

Buying a new Home Computer or a Smartphone



Why buy a New Computer?

- Current computer is old
 - May not run Windows 10
 - Maybe becoming unreliable
 - Laptop battery has died
- Current computer is slow
 - Avoid death by sledge hammer
 - Remove 1 source of stress from your life
- You want a new toy

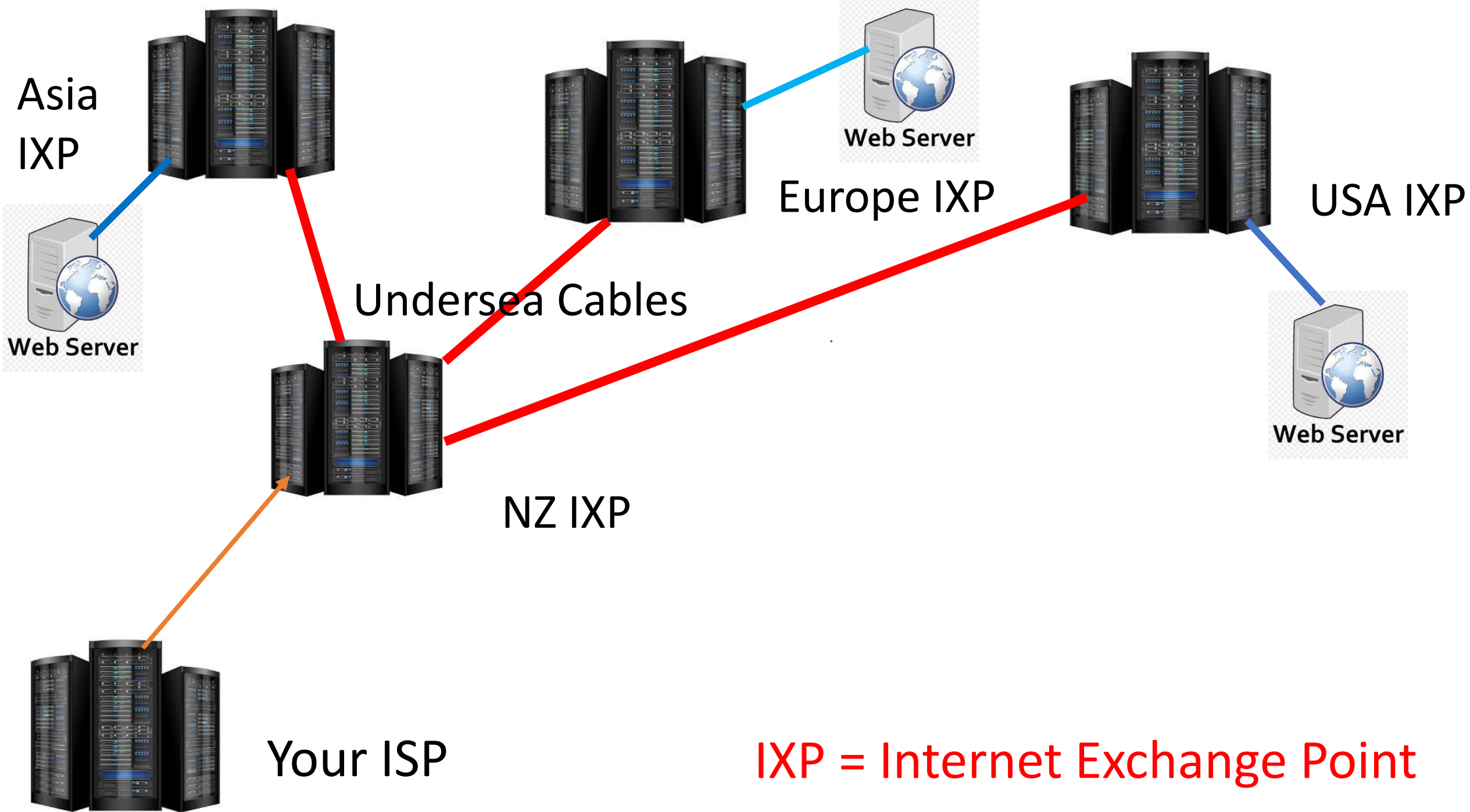


Things You Need to Think About



Things You **Can't** Influence When Surfing the Internet

- The Internet:
 - Your ISP connection to the IXP
 - IXP connections to the undersea cables
 - Traffic on the undersea cables
 - Traffic on the website you are connecting to
- If the Internet is slow, the Internet is slow



Asia IXP



Web Server



Web Server

Europe IXP



USA IXP



Web Server

Undersea Cables



NZ IXP



Your ISP

IXP = Internet Exchange Point

Things that Impact Performance in a Computer

- **Things YOU can control (1)**

- Processor (CPU)

- How fast can programs be run
 - How many cores
 - Clock speed

- Memory

- How much room is there to run programs
- How fast is the memory

- Storage

- How quickly can we get information on and off the drive
- Solid state or Winchester drives
- Drive size
- Drive speed



