



Dell OptiPlex 3020 SFF

Specification and Upgrade Options

The Dell OptiPlex 3020 SFF is a pre-built business desktop computer first released in 2013. Although more than five years old, it is still a viable solution for home and office. The motherboard is using the H81 chipset and supports 4th gen Intel Core processor, 16GB of DIMM DDR3-1600 memory, and a low profile GPU. You can even make a gaming PC from this machine with a proper GPU upgrade.

Dell OptiPlex 3020 SFF is a Small form factor computer. The Small Form Factor (SFF) is an in-between model. It

has less space for the larger form factors (Mid tower, Mini tower, and Desktop), but it is still easily upgradable. Usually the SFF come with 2x PCIe slots, so fitting a low profile graphics card is possible.

Specification

Model	<div>Dell OptiPlex 3020 SFF</div>
Form factor	Small
CPU options	Intel Gen4 i3/i5; Celeron; Pentium;
Chipset	H81
Dedicated GPU *	GeForce GT 1030 Low Profile
RAM	DIMM DDR3-1600
RAM slots	2
RAM speed	1600 MT/s
RAM max	16 GB
USB ports	(2x) USB-A 3.0; (6x) USB-A 2.0;
Video ports	DisplayPort 1.2; VGA;
Other ports	RJ45; Hdph; Mic; Line-Out; Line-In;
Optional ports	Serial+PS2;
SATA ports	2
PCI slots	PCIe 2.0 ×16; PCIe 2.0 ×1;
M.2 slots	N.A.
Drive bays	2.5/3.5in; 5.25in(slim);

PSU	255 W
Weight	5 kg (11.02 lb)
Released	2013
Manual	link
Price**	Check Price

* Dedicated GPU warning: Check if your particular power supply model has enough power. Additionally some PSUs don't come with an auxiliary PCIe power connector and you may need to buy a SATA to PCIe power adapter.

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Can you upgrade Dell OptiPlex 3020 SFF to play games?

Yes, you can upgrade Dell OptiPlex 3020 SFF for gaming with better processors, graphics card, memory, and storage devices. However, like many other business pre-built PCs, this model may have proprietary elements like the power supply, the chassis or the power connector, which can make it difficult for users to install aftermarket PSUs to support better GPUs. You can also find that there is space constraints inside the chassis, making it difficult to accommodate larger GPU to boost the gaming performance.

Please explore the sections below to find ideas and suggestions on how to upgrade Dell OptiPlex 3020 SFF.

Windows 11 compatibility

No, Dell OptiPlex 3020 SFF does not meet the Windows 11 hardware requirements. According to Windows 11 specification, all models with Intel 7th Gen CPU or older are not officially supported. Processor with TPM 2.0 and a UEFI Secure boot BIOS is also

required in order to upgrade from Windows 10 to Windows 11 through Windows Update.

However, anyone with PC that does not pass the upgrade test can download the official Windows 11 ISO, make a bootable flash drive, and install the OS manually.

GPU upgrade

To upgrade the GPU of OptiPlex 7040 SFF, a low-power, low-profile graphics card must be used. Currently, the most reasonable GPU option is AMD's **Radeon RX 6400 low profile**. This model has a good price point, delivers decent FPS, and does not require any additional hardware upgrades.

The low power requirements of this model make it the perfect option for an SFF gaming build. The RX 6400 low does not need any additional power from the PSU and can rely solely on the power delivered by the PCIe slot (75W).

GPU upgrade options for Dell OptiPlex 3020 SFF with the stock 255W power supply:

GPU	Power consumption	Memory	Req.
RX 6400 Low ...	50 W	4 GB DDR6	Works with no additional
Specs GPU Processor Memory Ports SSD Power supply Motherboard			
GTX 1650 Low profile	75 W	4 GB DDR5	Works with no additional

			hardware changes
RTX A2000 Low profile	70 W	6 GB DDR6 12 GB DDR6	Works with no additional hardware changes

Keep in mind that these low-profile, low-power GPUs can be quite noisy and may run hot when under full load.

