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Intel Introduces Tremont Microarchitecture

SANTA CLARA, Calif.--(BUSINESS WIRE)-- **What's New:** Today at the Linley Fall Processor Conference in Santa Clara, Calif., Intel revealed the first architectural details related to Tremont. Intel's newest and most advanced low-power x86 CPU architecture, Tremont offers a significant performance boost over prior generations.

This press release features multimedia. View the full release here:
<https://www.businesswire.com/news/home/20191024005796/en/>

Intel Corporation in October 2019 introduced its Tremont microarchitecture. Intel Tremont advances instruction set architecture, microarchitecture, security and power management. Tremont is designed for enhanced processing power in compact, low-power packages. Tremont-based processors will enable a new generation of innovative form factors. (Credit: Intel Corporation)

"Tremont is Intel's most advanced low-power x86 architecture to date. We focused on a range of modern, complex workloads,

while considering networking, client, browser and battery so that we could raise performance efficiently across the board. It is a world-class CPU architecture designed for enhanced processing power in compact, low-power packages."

--Stephen Robinson, Intel Tremont Chief Architect

Why It Matters: Tremont next-generation low-power x86 microarchitecture delivers significant IPC (instructions per cycle) gains gen-over-gen compared with Intel's prior low-power x86 architectures. Designed for enhanced processing power in compact, low-power packages, Tremont-based processors will enable a new generation of innovative form factors for client devices, creative applications for the internet of things (IoT), efficient data center products and more.

When combined with other technologies across Intel's broader IP portfolio, this architecture will enable a new generation of products. Using Intel's 3D packaging technology [Foveros](#), Tremont is integrated within a wider set of silicon IPs in [Lakefield](#), which will power breakthrough innovative devices like the recently announced dual-screen Microsoft Surface Neo.

Performant architectures are the foundation of chips that capture and process data. Low-power solutions are essential to enabling new use cases driven by smaller form factors.

The Details: Intel Tremont includes several advancements in ISA (instruction set architecture), microarchitecture, security and power management. It delivers significant IPC gains gen-over-gen as compared with Intel's prior low-power x86 architectures, making it a first-class offering for powering a new generation of Intel products across client, IoT and data center offerings. Tremont's unique 6-wide (2x3-wide clustered) out-of-order decoder in the front end allows for a more efficient feed to the wider back end, which is fundamental for performance.

For more complete information about performance and benchmark results, visit [Intel's Performance Benchmark page](#).

More Context: [Introducing Intel Tremont Microarchitecture](#) (Stephen Robinson's Linley Presentation) | [Intel Tremont Architecture Flyover](#) (Video)

About Intel

Intel (NASDAQ: INTC), a leader in the semiconductor industry, is shaping the data-centric future with computing and communications technology that is the foundation of the world's innovations. The company's engineering expertise is helping address the world's greatest challenges as well as helping secure, power and connect billions of devices and the infrastructure of the smart, connected world – from the cloud to the network to the edge and everything in between. Find more information about Intel at newsroom.intel.com and intel.com.

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