

Assignment

by Sami Omar Mohamed

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File name: 32895_Sami_Omar_Mohamed_Assignment_393422_1247477836.docx (8.27M)

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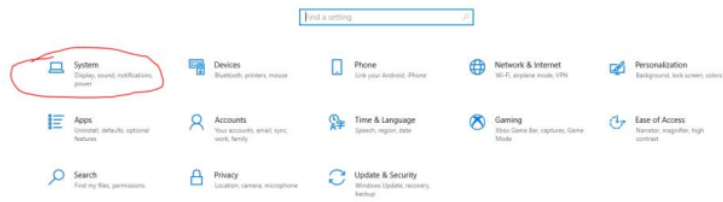
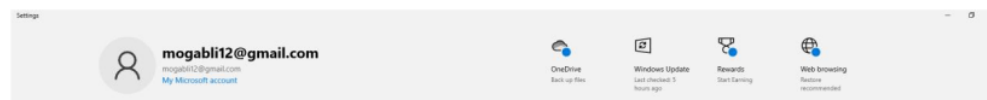
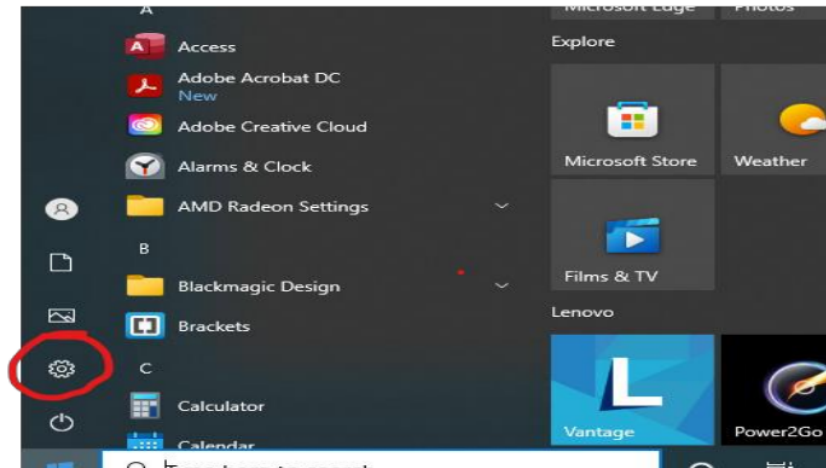
Computer Systems Fundamentals

Tasks

1. Investigate the specification of your own personal computer to ascertain the following information (Include pictures/screengrabs etc to show how you obtained this information)
Make and model
How much RAM do you have?
What is the type and capacity of your non-volatile storage?
What CPU do you have, and what are its main specifications (clock speed, cache size, turbo boost speed, hyperthreading etc)
What connectivity/ports does your computer have, and what are their specifications (e.g., what are they used for, what speeds do they operate at etc)

My computer is Lenovo desktop ideacentre AIO 520-24ARR model. It has AMD Ryzen 5 Processor with clock speed of 3.20GHz turbo boost speed of 3.8GHz and Cache sizes L1 of 384KB, L2 of 2MB and L3 of 4MB with 4 Cores and 8 Threads. It has 8 GB of RAM. Also, it has about 2TB HDD and 120 GB SSD.

Below I include all the screenshots that show how I get all this information:



Home

Find a setting

System

- Display
- Sound
- Notifications & actions
- Focus assist
- Power & sleep
- Storage
- Tablet
- Multitasking
- Projecting to this PC
- Shared experiences
- Clipboard
- Remote Desktop
- About

Display

Brightness and color

Change brightness for the built-in display

Night light

Off

[Night light settings](#)

Windows HD Color

Get a brighter and more vibrant picture for videos, games and apps that support HDR.

[Windows HD Color settings](#)

Scale and layout

Change the size of text, apps, and other items

100% (Recommended)

[Advanced scaling settings](#)

Display resolution

1920 x 1080 (Recommended)

Display orientation

Landscape

Multiple displays

[Connect to a wireless display](#)

Older displays might not always connect automatically. Select Detect to try to connect to them.

Detect

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About

Your PC is monitored and protected.

[See details in Windows Security](#)

Device specifications

ideacentre AIO 520-24ARR

Device name DESKTOP-4QFAG62
Processor AMD Ryzen 5 2400GE with Radeon Vega Graphics 3.20 GHz
Installed RAM 8.00 GB (7.68 GB usable)
Device ID 014470CA-854E-464A-AD04-3143418AD455
Product ID 00325-96464-88393-AAOEM
System type 64-bit operating system, x64-based processor
Pen and touch No pen or touch input is available for this display

Copy

Rename this PC

Windows specifications

Edition Windows 10 Home
Version 20H2
Installed on 22/02/2021
OS build 19042.1415
Serial number MP19ALXB
Experience Windows Feature Experience Pack 120.2212.3920.0

Copy

[Change product key or upgrade your edition of Windows](#)

[Read the Microsoft Services Agreement that applies to our services](#)

[Read the Microsoft Software License Terms](#)

This page has a few new settings from Windows 10. Some settings from Windows 7 have moved here, and your PC info so it's easier to find.

[Related settings](#)

[BitLocker settings](#)

[Device Manager](#)

[Remote desktop](#)

