

WINDOWS COMMAND PROMPT

(Intermediate)

MS-DOS was the main command-line interface operating system for IBM PC compatible personal computers during the 1980s.

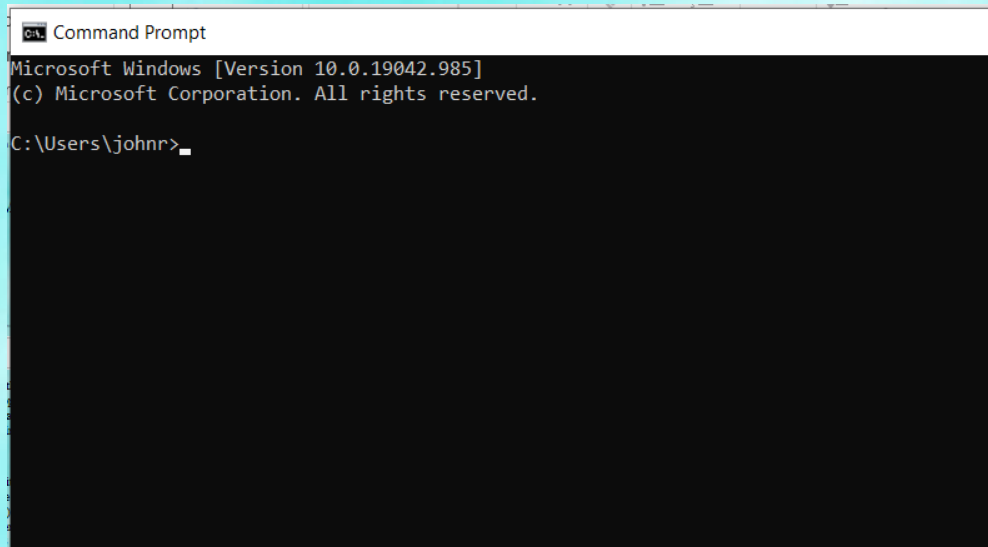
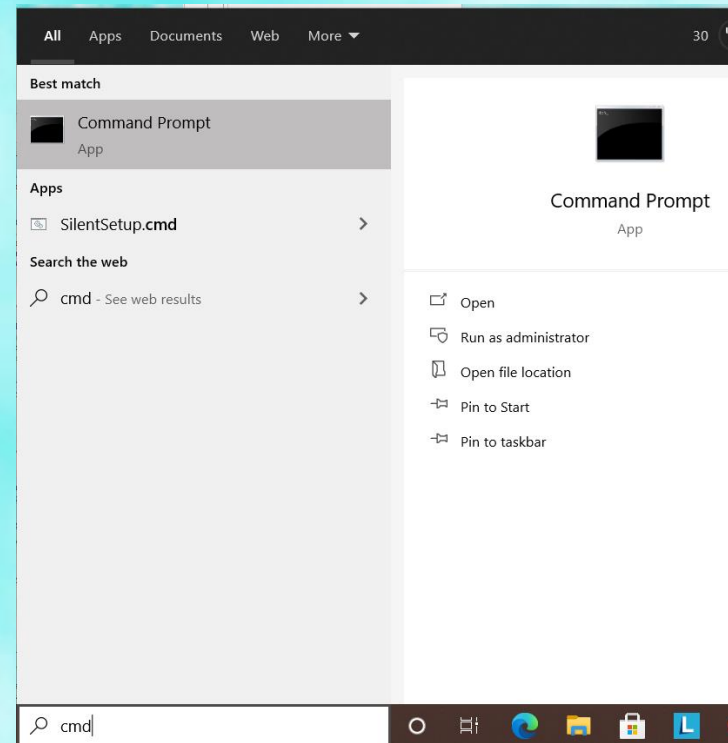


By the 1990's it had been replaced by the Graphical user interface (GUI) WINDOWS operating system, of which Windows 10 is the latest.



However a version of MS-DOS still exists within the WINDOWS operating system as the Command Prompt and can still be very useful.

