|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ARK | Compare Intel® Products** | |  |  |  |  | |
| 11/23/2017 4:17:04 PM | |  |  |  |  | |
|  | [Intel® Core™ i9-7900X X-series Processor (13.75M Cache, up to 4.30 GHz)](https://ark.intel.com/products/123613/Intel-Core-i9-7900X-X-series-Processor-13_75M-Cache-up-to-4_30-GHz) | [Intel® Core™ i9-7920X X-series Processor (16.50M Cache, up to 4.30 GHz)](https://ark.intel.com/products/126240/Intel-Core-i9-7920X-X-series-Processor-16_50M-Cache-up-to-4_30-GHz) | [Intel® Core™ i9-7940X X-series Processor (19.25M Cache, up to 4.30 GHz)](https://ark.intel.com/products/126695/Intel-Core-i9-7940X-X-series-Processor-19_25M-Cache-up-to-4_30-GHz) | [Intel® Core™ i9-7960X X-series Processor (22M Cache, up to 4.20 GHz)](https://ark.intel.com/products/126697/Intel-Core-i9-7960X-X-series-Processor-22M-Cache-up-to-4_20-GHz) | [Intel® Core™ i9-7980XE Extreme Edition Processor (24.75M Cache, up to 4.20 GHz)](https://ark.intel.com/products/126699/Intel-Core-i9-7980XE-Extreme-Edition-Processor-24_75M-Cache-up-to-4_20-GHz) |  |
| Code Name | Skylake | Skylake | Skylake | Skylake | Skylake |  |
| **Essentials** | |  |  |  |  |  |
| Vertical Segment | Desktop | Desktop | Desktop | Desktop | Desktop |  |
| Processor Number | i9-7900X | i9-7920X | i9-7940X | i9-7960X | i9-7980XE |  |
| Status | Launched | Launched | Launched | Launched | Launched |  |
| Launch Date | Q2'17 | Q3'17 | Q3'17 | Q3'17 | Q3'17 |  |
| Lithography | 14 nm | 14 nm | $1387.00 - $1399.00 | $1684.00 - $1699.00 | $1999.00 |  |
| Recommended Customer Price | $989.00 - $999.00 | $1189.00 - $1199.00 |  |  |  |  |
| **Performance** | |  |  |  |  |  |
| # of Cores | 10 | 12 | 14 | 16 | 18 |  |
| # of Threads | 20 | 24 | 28 | 32 | 36 |  |
| Processor Base Frequency | 3.30 GHz | 2.90 GHz | 3.10 GHz | 2.80 GHz | 2.60 GHz |  |
| Max Turbo Frequency | 4.30 GHz | 4.30 GHz | 4.30 GHz | 4.20 GHz | 4.20 GHz |  |
| Cache | 13.75 MB L3 | 16.5 MB L3 | 19.25 MB | 22 MB | 24.75 MB |  |
| Bus Speed | 8 GT/s DMI3 | 8 GT/s DMI | 8 GT/s DMI3 | 8 GT/s DMI3 | 8 GT/s DMI3 |  |
| # of QPI Links | 0 | 0 | 0 | 0 | 0 |  |
| Intel® Turbo Boost Max Technology 3.0 Frequency ‡ | 4.50 GHz | 4.40 GHz | 4.40 GHz | 4.40 GHz | 4.40 GHz |  |
| TDP | 140 W | 140 W | 165 W | 165 W | 165 W |  |
| **Supplemental Information** | |  |  |  |  |  |
| Embedded Options Available | No | No | No | No | No |  |
| Conflict Free | Yes | Yes | Yes | Yes | Yes |  |
| Datasheet | [Link](https://www.intel.com/content/www/us/en/processors/core/core-technical-resources.html) | [Link](https://www.intel.com/content/www/us/en/processors/core/core-technical-resources.html) | [Link](https://www.intel.com/content/dam/www/public/us/en/documents/product-briefs/core-x-series-processor-family-product-brief.pdf) | [Link](https://www.intel.com/content/dam/www/public/us/en/documents/product-briefs/core-x-series-processor-family-product-brief.pdf) | [Link](https://www.intel.com/content/dam/www/public/us/en/documents/product-briefs/core-x-series-processor-family-product-brief.pdf) |  |
| Product Brief | [Link](https://www.intel.com/content/www/us/en/processors/core/core-x-series-processor-family-product-brief.html) | [Link](https://www.intel.com/content/www/us/en/processors/core/core-x-series-processor-family-product-brief.html) |  |  |  |  |
| **Memory Specifications** | |  |  |  |  |  |
| Max Memory Size (dependent on memory type) | 128 GB | 128 GB | 128 GB | 128 GB | 128 GB |  |
| Memory Types | DDR4-2666 | DDR4-2666 | DDR4-2666 | DDR4-2666 | DDR4-2666 |  |
| Max # of Memory Channels | 4 | 4 | 4 | 4 | 4 |  |
| ECC Memory Supported ‡ | No | No | No | No | No |  |
| **Expansion Options** | |  |  |  |  |  |
| Scalability | 1S Only | 1S Only | 1S Only | 1S Only | 1S Only |  |
| PCI Express Revision | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |  |
| Max # of PCI Express Lanes | 44 | 44 | 44 | 44 | 44 |  |
| **Package Specifications** | |  |  |  |  |  |
| Sockets Supported | FCLGA2066 | FCLGA2066 | FCLGA2066 | FCLGA2066 | FCLGA2066 |  |
| Max CPU Configuration | 1 | 1 | 1 | 1 | 1 |  |
| Thermal Solution Specification | PCG 2017X | PCG 2017X | PCG 2017X | PCG 2017X | PCG 2017X |  |
| T<sub>JUNCTION</sub> | 95°C | 95°C | 102°C | 98°C | 94°C |  |
| Low Halogen Options Available | See MDDS | See MDDS | See MDDS | See MDDS | See MDDS |  |
| **Advanced Technologies** | |  |  |  |  |  |
| Intel® Optane™ Memory Supported ‡ | Yes | Yes | Yes | Yes | Yes |  |
| Intel® Turbo Boost Max Technology 3.0 ‡ | Yes | Yes | Yes | Yes | Yes |  |
| Intel® Turbo Boost Technology | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |  |
| Intel® Hyper-Threading Technology ‡ | Yes | Yes | Yes | Yes | Yes |  |
| Intel® Virtualization Technology (VT-x) ‡ | Yes | Yes | Yes | Yes | Yes |  |
| Intel® Virtualization Technology for Directed I/O (VT-d) ‡ | Yes | Yes | Yes | Yes | Yes |  |
| Intel® 64 ‡ | Yes | Yes | Yes | Yes | Yes |  |
| Instruction Set | 64-bit | 64-bit | SSE4.1/4.2, AVX2, AVX-512 | SSE4.1/4.2, AVX2, AVX-512 | SSE4.1/4.2, AVX2, AVX-512 |  |
| Instruction Set Extensions | SSE4.1/4.2, AVX2, AVX-512 | SSE4.1/4.2, AVX2, AVX-512 | Yes | Yes | Yes |  |
| Enhanced Intel SpeedStep® Technology | Yes | Yes |  |  |  |  |
| **Security & Reliability** | |  |  |  |  |  |
| Intel® AES New Instructions | Yes | Yes | Yes | Yes | Yes |  |
| Execute Disable Bit ‡ | Yes | Yes | Yes | Yes | Yes |  |