

# Intel® Core™ i9-13900F Processor

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36M Cache, up to 5.60 GHz

[Export specifications](#)



## Essentials

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- [Product Collection 13th Generation Intel® Core™ i9 Processors](#)
- [Processor Number i9-13900F](#)

## CPU Specifications

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- [Total Cores](#) 24
- # of Performance-cores 8
- # of Efficient-cores 16
- [Total Threads](#) 32
- [Max Turbo Frequency](#) 5.60 GHz
- [Intel® Thermal Velocity Boost Frequency](#) 5.60 GHz
- [Intel® Turbo Boost Max Technology 3.0 Frequency](#) <sup>‡</sup> 5.50 GHz
- [Performance-core Max Turbo Frequency](#) 5.20 GHz
- [Efficient-core Max Turbo Frequency](#) 4.20 GHz
- Performance-core Base Frequency 2.00 GHz
- Efficient-core Base Frequency 1.50 GHz
- [Cache](#) 36 MB Intel® Smart Cache
- Total L2 Cache 32 MB
- [Processor Base Power](#) 65 W
- [Maximum Turbo Power](#) 219 W

## Memory Specifications

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- [Max Memory Size \(dependent on memory type\)](#) 128 GB
- [Memory Types](#) Up to DDR5 5600 MT/s  
Up to DDR4 3200 MT/s
- [Max # of Memory Channels](#) 2
- [Max Memory Bandwidth](#) 89.6 GB/s

## Expansion Options

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- Direct Media Interface (DMI) Revision 4.0
- Max # of DMI Lanes 8
- Scalability 1S Only
- PCI Express Revision 5.0 and 4.0
- PCI Express Configurations ‡ Up to 1x16+4, 2x8+4
- Max # of PCI Express Lanes 20
- Sockets Supported FCLGA1700

## Advanced Technologies

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- Intel® Gaussian & Neural Accelerator 3.0
- Intel® Thread Director Yes
- Intel® Deep Learning Boost (Intel® DL Boost) Yes
- Intel® Speed Shift Technology Yes
- Intel® Thermal Velocity Boost Yes
- Intel® Turbo Boost Max Technology 3.0 ‡ Yes
- Intel® Turbo Boost Technology ‡ 2.0
- Intel® Hyper-Threading Technology ‡ Yes
- Intel® 64 ‡ Yes
- Instruction Set 64-bit
- Instruction Set Extensions Intel® SSE4.1, Intel® SSE4.2, Intel® AVX2
- Idle States Yes
- Enhanced Intel SpeedStep® Technology Yes
- Thermal Monitoring Technologies Yes
- Intel® Volume Management Device (VMD) Yes

## Security & Reliability

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- Intel® Standard Manageability (ISM) ‡ Yes
- Intel® Control-Flow Enforcement Technology Yes
- Intel® AES New Instructions Yes
- Secure Key Yes
- Intel® OS Guard Yes
- Execute Disable Bit ‡ Yes
- Intel® Boot Guard Yes
- Mode-based Execute Control (MBEC) Yes
- Intel® Virtualization Technology (VT-x) ‡ Yes
- Intel® Virtualization Technology for Directed I/O (VT-d) ‡ Yes
- Intel® VT-x with Extended Page Tables (EPT) ‡ Yes