Home Networking

What ?

Why ?

How ?

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Home Networking - What ?

- Connecting any ‘Computer-type’ devices
  - **PCs, Tablets, Phones, GPS**
  - **Smart TV, Smart Watches, Fitbit-type devices**
  - **Printers, Modems, Routers, Network Storage**
  - **Keyboards, Mouse, Remote Controllers etc**

Home Networking - Why ?

- Access / Share files
  - **Across two PCs, Phone ex PC, Smart TV / Media Centre**
  - **Remote Access - from any Internet point . . (not tonight)**
- Transfer Data
  - **Phone (or Camera) to PC, PC to Network Storage**
- Share Peripherals
  - **Printer, Network Storage, Internet Access**

Home Networking - How ?

- Connectivity ? Distance ?
  - **Sneakernet - USB stick, distance = as needed . .**
  - **Ethernet Cable ('Blue', rj45 plug) – 100m Cat-5, 200m Cat-6**
  - **Wi-Fi Wireless Connection - 50m ? Confusion with 3 or 4 G ?**
  - **- - other means outside tonight's agenda - -**
  - **BlueTooth - 10m (between Paired devices)**
  - **Infra Red / Radio Frequency – 25m line-of-sight (usually)**

Internet Connections ?
ADSL, Wi-Fi , 3 or 4G ?

Mobile Phone

Mobile Phone Provider
(via Towers)

3,4 G "Anywhere"

I S P

Wi-Fi Tethering

3,4 G Anywhere

ADSL on or Cable

Phone Line Connect

3,4G Wi-Fi Modem Router

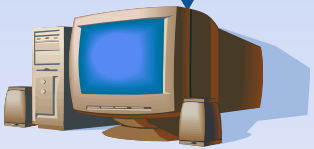
USB Modem

Modem / Router @ Home

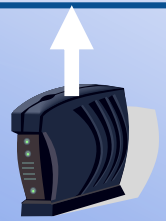
Wi-Fi < 20m

Wi-Fi < 20m

Ethernet Cable



Wi-Fi < 20m



Hot Spot

Library, McD, OWK, Hotel etc

Wi-Fi - up to 20 metres, free ?

3, 4 G - via Mobile Towers, cost $s

Simple Home Network

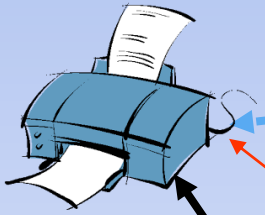
Smart
TV

to ISP

Single Port
Modem

RJ45

Router / Gateway

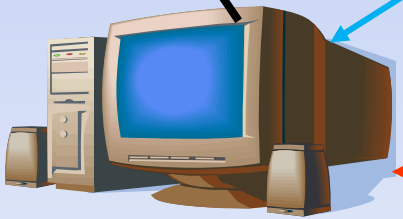


USB

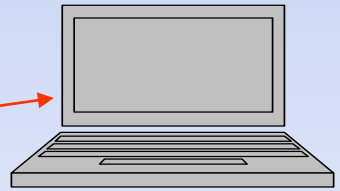
RJ 45
Cable

External
HD or
NAS

Wi-Fi



Router provides
internal addresses



Home Network Achievements

- Shared Internet Access
  - **Blue Cable to PC and TV, Wi-Fi to Laptop and Phone**
  - **Saves dramatically on phone's data allowance**
- Shared Data
  - **Network Attached Storage (NAS) via USB or Ethernet**
  - **Data shared across NAS and PCs, Laptop, and Phone**
  - **TV can show Pictures, Video and Music from PCs or NAS**
  - **Smart TV can access Internet directly**
- Shared Peripherals
  - **Laptop can access printer (either via PC or Router)**

Home Networking - How ?

- Setup Connectivity
  - **Multi-Port Router (preferably with Wi-Fi)**
  - **Ethernet Cable (blue, rj45) to fixed devices**
  - **Router setup as DHCP Host, Devices to use DHCP**