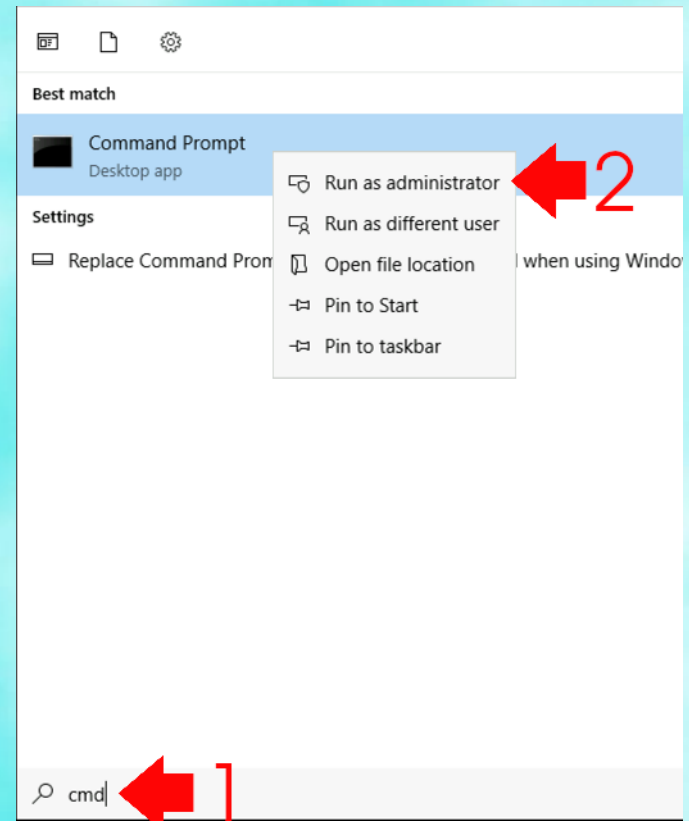
The Command Prompt is accessed using `cmd`



By default it opens in your **c:\users\[username]** folder

Sometimes **cmd** needs to be run in Administrator mode.

Right click on “Command Prompt” and select “Run as administrator”



For more information on all Command Prompts
and their options
got to:

<https://ss64.com/nt/>

Commands are not case sensitive

Navigation

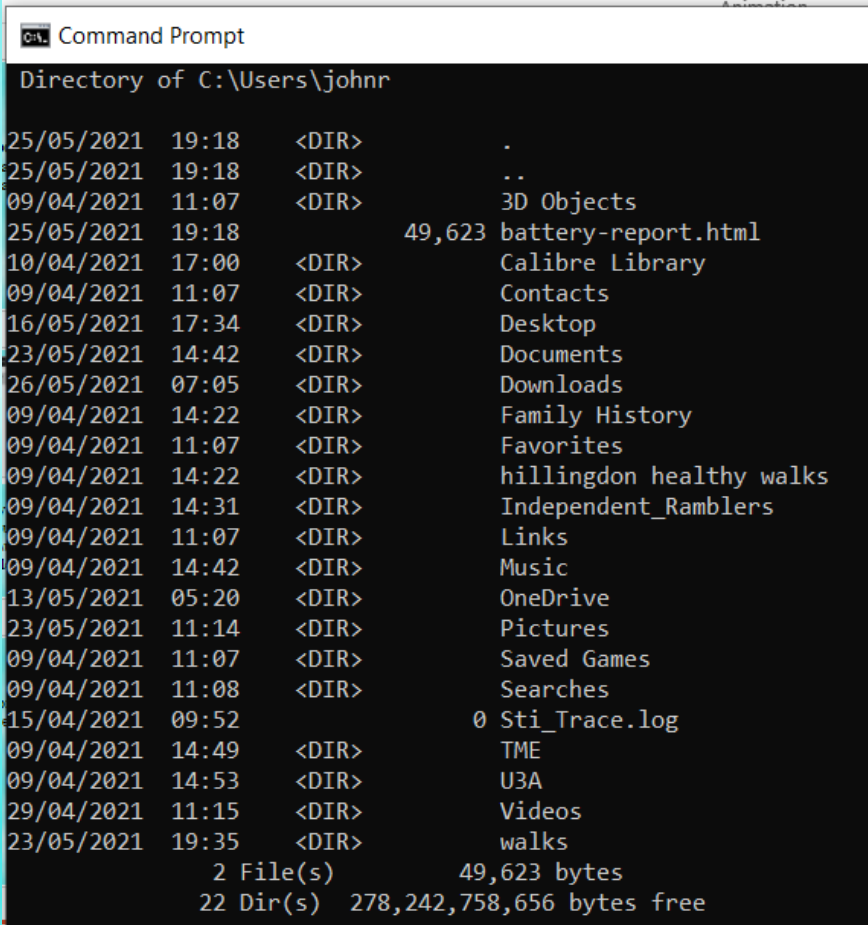
Navigate through the folders of your hard drive by typing the *change directory* command **cd**

