

CDX平台之虛擬機器安裝及啟用RDP、VNC、SSH操作手冊

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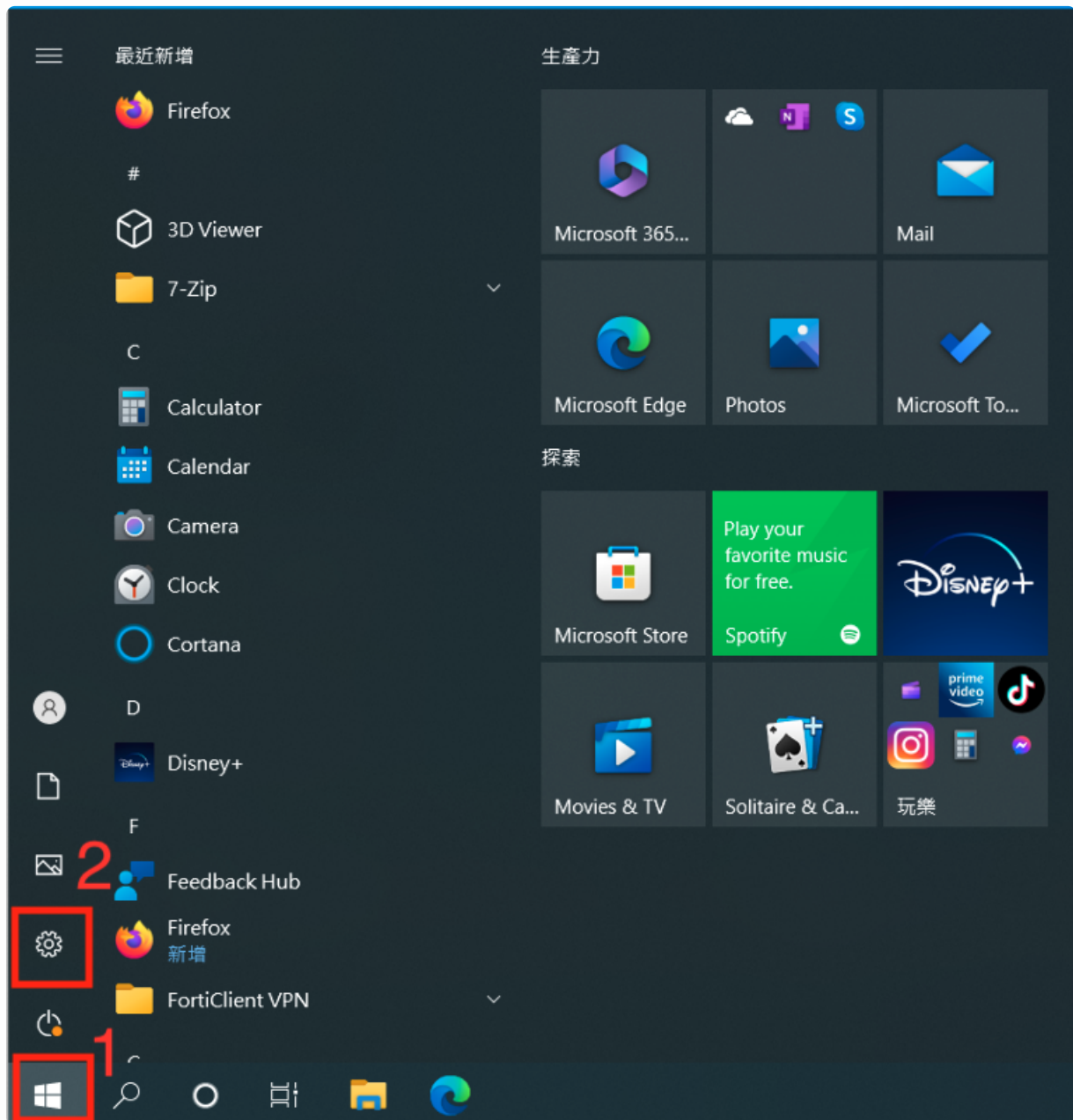
Windows 10啟用遠端桌面連線(Remote Desktop Protocol,

RDP)

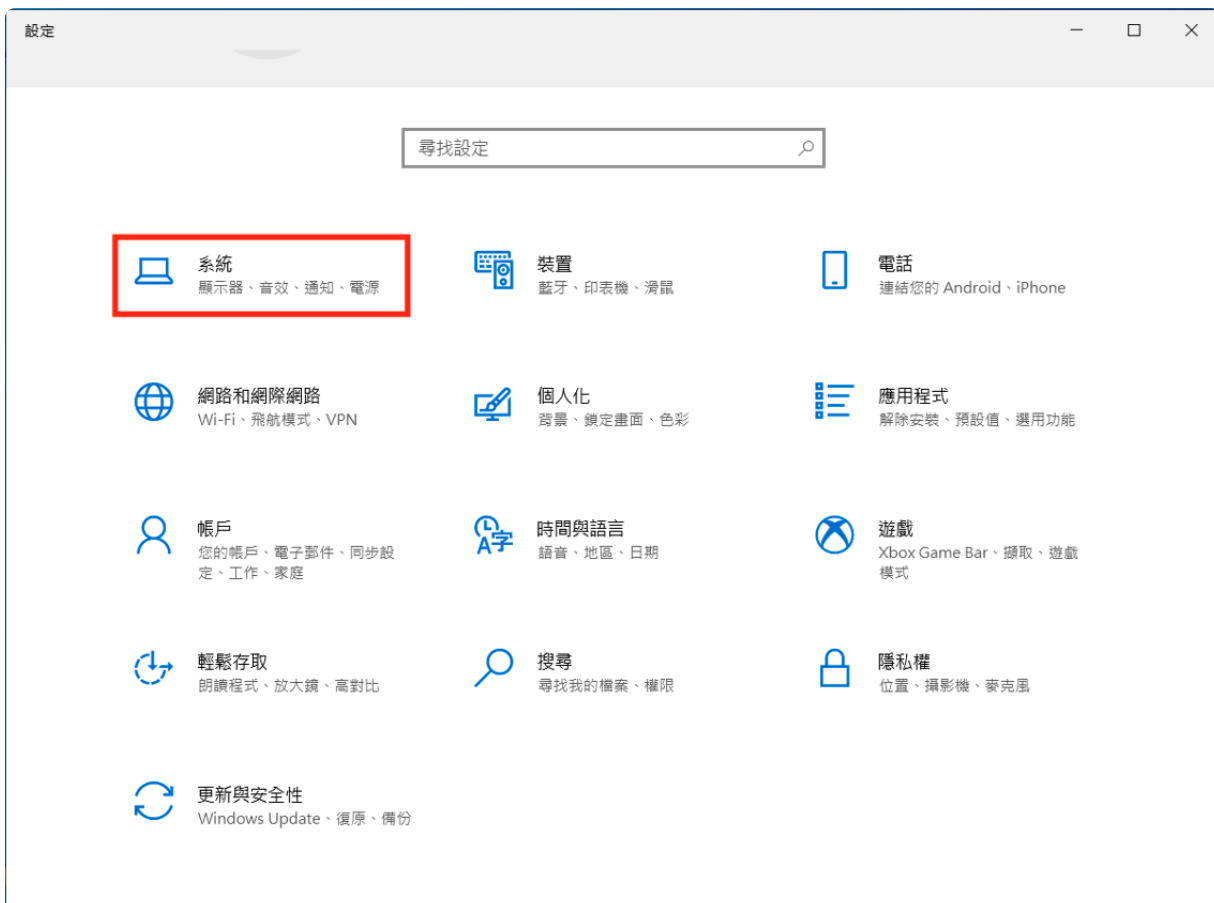
Windows系統內建遠端桌面連線功能，不需再另外安裝，不過預設是關閉的，自行打開即可