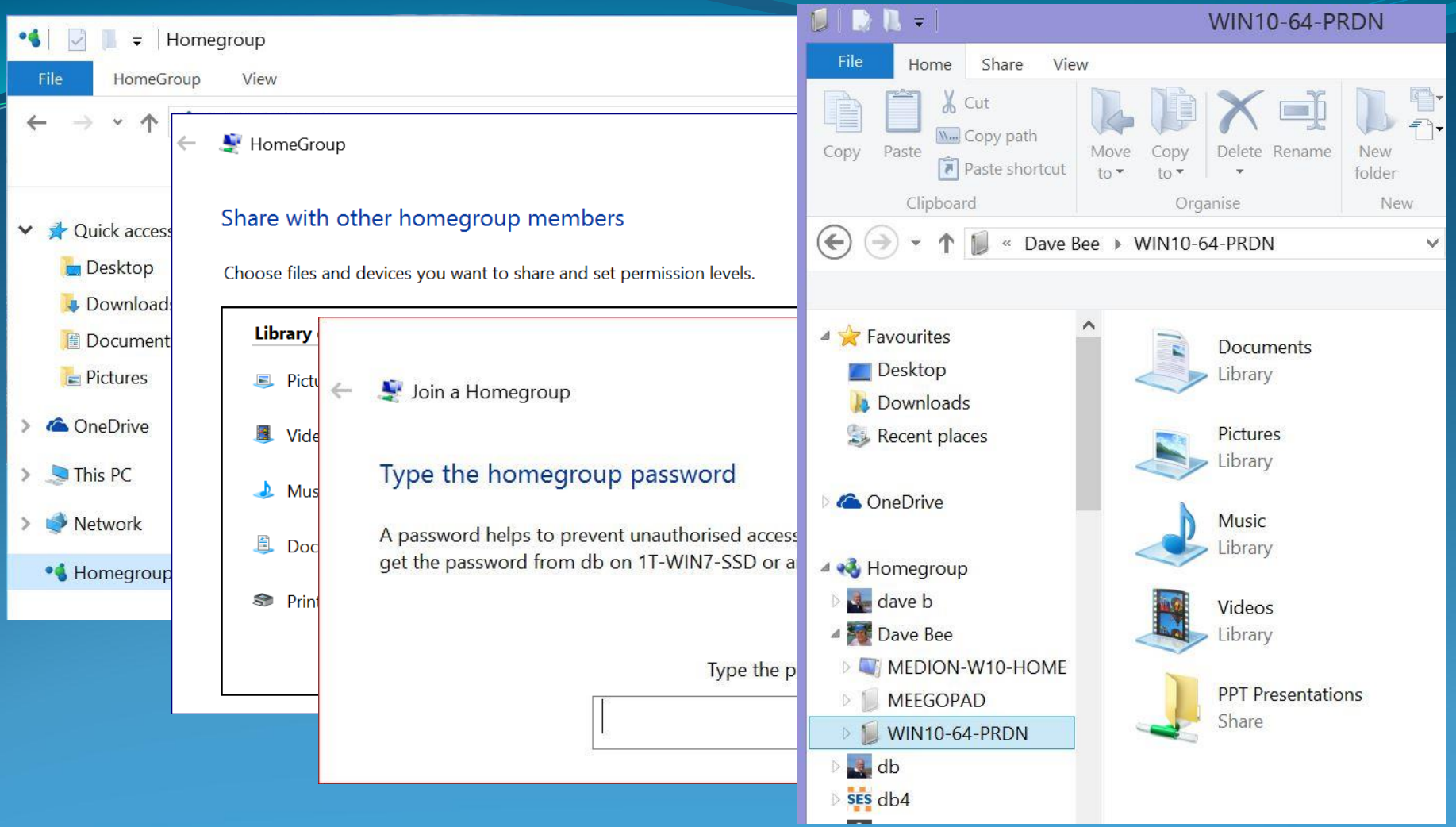
    ie. Router provides local network addresses
  - **Router setup for Wi-Fi - change default admin & user passwords**
  - **Wi-Fi setup on Portable devices - Laptop, Phone etc**

Home Networking - How ?

- Test Connectivity
  - **On PC, look at File Explorer / Network to see other devices**
- Two Options
  - **Home Group – Windows feature , single Password, automated sharing of media and printers**
  - **Selective File Sharing and Printer ?**

Home Group option

- **Simpler option** for Windows PCs,
  provides auto sharing of media directories
- Limited sharing with Apple and Android devices
- Provides DLNA media sharing function for TVs etc
  - Distributed Living Network Alliance –
- Also UPnP (Universal Plug and Play)