Such as: **cd c:\users**

List Files in Directory/Folder

List the files in a folder by using the *Directory* Command prompt
dir

To list the files in sub folders as well use the
/s option
dir /s



```
CA: Command Prompt
Directory of C:\Users\johnr

25/05/2021  19:18    <DIR>          .
25/05/2021  19:18    <DIR>          ..
09/04/2021  11:07    <DIR>          3D Objects
25/05/2021  19:18             49,623 battery-report.html
10/04/2021  17:00    <DIR>          Calibre Library
09/04/2021  11:07    <DIR>          Contacts
16/05/2021  17:34    <DIR>          Desktop
23/05/2021  14:42    <DIR>          Documents
26/05/2021  07:05    <DIR>          Downloads
09/04/2021  14:22    <DIR>          Family History
09/04/2021  11:07    <DIR>          Favorites
09/04/2021  14:22    <DIR>          hillingdon healthy walks
09/04/2021  14:31    <DIR>          Independent_Ramblers
09/04/2021  11:07    <DIR>          Links
09/04/2021  14:42    <DIR>          Music
13/05/2021  05:20    <DIR>          OneDrive
23/05/2021  11:14    <DIR>          Pictures
09/04/2021  11:07    <DIR>          Saved Games
09/04/2021  11:08    <DIR>          Searches
15/04/2021  09:52             0 Sti_Trace.log
09/04/2021  14:49    <DIR>          TME
09/04/2021  14:53    <DIR>          U3A
29/04/2021  11:15    <DIR>          Videos
23/05/2021  19:35    <DIR>          walks

                2 File(s)             49,623 bytes
                22 Dir(s)  278,242,758,656 bytes free
```

CMD Command Options

Nearly all Commands allow options to vary the result of the Command

For **dir**:

To list the files in sub folders as well as the main directory use the /s option

dir /s

Copying and Moving Files

It is easier to do this using the Windows File Explorer but it can also be done by using the Command prompts **copy** and **move**.

To copy the file myphoto.jpg from the current folder to folder c:\photobackup, you would enter:

```
copy myphoto.jpg c:\photobackup
```

To copy all jpg files in the current folder to folder c:\photobackup, you can use a wildcard “*” and would enter:

copy *.jpg c:\photobackup

You can also use a question mark to represent individual characters, thus to copy all Word documents starting with “letter” followed by one extra character (letter1, letter2....):

copy letter?.txt c:

Files can be deleted using the *Delete* Command prompt **del**

del c:\photobackup\me.jpg

del also accepts the wildcard “*”

View a map of your folders

Use Command prompt
tree

```
Command Prompt
C:\Users\johnr>tree
Folder PATH listing for volume Yoga
Volume serial number is 8CE9-746F
C:..
|-- 3D Objects
|-- Calibre Library
|   |-- John Schember
|   |   |-- Quick Start Guide (1)
|   |-- Unknown
|   |   |-- B00F4F0E3Y EBOOK (6)
|   |   |-- CR!CDH0HD5NC56P1BWVVSHE18DKYFS3.azw (7)
|-- Contacts
|-- Desktop
|   |-- Android
|   |-- Internet
|   |   |-- Browsers
|   |   |   |-- Tor Browser
|   |   |   |-- Browser
|   |   |       |-- browser
|   |   |       |   |-- features
|   |   |       |   |-- VisualElements
|   |   |       |-- defaults
|   |   |       |   |-- pref
|   |   |       |-- fonts
|   |   |       |-- TorBrowser
|   |   |           |-- Data
|   |   |               |-- Browser
|   |   |                   |-- Caches
|   |   |                       |-- profile.default
|   |   |                           |-- cache2
|   |   |                               |-- doomed
|   |   |                                   |-- entries
|   |   |                                       |-- safebrowsing
|   |   |                                           |-- startupCache
|   |   |                                               |-- thumbnails
|   |   |               |-- Mozilla
|   |   |                   |-- Extensions
|   |   |                       |-- SystemExtensionsDev
|   |   |                   |-- profile.default
|   |   |                       |-- bookmarkbackups
|   |   |                           |-- browser-extension-data
|   |   |                               |-- https-everywhere-eff@eff.org
|   |   |                                   |-- {73a6fe31-595d-460b-a920-fcc0f8843232}
|   |   |                           |-- datareporting
|   |   |                               |-- extensions
|   |   |                                   |-- security_state
```