Things that Impact Performance in a Computer

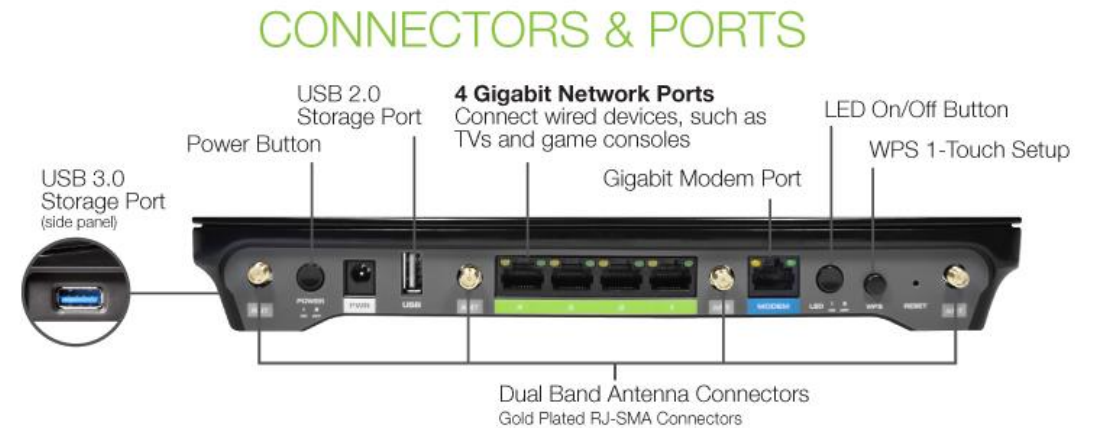
- **Things YOU can control (2)**

- Connectivity to the Router

- Wired OR wireless

- Broadband Speed

- How fast can we get data on and off the internet
 - Fibre or copper
 - Data plan



Processor

- What you buy will have a BIG impact on your long term satisfaction
- Generically, Intel processors are faster than AMD processors
 - They also cost more but ***it is worth it***
- The better the processor, the more cores
 - More cores = faster*
- To future proof yourself
 - Specify an Intel *17* processor
 - Otherwise an Intel i5 processor



Memory (RAM)

- The place where the computer does stuff
 - Runs programs
 - Does system stuff
- Operating System– paging to disk
 - The more memory you have, the less paging required
 - The more paging happens, the slower things go
- Memory is inexpensive. Buy LOTS of it
- Windows 10 claims to need just 2Gb.
 - At less than 8Gb it runs like a pig
- Specify 16Gb or more memory
 - You will thank me.



Storage - Hard Drives

- Based on platters
- Multiple platters spinning
- Contained in sealed unit
- Heads read data from the platters
- Faster spin = faster data retrieval
- Size matters
 - Laptops drives 2.5 inch 5500 RPM
 - Desktop drives 3.5 inch 7200 RPM
- SSD
 - More expensive
 - Very fast
 - Usually 2.5 inch



Connecting your computer to your Home Router

- Two choices
 - Wireless
 - Ethernet (cable)
- If possible, use Ethernet
 - Faster – 1Gbps Versus ??
 - More reliable connection
- (Same goes for your Printer)



First Things First

- What to buy?
 - Laptop
 - Desktop
 - All-in-One
- It depends



Laptop or Desktop?

- Do you travel a lot?
- Do you need to transport your computer?
- Does small size matter?
 - If YES, buy a laptop
 - If NO, buy a desktop



Why Not Just Buy a Laptop?

- Laptops are built for purpose
 - Portable
 - Light
 - Power efficient
 - Great for business people
- Laptops involve compromise
 - Processor
 - Memory
 - Screen
 - Storage
 - Power
 - No expansion
 - Drop proof
- Good value only if you need portability



