

# Computer sciences

Smart skills  
(Hardware management & network applications)

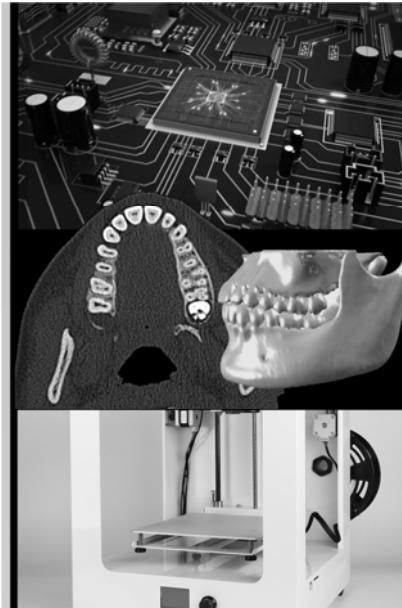
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## Smart Skills

- Hardware information: Windows device manager, CPU-Z
- Disk management: disk partition/format, de-fragmentation
- Graphics card management: GPU-Z, driver update
- Performance monitoring: Task manager, resource monitor
- Remote desktop/control: remote desktop connection (fixed IP), chrome remote desktop

Course video and handouts  
[http://CFLU.lab.nycu.edu.tw/CFLU\\_course\\_CompSci.html](http://CFLU.lab.nycu.edu.tw/CFLU_course_CompSci.html)

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## Hardware Information

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## Windows Device Manager – Driver(驅動程式)

- All connected hardware devices require a set of working commands to function (software ⇔ hardware).
  - Keyboard, Mouse
  - Screens
  - Printers
  - Graphic cards
  - Webcam

Install correct and up-to-date device drivers!

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## Driver Booster (Keep Drivers Up-to-date)

<https://www.iobit.com/en/driver-booster.php>



## SPECIFICATION OF CPU

- 型號 Name
- 運作頻率/時脈 Clock
- 核心代號 Code Name
- 封裝 Package
- 快取記憶體 Cache Memory
- 核心數 Cores
- 執行緒數 Threads
- 製程 Technology
- 內建繪圖核心 Graphics core
- 最高功耗 Max TDP



# Disk Management

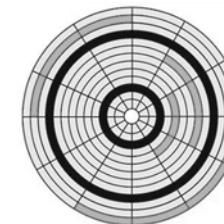
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## Disk and File Management

- Increase the performance of the operating system in managing and accessing files.

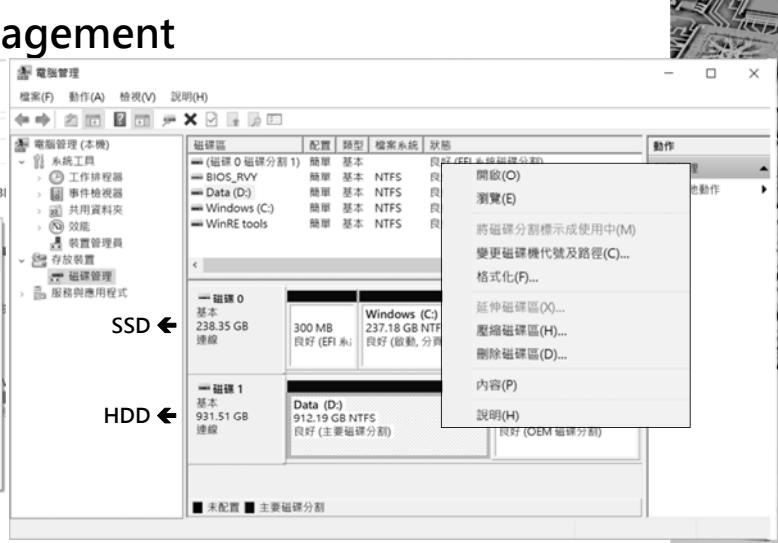


The same file data may be stored in discontinuous sectors.

