

:**Team TRE** :Preston Chang, Noirit Sami, Leonid Metlitsky

;IntroCS pd4 Sec4

;LAB01 Building a computer for Tyrone

;2022-11-15

;time cost: 3 hours

<preston>

Hello Tyrone! You're an architect, so you'll run AutoCAD 2020. AutoCAD is a beefy and heavy program on the system's resources, so it's good that you have set aside an adequate budget for a performant workstation. With your budget of 2 thousand dollars, you can create a highly performant workstation that will be future-proof for years to come and have quiet acoustics.

The rig will include a 12-core, 24-thread (think simultaneous brains) processor, and an industry-standard air cooler will cool it. The motherboard will have WIFI and 2.5-gigabyte networking built-in, making this workstation have no issues with connectivity and data transfers.

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<lenny>

There will also be 64 gigabytes of fast RAM, which is 8 times more than your average computer. The SSD will be large and fast, perfect for storing your huge detailed architecture models. There will be a powerful workstation-class graphics card that will vastly speed up renders and the live preview of the model you will be working with. Conveniently, this workstation could also serve as a powerful gaming computer; just don't tell your boss about it.

</lenny>

<noirit>

The case is spacious, housing all the parts with room to spare. Since this is a case designed for airflow, you will enjoy the reduced temperatures and noise that your system emits. The in-house fans, coupled with the classy Arctic p12s, will provide ample airflow to push cold air into the build and hot air out. Lastly, the 750-watt gold power supply will ensure that your house doesn't burn down, providing more than enough power to your beefy components. The total wattage of this system is estimated to be around 553 watts, and our power supply is a good 200 watts above that. So, if you ever choose to, you can upgrade your parts without worrying about power issues.

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Overall, this workstation will last you for years, and the total comes to \$1820. When 8-9% sales tax is applied, this will fall just under \$2000. We hope you enjoy this computer.

Tyrone, we're going to briefly explain our hardware choices, without boring you to death with product names and numbers. The product names and prices will be on the next page, for any questions that may arise.

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PCPartPicker Part List:

<https://pcpartpicker.com/user/rearendlover/saved/GTgGJx>

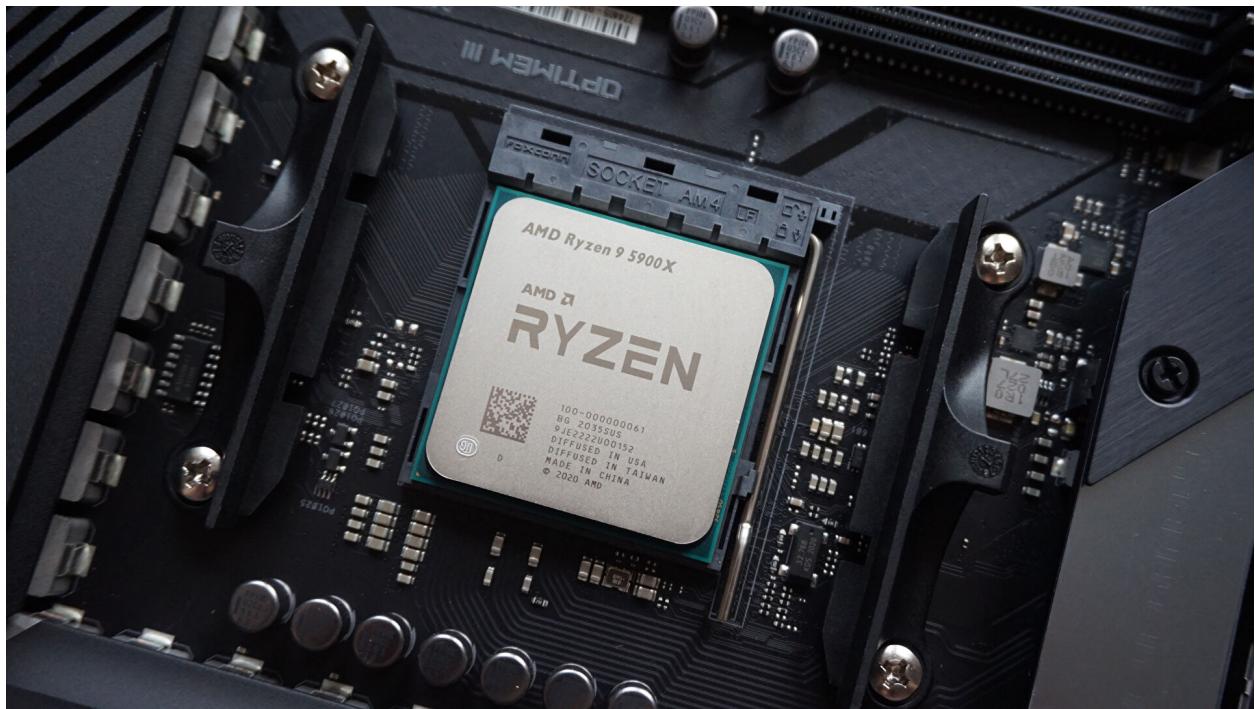
Prices:

1. CPU: AMD Ryzen 9 5900X 3.7 GHz 12-Core Processor (\$342.04 @ Newegg)
2. CPU Cooler: Noctua NH-D15 chromax.black 82.52 CFM CPU Cooler (\$109.95 @ Amazon)
3. Motherboard: MSI MAG X570S TOMAHAWK MAX WIFI ATX AM4 Motherboard (\$229.99 @ Amazon)
4. Memory: Corsair Vengeance LPX 64 GB (2 x 32 GB) DDR4-3600 CL18 Memory (\$199.99 @ Amazon)
5. Storage: Samsung 980 Pro 1 TB M.2-2280 PCIe 4.0 X4 NVME Solid State Drive (\$99.99 @ Newegg)
6. Video Card: Gigabyte GAMING OC GeForce RTX 3070 Ti 8 GB Video Card (\$597.99 @ Amazon)
7. Case: Corsair 4000D Airflow ATX Mid Tower Case (\$104.99 @ Amazon)
8. Power Supply: Corsair RM750 750 W 80+ Gold Certified Fully Modular ATX Power Supply (\$119.01 @ Amazon)
9. Case Fan: ARCTIC P12 56.3 CFM 120 mm Fan (\$8.49 @ Amazon)
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Total: \$1820.93 (when 8-9% sales tax is applied, will total to \$2000)

Prices include shipping, taxes, and discounts when available

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AMD Ryzen 9 5900X (12 [fast] Cores)



Big Big Big Big Air cooler (has MORE than enough thermal capacity to cool this chip, should be quiet and reliable for decades)



- Full Size ATX motherboard
- Has many expansion slots
- Has 2.5 gig ethernet built in(much faster than the current 1 gig ethernet)
- More than enough connectivity



Fast transfer memory (3600mhz)
64 gigabytes, to hold huge AutoCAD models
entirely in memory



Fast Reliable NVME ssd (3+ gigabytes per second, 70 times faster than a hard drive)



FAST GPU for graphics hardware acceleration
(With 8 additional gigabytes of even faster
memory than RAM)



Corsair 4000D AIRFLOW

Full size case to fit our components with plenty of room, good AIRFLOW (it's in the name)

Comes with two free high quality fans



Corsair RM750 750 W 80+ Gold Certified
Modular Power supply (you can swap cables and not have a rats nest)
Quiet fan, more than enough wattage to support high-powered components



(2 of) ARCTIC P12 120MM CASE FANS
Quiet and performance case fans