ABOUT MPL BUILT COMPUTER SYSTEMS

For a personal price offer of a computer system built by MPL you can email to info@mpl.be

The more information you give us about the system you are looking for, the more the system will be tailored to your needs.

For which purposes (applications) will you mainly be using your system?

Do certain programs need to be able to run on it? Feel free to send us a list of those as well.

What budget do you want to spend?

For fairly simple PC's (light administrative work, surfing the web, watching video, ...) we will propose a brand PC. This will be the most interesting for you in terms of price/quality.

This is because the cost of the operating system and the assembly cost of the components is quite high here compared to the total price of the system. And brand manufacturers can purchase the operating system (usually Windows) much cheaper than resellers and the assembly of their PC's is largely automated.

For more advanced systems, having them assembled by MPL can add great added value.

Our self-assembled systems are based exclusively on selected quality components. Special attention is always paid to cable management, resulting in optimal airflow and a neat finish in your computer case.

We also always flash the latest bios on the installed motherboard.

And if you also order your operating system together with the PC system, we will ensure that the latest drivers are installed for components such as the chipset, graphics card, network chip, etc.

We also ensure that the BIOS settings are optimal for your system.

It's amazing how many self-assembled PC systems underperform because of poorly chosen (default) BIOS settings and drivers. Self-assembled systems also offer more options for possible expansions in the future. And the price for these extensions will usually be cheaper than if you have to buy them from a certain brand.

Below is an example of our way of working.

A quotation request from a customer and the proposal that this customer will then receive from us.

QUOTE REQUEST 28 SEPTEMBER 2022 :

I am currently active in the graphic world, more specifically as a 3D artist for the real estate sector. Soon I will start as a self-employed person in project development, but I will also continue with 3D. So I urgently need a PC of my own.

I received your details through a colleague who bought a PC from you a few months ago, which he is very satisfied with. Attached is his proposal that you prepared for him at the time.

My PC certainly doesn't have to be as powerful as his. My budget is around 3000 euros VAT exclusive. Programs that I will mainly use are: Autodesk 3DS Max, Autocad and Photoshop. My PC must therefore be strong enough to render and it should not be a problem if I were to work with 3 monitors.

Things I would like to have are:

- 128 GB RAM
- 1TB storage space
- Preferably as many cores as possible within the budget

OUR PROPOSAL ON OCTOBER 2, 2022 (PRICES INCLUDING AND EXCLUDING VAT):

1	AMD Ryzen 9 7950X, Processor (boxed with 3 years warranty) - 100-100000514WOF	845,00	698,35
1	ASUS ROG Crosshair X670E Hero motherboard - 90MB1BC0-M0EAY0	798,00	659,50
1	Kingston FURY DIMM 64 GB DDR5-5200 (2x 32 GB Kit) - KF552C40BBK2-64	338,00	279,34
1	Kingston FURY DIMM 64 GB DDR5-5200 (2x 32 GB Kit) - KF552C40BBK2-64	338,00	279,34
1	Corsair H150i ELITE LCD 360mm, Water Cooling - CW-9060062-WW	280,00	231,40
1	Seagate FireCuda 530 1 TB, SSD (M.2 & NVMe) - ZP1000GM3A013	137,00	113,22
1	Gigabyte GeForce RTX 3060 EAGLE OC 12G (rev. 2.0, LHR) - 4719331309305	429,00	354,55
1	EZDIY-FAB graphics card bracket support	14,00	11,57
1	Corsair RM850x (2021) 850W, PC-PSU - CP-9020200-EU	150,00	123,97
1	Noctua NA-SEC1 4-Pin extension cable - NA-SEC1	0,00	0,00
1	Noctua NA-SEC1 4-Pin extension cable - NA-SEC1	0,00	0,00
1	Fractal Design Define 7 Black Solid, Tower (Zwart) - FD-C-DEF7A-01	210,00	173,55
1	Arctic MX-4 Thermal Paste - ACTCP00002B	0,00	0,00
1	Windows 10 Home x64 NDL OEM DVD - KW9-00152	112,00	92,56
1	Full PC Assembly= hardware assembly + install operating system + install all recent drivers + install recent bios + optimizing bios settings	150,00	123,97
	TOTAL:	**3801,00**	**3141,32**

Additional explanation from our PC builder about the proposed PC components:

AMD Ryzen 9 7950X, Processor (boxed) - 100-10000514WOF

Previously, we mostly used AMD Threadripper CPU's for graphics workstations, but these are end of life now. And the AMD Threadripper Pro's are much more expensive than the non-Pro Threadripper CPU's. Only the 16 core Threadripper Pro CPU + the motherboard already cost ± 2,000 euros VAT exclusive.