Homegroup
File
HomeGroup
View
Quick access
Desktop
Downloads
Documents
Pictures
OneDrive
This PC
Network
Homegroup
HomeGroup
Share with other homegroup members
Choose files and devices you want to share and set permission levels.
Library
Join a Homegroup
Type the homegroup password
A password helps to prevent unauthorised access
get the password from db on 1T-WIN7-SSD or a
Type the p
WIN10-64-PRDN
File
Home
Share
View
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organise
New folder
New
Dave Bee
WIN10-64-PRDN
Favourites
Desktop
Downloads
Recent places
OneDrive
Homegroup
dave b
Dave Bee
MEDION-W10-HOME
MEEGOPAD
WIN10-64-PRDN
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db4
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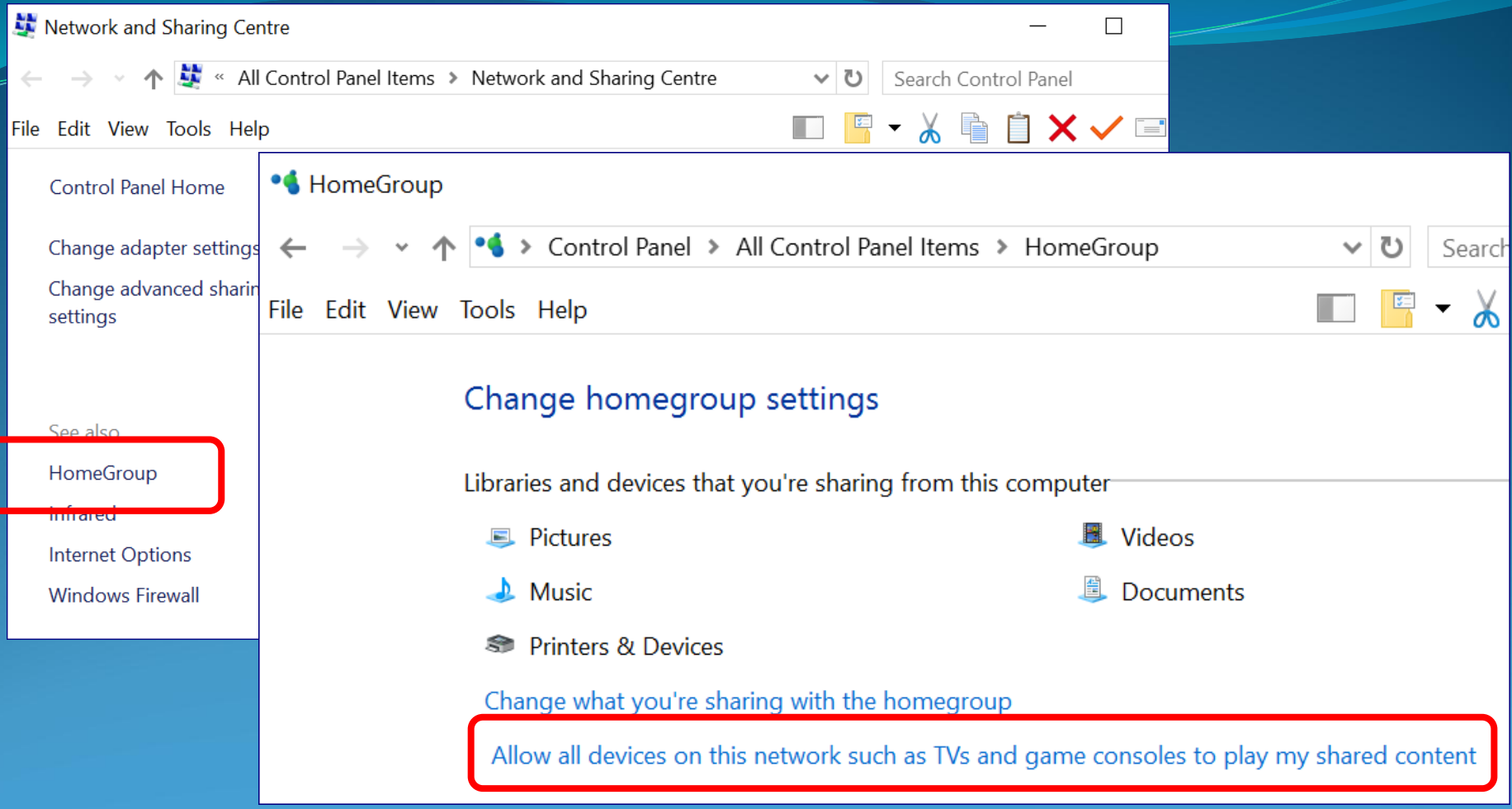
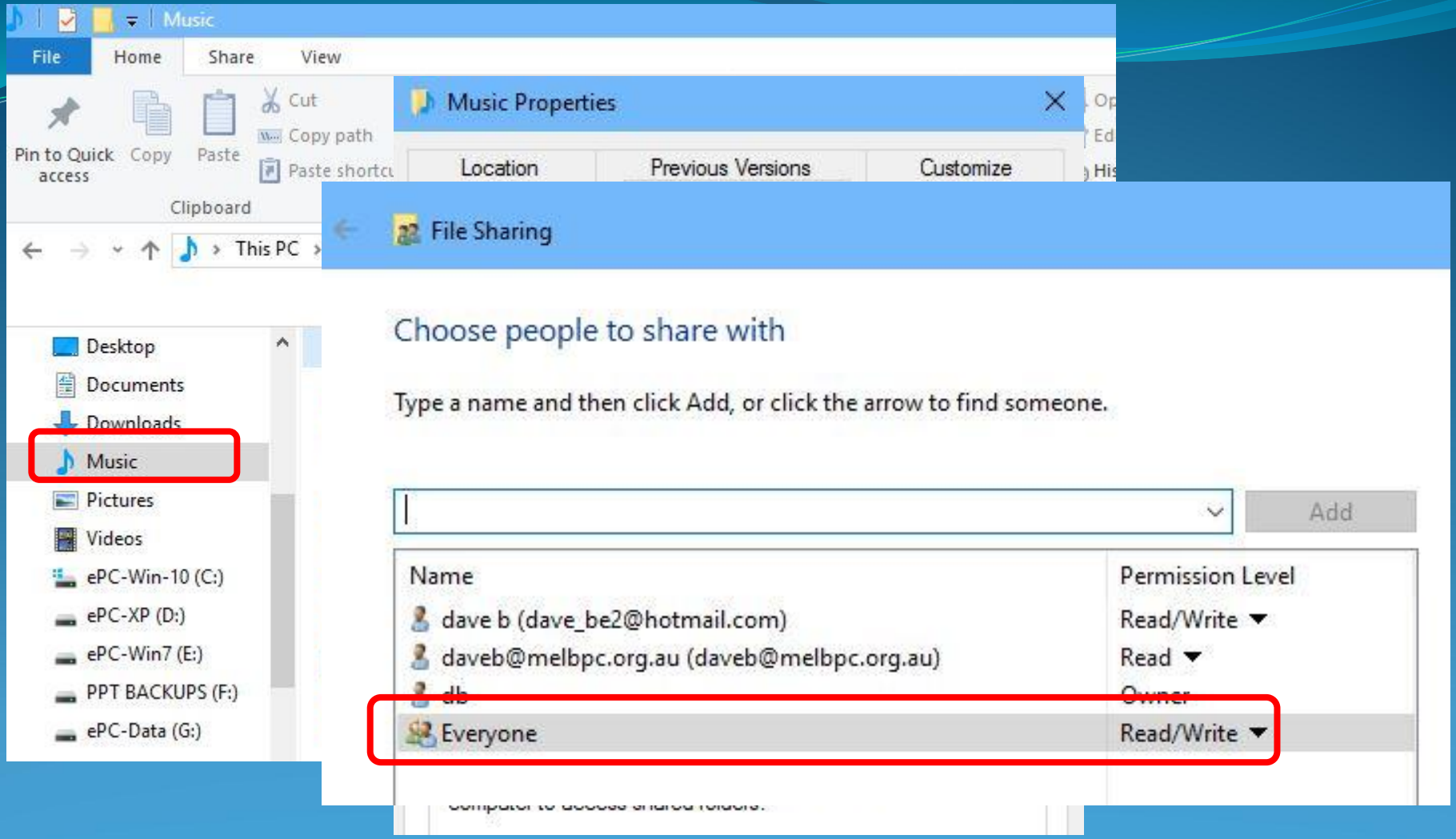
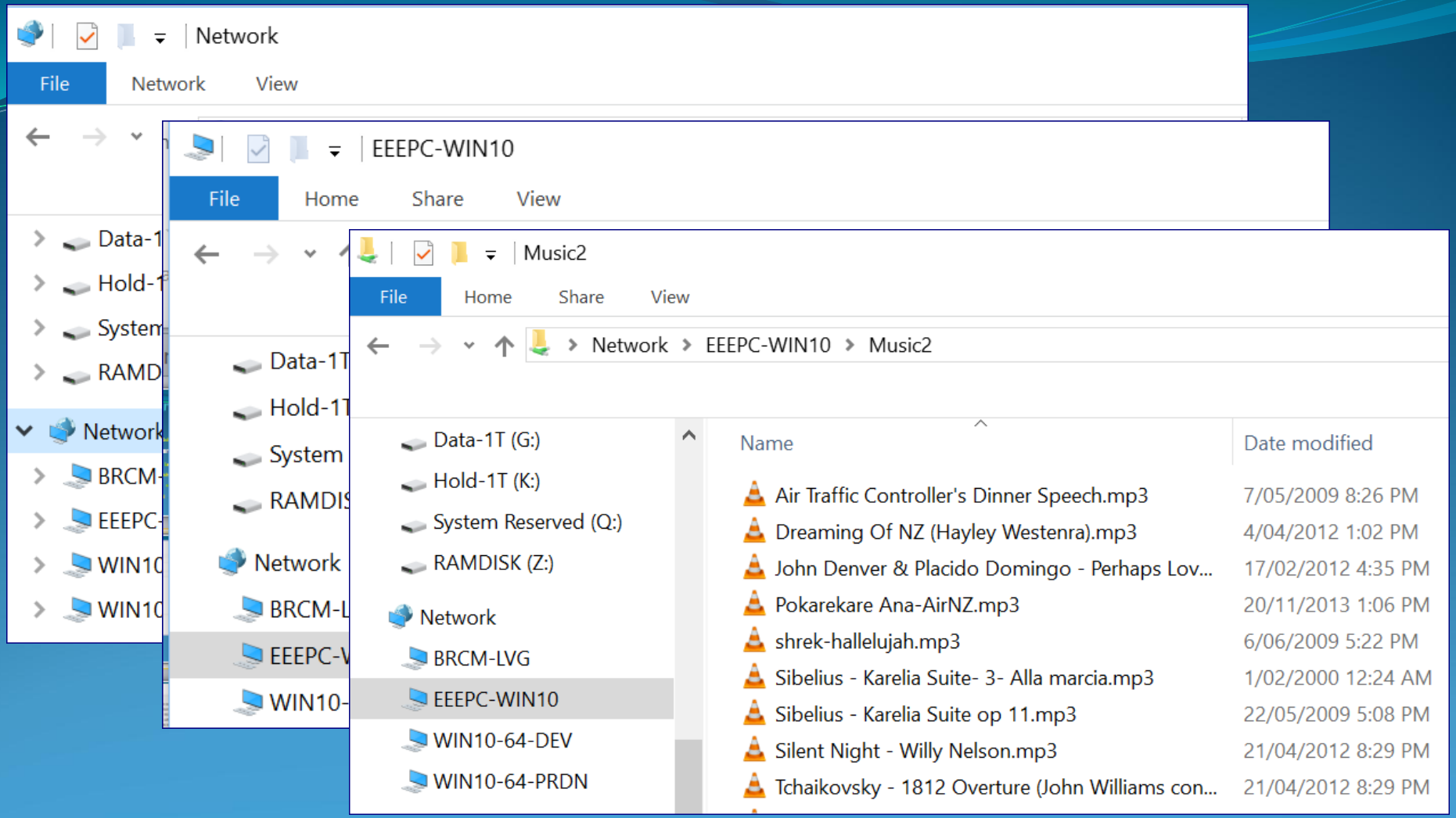
Library
Pictures
Library
Music
Library
Videos
Library
PPT Presentations
Share

