increase the execution units(EUs) to 64, from 24 or 48 in Gen 9.5 graphics,
- 3) Each EU supports 7 threads,
- 4) 50% increase in the size of L1, L2 cache, larger  $\mu OP$  cache, and larger 2nd level TLB,
- 5) 3MB L3 cache,
- 6) 1 TFLOPS of compute performance.

Focus: Single-thread performance, new instructions(VPOPCNTDQ, VBMI2, BITALG, VPCLMULQDQ, GFNI, and VAES), and scalability.

- a) *VPOPCNTDQ*:
- b) *VBMI2*:
- c) *BITALG*:
- d) *VPCLMULQDQ*:
- e) *GFNI*:
- f) *VAES*:

### B. *Tiger Lake*

## II. INTEL GPU

Code Name: DG1

## III. AMD PROCESSORS

### A. *Ryzen*