Tools	Functions
檔案管理員	Display file lists and folders; copy, name, move, delete, and sort files.
程式集(解除安裝程式)	Remove a specific program and its associated items
磁碟分割	Create or delete partitions of disk for file storage
磁碟清理	Search and remove unwanted files
磁碟重組	Reorganize files and unused space to access data more quickly
備份和還原	Copy the contents of the storage media to other storage locations

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## Disk Partition



- Conventional partition, MBR, only support hard drive with 2TB
- Use GPT partition for a larger capacity hard drive.

## Disk Partition

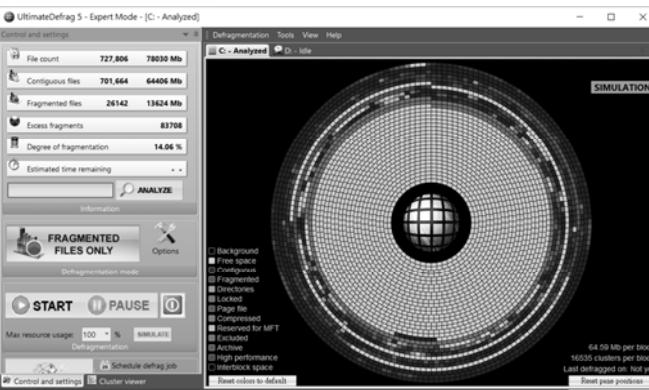


## Disk Defragmenter - Increase Data Access Performance



## ULTIMATEDEGRAG 6

<http://www.disktrix.com/index.php>



Free for 30 day trial

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## WINDOWS 10



## Should I Defrag My SSD?

- The short answer is this: you don't have to defrag an SSD.
- Mechanical drives have a relatively long seek time of approximately 15ms, so every time a file is fragmented you lose 15ms finding the next one.
- However, this isn't an issue with SSDs because the seek time are about 0.1ms. There is no performance advantage to defragging an SSD.
- At best it won't do anything, at worst it does nothing for your performance and you will use up write cycles of SSD.

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## Graphics Card Management

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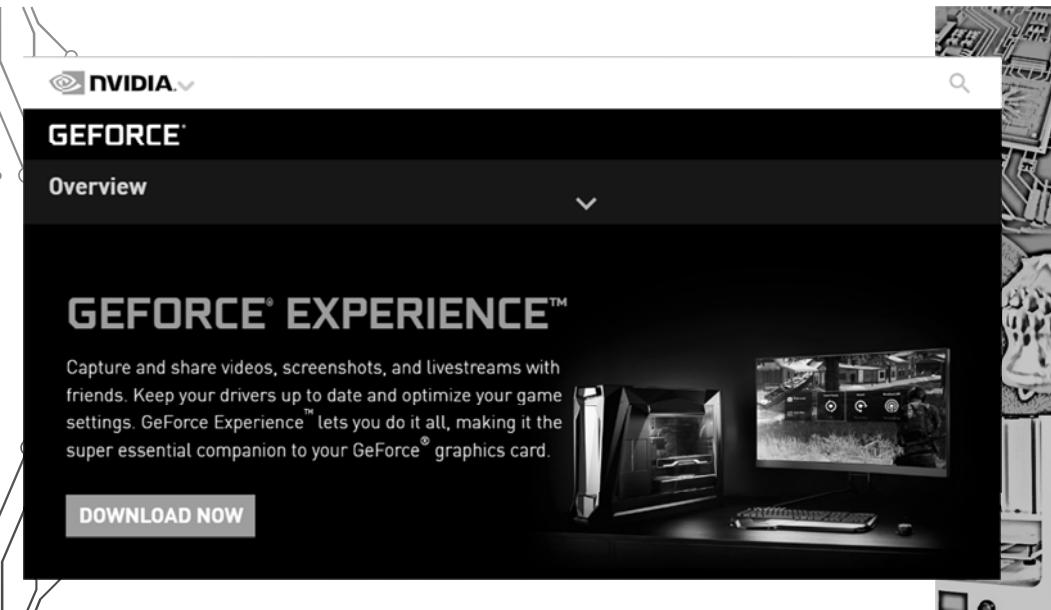