Processor

The Dell OptiPlex 3020 SFF supports Gen4 Intel Core technology. The 4th generation was released in 2013 and under the codename Haswell. They adopt the same 22nm manufacturing process as its predecessor. The performance improvement of Haswell compared to the Ivy Bridge is around 8%. The 4th gen comes with support for new sockets (LGA 1150, LGA 2011-3), DDR4 RAM and a new cache design.

Best CPUs for Dell OptiPlex 3020 SFF upgrade:

Model	Cores (Threads)	Base frequency	Turbo
Core i5 4690	4(4)	3.5 GHz	3.9 GHz
Core i7 4770	4(8)	3.4 GHz	3.9 GHz
Core i7 4790	4(8)	3.6 GHz	4.0 GHz

Memory

Dell OptiPlex 3020 SFF has **two RAM slots**. This is more than enough for most users. For those of you who need extra flexibility

and RAM size, go for a model with 4 memory slots.

To cover the needs of your OS, games, and apps, Dell OptiPlex 3020 SFF supports up to **16 GB of DIMM DDR3-1600 RAM**. For office work, home use, and light gaming we recommend 8GB of RAM. For everything else, use 16GB or more.

Faster RAM speeds permit your processor to access the data stored inside the memory faster. This is important for the overall speed of your system. The motherboard of the Dell OptiPlex 3020 SFF supports RAM speeds of up to **1600 MT/s**.

Wi-Fi Support

Dell OptiPlex 3020 SFF doesn't come with any on-board Wi-Fi support. In that case, you have two options to upgrade this model with Wi-Fi. You either use an external USB Wi-Fi adapter (wireless network dongle) or a PCIe-based wireless adapter.

The USB dongle is much more convenient and easy to install, but has less space for a decent antenna and can have thermal problems. On the other hand, the PCIe based adapter is much more powerful, more reliable, and has better antenna, but it is harder to install.

Wi-Fi and Bluetooth wireless adapter upgrades for Dell OptiPlex 3020 SFF:

Model	Speed	Frequency	Interface
WiFi 6E	3000 Mbit/s	2.4GHz / 5GHz	NGFF M.2 A/E Key

(Gig+) Kit			
Rekong AX210	3000 Mbit/s	2.4GHz / 5GHz	NGFF M.2 A/E Key
Gigabyte GC-Wbax200	2400 Mbit/s	2.4GHz / 5GHz	PCIe
TP-Link Archer TX50E	2400 Mbit/s	2.4GHz / 5GHz	PCIe
TP-Link Archer T9UH	1300 Mbit/s	2.4GHz / 5GHz	USB 3.0

Ports

Ports are important and often people don't think about them when buying a PC. For example, if you don't have enough [USB ports](#), using external devices becomes problematic. Before you buy any system, considering your use case, check the number of external devices you are going to use and plan the number of the extension ports accordingly.

USB ports

The Dell OptiPlex 3020 SFF comes with **eight USB ports** in total. Having more USB ports is always better, but also pay attention to the version of those USB ports. Higher version ports support faster [transfer speeds](#). Unfortunately, this model doesn't come with a USB 3.1 port. If you need a faster connection for your peripherals, like external Solid State Drive, you will need to choose another model.

Video ports

The DisplayPort (DP) is the most widely used digital interface for transmitting digital video and audio between display devices and PCs. It is good to see that the Dell OptiPlex 3020 SFF is featuring a

DisplayPort 1.2. The port version is important if you target higher resolutions with high refresh rate. Although, ver. 1.2 is completely fine for most users, if possible, aim for the higher versions DisplayPort.

The [HDMI port](#) is another digital video port you can use to connect external display. It has very similar capabilities to the DisplayPort with few exceptions. However, the Dell OptiPlex 3020 SFF doesn't have one. This is not a problem if there is on-board DisplayPort.

*Please keep in mind in order to use the video ports available through the motherboard, you need a CPU with integrated graphics card. If you have a dedicated GPU, use its ports instead.