Redirect Command Output to a File

To do this use the operator “>”

```
dir c:\users > c:\output.txt
```

File Commands

File Commands generally work only on TEXT files.

If you want to process information from other types of file such as WORD documents.

1. Open the file in the correct software.
2. Select all the data and copy
3. Open Notepad
4. Past the copied data
5. Save the text file

To view contents of file

Type c:\output.txt

To sort a file redirecting output

Sort c:\input.txt > c:\output.txt

To search for a text string in a text file

Findstr "Name" Address.txt

Search for "granny" OR "Smith" in the files
Apples.txt or Pears.txt

Findstr "granny Smith" Apples.txt Pears.txt

Search for "granny Smith" in Contacts.txt

Findstr /C:"granny Smith" Contacts.txt

Pipe Command output to another Command

To do this use the operator “|”

Pipe the output of a DIR command into SORT

DIR /b “c:\demo\” | SORT

/b Bare format (no heading, file sizes or summary)

Pipe the output from DIR into SORT, reverse the list and save into a file

DIR /b | SORT /r /o demo.txt

/R[EVERSE] Reverse the sort order (Z to A, 9 to 0)

/O[UTPUT] [*drive:*][*pathname*]

Find Files

Find files in a folder by using the **Where** Command

List all the .CSV files in both the work and play folders:

WHERE c:\work\;c:\Play\:*.*.csv

Create a Virtual Drive

WINDOWS only recognises Partitions and physical drives as separate drives.

Using the *Substitute* Command prompt **subst**, you can change any folder into a virtual drive:

```
subst f: c:\users\[username]\Pictures
```

To remove a virtual drive use the /d switch

```
subst f: /d
```

File Associations

File Associations dictate what program your file will open in. Thus a .doc or .docx file will usually open in MS WORD.

To see the current associations use the Command prompt **assoc**

```
.dll=dllfile
.doc=Word.Document.8
.dochtml=wordhtmlfile
.docm=Word.DocumentMacroEnabled.12
.docmhtml=wordmhtmlfile
.docx=Word.Document.12
.docxml=wordxmlfile
.dot=Word.Template.8
.dohtml=wordhtmltemplate
.dotm=Word.TemplateMacroEnabled.12
.dotx=Word.Template.12
.dqy=dqyfile
.drc=VLC.drc
```

Check if file is a duplicate

If you have two files which you think are duplicates then use the *File Compare* Command prompt **fc** to check.

```
fc c:\users\[username]\test.txt c:\test2.txt
```

Encrypt files

(not available on Windows 10 Home)

To encrypt a folder so that the files can only be accessed using your login

cipher /e c:\vault

(replace c:\vault with the required folder)

To decrypt use the /d switch:

cipher /d c:\vault

View running tasks and related services

tasklist -svc

```
Administrator: Command Prompt

C:\Windows\system32>tasklist -svc

Image Name                      PID Services
=====
System Idle Process             0 N/A
System                          4 N/A
Registry                        148 N/A
smss.exe                        596 N/A
csrss.exe                       940 N/A
wininit.exe                     644 N/A
services.exe                   724 N/A
lsass.exe                       1040 KeyIso, SamSs, VaultSvc
svchost.exe                     1156 BrokerInfrastructure, DcomLaunch, PlugPlay,
                                   Power, SystemEventsBroker
fontdrvhost.exe                 1184 N/A
WUDFHost.exe                    1232 N/A
svchost.exe                     1292 RpcEptMapper, RpcSs
svchost.exe                     1340 LSM
svchost.exe                     1596 nsi
svchost.exe                     1632 BTAGService
svchost.exe                     1640 BthAvctpSvc
svchost.exe                     1668 bthserv
svchost.exe                     1748 Wcmsvc
svchost.exe                     1832 Schedule
svchost.exe                     1856 NcbService
svchost.exe                     1864 ProfSvc
svchost.exe                     1872 TimeBrokerSvc
svchost.exe                     1096 Dhcp
svchost.exe                     1524 CoreMessagingRegistrar
```

View running Window Apps

tasklist -apps

C:\Windows\system32>tasklist -apps

C:\Windows\system32>tasklist -apps

Image Name	PID	Mem Usage	Package Name
StartMenuExperienceHost.exe (App)	19148	90,316 K	Microsoft.Windows.StartMenuExperienceHost_10.0.190
RuntimeBroker.exe (runtimebroker07f4358a809ac99a64	20440	25,636 K	Microsoft.Windows.StartMenuExperienceHost_10.0.190
SearchApp.exe (CortanaUI)	25136	243,228 K	Microsoft.Windows.Search_1.14.1.19041_neutral_neut
RuntimeBroker.exe (runtimebroker07f4358a809ac99a64	25740	42,488 K	Microsoft.Windows.Search_1.14.1.19041_neutral_neut
YourPhone.exe (App)	24492	15,488 K	Microsoft>YourPhone_1.21042.110.0_x64__8wekyb3d8bb
RuntimeBroker.exe (runtimebroker07f4358a809ac99a64	23976	20,096 K	Microsoft>YourPhone_1.21042.110.0_x64__8wekyb3d8bb
utility.exe (LenovoUtility)	2296	28,360 K	E0469640.LenovoUtility_3.2.1.0_x64__5grkq8ppsgwt4
IGCCTray.exe (App)	25516	70,152 K	AppUp.IntelGraphicsExperience_1.100.3325.0_x64__8j
IGCC.exe (App)	25976	44,968 K	AppUp.IntelGraphicsExperience_1.100.3325.0_x64__8j
WinStore.App.exe (App)	4648	1,840 K	Microsoft.WindowsStore_12104.1001.1.0_x64__8wekyb3
RuntimeBroker.exe (runtimebroker07f4358a809ac99a64	23696	23,876 K	Microsoft.WindowsStore_12104.1001.1.0_x64__8wekyb3
TextInputHost.exe (InputApp)	19908	48,376 K	MicrosoftWindows.Client.CBS_120.2212.2020.0_x64__c
Microsoft.Photos.exe (App)	14332	1,840 K	Microsoft.Windows.Photos_2020.20120.4004.0_x64__8w
RuntimeBroker.exe (runtimebroker07f4358a809ac99a64	15600	22,420 K	Microsoft.Windows.Photos_2020.20120.4004.0_x64__8w
ShellExperienceHost.exe (App)	24560	65,192 K	Microsoft.Windows.ShellExperienceHost_10.0.19041.9
RuntimeBroker.exe (runtimebroker07f4358a809ac99a64	4608	17,316 K	Microsoft.Windows.ShellExperienceHost_10.0.19041.9

C:\Windows\system32>

To stop an App you need to use **taskkill**
taskkill /PID 14332 /f

SOLVE PROBLEMS USING CMD

**Your Windows computer keep crashing or
appears to not be working correctly.**

Check and fix a corrupt Windows Operating System

cmd (run as Administrator)

Check for system file corruption with the
System File Checker Command prompt:

sfc /scannow

To repair:

DISM /Online /Cleanup-Image /RestoreHealth

While the SFC command checks the integrity of system files, you can use the *Check Disk* Command prompt **chkdsk** to scan an entire drive.

The /f switch will automatically Fix file system errors on the disk.

cmd (run as Administrator)

chkdsk /f C:

Network Problems?