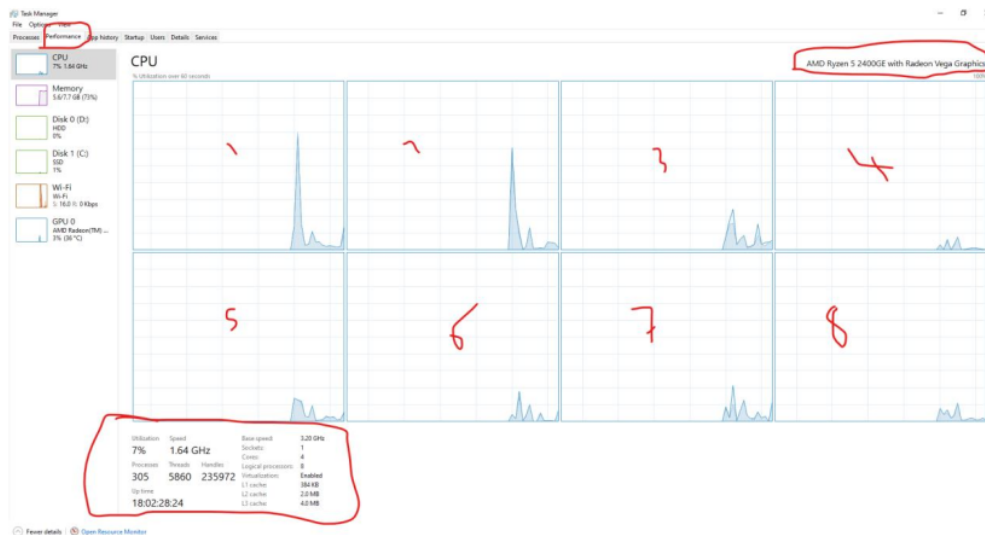
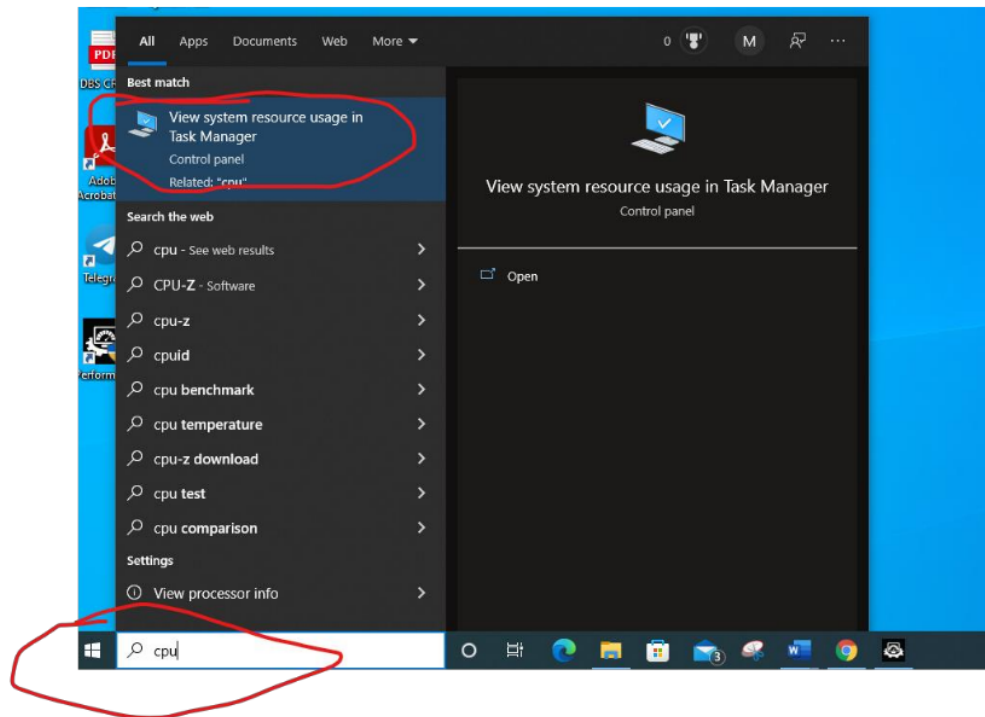
[System protection](#)

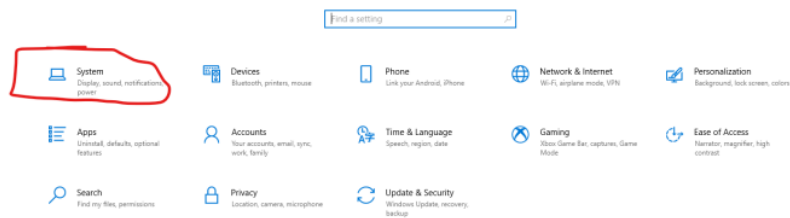
[Advanced system settings](#)

[Rename this PC \(advise\)](#)

[Get help](#)

[Give feedback](#)





Settings

Home

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Storage

Storage Sense can automatically free up space by getting rid of files you don't need, like temporary files and content in your recycle bin.

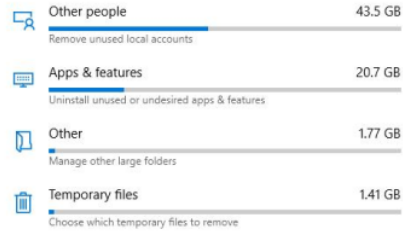
☒ On

[Configure Storage Sense or run it now](#)

Windows (C:) - 117 GB

96.5 GB used 21.4 GB free

This is how your storage is used and how you can free up space.



[Show more categories](#)

More storage settings

[View storage usage on other drives](#)

[Change where new content is saved](#)

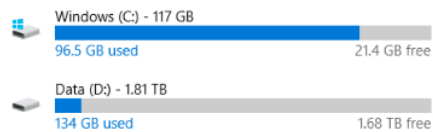
[Manage Storage Spaces](#)

[Optimize Drives](#)

[View backup options](#)

View storage usage on other drives

Local storage



“Ports: Rear: Three USB 2.0, one USB 3.1 Gen1, one ethernet (RJ-45), one HDMI out port, optional one HDMI in port, one power connector, one security cable slot Right: one USB 3.1 Gen1 Bottom: one headphone / microphone combo jack (3.5mm), card reader Two M.2 Card slots (one for WLAN, one for SSD) * Depending on many factors, actual data transfer speed may be lower than theoretical”.

[1]

2. Your computer will have internet connectivity and be connected to a device such as a modem or router. Show how you can use operating system tools such as ipconfig to find out your machines IP and MAC address and explain what these are used for. Also – use a benchmarking tool to discover your Upload/Download speeds and Latency timings for your internet connection. Include screengrabs/images to show your result.

I have used two ways to find out my IP address and MAC address also known as Physical address. First one is to use windows command prompt tools by using (ipconfig/all) this will show all the information in relation to the computer connectivity with internet that include IP address and MAC address.