👉 步驟1: 開啟windows設定

在畫面左下角找到「開始」 -> 「設定」



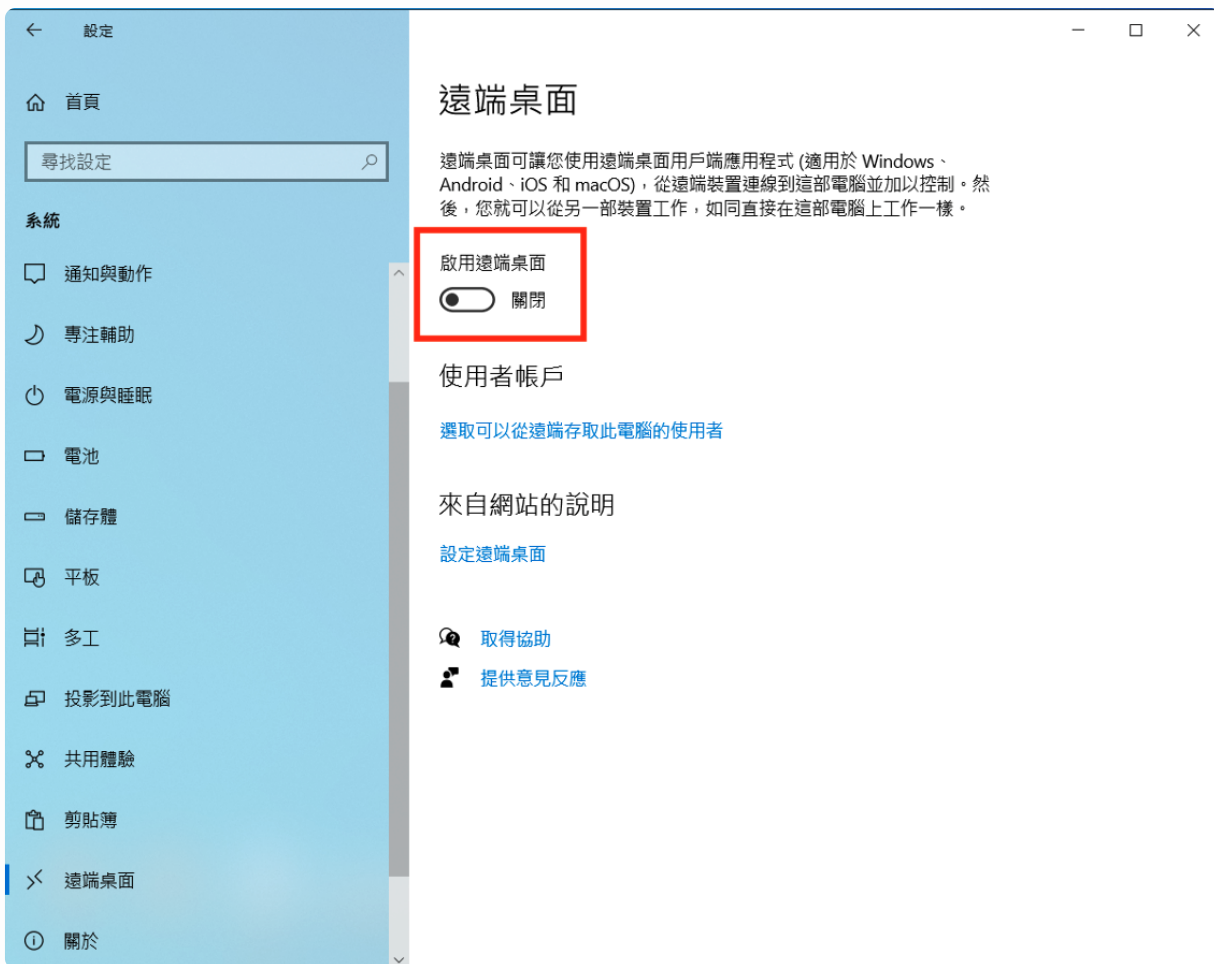
👉 步驟2: 打開系統設定



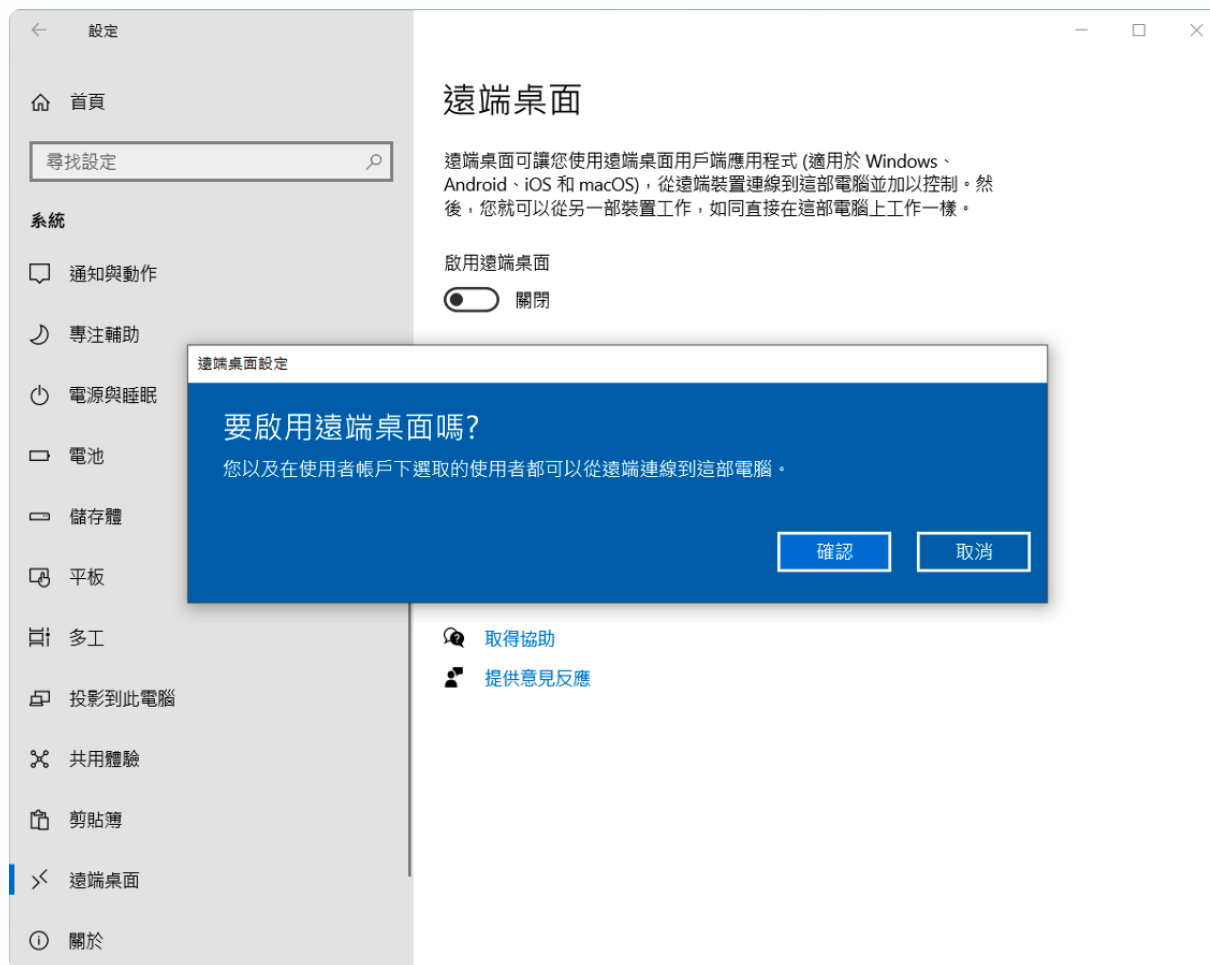
👉 步驟3: 於畫面左邊選擇「遠端桌面」



👉 步驟4: 將「啟用遠端桌面」的選項開啟



點擊啟用後會有提醒視窗，選擇確認



👉 步驟5: 確認功能正常開啟即完成遠端桌面連線設定



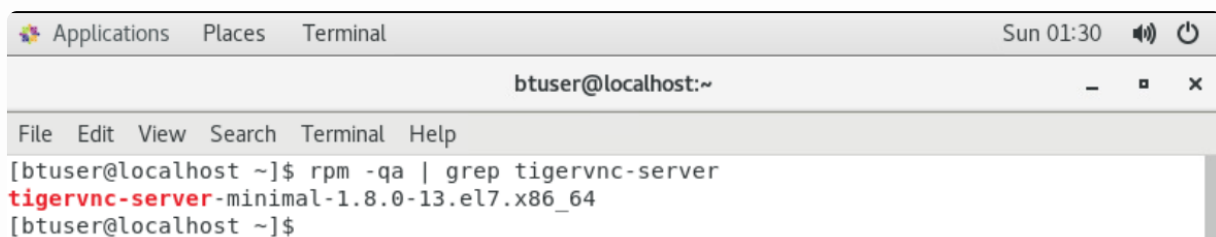
Linux 安裝及啟用 VNC 服務(CentOS7)

👉 步驟1: 安裝VNC服務

! 安裝服務時請以 **root** 身分執行 !

