Computer Basics
Intermediate Quick Reference Tutorial

JN Software Consulting

Internet Safety Tips

- ✓ Think carefully about the programs you download and install from the Internet. Do a bit of research first and see what other people have to say about how good or bad the software might be.
- ✓ Make sure you download and install program patches and updates to prevent against security holes. If a program has the option to check for updates by itself, it is a good idea to let the software take care of itself.
- ✓ Keep your anti-virus software up to date. These programs only work as well as their virus dictionaries.
- ✓ Scan your files from time to time and make sure nothing has sneaked through your defenses.
- ✓ Be careful what you click on – too good to be true usually means it is!
- ✓ Be careful with e-mail. Attachments to e-mail can contain malicious software. Make sure you trust the sender or recognize the software that is being sent to you before opening or using it.
- ✓ Be aware. Make sure to read any safety bulletins from your anti-virus manufacturer or on the news about emerging computer threats.

Choosing a Good Password

- ✓ Have at least six characters (more would be better)
- ✓ Use numbers and letters (upper and lower case) and symbols ($,*,#)
- ✓ Avoid using people's names
- ✓ Avoid using everyday words
- ✓ Avoid using common keyboard patterns (like qwerty or 123456)
- ✓ If you must write it down, store it in a safe place.

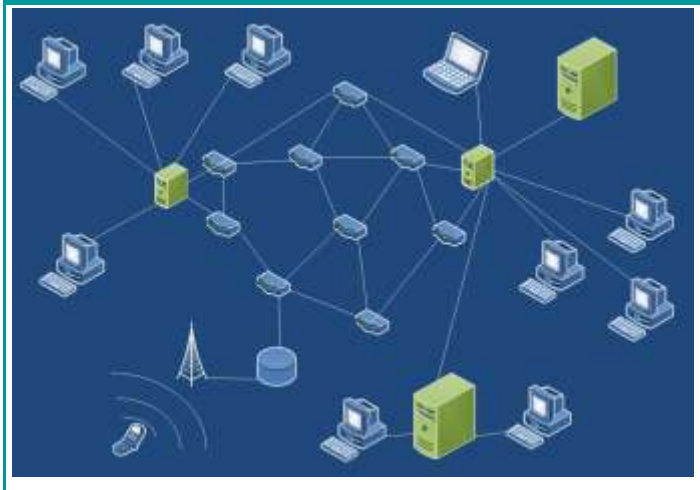
Understanding Backup Methods

Method	Description	Best
CDs or DVDs	CDs can store about 600 to 700 megabytes of data, while DVDs can store 4+ gigabytes. CDs and DVDs are offer direct access to the data that is stored on them. Though CDs and DVDS are relatively inexpensive and quite durable, it can be inconvenient to continually back up data to them manually, especially if there are large amounts of data that must be backed up frequently on a regular schedule. As well, the data that is stored on optical disks may not last as long as the data that is stored on magnetic tape.	Hon Sm
Tape Drives	Tape drives offer large relatively inexpensive storage capacities and they can last a long time without losing data in archival situations. However, data must be accessed sequentially from a tape drive.	Any
Network Servers	Network servers provide a highly efficient and highly automated form of data storage. Basically, the data to be backed up travels over a network and is stored on another hard disk located in a remote server.	Larg
RAID	RAID stands for Redundant Array of Independent Disks. This is a group of two or more disks that behave logically as one. This means that if there is a disk failure in the computer, the data can still be recovered from the remaining disks that also store the data. Backup systems using RAID can be easily automated and are very fast.	Larg

Types of Networks

Network	Use	Infrastructure	Switching Method
PSTN (Public Switched Telephone Network)	Primarily voice	Mostly digital, but the last link to the home is often analog	Circuit switching
ISDN (Integrated Services Digital Network)	Primarily for voice, but also for data, video conferencing, and more	All digital, from end to end	Circuit switching
Internet	Primarily for computer data	Mostly digital, but some links can be analog (like an analog telephone line)	Packet switching

Basic Internet Map



Devices on outside rim send requests to servers (green). Servers send information through communication network (center of diagram) and return data.