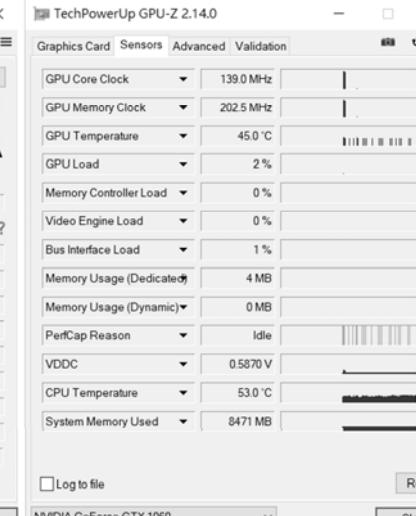
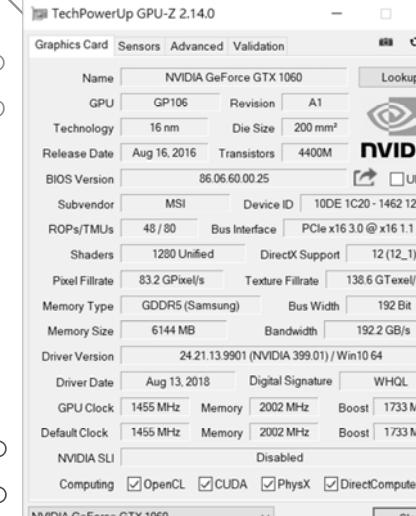
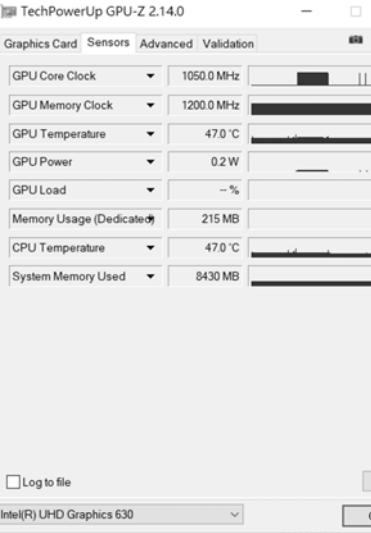
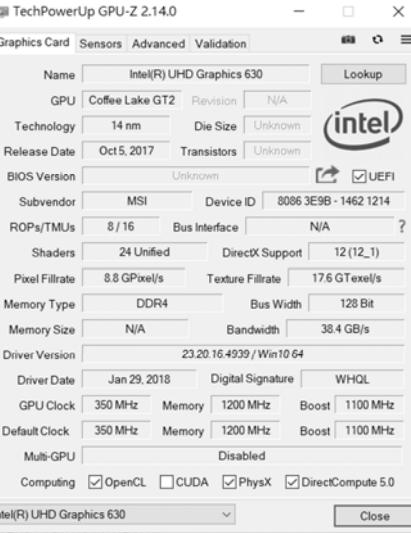
## Graphics Card Drivers

- Recommend to keep up-to-date drivers
- Windows updates may cause incompatible driver issues
- NVIDIA GEFORCE Experience
- GPU-Z <http://www.techpowerup.com/gpuz>