安裝前可以先確認是否已經安裝

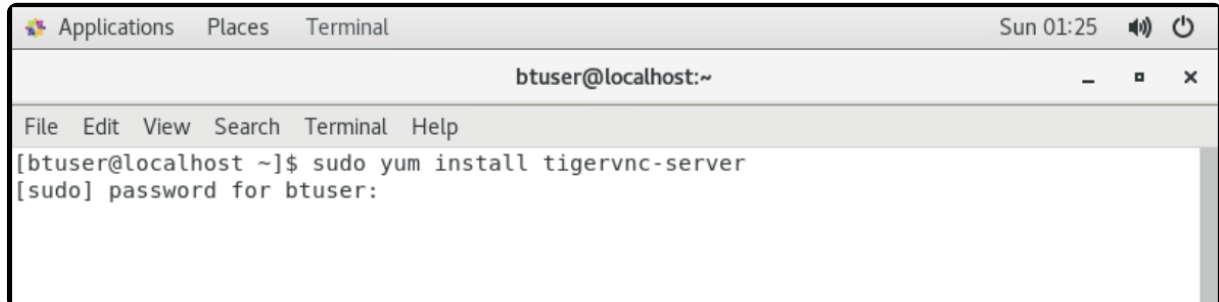
```
rpm -qa |grep tigervnc-server
```



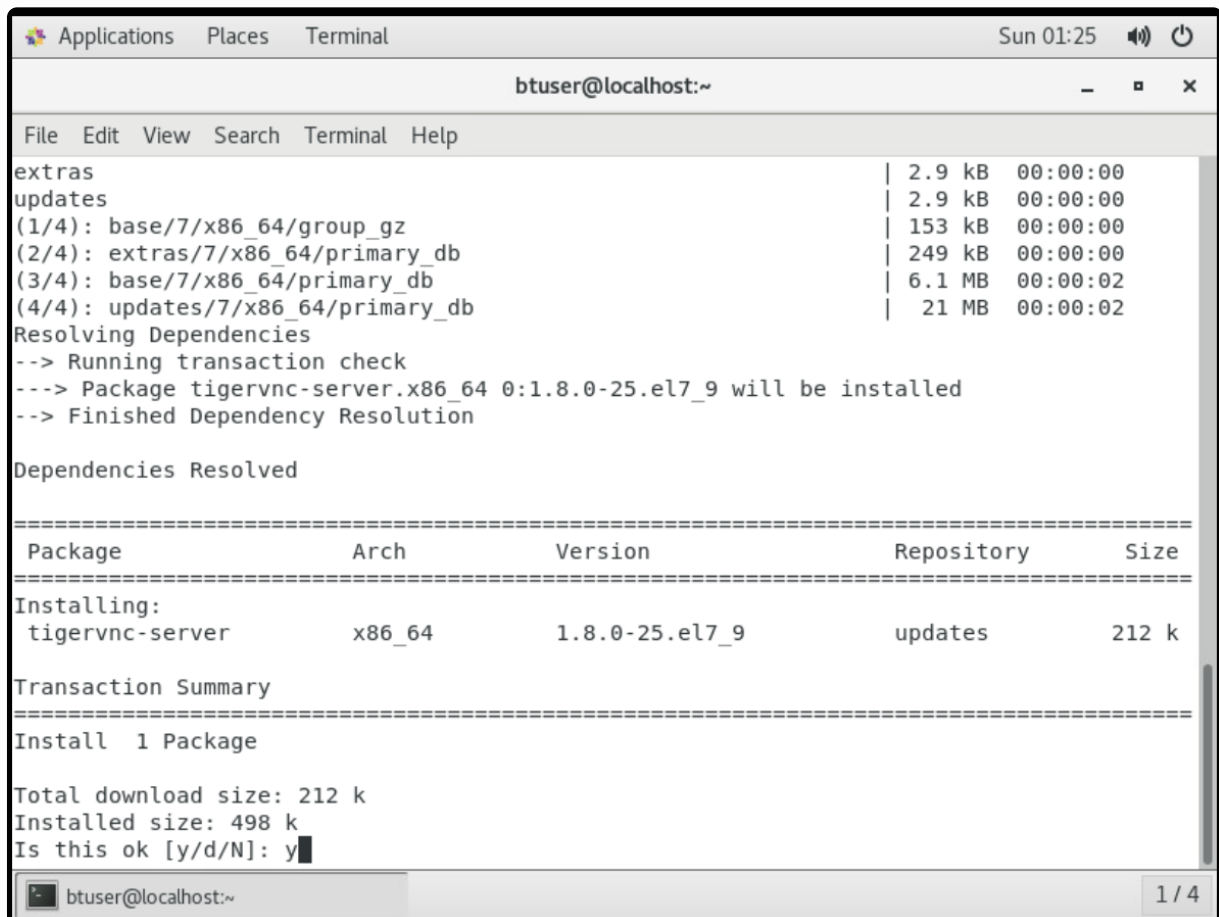
只有安裝minimal版的，所以還是需要手動安裝完整版的，如果已安裝完整版的可跳過安裝步驟

安裝指令：

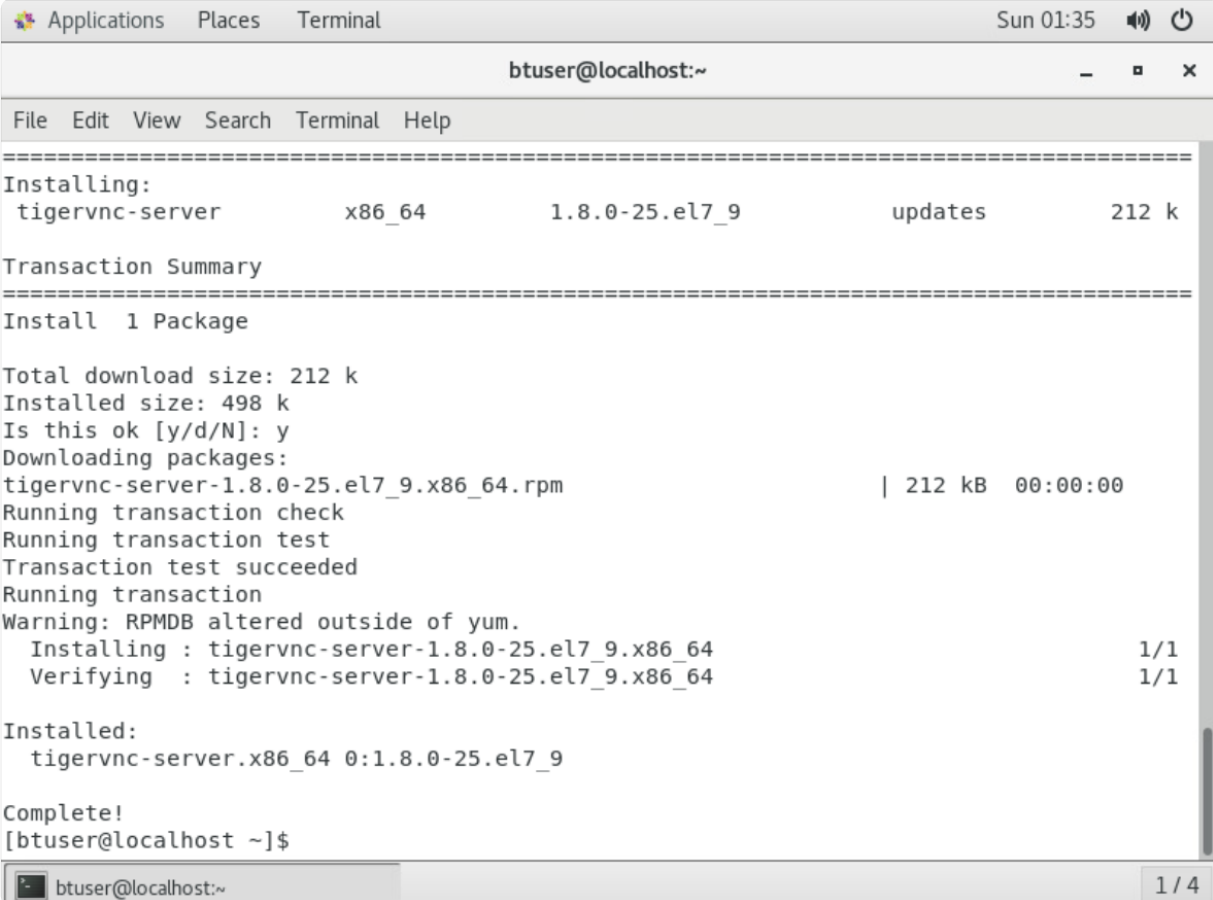
```
sudo yum install tigervnc-server
```



