Name	AMD Ryzen™ 9 9900X3D
Family	Ryzen
Series	Ryzen 9000 Series
Form Factor	Desktops , Boxed Processor
Market Segment	Enthusiast Desktop
AMD PRO Technologies	No
Regional Availability	Global
Former Codename	Granite Ridge AM5
Architecture	Zen 5
# of CPU Cores	12
Multithreading (SMT)	Yes
# of Threads	24
Max. Boost Clock	Up to 5.5 GHz
Base Clock	4.4 GHz
L1 Cache	960 KB
L2 Cache	12 MB
L3 Cache	128 MB
Default TDP	120W
Processor Technology for CPU Cores	TSMC 4nm FinFET
Processor Technology for I/O Die	TSMC 6nm FinFET
Package Die Count	3
Unlocked for Overclocking	Yes
AMD EXPO™ Memory Overclocking Technology	Yes
Precision Boost Overdrive	Yes
Curve Optimizer Voltage Offsets	Yes
AMD Ryzen™ Master Support	Yes
CPU Socket	AM5
Supporting Chipsets	A620 , X670E , X670 , B650E , B650 , X870E , X870 , B840 , B850
CPU Boost Technology	Precision Boost 2
Instruction Set	x86-64
Supported Extensions	AES , AMD-V , AVX512 , AVX2 , AVX , FMA3 , MMX-plus , SHA , SSE2 , SSE4.2 , SSE4A , SSE4.1 , SSE3 , SSSE3 , SSE , x86-64
Thermal Solution (PIB)	Not Included

Recommended Cooler	Liquid cooler recommended for optimal performance
Max. Operating Temperature (Tjmax)	95°C
***OS Support**	Windows 11 - 64-Bit Edition , Windows 10 - 64-Bit Edition , RHEL x86 64-Bit , Ubuntu x86 64-Bit

Connectivity

Native USB 4 (40Gbps)	4
Native USB 3.2 Gen 1 (5Gbps)	1
PCI Express® Version	PCIe® 5.0
Native PCIe® Lanes (Total/Usable)	28 , 24
NVMe Support	Boot , RAID0 , RAID1 , RAID5 , RAID10
System Memory Type	DDR5
Memory Channels	2
Max. Memory	192 GB
System Memory Subtype	UDIMM
Max Memory Speed	**2x1R** DDR5-5600 **2x2R** DDR5-5600 **4x1R** DDR5-3600 **4x2R** DDR5-3600
ECC Support	Yes (Requires mobo support)

Graphics Capabilities

Graphics Model	AMD Radeon™ Graphics
Graphics Core Count	2
Graphics Frequency	2200 MHz
USB Type-C® DisplayPort™ Alternate Mode	Yes

Product IDs

Product ID Boxed	100-100001368WOF