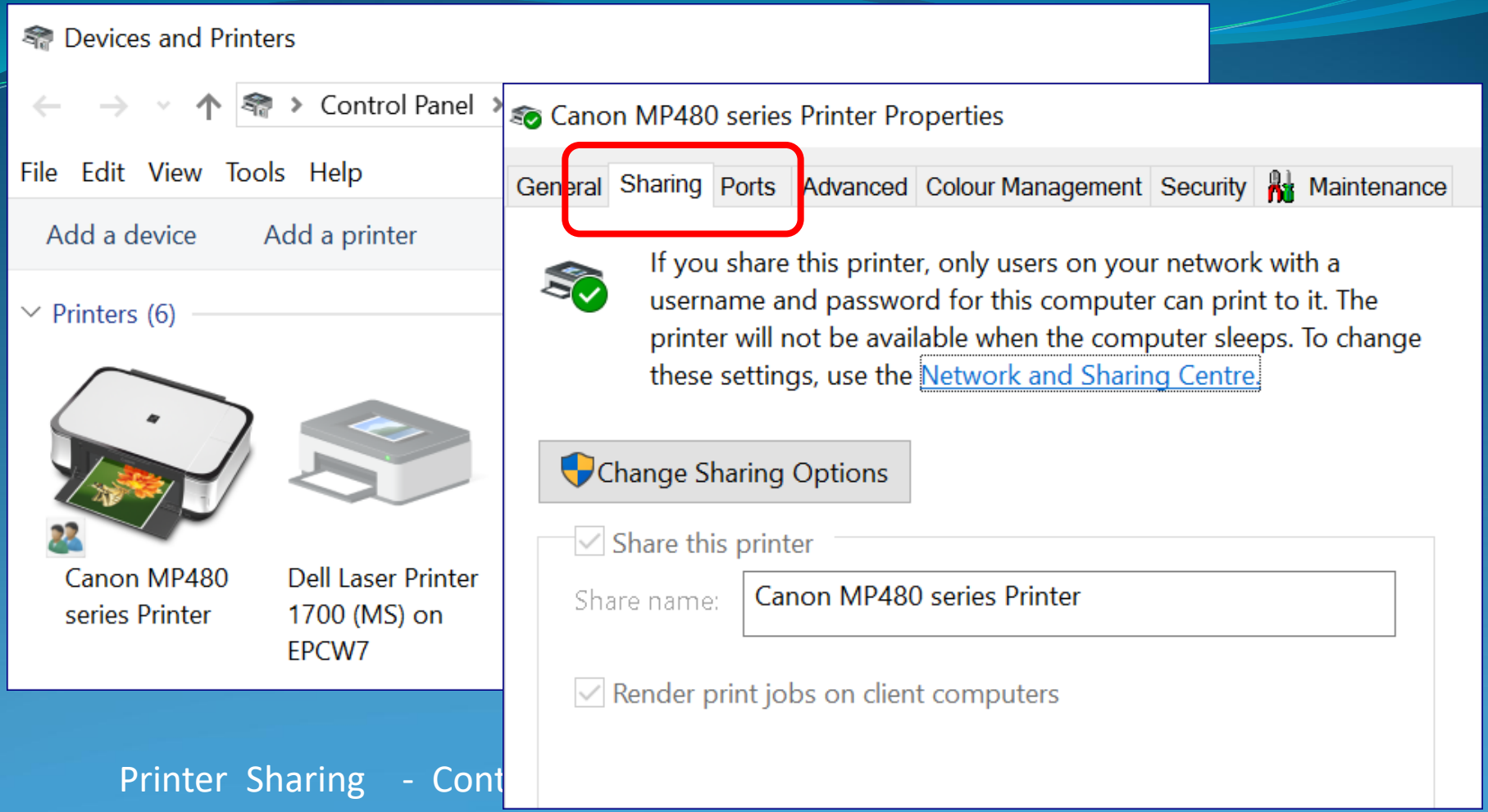

Network and Sharing Centre
All Control Panel Items › Network and Sharing Centre
Search Control Panel
File Edit View Tools Help
Control Panel Home
Change adapter settings
Change advanced sharing settings
See also
HomeGroup
Infrared
Internet Options
Windows Firewall
HomeGroup
Control Panel › All Control Panel Items › HomeGroup
Search
File Edit View Tools Help
Change homegroup settings
Libraries and devices that you're sharing from this computer
Pictures
Videos
Music
Documents
Printers & Devices
Change what you're sharing with the homegroup
Allow all devices on this network such as TVs and game consoles to play my shared content

File Sharing Option

- Test Connectivity
  - **On PC, look at File Explorer / Network to see other devices**
- Arrange File and Printer Sharing
  - **Decide on Directories / Files to be shared – on each device**
  - **File Explorer, select files, Rt Click -> Properties, Share with . Select Users (at home, usually everyone)**
  - **For Printer, go to Control Panel / Printers / Printer Properties / Share With . . .**


Music
File
Home
Share
View
Pin to Quick access
Copy
Paste
Cut
Copy path
Paste shortcu
Clipboard
Music Properties
Location
Previous Versions
Customize
This PC
Desktop
Documents
Downloads
Music
Pictures
Videos
ePC-Win-10 (C:)
ePC-XP (D:)
ePC-Win7 (E:)
PPT BACKUPS (F:)
ePC-Data (G:)
File Sharing
Choose people to share with
Type a name and then click Add, or click the arrow to find someone.
Add
Name
Permission Level
dave b (dave_be2@hotmail.com)
Read/Write
daveb@melbpc.org.au (daveb@melbpc.org.au)
Read
db
Owner
Everyone
Read/Write


Network
File
Network
View
EEEPC-WIN10
File
Home
Share
View
Music2
File
Home
Share
View
Network › EEEPC-WIN10 › Music2
Data-1T (G:)
Hold-1T (K:)
System Reserved (Q:)
RAMDISK (Z:)
Network
BRCM-LVG
EEEPC-WIN10
WIN10-64-DEV
WIN10-64-PRDN
Name
Date modified
Air Traffic Controller's Dinner Speech.mp3 7/05/2009 8:26 PM
Dreaming Of NZ (Hayley Westenra).mp3 4/04/2012 1:02 PM
John Denver & Placido Domingo - Perhaps Lov... 17/02/2012 4:35 PM
Pokarekare Ana-AirNZ.mp3 20/11/2013 1:06 PM
shrek-hallelujah.mp3 6/06/2009 5:22 PM
Sibelius - Karelia Suite- 3- Alla marcia.mp3 1/02/2000 12:24 AM
Sibelius - Karelia Suite op 11.mp3 22/05/2009 5:08 PM
Silent Night - Willy Nelson.mp3 21/04/2012 8:29 PM
Tchaikovsky - 1812 Overture (John Williams con... 21/04/2012 8:29 PM



