

Home Networking and Data Security

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Data Security

- Browse Safely
- Keep Operating System up to date
- Data BackUp
- Software Protection
- Home Network Configuration

Browsing

- **Browser**
 - IE, Firefox, Safari, Chrome, Opera
 - **Specialty Browsers**
 - Buddy Browser
 - Kidsplorer
 - OnlineFamily.norton.com
- **Location**
 - Is encryption being used
- **Behavior**
 - Know what sites you use

Update OS

- **MS Automatic Update**
 - Updates typically released monthly
 - **Configuration Options**
 - Automatic – Downloads and installs updates
 - Download and prompt for install
 - Prompt for download and install
 - Disable

Data Backup

- Copy Data to CD, DVD or Thumb Drive
 - Cheap and Easy
- External Hard Drive
 - Maxtor One Touch
 - USB or Firewire connection to system
 - One Touch operation
 - LaCie Hard Disk
 - USB or Firewire connection to system
 - One Touch operation
 - Maxtor Shared Storage
 - Network Device
 - Can be configured to backup all systems on your network

Standard RAID Options

- External Storage Drives
- Redundant Array of Inexpensive Disks
- RAID 0 – Striped Set
 - Data is Written to 2 disks
 - Not redundant – but increases performance
- RAID 1 – Mirrored Set
 - Data is written to 2 disks
 - Exact copy on each disk
- RAID 5 – Striped with Parity
 - At least 3 drives
 - Increases capacity and redundancy

Software

- McAfee – www.mcafee.com
 - Total Protection
 - AV, Firewall, Spyware and Phishing
 - Up to 3 PCs
- Symantec – www.symantec.com
 - Norton Internet Security 2010
 - AV, Firewall, Spyware and Phishing
 - Up to 3 PCs
 - MAC version also available
- Trend Micro – www.trendmicro.com
 - Internet Security Pro
 - AV, Firewall, Spyware, Phishing and Parental Control
 - Up to 3 PCs
- Free AV Software
 - Avast – www.avast.com
 - AVG – free.avg.com

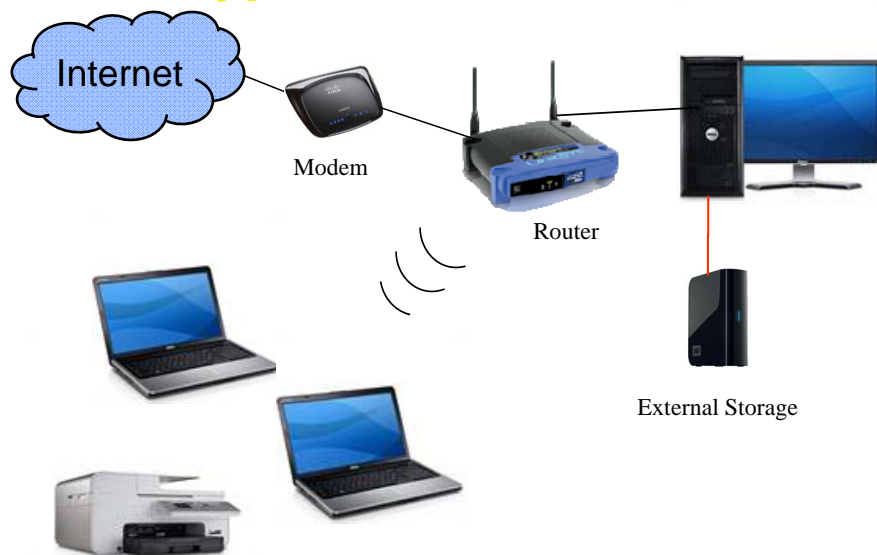
Stand Alone Applications

- Spyware
 - Ad-Aware
 - Spybot Search and Destroy
 - Malwarebytes' Anti-Malware
- Firewall
 - ZoneAlarm
 - MS Windows Firewall
- Phishing
 - MS Phishing Filter – Built into IE 7 and 8
 - McAfee SiteAdvisor

Home Router Configuration

- **WiFi settings**
 - Use ambiguous SSID (service set identifier)
 - Do not broadcast SSID
- **Security Options**
 - **Modify Router Password**
 - **MAC address filtering**
 - Allow only specific MAC addresses access
 - **Modify Internal IP Settings**
 - Change default IP addressing
 - Disable DHCP
 - » Manually configure IP addresses access
 - **Enable Encryption**
 - WEP, WPA or WPA2

Typical Home Network



Encryption

- **WEP – Wired Equivalent Privacy**
 - Contains weaknesses that are now well-known
 - Uses the same encryption key
 - Better than nothing
- **WPA – WiFi Protected Access**
 - Uses Temporal Key Integrity Protocol (TKIP) for encryption
 - Keys are dynamic per user, session and packet
 - Uses Extensible Authentication Protocol (EAP) for authentication
 - Home Use
 - Use a Pre-Shared Key (PSK)
 - Manually entered on router and client adapter
 - Should be longer than 8 characters
 - Office
 - Utilizes an authentication server
 - Uses Message Integrity Check (MIC)
 - Prevents attacker from altering data packets and resending them
- **WPA2 – Second Generation**
 - Similar to WPA
 - More advanced encryption

Demonstration

- **Linksys Wireless Broadband Router**
- **OnlineFamily.norton.com**

Trends in WIFI

- **802.11 N**
 - Improves Network Throughput (Increases Speed)
 - Depending on Environment up to 100 Mbit/s
 - Uses 2 separate data streams to accomplish throughput
 - Pure N network runs on 5 GHz
 - Mixed b/g/n network – One antennae on 2.4 GHz other on 5 GHz
 - This allows for backward compatibility
 - New hardware will eventually be N
- **3G/4G Mobile HotSpots**
 - Cell Phone cards with WiFi HotSpot built in
 - Supports up to 4 simultaneous users
 - Novatel MiFi Mobile HotSpot
 - Verizon and Sprint
 - Sprint Personal Hot Spot PHS300S

Resources

- **Software**
 - www.symantec.com
 - www.mcafee.com
 - www.lavasoftusa.com (Ad-Aware)
 - www.malwarebytes.org
 - www.buddybrowser.com
 - www.devicode.com/kidsplorer
 - www.zonelabs.com
 - www.safer-networking.org (Spybot S & D)
 - www.lacie.com
 - www.maxtor.com
 - www.avast.com
 - free.avg.com
 - OnlineFamily.norton.com
- **General Information**
 - www.getnetwise.org
 - www.wi-fi.org

Questions and Answers



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