輸入Y繼續安裝



看到完成字樣，沒有錯誤訊息即安裝完成



A terminal window titled 'Applications Places Terminal' with a status bar showing 'Sun 01:35'. The prompt is 'btuser@localhost:~'. The output shows the installation of 'tigervnc-server' for 'x86_64' architecture, version '1.8.0-25.el7_9', with 'updates' and a size of '212 k'. It includes a transaction summary, download size, and a list of installed packages. The installation is complete, and the prompt returns to '[btuser@localhost ~]\$'.

```
=====  
Installing:  
tigervnc-server          x86_64          1.8.0-25.el7_9          updates          212 k  
=====  
Transaction Summary  
=====  
Install 1 Package  
  
Total download size: 212 k  
Installed size: 498 k  
Is this ok [y/d/N]: y  
Downloading packages:  
tigervnc-server-1.8.0-25.el7_9.x86_64.rpm | 212 kB  00:00:00  
Running transaction check  
Running transaction test  
Transaction test succeeded  
Running transaction  
Warning: RPMDB altered outside of yum.  
Installing : tigervnc-server-1.8.0-25.el7_9.x86_64 1/1  
Verifying  : tigervnc-server-1.8.0-25.el7_9.x86_64 1/1  
  
Installed:  
tigervnc-server.x86_64 0:1.8.0-25.el7_9  
  
Complete!  
[btuser@localhost ~]$
```

確認一下服務是否順利安裝，有出現剛剛安裝的版本就成功

```
rpm -qa|grep tigervnc-server
```

```
btuser@localhost:~  
File Edit View Search Terminal Help  
[btuser@localhost ~]$ rpm -qa|grep tigervnc-server  
tigervnc-server-1.8.0-25.el7_9.x86_64  
tigervnc-server-minimal-1.8.0-13.el7.x86_64  
[btuser@localhost ~]$
```

👉 步驟2: 設定VNC使用者的VNC連線密碼

設定VNC密碼

```
vncpasswd
```

```
[btuser@localhost ~]$ vncpasswd  
Password:  
Verify:  
Would you like to enter a view-only password (y/n)? n  
A view-only password is not used  
[btuser@localhost ~]$
```

Password: 輸入第一次密碼

Verify: 同一個密碼輸入第二次

Would you like to enter a view-only password (y/n)? 預設會詢問有沒有需要建立一組只能觀看的vnc密碼，這邊輸入 **n** 即可

👉 步驟3: 設定VNC服務

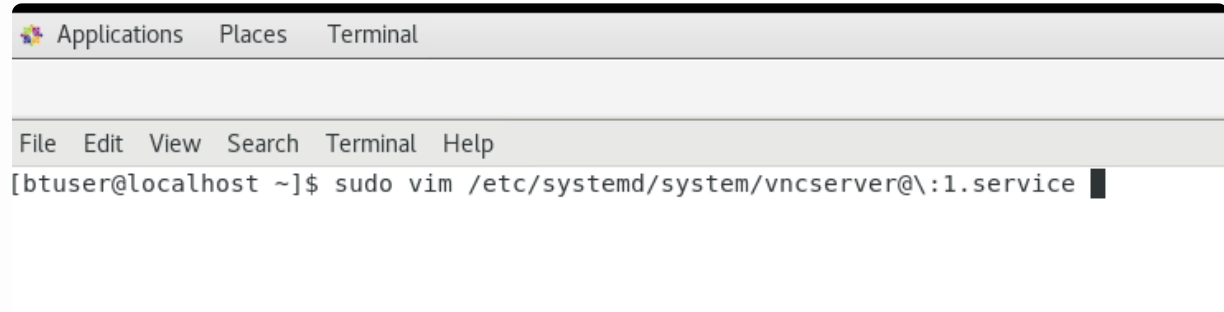
VNC的設定檔在 **/lib/systemd/system** 底下的 **vncserver@.service** 這個檔案，VNC預設並不是systemctl管理的服務，不過我們可以複製一份設定檔到系統目錄下，這樣之後就可以設定開機啟動VNC服務

```
cp /lib/systemd/system/vncserver@.service
/etc/systemd/system/vncserver@:1.service
```

:1 表示這個服務建立在Port 5901

編輯設定檔的內容，指定VNC連線的使用者 (善用 **Tab** 鍵，可以避免打錯字)

```
sudo vim /etc/systemd/system/vncserver@\:1.service
```



打開檔案後找到第10行 **ExecStart** 開頭的字串，把後面的 **<USER>** 換成我們要設定的使用者，以本例子來說，建議設定一般使用者 **btuser**，不要設定 **root**

修改前:

```
1 [Unit]
2 Description=Remote desktop service (VNC)
3 After=syslog.target network.target
4
5 [Service]
6 Type=simple
7
8
9 ExecStartPre=/bin/sh -c '/usr/bin/vncserver -kill %i > dev/null 2>&1 || :'
10 ExecStart=/usr/bin/vncserver_wrapper <USER> %i
11 Execstop=/bin/sh -c '/usr/bin/vncserver -kill %i > /dev/null 2>&1 || :'
12
13 [Install]
14 WantedBy=multi-user.target
```

修改後:

```
1 [Unit]
2 Description=Remote desktop service (VNC)
3 After=syslog.target network.target
4
5 [Service]
6 Type=simple
7
8 ExecStartPre=/bin/sh -c '/usr/bin/vncserver -kill %i > dev/null 2>&1 || :'
9 ExecStart=/usr/bin/vncserver_wrapper btuser %i
10 Execstop=/bin/sh -c '/usr/bin/vncserver -kill %i > /dev/null 2>&1 || :'
11
12 [Install]
13 WantedBy=multi-user.target
```

修改完成後記得儲存

使用root權限更新Systemctl

```
sudo systemctl daemon-reload
```

👉 步驟4: 啟動服務及設定開機啟動

啟動服務

```
sudo systemctl start vncserver@:1.service
```

設定開機啟動

```
sudo systemctl enable vncserver@:1.service
```

👉 步驟5: 設定防火牆

如果是使用firewalld的可以參考以下指令:

```
sudo firewall-cmd --permanent --add-service="vnc-server" --zone="public"
```

如果是使用iptables的可以參考以下指令:

```
sudo iptables -A INPUT -m state --state NEW -m tcp -p tcp --dport 5901 -j
ACCEPT
```

防火牆設定請根據自身環境調整，以上指令用意為放行Port 5901可被外部連線

Linux 安裝及啟用 VNC 服務(Ubuntu 20.04)

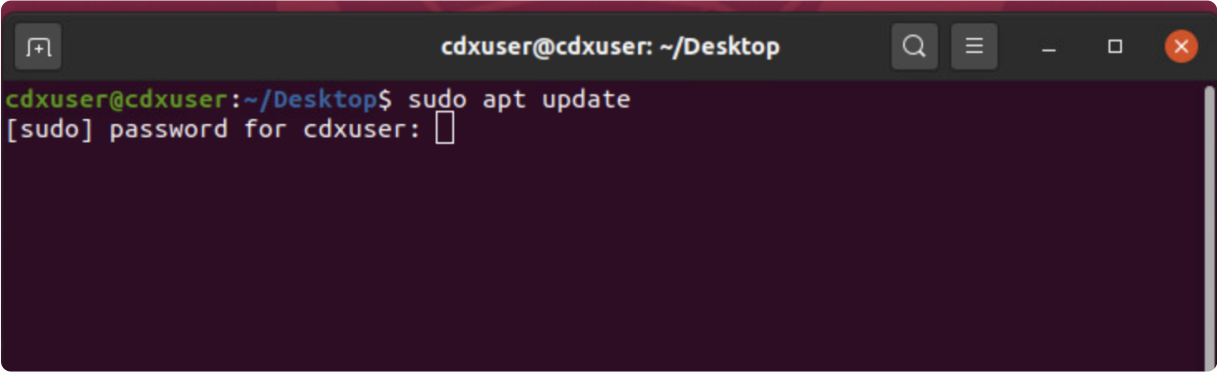
👉 步驟1: 安裝VNC服務

! 安裝或更新服務時請以 **root** 身分執行 !