Find out your computer's name on the network

Use Command prompt **hostname**

Display details of your network

Use the *Configure IP* Command prompt
ipconfig /all

Check if connected to internet

Use *Test Network Connection* Command
prompt **ping** to connect to a known website

ping www.google.co.uk

```
C:\Users\johnr>ping www.google.co.uk

Pinging www.google.co.uk [2a00:1450:4009:823::2003] with 32 bytes of data:
Reply from 2a00:1450:4009:823::2003: time=7ms
Reply from 2a00:1450:4009:823::2003: time=6ms
Reply from 2a00:1450:4009:823::2003: time=6ms
Reply from 2a00:1450:4009:823::2003: time=6ms

Ping statistics for 2a00:1450:4009:823::2003:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 6ms, Maximum = 7ms, Average = 6ms
```

Reveal which programs are connected to the web

cmd (run as Administrator)

Now use the *Display
Networking Statistics*
Command prompt:

netstat -b

```
Administrator: Command Prompt
C:\Windows\system32>netstat -b

Active Connections

Proto Local Address          Foreign Address         State
TCP    127.0.0.1:27275         LAPTOP-BNA3A64M:58209  TIME_WAIT
TCP    127.0.0.1:27275         LAPTOP-BNA3A64M:58210  TIME_WAIT
TCP    127.0.0.1:27275         LAPTOP-BNA3A64M:58211  TIME_WAIT
TCP    127.0.0.1:55855         LAPTOP-BNA3A64M:55856  ESTABLISHED
[firefox.exe]
TCP    127.0.0.1:55856         LAPTOP-BNA3A64M:55855  ESTABLISHED
[firefox.exe]
TCP    127.0.0.1:55857         LAPTOP-BNA3A64M:55858  ESTABLISHED
[firefox.exe]
TCP    127.0.0.1:55858         LAPTOP-BNA3A64M:55857  ESTABLISHED
[firefox.exe]
TCP    127.0.0.1:55863         LAPTOP-BNA3A64M:55864  ESTABLISHED
[firefox.exe]
TCP    127.0.0.1:55864         LAPTOP-BNA3A64M:55863  ESTABLISHED
[firefox.exe]
TCP    127.0.0.1:55870         LAPTOP-BNA3A64M:55871  ESTABLISHED
[firefox.exe]
TCP    127.0.0.1:55871         LAPTOP-BNA3A64M:55870  ESTABLISHED
[firefox.exe]
TCP    127.0.0.1:61734         LAPTOP-BNA3A64M:61735  ESTABLISHED
[firefox.exe]
TCP    127.0.0.1:61735         LAPTOP-BNA3A64M:61734  ESTABLISHED
[firefox.exe]
TCP    192.168.1.180:49447     20.54.37.73:https      ESTABLISHED
WpnService
```

Wi-fi not be working correctly or slow

Check signal strength:
netsh wlan show interfaces

If < 50% try moving your
router to another position.

```
C:\Users\johnr>netsh wlan show interfaces

There is 1 interface on the system:

Name                           : Wi-Fi
Description                     : Intel(R) Wi-Fi 6 AX201 160MHz
GUID                            : f90f42dc-e55c-4b01-86ea-6239b4a23e9d
Physical address                : 98:8d:46:c4:0d:88
State                           : connected
SSID                            : BT-Z2A33P
BSSID                           : e4:75:dc:e9:6c:66
Network type                    : Infrastructure
Radio type                      : 802.11ac
Authentication                  : WPA2-Personal
Cipher                          : CCMP
Connection mode                 : Auto Connect
Channel                         : 36
Receive rate (Mbps)            : 780
Transmit rate (Mbps)           : 780
Signal                          : 80%
Profile                         : BT-Z2A33P
```

If signal strength is not the problem.