So this puts me above the stated budget.

A week ago, the new AMD Ryzen CPU's were released and they are masters in many matters, both in singlecore- but especially in multicore operations.

Intel Gen 12 CPU's consume more power and are on average slower than the Ryzen 7000 series. I have chosen the 16 cores/32 threads model which is the top model in this series. In a few benchmarks I've seen that the performance is very close to the old Threadripper 16 core.

Most of the specified software packages that you mention are multi-core (Adobe Photoshop can handle a maximum of 16 CPU cores). In the new AMD Ryzen 7000 there is a feature where the CPU checks how fast it can go below the maximum temperature of 95°C and if there is still a margin it will overclock itself.

Around October 20, 2022 Intel will release its 13th gen CPU, but I have yet no idea what the price will be or the performance or the power consumption or the temperatures.

However, I have already seen that the top model I9-13900K has 8 fast cores and not 16 like the AMD 7950X, so I expect that the AMD will be faster with the software that you use.

Benchmarks:

https://www.digitaltrends.com/computing/ryzen-9-7950x-vs-intel-core-i9-12900k/

https://www.cpu-monkey.com/en/compare_cpu-amd_ryzen_9_7950x-vs-intel_core_i9_12900k

ASUS ROG Crosshair X670E Hero motherboard - 90MB1BC0-M0EAY0

Asus chosen for speed, stability and features.

Because the AMD Ryzen 7000 is only just out, there are only a few motherboards models for it readily available. I chose this motherboard because I have confidence in it. Very good cooling is provided on the VRM, as well as on the chipset and on the M.2 SSD slots.

And there is also very good power supply from the motherboard to the CPU, which is very important because a disadvantage of the AMD Ryzen 7000 series is that it consumes much more power than the previous Ryzen generation and it also gets hot (± 95°C).

The motherboard also includes already PCI-E 5.0 slots and an Intel 2.5 Gbit network chip (which is faster and more stable than the cheaper Realtek network chips).

There are also 5x M.2 slots, with heat sinks on top of it, and 6 x SATA 600 connections. Also a lot of fast USB ports and Intel WIFI are available. And 4x DDR5 RAM slots supporting up to 128 GB RAM.

Actually I wanted to propose the Asus ProArt X670E-CREATOR WIFI motherboard, but it is not yet available from stock at this moment. The chosen Hero motherboard is a step higher in quality than the Creator (but also pricier).

2x Kingston FURY DIMM 64GB DDR5-5200 (2x 32GB Kit) - KF552C40BBK2-64

This memory is in the Asus QVL list for the proposed motherboard and should therefore be 100% compatible. 5200 Mhz is the fastest possible RAM speed that the motherboard can handle (without overclocking). Normally, using 4 RAM modules (instead of 2 modules) drops the speed to 3600 Mhz.

But there is a nice feature in the X670E chipset that tests the installed RAM on the first boot (takes +/- 10 minutes the first time), which makes the processor try to start the RAM with the fastest speed and tightest timings.

Every time this fails, the timings are tightened (making the RAM speed slightly slower) until the PC boots up stably.

2x RAM modules in dual channel RAM configuration results in a higher bandwidth to the CPU.

The proposed RAM is one of the better ones available from stock (in terms of speed and timings).

4x 32 GB = 128 GB RAM which is requested, and which is also the maximum with this CPU.