更新套件庫內容:

```
sudo apt update
```

輸入密碼後繼續



```
cdxuser@cdxuser: ~/Desktop
cdxuser@cdxuser:~/Desktop$ sudo apt update
[sudo] password for cdxuser: 
```

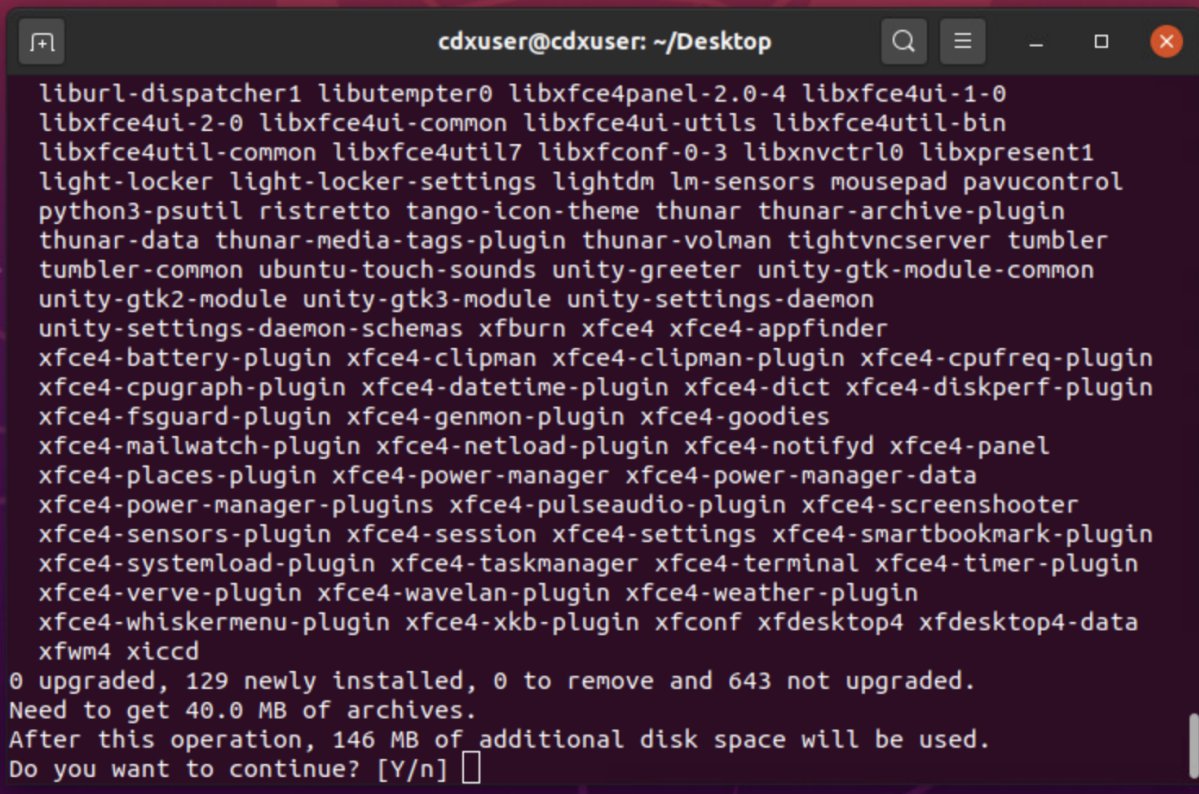
看到下面沒有錯誤就是正確完成

```
cdxuser@cdxuser: ~/Desktop
Get:62 http://free.nchc.org.tw/ubuntu focal-security/universe amd64 c-n-f Metada
ta [18.5 kB]
Get:63 http://free.nchc.org.tw/ubuntu focal-security/multiverse amd64 Packages [
22.9 kB]
Get:64 http://free.nchc.org.tw/ubuntu focal-security/multiverse i386 Packages [7
204 B]
Get:65 http://free.nchc.org.tw/ubuntu focal-security/multiverse Translation-en [
5488 B]
Get:66 http://free.nchc.org.tw/ubuntu focal-security/multiverse amd64 DEP-11 Met
adata [940 B]
Get:67 http://free.nchc.org.tw/ubuntu focal-security/multiverse DEP-11 48x48 Ico
ns [1867 B]
Get:68 http://free.nchc.org.tw/ubuntu focal-security/multiverse DEP-11 64x64 Ico
ns [2497 B]
Get:69 http://free.nchc.org.tw/ubuntu focal-security/multiverse DEP-11 64x64@2 I
cons [29 B]
Get:70 http://free.nchc.org.tw/ubuntu focal-security/multiverse amd64 c-n-f Meta
data [540 B]
Fetched 17.8 MB in 3s (5354 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
643 packages can be upgraded. Run 'apt list --upgradable' to see them.
cdxuser@cdxuser:~/Desktop$
```

安裝VNC相關服務

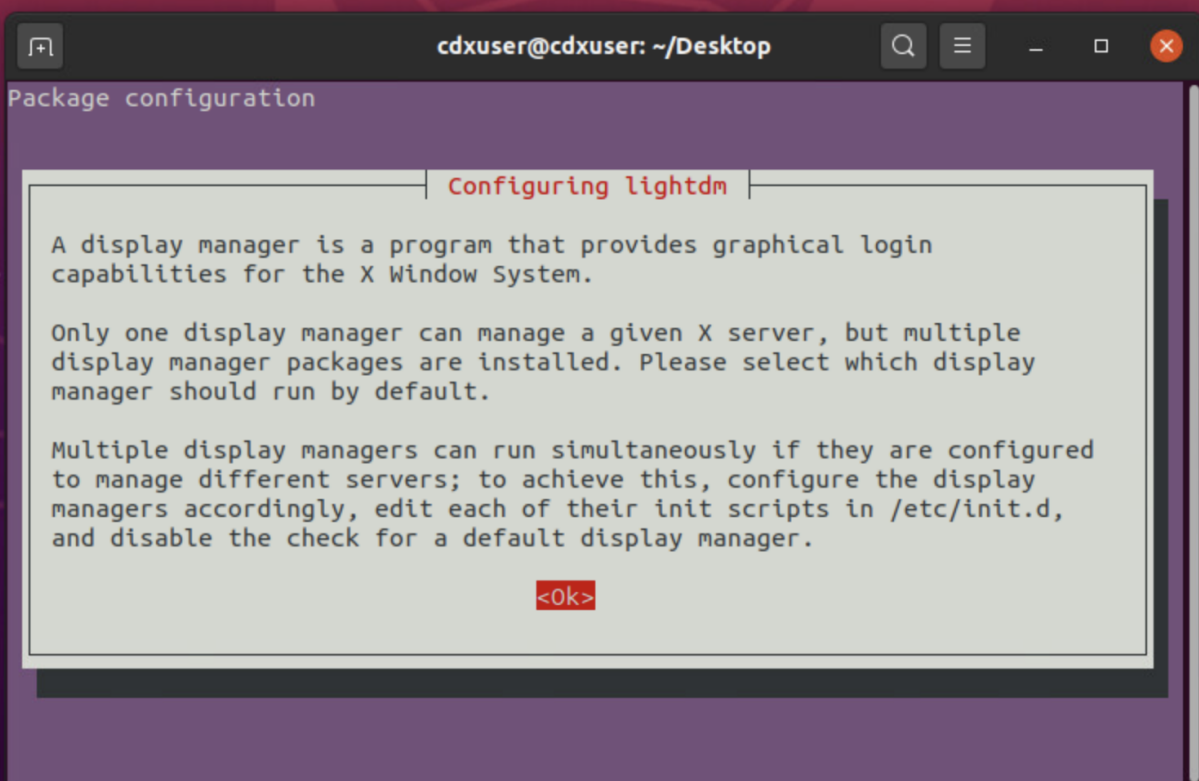
```
sudo apt install xfce4 xfce4-goodies tightvncserver
```