The second way I have used is to go to setting then click on network and internet icon then under status I go to my WIFI connection properties it will show the information I need.

IP address: 192.168.0.11

MAC address: B0-FC-36-C8-36-69

IP address is a logical address of the device provided normally by internet service provider. IP addresses are used to uniquely identifies the connection of the network with a computer connected to the network.

MAC address is like a Physical address never changed. NICs manufactures provides the MAC address. “Both IP & MAC addresses are used to uniquely define a device on the internet.”

[2]

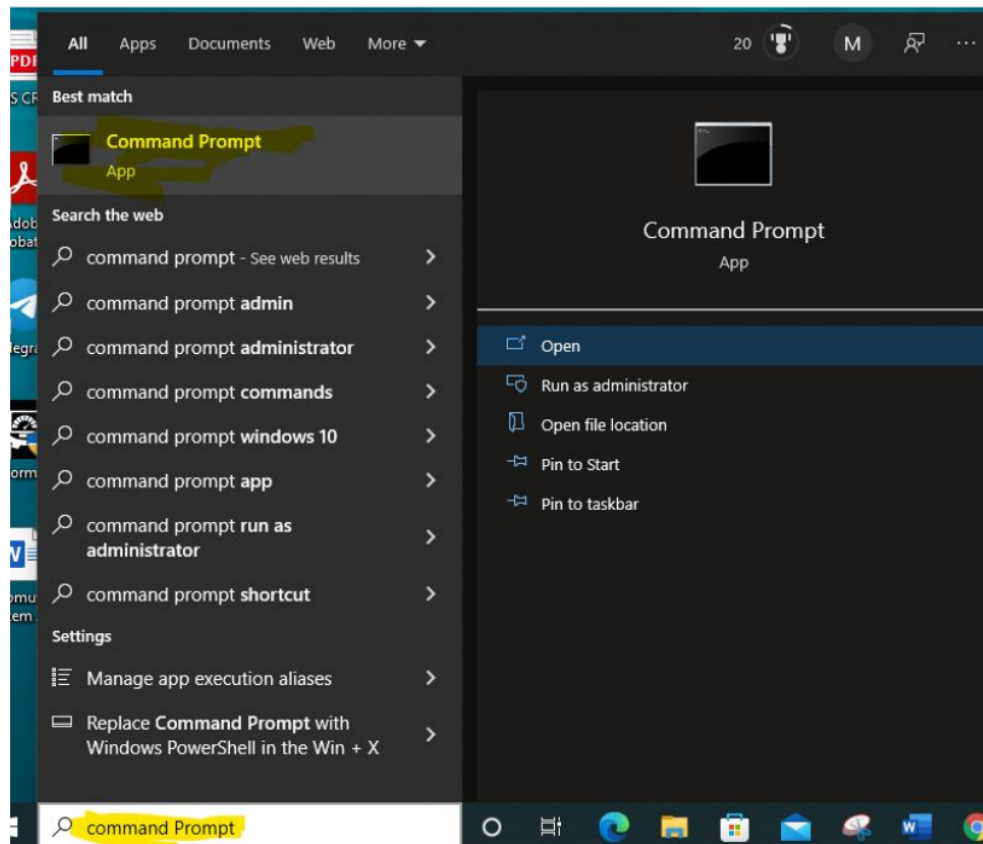
I have used the speed test website tools to find out my internet speed and it was as follows:

Download speed 81.08 Mbps

Upload speed 21.09 Mbps

Latency timings ping 13ms

Below I include all screenshots explained how I get all this information:



Command Prompt

Microsoft Windows [Version 10.0.19042.1415]
(c) Microsoft Corporation. All rights reserved.

C:\Users\mogab> ipconfig/all

```

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . : 
Description . . . . . : Realtek PCIe GBE Family Controller
Physical Address. . . . . : 9C-SA-44-22-A2-1C
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes

Unknown adapter McAfee VPN:
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . : 
Description . . . . . : TAP-Windows Adapter V9
Physical Address. . . . . : 00-FF-71-65-9C-78
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Local Area Connection* 2:
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . : 
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter
Physical Address. . . . . : B2-FC-36-F1-78-3C
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes

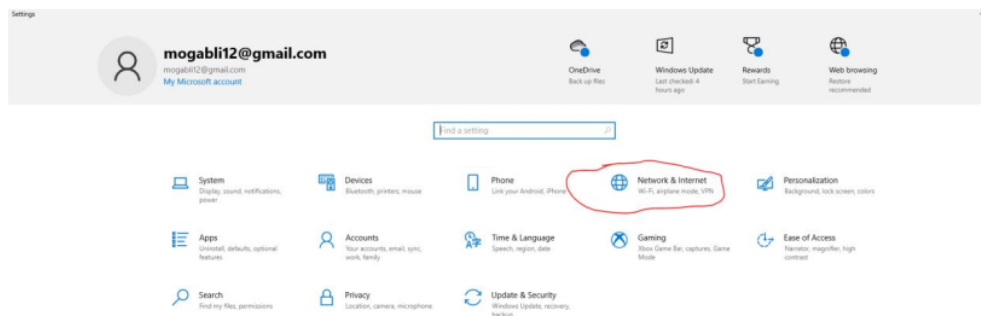
Wireless LAN adapter Local Area Connection* 3:
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . : 
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter #2
Physical Address. . . . . : F2-FC-36-AB-58-28
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes

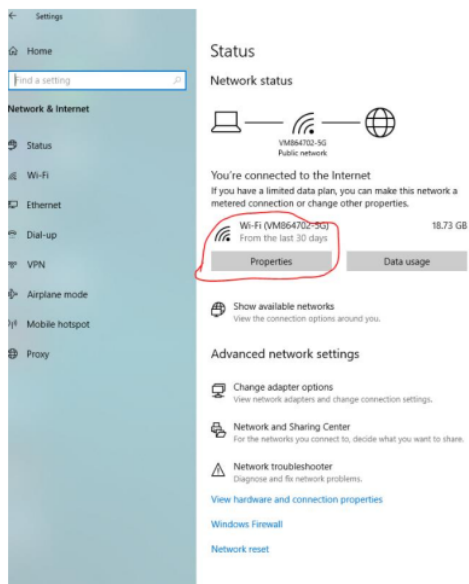
Wireless LAN adapter Wi-Fi:
Connection-specific DNS Suffix . : 
Description . . . . . : Realtek 8821CE Wireless LAN 802.11ac PCI-E NIC
Physical Address. . . . . : B0-FC-36-C8-36-69
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . : fe80::f871:2c86:3dbb:7a08%17(Preferred)
IPv4 Address. . . . . : 192.168.0.11(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : 01 January 2022 16:37:50
Lease Expires . . . . . : 06 January 2022 20:20:47
Default Gateway . . . . . : 192.168.0.1
DHCP Server . . . . . : 192.168.0.1
DHCPv6 IAID . . . . . : 179371862
DHCPv6 Client DUID. . . . . : 00-01-00-01-23-3F-40-50-9C-SA-44-22-A2-1C
DNS Servers . . . . . : 192.168.0.1
NetBIOS over Tcpip. . . . . : Enabled

Ethernet adapter Bluetooth Network Connection 2:
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . : 
Description . . . . . : Bluetooth Device (Personal Area Network) #2
Physical Address. . . . . : B0-FC-36-C8-36-6A
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes

C:\Users\mogab>