SSD storage - M.2 sockets and SATA ports

The SATA port is one of the places where you can connect a storage device. The Dell OptiPlex 3020 SFF comes with **two SATA** port(s). Not enough SATA ports might limit your options for additional storage devices. Think about your use case and decide if the SATA ports provided by this model will be sufficient.

Unfortunately, the Dell OptiPlex 3020 SFF has **no M.2 PCIe socket** and you have to rely on the available SATA ports to connect your drives.

The M.2 PCIe SSD connector in combination with an NVMe drive allows for higher transfer rates, compared to the old SATA

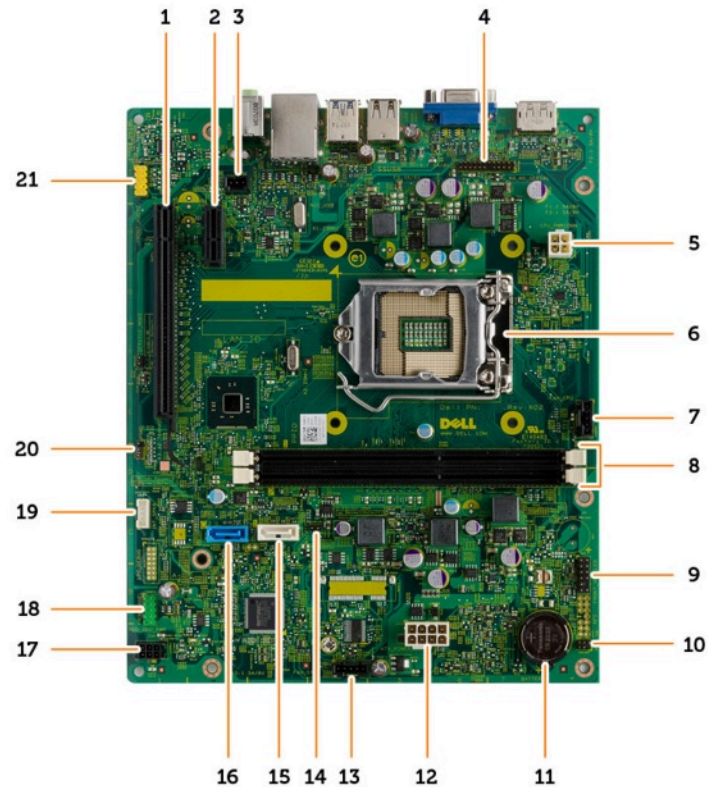
interface. In some situations, NVMe device connected to the M.2 PCIe socket can be more than 5 times faster.

Power Supply

The Dell OptiPlex 3020 SFF comes with a **255 Watt PSU**. Having a power supply with high power rating is important, especially if you are doing upgrade with additional components, like dedicated GPU and more HDDs. Will this 255 W be enough, it all depends on your specific use. Please keep in mind that some models might have more than one PSU option. Whenever possible get the most powerful one, as it might make future upgrades easier.

Motherboard

OptiPlex 3020SFF



The following image displays the system board layout.

- | | |
|---------------------------------------|-----------------------------|
| 1. PCI Express x16 connector | 2. PCI Express x1 connector |
| 3. intrusion-switch connector | 4. PS/2, serial connector |
| 5. power connector | 6. processor socket |
| 7. CPU fan connector | 8. memory module connectors |
| 9. HDD LED & chassis detect connector | 10. power switch connector |
| 11. coin-cell battery | 12. system power connector |
| 13. system fan connector | 14. RTC reset jumper |
| 15. ODD SATA connector | 16. HDD SATA connector |
| 17. power connector | 18. front i/o connector |
| 19. internal speaker connector | 20. password reset jumper |
| 21. front audio connector | |

Other desktop models:

[Alienware X51 R3](#)

[Dell OptiPlex 7070 MT](#)

[Acer Veriton L4620g](#)

[HP ProDesk 400 G4 SFF](#)



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