Try resetting the Winsock Settings (if they get corrupted you will loose access to your network):

netsh winsock reset

Reset your computer's IP Address (if two devices have the same IP address, both will fail). To release:

ipconfig /release

To renew:

ipconfig /renew

Also worth purging your DNS history:

ipconfig /flushdns

If your wi-fi is still slow.

netsh int tcp show global

“Receive Windows
Auto-Tuning Level”
should be set to normal

```
C:\Windows\system32>netsh int tcp show global
Querying active state...

TCP Global Parameters
-----
Receive-Side Scaling State           : enabled
Receive Window Auto-Tuning Level    : normal
Add-On Congestion Control Provider  : default
ECN Capability                       : disabled
RFC 1323 Timestamps                 : disabled
Initial RTO                          : 1000
Receive Segment Coalescing State     : enabled
Non Sack Rtt Resiliency              : disabled
Max SYN Retransmissions              : 4
Fast Open                           : enabled
Fast Open Fallback                   : enabled
HyStart                             : enabled
Proportional Rate Reduction          : enabled
Pacing Profile                       : off
```

If “Receive Windows Auto-Tuning Level” is not set to normal

netsh int tcp set global autotuninglevel=normal

netsh interface tcp show heuristics

“Windows Scaling
heuristics” should be
set to disabled

```
C:\Windows\system32>netsh interface tcp show heuristics
TCP Window Scaling heuristics Parameters
-----
Window Scaling heuristics           : disabled
Qualifying Destination Threshold    : 3
Profile type unknown                 : normal
Profile type public                  : normal
Profile type private                 : normal
Profile type domain                  : normal
```

If “Windows Scaling heuristics” is set to enabled

netsh int tcp set heuristics disabled

Restart your computer and test your wi-fi

Forgotten your Wi-fi password:

netsh wlan show profile

This will show
your Wifi-name

```
C:\Windows\system32>netsh wlan show profile

Profiles on interface Wi-Fi:

Group policy profiles (read only)
-----
    <None>

User profiles
-----
    All User Profile      : BT-Z2A33P
```

netsh wlan show profile [WIFI-name] key=clear

The Wi-fi password
is shown against
“Key Content” under
“Security settings”

```
Administrator: Command Prompt

-----
Version                : 1
Type                   : Wireless LAN
Name                   : BT-Z2A33P
Control options        :
    Connection mode     : Connect automatically
    Network broadcast    : Connect only if this network is broadcasting
    AutoSwitch          : Do not switch to other networks
    MAC Randomization    : Disabled
Connectivity settings
-----
Number of SSIDs        : 1
SSID name              : "BT-Z2A33P"
Network type           : Infrastructure
Radio type             : [ Any Radio Type ]
Vendor extension       : Not present
Security settings
-----
Authentication         : WPA2-Personal
Cipher                 : CCMP
Authentication         : WPA2-Personal
Cipher                 : GCMP
Security key           : Present
Key Content             : XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Cost settings
-----
Cost                   : Unrestricted
Congested              : No
Approaching Data Limit : No
Over Data Limit        : No
Roaming                : No
Cost Source            : Default

C:\Windows\system32>
```

Use the Command prompt: **systeminfo**

```
C:\Users\johnr>systeminfo
```

Host Name:	LAPTOP-BNA3A64M
OS Name:	Microsoft Windows 10 Home
OS Version:	10.0.19042 N/A Build 19042
OS Manufacturer:	Microsoft Corporation
OS Configuration:	Standalone Workstation
OS Build Type:	Multiprocessor Free
Registered Owner:	johrmartin@btinternet.com
Registered Organization:	N/A
Product ID:	00325-81938-36458-AAOEM
Original Install Date:	10/04/2021, 01:59:40
System Boot Time:	18/05/2021, 13:53:52
System Manufacturer:	LENOVO
System Model:	82DS
System Type:	x64-based PC
Processor(s):	1 Processor(s) Installed. [01]: Intel64 Family 6 Model 165 Stepping 2 GenuineIntel ~2592 Mhz
BIOS Version:	LENOVO DNCN28WW, 21/12/2020
Windows Directory:	C:\Windows
System Directory:	C:\Windows\system32
Boot Device:	\Device\HarddiskVolume1
System Locale:	en-us;English (United States)
Input Locale:	en-gb;English (United Kingdom)
Time Zone:	(UTC+00:00) Dublin, Edinburgh, Lisbon, London
Total Physical Memory:	16,186 MB
Available Physical Memory:	9,106 MB
Virtual Memory: Max Size:	18,618 MB
Virtual Memory: Available:	8,053 MB
Virtual Memory: In Use:	10,565 MB
Page File Location(s):	C:\pagefile.sys
Domain:	WORKGROUP
Lgion Server:	\\LAPTOP-BNA3A64M
Hotfix(s):	12 Hotfix(s) Installed. [01]: KB4601554 [02]: KB4534170 [03]: KB4537759 [04]: KB4542335 [05]: KB4545706 [06]: KB4562830 [07]: KB4566785 [08]: KB4577586 [09]: KB4580325 [10]: KB4589212 [11]: KB5003173 [12]: KB5003242
Network Card(s):	2 NIC(s) Installed. [01]: Intel(R) Wi-Fi 6 AX201 160MHz

Check your laptops battery.