```





🏠 VM864702-5G

If you have a limited data plan and want more control over data usage, make this connection a metered network. Some apps might work differently to reduce data usage when you're connected to this network.

Set as metered connection

☐ Off

If you set a data limit, Windows will set the metered connection setting for you to help you stay under your limit.

[Set a data limit to help control data usage on this network](#)

IP settings

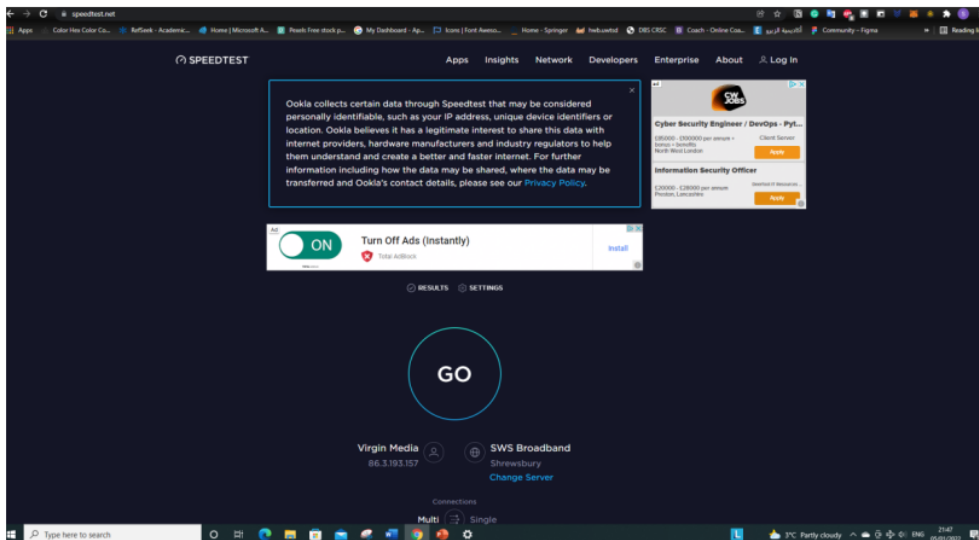
IP assignment: Automatic (DHCP)

Edit

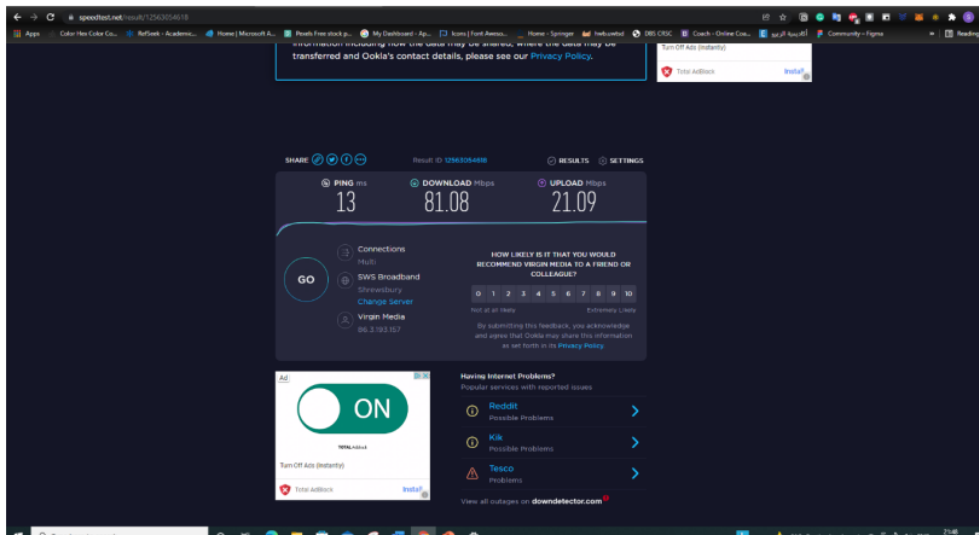
Properties

SSID:	VM864702-5G
Protocol:	Wi-Fi 5 (802.11ac)
Security type:	WPA2-Personal
Network band:	5 GHz
Network channel:	36
Link speed (Receive/Transmit):	180/180 (Mbps)
Link-local IPv6 address:	fe80:f871:3c86:3dbb:7a08%17
IPv4 address:	192.168.0.11
IPv4 DNS servers:	192.168.0.1
Manufacturer:	Realtek Semiconductor Corp.
Description:	Realtek 8821CE Wireless LAN 802.11ac PCI-E NIC
Driver version:	2024.0.8.132
Physical address (MAC):	B0-FC-36-C8-36-69

Copy



[3]



[3]

3. Your modem/router will typically have a DHCP server incorporated in it. Explain its purpose. Also investigate and report on what security features you can set in your modem/router to increase the level of cyber security.