有出現詢問視窗按下 **Y** 同意



```
cdxuser@cdxuser: ~/Desktop
liburl-dispatcher1 libutempter0 libxfce4panel-2.0-4 libxfce4ui-1-0
libxfce4ui-2-0 libxfce4ui-common libxfce4ui-utils libxfce4util-bin
libxfce4util-common libxfce4util7 libxfce4conf-0-3 libxnvctrl0 libxpresent1
light-locker light-locker-settings lightdm lm-sensors mousepad pavucontrol
python3-psutil ristretto tango-icon-theme thunar thunar-archive-plugin
thunar-data thunar-media-tags-plugin thunar-volman tightvncserver tumbler
tumbler-common ubuntu-touch-sounds unity-greeter unity-gtk-module-common
unity-gtk2-module unity-gtk3-module unity-settings-daemon
unity-settings-daemon-schemas xfburn xfce4 xfce4-appfinder
xfce4-battery-plugin xfce4-clipman xfce4-clipman-plugin xfce4-cpufreq-plugin
xfce4-cpugraph-plugin xfce4-datetime-plugin xfce4-dict xfce4-diskperf-plugin
xfce4-fsguard-plugin xfce4-genmon-plugin xfce4-goodies
xfce4-mailwatch-plugin xfce4-netload-plugin xfce4-notifyd xfce4-panel
xfce4-places-plugin xfce4-power-manager xfce4-power-manager-data
xfce4-power-manager-plugins xfce4-pulseaudio-plugin xfce4-screenshooter
xfce4-sensors-plugin xfce4-session xfce4-settings xfce4-smartbookmark-plugin
xfce4-systemload-plugin xfce4-taskmanager xfce4-terminal xfce4-timer-plugin
xfce4-verve-plugin xfce4-wavelan-plugin xfce4-weather-plugin
xfce4-whiskermenu-plugin xfce4-xkb-plugin xfce4-xfce4-terminal
xfce4-xfce4-terminal-data xfdm4 xiccd
0 upgraded, 129 newly installed, 0 to remove and 643 not upgraded.
Need to get 40.0 MB of archives.
After this operation, 146 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

設定過程請用預設值即可，第一個OK按下 **ENTER**



```
cdxuser@cdxuser: ~/Desktop
Package configuration
Configuring lightdm

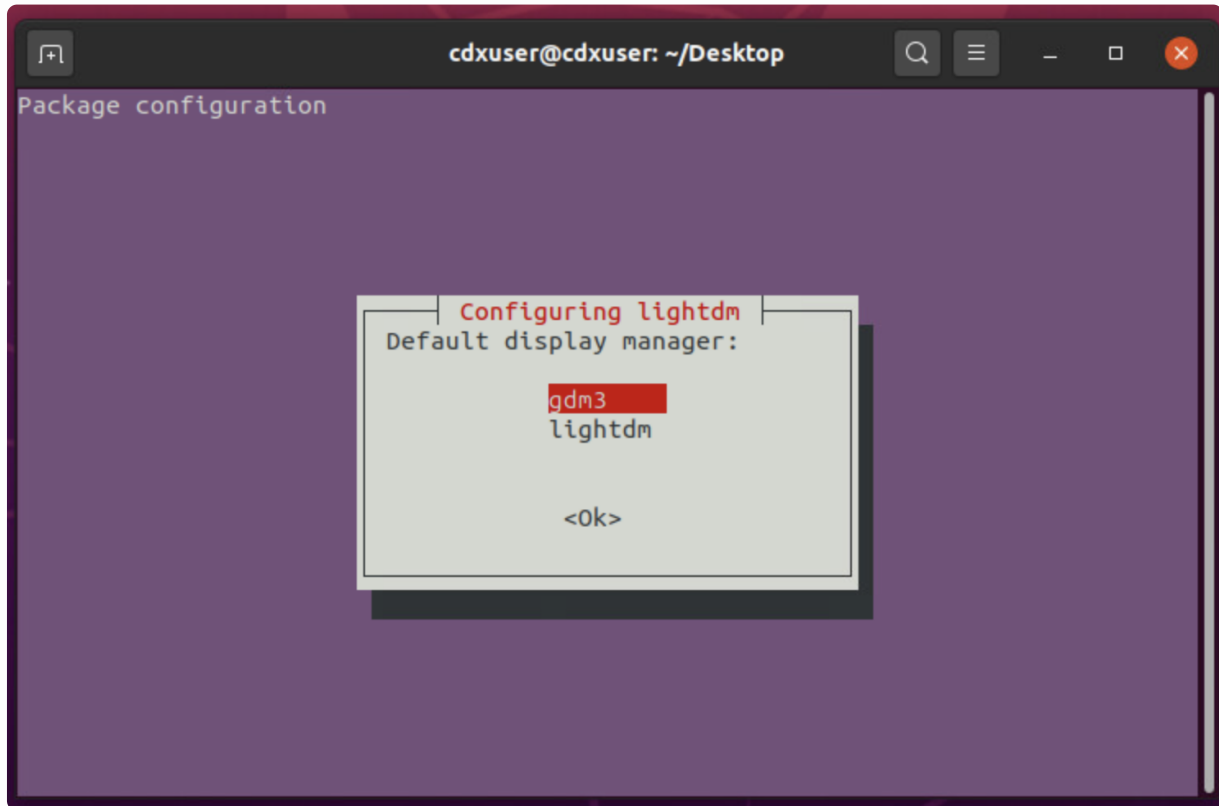
A display manager is a program that provides graphical login
capabilities for the X Window System.

Only one display manager can manage a given X server, but multiple
display manager packages are installed. Please select which display
manager should run by default.

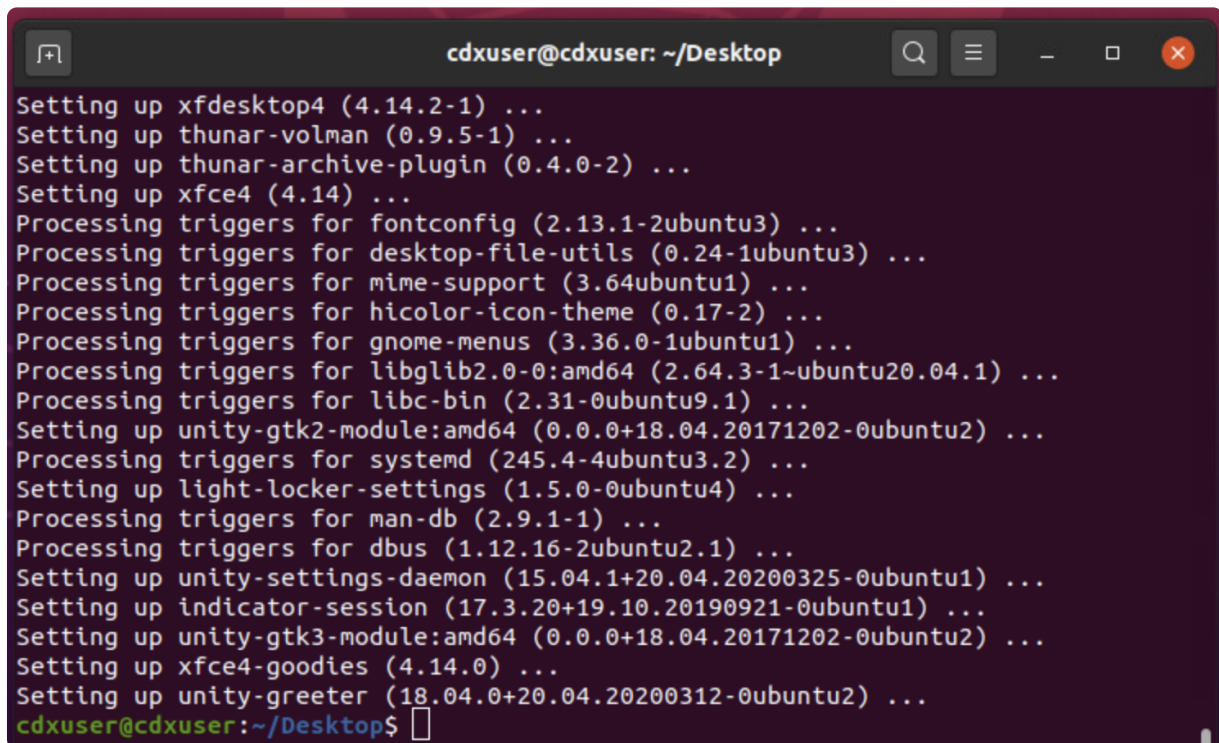
Multiple display managers can run simultaneously if they are configured
to manage different servers; to achieve this, configure the display
managers accordingly, edit each of their init scripts in /etc/init.d,
and disable the check for a default display manager.