Corsair H150i ELITE LCD 360mm, Water Cooling - CW-9060062-WW

As I mentioned before, those AMD Ryzen 7000 CPU's get hot (95°C). AMD says this is normal and that the CPU can handle this temperature 24/7 (the maximum temperature of those CPU's is 110°C). Also, the CPU clocks higher when the temperature allows it.

I also use this all-in-one cooler for the Intel I9-12900K CPU, which gets even warmer and with this cooler I manage to cool the CPU well. This cooler is also fairly quiet and easy to use.

Seagate FireCuda 530 1TB, SSD (M.2 & NVMe) – ZP1000GM3A013

This SSD is sometimes called the Samsung 980 Pro killer. It is faster than the Samsung 980 Pro and can be written almost twice as much. This SSD stays also fast under high workloads and it is a PCI-E 4.0 NVMe SSD.

I always use this model for high end workstations. 1 TB as requested.

Gigabyte GeForce RTX 3060 EAGLE OC 12G (rev 2.0, LHR) – 4719331309305

This card was chosen because certain software can also use the GPU of the video card for calculations that are done faster than via the normal processor.

The chosen model has a cooler that cools very well and is also very quiet.

Currently, the overclocking version is cheaper than the regular version and therefore I chose this O.C. model.

It comes with 12GB RAM.

The cooler on this card only starts working when the video card exceeds a certain temperature, so in 2D matters it is passively cooled and silent.

A video card from an even higher class makes little sense here, the extra speed gain is then no longer in proportion to the extra cost.

And within the given budget, the rest of the chosen components are much more important than a video card that is somewhat faster.

EZDIY FAB graphics card bracket support

This mount keeps the video card from sagging over time and also provides better protection during transport.

Corsair RM850x (2021) 850W, PC PSU - CP-9020200-EU

I have calculated this with PSUcalc and 850 watts is ideal for this configuration.

https://outervision.com/power-supply-calculator

This gives you the highest power efficiency what makes your power supply run in the most economical and quiet way. This way less power is lost as heat.

This power supply is certified "80 plus gold" in terms of efficiency and thus achieves 90% efficiency at 50% load.

It is a fully modular power supply so that excess cables can be removed from the PC for a neater look and better airflow.

This power supply is also semi-passively cooled, the silent fan only starts running when the power supply exceeds a certain temperature.

This power supply has Japanese capacitors which are currently the best on the market, what makes this power supply very reliable.

2x Noctua NA-SEC1 4-Pin extension cable - NA-SEC1

You need these 4 pin PWM extension cables to nicely hide the fans of the AIO cooler and the case fans in the case.

Fractal Design Define 7 Black Solid, Tower (Black) - FD-C-DEF7A-01

https://www.fractal-design.com/products/cases/define/define-7/

This computer case is of top quality.

It is very quiet because of its silent case fans, its hard disk adapters that prevent vibration and because the walls are covered with sound-damping material.

Also has it very good cooling with 2x 140x140 mm intake fans in the front and a 140x140 outtake fan at the back.

All intake holes have a fan filter.

The case is very spacious inside so that you can effortlessly place a long power supply and long video card(s).

There is also enough space for that 360 AIO water cooler.

Cable management has also been considered when this case was developed.

And the materials used are of top quality.

Arctic MX-4 Thermal Paste – ACTCP00002B

This thermal paste provides +/- 7°C better temperatures than the standard thermal paste on the Corsair AIO cooler.

I have tested this with an AMD Threadripper CPU.

Even better thermal paste is available, but you pay 3 times as much for it to have only ± 4°C better cooling.

This thermal paste also lasts a long time.

Windows 10 Home x64 NDL OEM DVD - KW9-00152

At this moment Windows 11 has no added value in my opinion. The PC will not work faster or better because of it, on the contrary. Every week I see (new) bugs with Windows 11 and you are being Microsoft's guinea pig with this O.S.

Windows 10 has already proven its reliability and is still active until October 14, 2025.

And you can always upgrade to Windows 11 for free later, whenever you wish.

I propose the Home version of Windows 10 because it is cheaper than the Pro version.

In terms of speed, both are equally fast. The main advantages of the Pro are: the PC can be connected to a network domain, remote desktop, and support for encrypting your SSD's or HDD's.