Dynamic Host Configuration Protocol or DHCP server automatically assigns a computer or a device an IP address and other information so these devices or computers can communicate with each other without a problem or conflict.

Every computer or device must have an IP address, it works like an identifier for a computer or a device on a network. DHCP is important because it simplifies the management of IP addresses on a network. [4]

I was able to access how to change the security features in the router of my Virgin Media router. With some steps, for example, by typing the IP address 192.168.1.0 on the search engine, and then entering the password printed in the router,

then I can change some security features, for example, the level of the firewall or change the name of the network and the password also with the DHCP server I can change the IP addresses or change the range for them. All these steps will increase the

level of cyber security on my home network. [5]

Below are some pictures that show the result of my research during the change of security procedures:



Super Hub

Router Status

Welcome to your Virgin Media Super Hub 2ac



Sign in to view and change your settings

Settings Password



WPS PIN



Sign In

Don't know your password or WPS PIN?

You'll find your default password and WPS PIN on the bottom of your Super Hub.

© 2010 Virgin Media. All rights reserved.





Super Hub is in Router Mode

Sign

Manage your Super Hub and wireless network



Change your wireless network settings, manage your wireless security and more.



Enable or disable Modem Mode, change your Super Hub password and other settings.



Check your web usage and monitor devices connected to your network.

You are currently in Router Mode. To change to Modem Mode, go to the Super Hub Settings section.

[Advanced Settings](#)

Advanced Settings

[Home](#)[Advanced Settings](#)

Wireless

[Wireless Radio](#)[2.4GHz Primary Wireless Network](#)[2.4GHz First Guest Wireless Network](#)[2.4GHz Second Guest Wireless Network](#)[5GHz Primary Wireless Network](#)[5GHz First Guest Wireless Network](#)[5GHz Second Guest Wireless Network](#)[WPS Settings](#)

Security

[Firewall](#)[IP Filtering](#)[MAC Filtering](#)[Port Blocking](#)

Firewall

[Home](#)[Advanced Settings](#)[Security](#)[Firewall](#)[? Help](#)☒ Firewall 

Firewall Protection

Low 

Detection

☒ Port Scan Detection ☒ IP Flood Detection 

Pass-through

☒ IPSec Pass-Through ☐ PPTP Pass-Through ☐ Multicast Pass-Through [Apply](#)[Restore Defaults For This Section](#)

Restoring to factory default will mean any changes you have made to the settings in this section will be lost.



DHCP Settings



Home



Advanced Settings



DHCP



DHCP Settings

[? Help](#)

LAN IP

IP Address

Subnet Mask

DHCP

☒ Check to enable or uncheck to disable DHCP

IP Address to 254

Max Users

Lease Time

Apply

4. Imagine you want to expand your home network and build a HTPC (Home theatre PC) which will be connected to your Television as a display, but also connected to a separate Hi-Fi AV amplifier & speakers with Dolby Digital 5.1 surround sound.

Produce a sensible specification for the HTPC. Ensure you specify as a minimum:

- a) A suitable CPU and motherboard
- b) A sensible amount of RAM
- c) What type and size of non-volatile storage would be suitable
- d) The input/output features/ports needed
- e) The features a suitable graphics card would require.
- f) A suitable case and power supply
- g) A suitable monitor

For all of the areas a-g, you should justify your choice with reasoning, and where possible, explain why you chose that particular option over the alternatives.

You should also produce a 'shopping list' of actual components (as if you were going to build the computer yourself from scratch), so perform some research using online retailers and produce a neat table with the name, price and where possible an image of the product. Calculate the final price of your system.

DO NOT simply find a ready built PC and just present that information. You need to demonstrate that you understand WHY you chose that particular component - CPU (what are its features compared to other alternatives), WHY you decided on that quantity of RAM etc etc.

I think I would build an affordable HTPC that is not too expensive but good for watching videos and maybe light gaming.

- a) For the CPU, I have two choices of Intel or AMD processors. I would choose an Intel processor instead of an AMD processor, there is nothing wrong with AMD, but I prefer Intel because it has integrated graphics unit in almost all processors, but AMD needs to go to a higher model to find an iGPU and I don't want to spend any money in graphics cards because that's supposed to be mainly for watching videos. [6]

After a thorough research I decided to buy intel core i5. Of course, there are many choices, but I think intel core i5 is a very good reliable processor with reasonable price and it will do more than enough for HTPC. For a motherboard, all I need is a motherboard that is compatible with the other components and has enough slots for them. Of course, I will buy from a reputable manufacturer, the size for me is not a big issue. For some people they prefer the small or mini motherboard because they don't want a big computer unit but for me it doesn't matter as long as it does the job. So, I would choose gigabyte z690 ud ddr4 atx lga1700 motherboard.

- b) 8GB of RAM is enough for a HTPC but I will buy two of them so I will have plenty of RAM just in case someone wants to play a game. Corsair Vengeance LPX 16GB (2x8GB) DDR4-3200 CL16 Memory is my go-to because it has excellent customer reviews, and it is very reliable.
- c) I like SSD memories they are faster & quieter than the normal HDD but the problem is they are expensive, so I will settle for 1TB of SSD plus 2TB of HDD. I can always add more memory if I need it.
- d) The input/output ports I need things like USB ports, HDMI ports, display ports. This motherboard has so many ports for example the back panel connectors includes the following: 1. 1 x PS/2 keyboard/mouse port 2. 1 x DisplayPort 3. 1 x HDMI port 4. 1 x USB Type-C port, with USB 3.2 Gen 2x2 support 5. 1 x USB 3.2 Gen 2 Type-A port (red) 6. 4 x USB 3.2 Gen 1 ports 7. 4 x USB 2.0/1.1 ports 8. 1 x RJ-45 port 9. 3 x audio jacks. Plus, more USB ports available through the internal USB header. [7]

- e) As I mentioned before, I will not buy any graphic cards because this HTPC is mainly for watching movies etc not playing games, also because intel core i5 has integrated GPU and for me this will be more than enough for streaming videos or even play a light game.
- f) corsair 4000d airflow atx mid tower case this is my choice for the case because it nice-looking, good size and has wonderful reviews from so many customers. I will go for Corsair RM750 Power Supply for its efficiency, reasonable price, silent and it has 10 years warranty. [8]
- g) I don't need to buy a monitor as I have 55 inches smart TV, all I need is connect it with HTPC.I will need to buy a mouse plus keyboard to be able to operate through.
- h) I will also buy a wireless adapter.