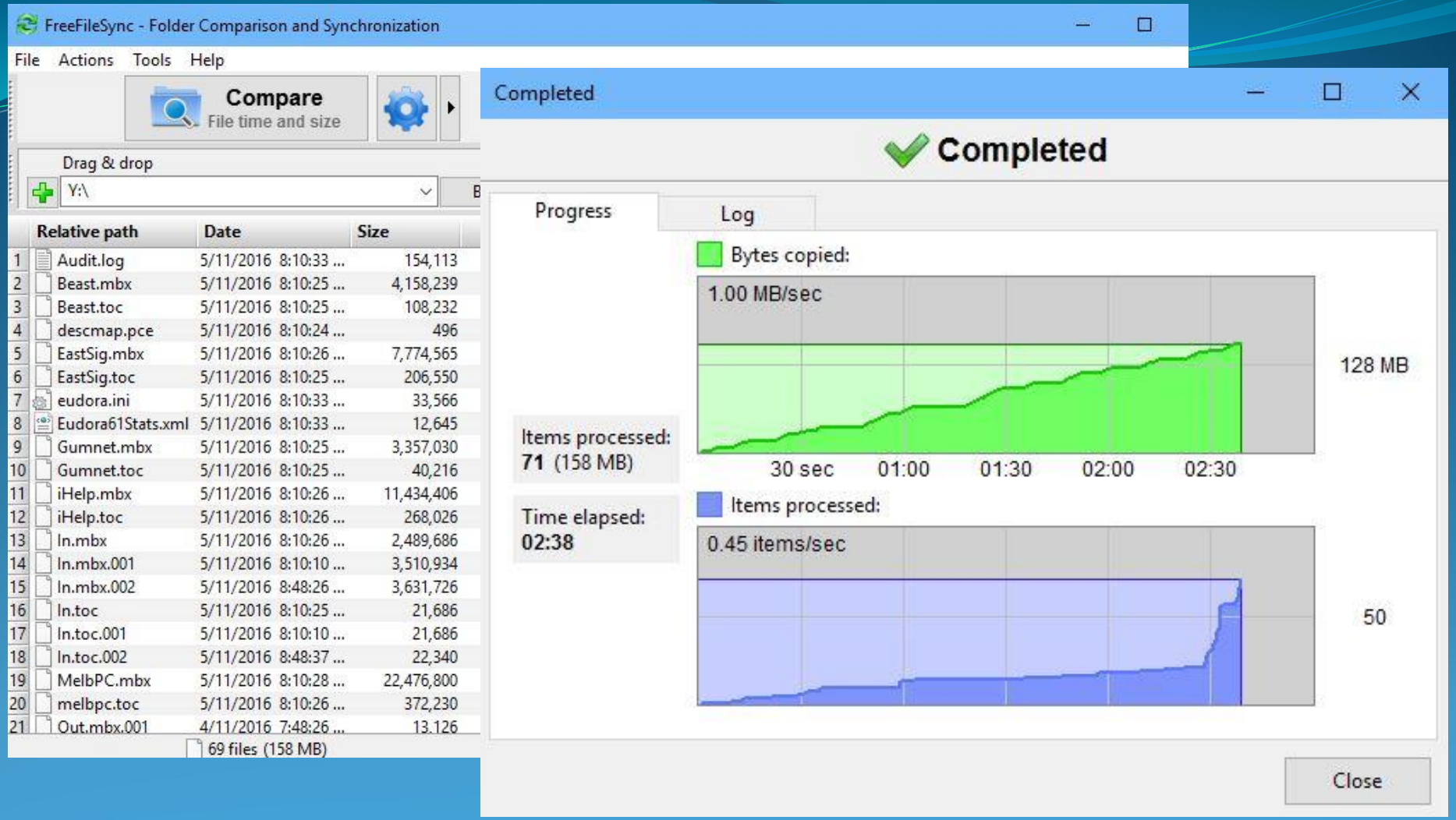
Printer Sharing - Cont

Security Comparisons

- Home Group
  - **Other PCs need 8ch Home Group psw for access**
  - **Then open to anyone who can logon to that PC**
- File Sharing . . .
  - **Users on other device(s) each need assigned access**
  - **Setup at either Directory or individual file levels**
  - **Can then control which Users have access, R only or R/W**
  - **Can use "Everyone" where lesser security needed**

File Synchronisation

- Automatic Windows methods
  - **One Drive in Cloud - create sync file on PCs etc**
- Third party Controlled . . .
  - **Free File Sync - both Real Time and user Controlled**
  - **My favourite for syncing Eudora Mail from main PC to development PC, two laptops and a Stick PC**
  - **FFS can also sync to Apple and Linux (no Android ?)**
  - **Has a Real-Time Option - not used by me . .**