<Ok>
```

第二個設定選擇 **gdm3** 即可，選擇後按下 **ENTER**



沒有任何錯誤就是正確完成



確認一下服務是否順利安裝，有出現剛剛安裝的版本就成功

```
dpkg --get-architecture | grep tightvncserver
```



```
cdxuser@cdxuser: ~/Desktop
cdxuser@cdxuser:~/Desktop$ dpkg --get-architecture | grep tightvncserver
ii tightvncserver 1.3.10-0ubuntu5
amd64 virtual network computing server software
cdxuser@cdxuser:~/Desktop$
```

👉 步驟2: 設定VNC使用者的VNC連線密碼

設定VNC密碼

```
vncpasswd
```

! 建議不要使用root，使用一般使用者操作此命令即可 !

```
cdxuser@cdxuser:~/Desktop$ vncpasswd
Using password file /home/cdxuser/.vnc/passwd
VNC directory /home/cdxuser/.vnc does not exist, creating.
Password:
Verify:
Would you like to enter a view-only password (y/n)? n
cdxuser@cdxuser:~/Desktop$
```

Password: 輸入第一次密碼

Verify: 同一個密碼輸入第二次

Would you like to enter a view-only password (y/n)? 預設會詢問有沒有需要建立一組只能觀看的vnc密碼，這邊輸入 **n** 即可

👉 步驟3: 設定VNC服務

將VNC設定為系統服務，VNC預設並不是systemctl管理的服務，不過我們可以寫一份設定檔到系統目錄下，這樣之後就可以設定開機啟動VNC服務

新增一個檔案 `/etc/systemd/system/vncserver@:1.service`

```
sudo vim /etc/systemd/system/vncserver@:1.service
```

新增以下內容，請將第7、8、9行的 `<Your_User>` 替換為你的VNC User，以本例來說就是替換成 `cdxuser`

```
1 [Unit]
2 Description=Start TightVNC server at startup
3 After=syslog.target network.target
4
5 [Service]
6 Type=forking
7 User=<Your_User>
8 Group=<Your_User>
9 WorkingDirectory=/home/<Your_User>
10
11 ExecStartPre=/bin/sh -c '/usr/bin/vncserver -kill %i > /dev/null 2>&1 || :'
12 ExecStart=/usr/bin/vncserver -depth 24 -geometry 1280x800 %i
13 ExecStop=/bin/sh -c '/usr/bin/vncserver -kill %i > /dev/null 2>&1 || :'
14
15 [Install]
16 WantedBy=multi-user.target
```

儲存後離開編輯

使用root權限更新Systemctl

```
sudo systemctl daemon-reload
```

編輯使用者的VNC啟動腳本，注意不要使用root

```
vim ~/.vnc/xstartup
```

設定內容

```
1 #!/bin/bash
2
3 unset SESSION_MANAGER
4 unset DBUS_SESSION_BUS_ADDRESS
5 export XKL_XMODMAP_DISABLE=1
6 [ -x /etc/vnc/xstartup ] && exec /etc/vnc/xstartup
7 [ -r $HOME/.Xresources ] && xrdp $HOME/.Xresources
8 xsetroot -solid grey
9 xfce4-session &
```

儲存後離開編輯

設定權限

```
chmod +x ~/.vnc/xstartup
```

檢查權限是否正確變更，檔案前方檢查權限有x就正確

```
ll ~/.vnc/xstartup
```

```
cdxuser@cdxuser:~/Desktop$ ll ~/.vnc/xstartup
-rwxr-xr-x 1 cdxuser cdxuser 355 六 14 22:38 /home/cdxuser/.vnc/xstartup*
cdxuser@cdxuser:~/Desktop$
```

👉 步驟4: 啟動服務及設定開機啟動

啟動服務

```
sudo systemctl start vncserver@:1.service
```

設定開機啟動

```
sudo systemctl enable vncserver@:1.service
```

👉 步驟5: 設定防火牆

如果是使用firewalld的可以參考以下指令:

```
sudo firewall-cmd --permanent --add-service="vnc-server" --zone="public"
```

如果是使用iptables的可以參考以下指令:

```
sudo iptables -A INPUT -m state --state NEW -m tcp -p tcp --dport 5901 -j
ACCEPT
```

防火牆設定請根據自身環境調整，以上指令用意為放行Port 5901可被外部連線

Linux 安裝及啟用 SSH 服務

Linux 系統預設已安裝ssh服務，但不是所有系統都會預設啟動這個服務，可以先檢查ssh服務是否有啟動，依各個不同的linux對ssh有不同的服務名稱，可能是ssh或是sshd

```
sudo systemctl status sshd
```

```
cdxuser@cdxuser:~/Desktop$ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
   Loaded: loaded (/lib/systemd/system/ssh.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2023-06-15 01:03:15 CST; 7min ago
     Docs: man:sshd(8)
           man:sshd_config(5)
   Main PID: 5556 (sshd)
    Tasks: 1 (limit: 4657)
   Memory: 1.5M
   CGroup: /system.slice/ssh.service
           └─5556 sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups

六 15 01:03:15 cdxuser systemd[1]: Starting OpenBSD Secure Shell server...
六 15 01:03:15 cdxuser sshd[5556]: Server listening on 0.0.0.0 port 22.
六 15 01:03:15 cdxuser sshd[5556]: Server listening on :: port 22.
六 15 01:03:15 cdxuser systemd[1]: Started OpenBSD Secure Shell server.
六 15 01:07:09 cdxuser sshd[7558]: Accepted password for cdxuser from 10.0.0.163 port 43678 ssh2
六 15 01:07:09 cdxuser sshd[7558]: pam_unix(sshd:session): session opened for user cdxuser by (uid=0)
cdxuser@cdxuser:~/Desktop$
```

出現 **active(running)** 就表示ssh服務已啟動

檢查是否有開啟 Port 22

```
sudo netstat -tulnp|grep 22
```

```
cdxuser@cdxuser:~/Desktop$ sudo netstat -tulnp|grep 22
tcp        0      0 0.0.0.0:22          0.0.0.0:*        LISTEN      5556/sshd: /usr/sbi
tcp6       0      0 :::22             :::*             LISTEN      5556/sshd: /usr/sbi
cdxuser@cdxuser:~/Desktop$
```

如果有就表示服務正確啟動並打開了預設的Port

如果服務沒有啟動則手動打開他並設定開機會自動啟動

```
sudo systemctl start sshd

sudo systemctl enable sshd
```

順利啟動後再確認是否開啟Port 22

如果發現服務正常啟動了，但沒有啟動Port 22，可能是設定檔中沒有打開Port 22，編輯
/etc/ssh/sshd_config

```
sudo vim /etc/ssh/sshd_config
```

```
cdxuser@cdxuser: ~/Desktop
# $OpenBSD: sshd_config,v 1.103 2018/04/09 20:41:22 tj Exp $

# This is the sshd server system-wide configuration file.  See
# sshd_config(5) for more information.

# This sshd was compiled with PATH=/usr/bin:/bin:/usr/sbin:/sbin

# The strategy used for options in the default sshd_config shipped with
# OpenSSH is to specify options with their default value where
# possible, but leave them commented.  Uncommented options override the
# default value.

Include /etc/ssh/sshd_config.d/*.conf

#Port 22
#AddressFamily any
#ListenAddress 0.0.0.0
#ListenAddress ::

#HostKey /etc/ssh/ssh_host_rsa_key
#HostKey /etc/ssh/ssh_host_ecdsa_key
#HostKey /etc/ssh/ssh_host_ed25519_key

# Ciphers and keying
#RekeyLimit default none

# Logging
#SyslogFacility AUTH
#LogLevel INFO

"/etc/ssh/sshd_config" 123L, 3289C
```

將 **#Port 22** 這行的#刪掉，然後儲存並離開，接著再重新啟動服務

```
cdxuser@cdxuser: ~/Desktop
# $OpenBSD: sshd_config,v 1.103 2018/04/09 20:41:22 tj Exp $

# This is the sshd server system-wide configuration file.  See
# sshd_config(5) for more information.

# This sshd was compiled with PATH=/usr/bin:/bin:/usr/sbin:/sbin

# The strategy used for options in the default sshd_config shipped with
# OpenSSH is to specify options with their default value where
# possible, but leave them commented.  Uncommented options override the
# default value.