The table below shows prices for all components at different retailers:

	NAM E	Retail er	Pri ce	Item
1	INTE L Cor e™ i5- 1260 0KF Proce ssor	Currys pcpart picker.com	£2 65. 00 £2 61. 02	 INTEL Core™ i5-12600KF Unlocked Process Product code: 712452 ★★★★★ Read 2 customer reviews Ask an owner

2	4000d airflow atx mid tower case	Currys pcpartpicker.com	£79.99 £79.00	CORSAIR 4000D AIRFLOW Tempered Glass ATX Mid Tower PC Case  • Includes cable management • USB Type-C • Includes window • 7 expansion slots Buy Now £200.00 + 1 more Brief product
3	CPU Cooler	Currys(similar) pcpartpicker.com	£59.99	NZXT Kraken M22 CPU Cooler - RGB ONLINE ONLY Product code: 279044 ★★★★★ Read 6 customer reviews Ask an owner 
4	1TB SSD	Currys pcpartpicker.com	£122.00 £116.59	Buy now pay later SAMSUNG 970 Evo Plus PCIe M.2 Internal SSD  • PCIe 3.0 • PCIe 3.0 • Hardware • Read speed • Write speed Buy Now £200.00 + 1 more Brief product

7	<i>Corsair Vengeance LPX 16GB (2x8 GB) DDR4-3200 CL16 Memory</i>	Currys pcpartpicker.com	£69.99 £62.99	CORSAIR Vengeance LPX DDR4 3200 MHz PC RAM Product code: 652624 ★★★★★ Read 11 customer reviews Ask an owner 
8	<i>Corsair RM750 Power Supply</i>	Currys pcpartpicker.com	£76.99 £74.98	CORSAIR RM750x Modular ATX PSU - 750 W  • 80 PLUS Gold • 140mm fan Buy Now Pay £200 or more + 1 more offer Brief product description
9	<i>Mouse & Keyboard</i>	Currys	£29.99	HP 300 Wireless Keyboard & Mouse Set  • Connected • Ergonomic • Optical • Scroll Brief product description

10	HDMI cables	Currys	£25.49	BELKIN 4K Ultra HD AV10175BT2M-BLK High Speed HDMI Cable  • Suitable for 4K Ultra HD • Up to 18Gbps bandwidth • 2-lane HDMI 2.0 Brief product description
11	USB Cables	Currys	£19.99	ATEN CS22U 2-Port USB VGA Cable Switch - 1.2m  • Compact design • VGA to USB Brief product description

1 2	Wireless adapter	Currys pcpartpicker.com	£29.99 £29.99	TP-LINK Archer T5E Wireless Bluetooth PCI Product code: 532974 ★★★★★ Read 35 customer reviews Ask an owner Sale  
1 3	Microsoft Windows 10 Pro	Currys pcpartpicker.com	£164.99 £162.57	Buy now pay later MICROSOFT Windows 10 Pro (downl  • Lic • Cor • Op - fast • Dow Brief p
T o t a l	Currys – complete unit pcpartpicker.com – complete unit		~~£1,219.40~~ ~~£1,040.94~~	

	(Except Mouse & Keyboard)			
--	---------------------------	--	--	--

[9] [10] [11]

Also below are some screen shots during my search for the HTPC :





Roll over image to zoom in



VIDEO



Roll over image to zoom in

ts › Computer Cases



Cors
Mid-
Panc
Rapi
Spac
Fans

Visit th



Price: 4

Note: T
minimu

New (1

Colour



Brand

Colour

Materi

Hard d
factor

Cooling
metho

Free sh

See n

Netac

Customers who viewed this item also viewed



Corsair CMK16GX4M2D3000C16 Vengeance LPX
16 GB (2 x 8 GB) DDR4 3000 MHz C16 XMP 2
High Performance Desktop Memory Kit, Black

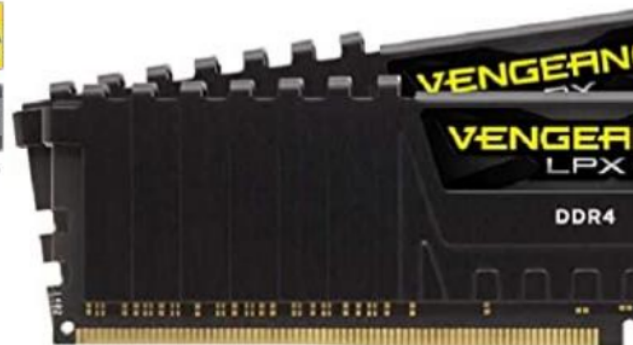
★★★★★ 4,353

£51⁹⁹

Components & Replacement Parts › Memory



2 VIDEOS



-eu.amazon.co.uk/x/c/QoMolDpYeZ9s0nM9Q8clyj4AAAF-Nr3C7wMAAAH5Af0ec_M/http://.../picassoRedirect.htm...

