

WiFi Security and Trends

Presented by:
Jonathon M. Santilli
Senior Network Engineer
Digital Acumen
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Technology
Pavilion



Staying Protected

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

Browsing

- **Browser**
 - **IE vs. Firefox**
 - **Specialty Browsers**
 - Buddy Browser
 - Kidsplorer
- **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**

Software

- McAfee – www.mcafee.com
 - Total Protection– \$59.99
 - AV, Firewall, Spyware and Phishing
 - Up to 3 PCs
- Symantec – www.symantec.com
 - Norton Internet Security 2008 – \$69.99
 - AV, Firewall, Spyware and Phishing
 - Up to 3 PCs
 - MAC version also available
- Trend Micro – www.trendmicro.com
 - Internet Security Pro - \$69.95
 - AV, Firewall, Spyware, Phishing and Parental Control
 - Up to 3 PCs

Stand Alone Applications

- **Spyware**
 - **AdAware**
 - **Spybot Search and Destroy**
- **Firewall**
 - **ZoneAlarm**
 - **MS Windows Firewall**
- **Phishing**
 - **MS Phishing Filter – Built into IE 7**
 - **McAfee SiteAdvisor**

Virtual Private Network

- **Small Business or Corporate Level Solution**
- **Connects your system to your network through a secure tunnel**
- **Server /Client**
 - **VPN Concentrator or Server**
 - **Software running on client**
- **How It Works**
 - **Encryption – Data is “scrambled”**
 - **Tunneling – Scrambled data packets are encased within another packet that contains routing info only**
 - **Decryption – Scrambled data is re-assembled at receiving end**

Home Network 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

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 of Settings

- **Typical Consumer Level Router**

Trends in WiFi

- **WPA 2**
 - All new WiFi devices support WPA2
 - It is backward compatible with WPA
- **WiFi Mesh Network**
 - WiFi devices are connected to multiple nodes
 - Does not rely on a fixed access point
 - Each device acts as a router
 - Applications
 - Devices can be fixed or mobile
 - Communications in emergency situations
 - Battlefield deployment
 - Urban networks
- **VoIP with WiFi**
 - VoIP phones using WiFi connection
 - VoIP using computer and WiFi connection

Resources

- **Software**

- www.symantec.com
- www.mcafee.com
- www.lavasoftusa.com
- www.buddybrowser.com
- www.devicode.com/kidsplorer
- www.zonelabs.com
- www.safer-networking.org

- **General Information**

- www.getnetwise.org
- www.spywareinfo.com
- www.wi-fi.org

Questions and Answers