Computer Comfort Checklist

- ✓ Adjust your monitor controls and screen resolution to make sure that the information on your computer screen is clear and easy to see.
- ✓ Adjust your seating height and monitor angle so that you can see the computer screen comfortably without neck strain or leaning forward.
- ✓ Adjust your seating so that you can use your keyboard and mouse with your forearms level and with a comfortable posture. (Your wrists should be fairly straight when typing or using a mouse.)
- ✓ Sit comfortably upright, with your lower back supported and your feet resting on ground. Your thighs should be roughly parallel with the floor.
- ✓ Make sure there is adequate light in your working area so you can comfortably see what you are doing, and safely move about.
- ✓ If possible, try to reduce the amount of glare/reflection on your computer screen by adjusting the lighting or the screen's position. Remember, do not make adjustments that make the screen more difficult to see, that disrupt your posture, or that create an unsafe working area (i.e. lighting that is too dim).
- ✓ Remember to take frequent posture breaks throughout your day. Remember to take frequent posture breaks throughout your day.

Types of Networks

Network Type	Devices	Range/transfer speeds	Multiple Access Strategy*
Bluetooth	Wireless mouse, wireless keyboards, Bluetooth enabled computers, some PDAs, mobile phones, and many other devices	Typically a few meters for room sized PANs (Personal Area Networks) Typical transfer speeds may be around 1Mbps (one megabit/second)	FHSS (Frequency Hopping Spread spectrum) Signals rapidly switch frequencies according to a pre determined pattern This allows multiple signals on a narrow frequency band with little interference
Wi-Fi (Wireless LAN standards) 802.11a 802.11b 802.11g	PCs and laptops with wireless network interface cards Wireless routers/ access points and some PDAs	Transfer rates are advertised as: 11 Mbps for 802.11b 54 mbps for 802.11a 54 mbps for 802.11g In practice, actual transfer rates for these networks may be significantly less	802.11b uses DSSS (Direct Sequence Spread Spectrum) 802.11a uses DSSS/FHSS 802.11g uses OFDM (Orthogonal Frequency Division Multiplexing)
Mobile Phone	Cell phones, some PDAs	If the mobile device can access the mobile service (if it is located in a mobile network cell or is moving across cells) then the device can reach just about any other phone that can connect to the PSTN Mobile phone networks allow mobile devices to exchange information while on the move Unfortunately, in terms of data transfer, mobile phone networks are slow compared to other wireless networks	TDMA (Time division Multiple Access) CDMA (Code division Multiple Access)

Internet Definitions

HTTP	HTTP stands for Hypertext Transfer Protocol. This is a set of rules that applications like Web browsers use.
HTML	HTML stands for Hypertext Markup Language. This is a language that specifies the contents of a web page.
Hyperlink	Using HTML, web designers can specify hyperlinks in a web page. These hyperlinks will typically refer to the location of a file.
URL	The term URL stands for Uniform Resource Locator. URLs are also sometimes called web addresses.
FTP	FTP stands for File Transfer Protocol. It is an application layer protocol that is used to communicate data over networks.
ISP	ISP stands for Internet Service Provider. An Internet Service Provider is a company that provides Internet access.
RSS	RSS stands for Really Simple Syndication. RSS is a format for delivering consistently changing content, like news.
Cookie	A cookie is a small amount of text information that can be automatically downloaded from a server into a user's computer.
Cache	A cache is a storage area on your computer's hard disk where elements from web pages (like images and graphics) can be stored.

What Can I Share Over a Network?

Files	Computer files can take the form of word processing documents, spreadsheets, digital images, and a host of other file types. Files stored in a shared network folder (typically located on a computer server) can be accessed by anyone on the network with the proper authorization. This makes it easy to distribute and collaborate on files across an organization.
Hardware resources	A hardware resource might be a printer, a storage area, or even another computer. By sharing hardware resources through a network, these resources can be used more efficiently and cost effectively. For example, networking could allow a single printer to be used by an entire department, rather than having a printer for each employee.
Applications	Sometimes, applications can be shared through a network. For example, in a multiprogramming environment, many users can log into a single computer and use certain applications on that computer that may be impractical to distribute to individual users on an individual basis. Some distributed applications may rely on several, moderately powerful, networked computers to solve problems that would otherwise require a computer with immense processing power. In a sense, these network computers are distributing the workload over a number of machines to solve the problem. For example, computer networks in countless businesses and other organizations allow multiple users to share centrally located database applications.

Computers and the Environment

- ✓ Recycle printer cartridges
- ✓ Get printer cartridges re-filled
- ✓ Recycle or re-use paper
- ✓ Use power conservation mode on your computer
- ✓ Turn computer or peripherals (such as monitors or speakers) off when not in use
- ✓ Choose low power components (such as LCD monitors)
- ✓ Donate old electronics to charity