Base Total: **£977.94**

Shipping: **£23.43**

Total: **£1001.37**

[Buy From Amazon UK](#)

Component	Selection	
CPU		Intel Core i5-12600KF 3.7 GHz 10-Core Processor
CPU Cooler		Cooler Master Hyper 212 RGB Black Edition 57.3 CFM CPU Cooler
Motherboard		Gigabyte Z690 UD DDR4 ATX LGA1700 Motherboard
Memory		Corsair Vengeance LPX 16 GB (2 x 8 GB) DDR4-3200 CL16 Memory
	+ Add Additional Memory	
Storage		Samsung 970 Evo Plus 1 TB M.2-2280 NVME Solid State Drive
Storage		Seagate Barracuda Compute 2 TB 3.5" 7200RPM Internal Hard Drive
	+ Add Additional Storage	
Video Card	+ Choose A Video Card	
Case		Corsair 4000D Airflow ATX Mid Tower Case
Power Supply		Corsair RM (2019) 750 W 80+ Gold Certified Fully Modular Power Supply
Operating System		Microsoft Windows 10 Pro OEM 64-bit

6. 4 x USB 3.2 Gen 1 ports

7. 4 x USB 2.0/1.1 ports

8. 1 x RJ-45 port

9. 3 x audio jacks

I/O Controller

1. ITE[®] I/O Controller Chip

H/W Monitoring

1. Voltage detection
2. Temperature detection
3. Fan speed detection
4. Water cooling flow rate detection
5. Fan fail warning
6. Fan speed control

* Whether the fan (pump) speed control function is supported will depend on the fan (pump)

BIOS

1. 1 x 256 Mbit flash
2. Use of licensed AMI UEFI BIOS
3. PnP 1.0a, DMI 2.7, WfM 2.0, SM BIOS 2.7, ACPI 5.0

Unique Features

1. Support for APP Center

* Available applications in APP Center may vary by motherboard model. Supported functions are subject to motherboard specifications.

@BIOS

EasyTune

Fast Boot

Game Boost

ON/OFF Charge

RGB Fusion

Smart Backup

System Information Viewer

2. Support for Q-Flash Plus
3. Support for Q-Flash
4. Support for Xpress Install

1. 8 x USB 2.0/1.1 ports (4 ports on the back panel, 4 ports available through the int

- Internal I/O Connectors

1. 1 x 24-pin ATX main power connector

2. 1 x 8-pin ATX 12V power connector

3. 1 x 4-pin ATX 12V power connector

4. 1 x CPU fan header

5. 1 x water cooling CPU fan header

6. 3 x system fan headers

7. 1 x system fan/water cooling pump header

8. 2 x addressable LED strip headers

9. 2 x RGB LED strip headers

10. 3 x M.2 Socket 3 connectors

11. 6 x SATA 6Gb/s connectors

12. 1 x front panel header

13. 1 x front panel audio header

14. 1 x S/PDIF Out header

15. 1 x USB Type-C[®] header, with USB 3.2 Gen 1 support

16. 1 x USB 3.2 Gen 1 header

17. 2 x USB 2.0/1.1 headers

18. 1 x serial port header

19. 2 x Thunderbolt™ add-in card connectors

20. 1 x Trusted Platform Module header (For the GC-TPM2.0 SPI/GC-TPM2.0 SPI 2.0

21. 1 x reset button

22. 1 x reset jumper

23. 1 x Q-Flash Plus button

24. 1 x Clear CMOS jumper

* All fan headers are subject to support AIO_Pump, Pump and high performance fan w

- Back Panel Connectors

1. 1 x PS/2 keyboard/mouse port

2. 1 x DisplayPort

3. 1 x HDMI port

4. 1 x USB Type-C[®] port, with USB 3.2 Gen 2×2 support

5. 1 x USB 3.2 Gen 2 Type-A port (red)

- LAN

1. Realtek[®] 2.5GbE LAN chip (2.5 Gbps/1 Gbps/100 Mbps)

- Expansion Slots

1. 1 x PCI Express x16 slot, running at x16 (PCIEX16)

* For optimum performance, if only one PCI Express graphics card is to be installed (The PCIEX16 slot conforms to PCI Express 5.0 standard.)

2. 1 x PCI Express x16 slot, running at x4 (PCIEX4)

3. 1 x PCI Express x16 slot, running at x1 (PCIEX1_4)

4. 2 x PCI Express x1 slots

(The PCIEX4 and PCIEX1 slots conform to PCI Express 3.0 standard.)

- Multi-Graphics Technology

1. Support for AMD Quad-GPU CrossFire™ and 2-Way AMD CrossFire™ technologies

- Storage Interface

CPU:

1. 1 x M.2 connector (Socket 3, M key, type 2260/2280/22110 PCIe 4.0 x4/x2 SSD support)

Chipset:

1. 1 x M.2 connector (Socket 3, M key, type 2260/2280 PCIe 4.0 x4/x2 SSD support)

2. 1 x M.2 connector (Socket 3, M key, type 2260/2280 PCIe 4.0 x4/x2 SSD support)

3. 6 x SATA 6Gb/s connectors

Support for RAID 0, RAID 1, RAID 5, and RAID 10

Intel[®] Optane™ Memory Ready

* System acceleration with Intel[®] Optane™ Memory can only be enabled on the M.2 connector

- USB

Chipset:

1. 1 x USB Type-C[®] port on the back panel, with USB 3.2 Gen 2×2 support

2. 1 x USB Type-C[®] port with USB 3.2 Gen 1 support, available through the internal I/O panel

3. 1 x USB 3.2 Gen 2 Type-A ports (red) on the back panel

4. 6 x USB 3.2 Gen 1 ports (4 ports on the back panel, 2 ports available through the internal I/O panel)

Chipset+2 USB 2.0 Hubs:

1. 8 x USB 2.0/1.1 ports (4 ports on the back panel, 4 ports available through the internal I/O panel)

Description

Additional information

Product Reviews

- CPU

1. LGA1700 socket: Support for 12th Generation Intel[®] Core™ i9 processors/Intel
2. L3 cache varies with CPU

(Please refer to "CPU Support List" for more information.)