Use the *Configure Power Settings* Command prompt:

powercfg /batteryreport

Open the file that
has been created

Battery report

COMPUTER NAME	LAPTOP-BNA3A64M
SYSTEM PRODUCT NAME	LENOVO 82DS
BIOS	DNCN29WW 05/26/2021
OS BUILD	19041.1.amd64fre.vb_release.191206-1406
PLATFORM ROLE	Mobile
CONNECTED STANDBY	Supported
REPORT TIME	2021-10-27 09:09:02

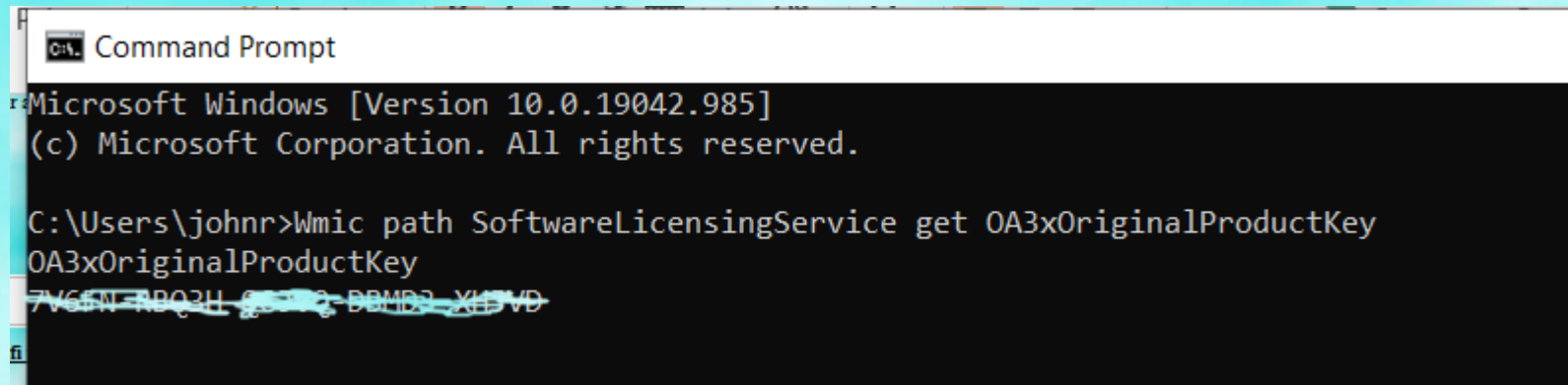
Installed batteries

Information about each currently installed battery

BATTERY 1	
NAME	L19C4PF2
MANUFACTURER	Celxpert
SERIAL NUMBER	1359
CHEMISTRY	LiP
DESIGN CAPACITY	70,000 mWh
FULL CHARGE CAPACITY	65,010 mWh
CYCLE COUNT	13

Find your Windows product key.

**Wmic path SoftwareLicensingService get
OA3xOriginalProductKey**



```
Command Prompt
Microsoft Windows [Version 10.0.19042.985]
(c) Microsoft Corporation. All rights reserved.

C:\Users\johnr>Wmic path SoftwareLicensingService get OA3xOriginalProductKey
OA3xOriginalProductKey
7V65N-ABQ3H-6-DBMD3-XHFD
```

Change a forgotten Windows password.

If someone who uses your computer forgets their Windows login, then you can reset the password:

cmd (run as Administrator)

net user Steve newpass

(where Steve is the username and newpass the new password)

For more information on all Command Prompts
and their options
got to:

<https://ss64.com/nt/>