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## Performance Monitoring

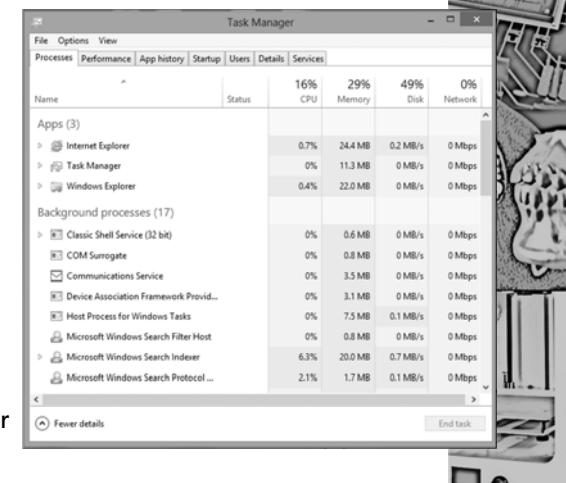
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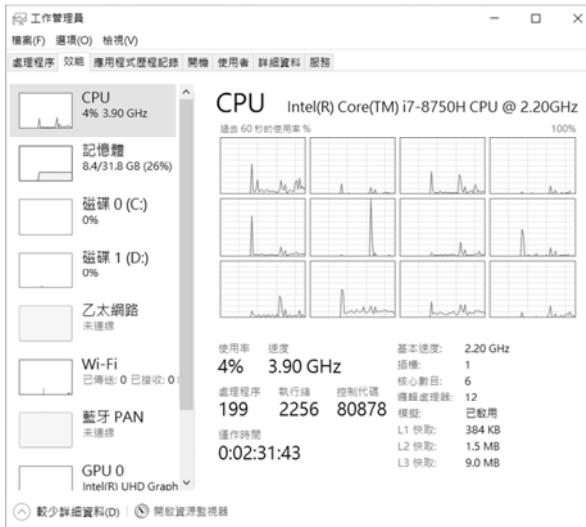
## Program Management & Coordination

- Multi-tasking OS
- Foreground programs
  - Currently used
- Background programs
  - Partially or fully hidden
- Background processes

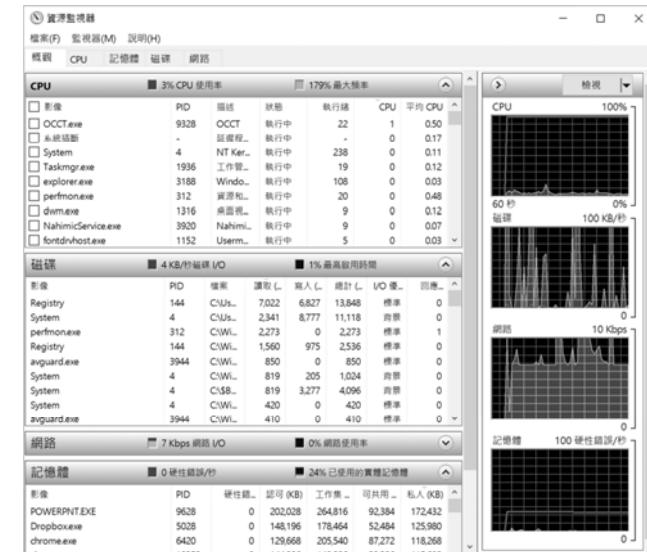
### Task Manager



## Performance Monitoring



## Resource Monitor



## Remote Desktop/Control

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## Chrome Remote Desktop

- https://remotedesktop.google.com/



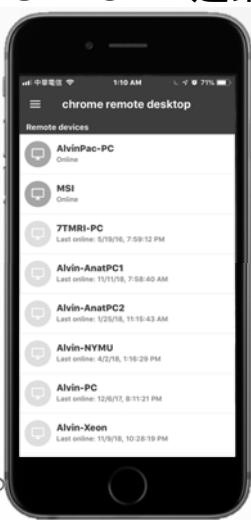
Chrome 遠端桌面

我的電腦  
AlvinPac-PC  
7TMRI-PC (上次上線時間: 2016/5/19)  
Alvin-Ana1PC1 (上次上線時間: 2018/11/11)  
Alvin-Ana1PC2 (上次上線時間: 2018/1/25)  
Alvin-NYMU (上次上線時間: 2018/4/2)  
Alvin-PC (上次上線時間: 2017/12/6)  
Alvin-Xeon (上次上線時間: 2018/11/9)

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## CHROME遠端桌面

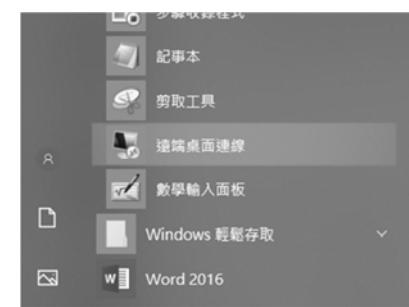


## Mobile Phone App



## Windows Remote Desktop Connection 遠端桌面連線

- 附屬應用程式 → 遠端桌面連線



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THE END

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