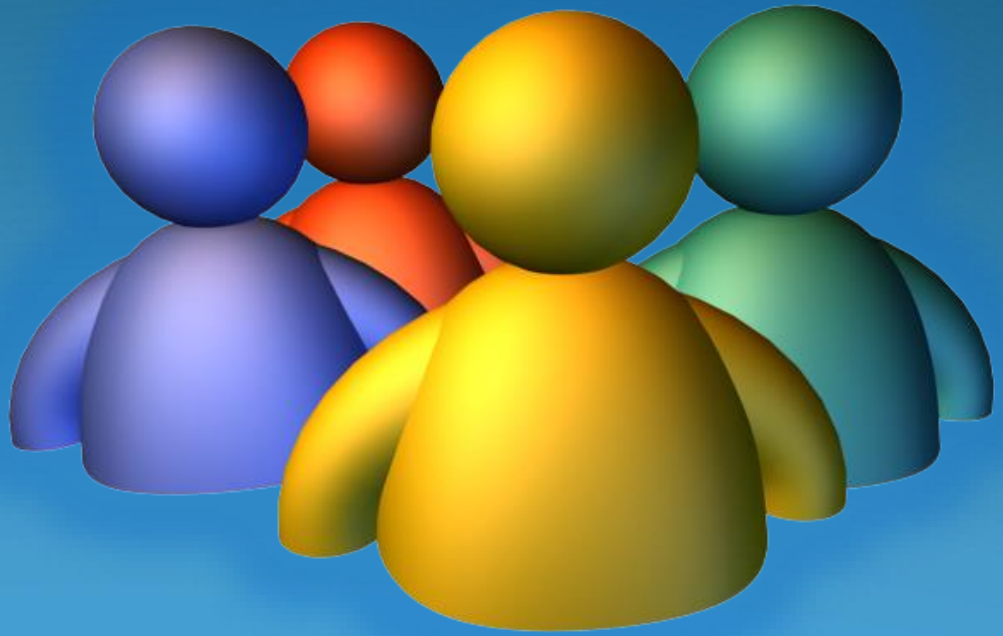

FreeFileSync - Folder Comparison and Synchronization
File Actions Tools Help
Compare
File time and size
Drag & drop
Y:\
Relative path Date Size
1 Audit.log 5/11/2016 8:10:33 ... 154,113
2 Beast.mbx 5/11/2016 8:10:25 ... 4,158,239
3 Beast.toc 5/11/2016 8:10:25 ... 108,232
4 descmap.pce 5/11/2016 8:10:24 ... 496
5 EastSig.mbx 5/11/2016 8:10:26 ... 7,774,565
6 EastSig.toc 5/11/2016 8:10:25 ... 206,550
7 eudora.ini 5/11/2016 8:10:33 ... 33,566
8 Eudora61Stats.xml 5/11/2016 8:10:33 ... 12,645
9 Gumnet.mbx 5/11/2016 8:10:25 ... 3,357,030
10 Gumnet.toc 5/11/2016 8:10:25 ... 40,216
11 iHelp.mbx 5/11/2016 8:10:26 ... 11,434,406
12 iHelp.toc 5/11/2016 8:10:26 ... 268,026
13 In.mbx 5/11/2016 8:10:26 ... 2,489,686
14 In.mbx.001 5/11/2016 8:10:10 ... 3,510,934
15 In.mbx.002 5/11/2016 8:48:26 ... 3,631,726
16 In.toc 5/11/2016 8:10:25 ... 21,686
17 In.toc.001 5/11/2016 8:10:10 ... 21,686
18 In.toc.002 5/11/2016 8:48:37 ... 22,340
19 MelbPC.mbx 5/11/2016 8:10:28 ... 22,476,800
20 melbpc.toc 5/11/2016 8:10:26 ... 372,230
21 Out.mbx.001 4/11/2016 7:48:26 ... 13,126
69 files (158 MB)
Completed
Completed
Progress
Log
Bytes copied:
1.00 MB/sec
128 MB
30 sec
01:00
01:30
02:00
02:30
Items processed:
71 (158 MB)
Time elapsed:
02:38
Items processed:
0.45 items/sec
50
Close

Demonstration

Some Issues

- Media Centre bridge for older TVs (ie. not Smart)
- DLNA option useful for TVs (or Media Centres)
- Easiest if common user logons across PCs
- Care needed if allowing external Read/Write access
- Be sure to change default passwords on Wi-Fi routers !

Summary

- Home Networking -> Ideal for Multiple devices
- Especially for shared Internet and TV integration
- Assistance available – Forums, YouTube, MelbPC-MHE
- Seems initially complex, but easy learning
- . . . **Try it** . . ..

Questions ?