- Chipset

1. Intel[®] Z690 Express Chipset

- Memory

1. Support for DDR4 5333(O.C.)/DDR4 5133(O.C.)/DDR4 5000(O.C.)/4933(O.C.), 4300(O.C.)/4266(O.C.) / 4133(O.C.) / 4000(O.C.) / 3866(O.C.) / 3800(O.C.) / 3733(O.C.) / 3200 / 3000 / 2933 / 2800 / 2666 / 2400 / 2133 MHz memory modules
2. 4 x DDR DIMM sockets supporting up to 128 GB (32 GB single DIMM capacity)
3. Dual channel memory architecture
4. Support for ECC Un-buffered DIMM 1Rx8/2Rx8 memory modules (operate in non-ECC mode)
5. Support for non-ECC Un-buffered DIMM 1Rx8/2Rx8/1Rx16 memory modules
6. Support for Extreme Memory Profile (XMP) memory modules

(Go to GIGABYTE's website for the latest supported memory speeds and memory modules)

- Onboard Graphics

Integrated Graphics Processor-Intel[®] HD Graphics support:

1. 1 x HDMI port, supporting a maximum resolution of 4096×2160@60 Hz
* Support for HDMI 2.0 version and HDCP 2.3.
2. 1 x DisplayPort, supporting a maximum resolution of 4096×2304@60 Hz
* Support for DisplayPort 1.2 version and HDCP 2.3

(Graphics specifications may vary depending on CPU support.)

- Audio

1. Realtek[®] Audio CODEC
2. High Definition Audio
3. 2/4/5.1/7.1-channel
* To configure 7.1-channel audio, you need to open the audio software and select 7.1-channel setting first. Please visit GIGABYTE's website for details on configuring the audio.
4. Support for S/PDIF Out

- LAN



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By Google	By Google	By Google	By Google

<https://www.gigabyte.com> › Socket 1700

Z690 UD DDR4 (rev. 1.0) Key Features | Motherbo

Z690 UD DDR4 (rev. 1.0) · Supports 12th Gen Intel® Core™ Series Proc Channel Non-ECC Unbuffered **DDR4**, 4 DIMMs · Direct 16+1+2 Digital V with ...

<https://www.gigabyte.com> › Socket 1700

Z690 UD (rev. 1.0) Key Features | Motherboard -

GIGABYTE Z690 Motherboards feature the latest DDR5 architecture capability. The new DDR5 memory technology brings 50% more band

<https://www.gigabyte.com> › Socket 1700

Z690 AORUS MASTER (rev. 1.x) Key Features ..

GIGABYTE Z690 Motherboards feature the latest DDR5 architecture capability. The new DDR5 memory technology brings 50% more band

Also identify a DD 5.1 Amplifier and speaker package. Include a diagram to explain how you would set up the system in terms of positioning, how you would connect the amplifier to the HTPC to produce your audio, and how you would connect the HTPC to your home network.

For this part I think it's a bit complicated for me because I don't feel like this is my area, but I did some research to find the right DD 5.1 Amplifier and speaker package to connect with my HTPC and thought I'd buy the **SONY HT-S40R 5.1 Sound Bar** because it has fewer wires, seems to be easier to connect than other 5.1 amplifiers. As for the process of connecting the parts together, I will be frank with you. I worked hard to find the appropriate method, but I did not reach a specific result. But I think and I may be wrong. It is as follows:

HTPC>HDMI>receiver>HDMI>TV screen. I will be connecting my HTPC to my home network via Wi-Fi.

Below is a picture of the sound system that I am planning to buy:

Buy now
pay later

SONY HT-S40R 5.1 Sound Bar



- 600 W with dialogue enhancement
- 4K pass-through
- Wired subwoofer & rear speakers
- Bluetooth
- HDMI / Optical

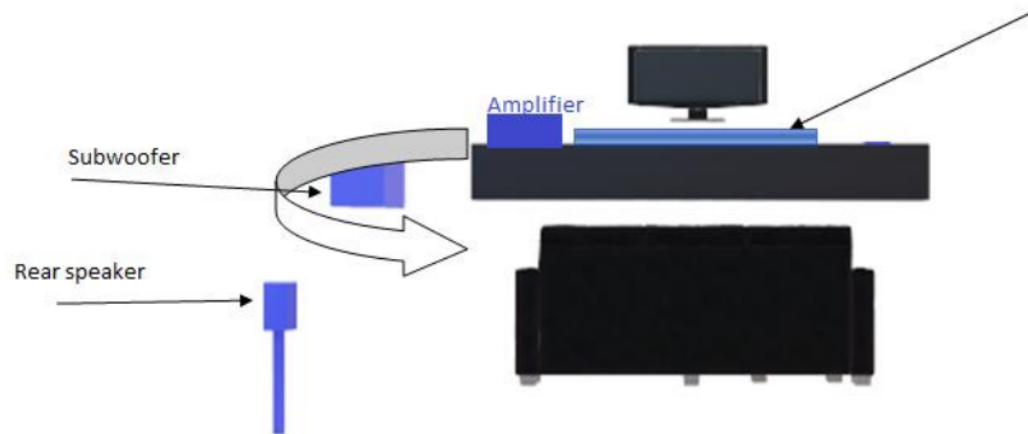
 Pay nothing for 9 months. 24.9% APR representative. (variable)*
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★★★★☆ (31)

[Brief product description](#) ▾

[12]

Below is my diagram to explain how I would set up the system in terms of positioning:



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Assignment

GRADEMARK REPORT

FINAL GRADE

GENERAL COMMENTS

Instructor

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GRADING FORM: GJ_2019

SAMI OMAR MOHAMED**308****ENGAGEMENT WITH LITERATURE**

Some citations/references, however this could have been extended to include more than mainly the parts used. e.g. there are lots of research sites you could have used to explain/work out how DD 5.1 systems are set up etc.

60**KNOWLEDGE AND UNDERSTANDING**

Fairly good K&U demonstrated. Especially for the specs and speeds etc of your system.

70**COGNITIVE AND INTELLECTUAL**

The logic behind your choices and decisions is generally sound.

70**PRACTICAL APPLICATION**



Excellent use of tools to discover your system spec. HTPC spec seems sensible given your justifications. Connection to the speakers might be the weakest part here - more research would have sorted this out!

68

TRANSFERABLE SKILLS



The report as a whole is very sloppily laid out! You should have a neat, professional cover page with your name, student number and title etc. You should number the sections in the 1.1 1.2 Style, and have a table of contents at the start. The tables and some of the images are badly formatted. You should avoid using the "I" first person style for University assignments like these.

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