Include /etc/ssh/sshd_config.d/*.conf

Port 22
#AddressFamily any
#ListenAddress 0.0.0.0
#ListenAddress ::

#HostKey /etc/ssh/ssh_host_rsa_key
#HostKey /etc/ssh/ssh_host_ecdsa_key
#HostKey /etc/ssh/ssh_host_ed25519_key

# Ciphers and keying
#RekeyLimit default none

# Logging
#SyslogFacility AUTH
#LogLevel INFO

"/etc/ssh/sshd_config" 123L, 3289C
```

重新啟動服務再檢查是否可以看到Port 22

```
sudo systemctl restart ssh
```

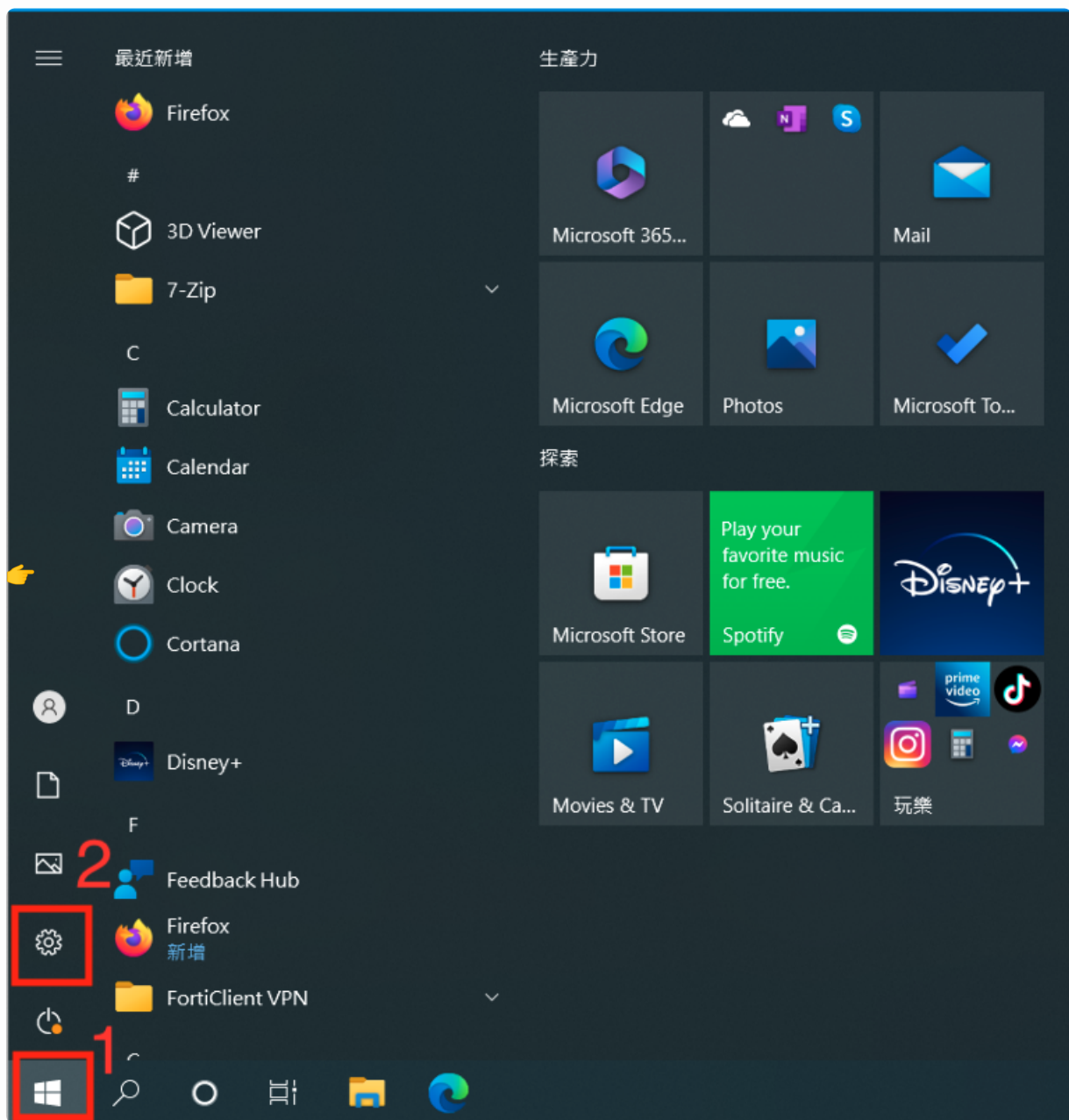
```
cdxuser@cdxuser:~/Desktop$ sudo netstat -tulnp|grep 22
tcp        0      0 0.0.0.0:22          0.0.0.0:*        LISTEN     5556/sshd: /usr/sbi
tcp6       0      0 :::22             :::*              LISTEN     5556/sshd: /usr/sbi
cdxuser@cdxuser:~/Desktop$
```

關閉休眠

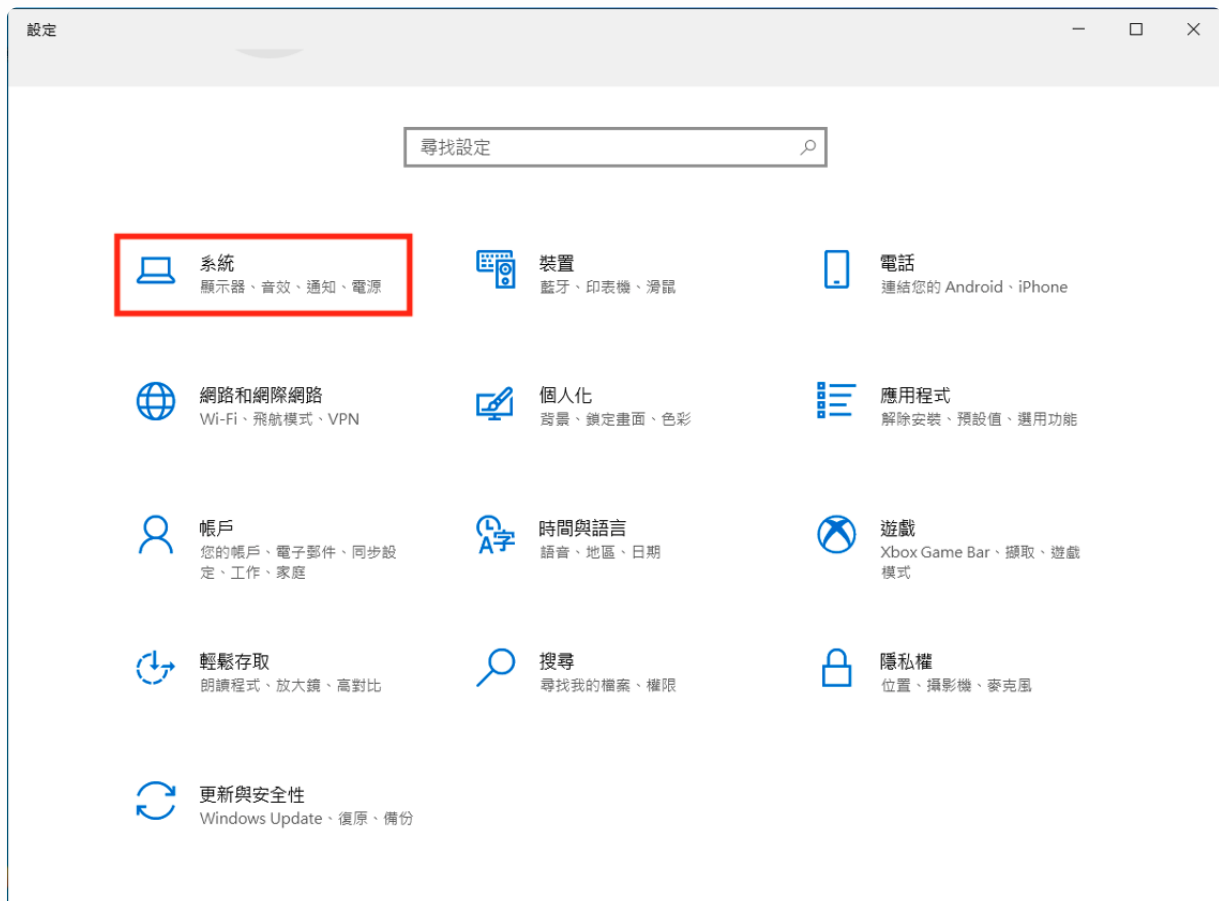
系統進入休眠會導致Guacamole連線中斷，因此必須將自動休眠功能關閉

👉 Windows 10

在畫面左下角找到「開始」 -> 「設定」



打開系統設定



找到左手邊的電源與睡眠，並把右手邊的睡眠選項調整為永不



👉 Linux

關閉與睡眠或休眠相關的服務即可

```
systemctl mask sleep.target suspend.target suspend-then-hibernate.target  
hibernate.target hybrid-sleep.target
```

感謝閱讀