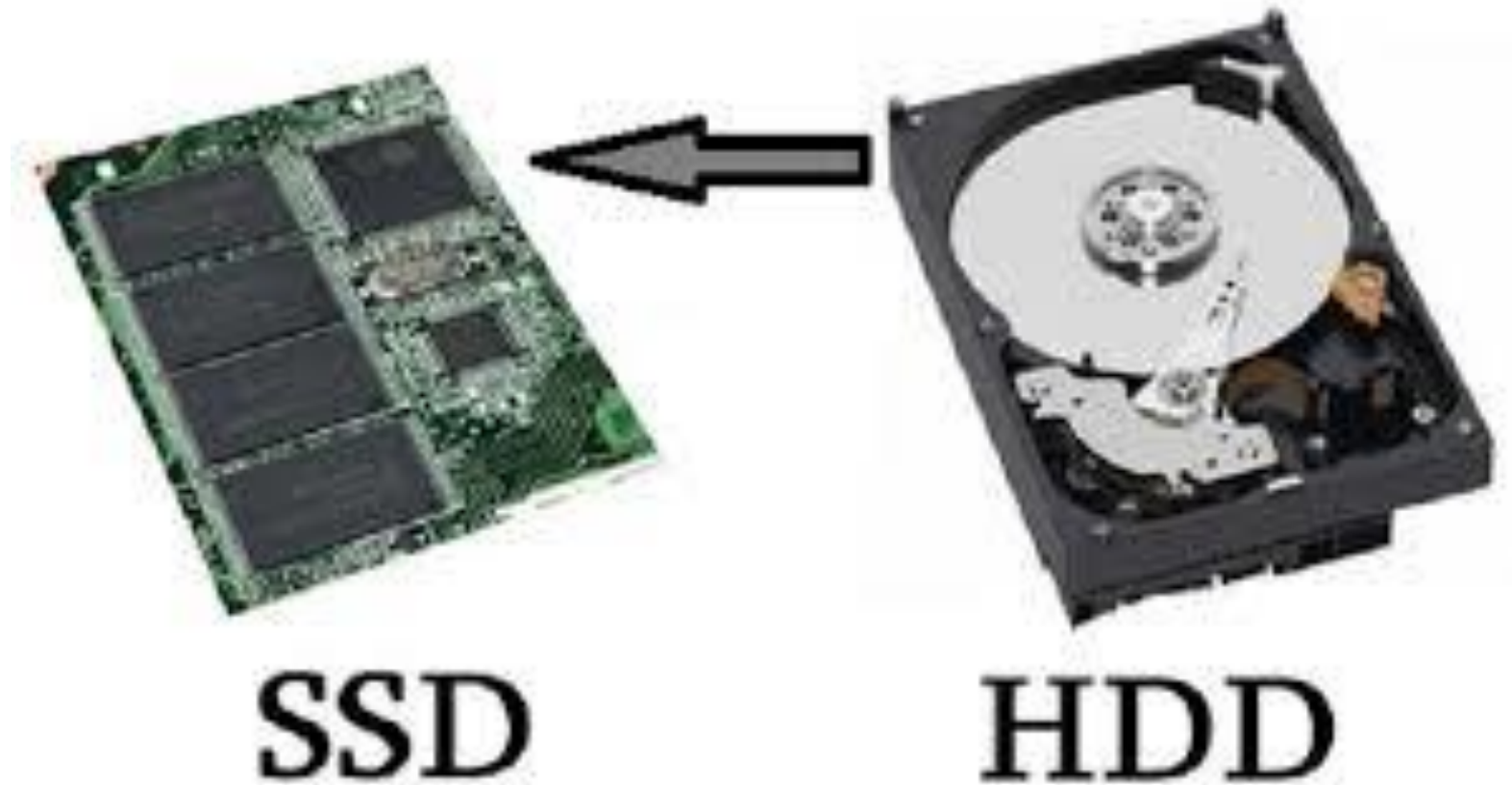
Laptop Compromises

- Processor
 - Battery friendly
 - Draw less power
 - Is less powerful = SLOWER
- Memory
 - Power efficient not fast
 - Soldered to MB = no upgrade
- Storage
 - Small and thin is king
 - 5400rpm instead of 7200rpm
 - Data retrieval is SLOWER
- Screen
 - Smaller
 - High resolution will cost you



Laptop Faster Storage Solution?

- Money No Object?
- Solid State Drive?
 - Fast, but it will cost you



Why Buy A Desktop?

- Processor
 - Higher performance
 - Not power constrained
- Memory
 - Upgradeable
 - Fast access
- Storage
 - SSD or Hard drive
 - Multiple drive options
 - Fast Access
- Screen
 - You choose
 - Multiple screen options
- Expandable



Size Does Matter



Why buy an All-In-One?

- If you are space or powerpoint constrained
- However not battery constrained
- Restricted expansion
- Don't buy the Touch screen model
 - Expensive



Sample Specification for a PC

- Intel i7 processor
- 16Gb+ Memory
- 256Gb+ SSD
- 2TB Hard Drive
- 25 inch high resolution monitor

- This will last you 5 to 10 years.
 - $\$2000/10/52 = \4 a week. A bargain.

Sample Specification for a PC if you are Cash constrained

- Intel i5 processor
- 16Gb+ Memory
- 2TB Hard Drive
- 23 inch high resolution monitor

What about Smartphones

- Storage, storage, storage!
 - Buy as much storage as you can afford
 - At least 32Gb if you buy Apple
 - At least 16 Gb and an expansion slot of Android
- You get what you pay for
 - Android is better value than Apple
 - Apple is probably better if you have never used a smartphone
 - Apple is EXPENSIVE
 - Avoid the \$200 specials!!!
- Storage is KING on a smartphone



Summary

- Don't buy a laptop unless you REALLY need one
- Do your research before you shop.
- Take your specification with you
- Don't just buy what's on special
- **You can never have:**
 - **too fast a processor**
 - **too much memory**
 - **too much storage**
- Spend as much as you can afford:
 - Go in with a specification
 - If they don't have your spec, go elsewhere
- The sales person WILL try to sell what they have in stock
- Consider buying on the internet.

Places you might consider buying online

- Dell New Zealand: www.dell.co.nz
- PBTech: www.pbtech.co.nz

Select a computer that fits your specification