

THE 123 OF WIRELESS SECURITY AT HOME

家居WIFI 保安 123

CONFIGURING YOUR HOME WIRELESS NETWORK

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Knowledge 123

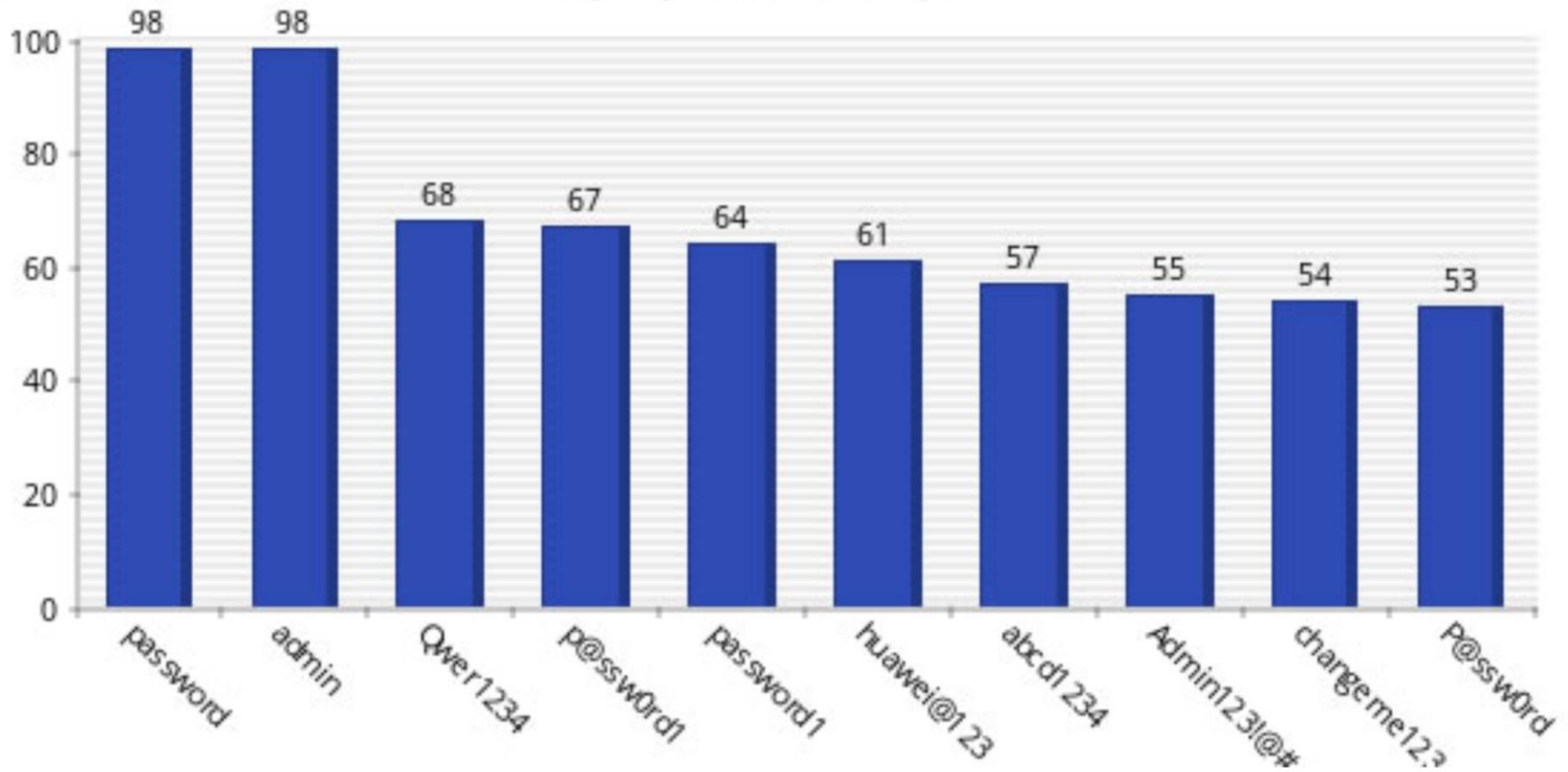


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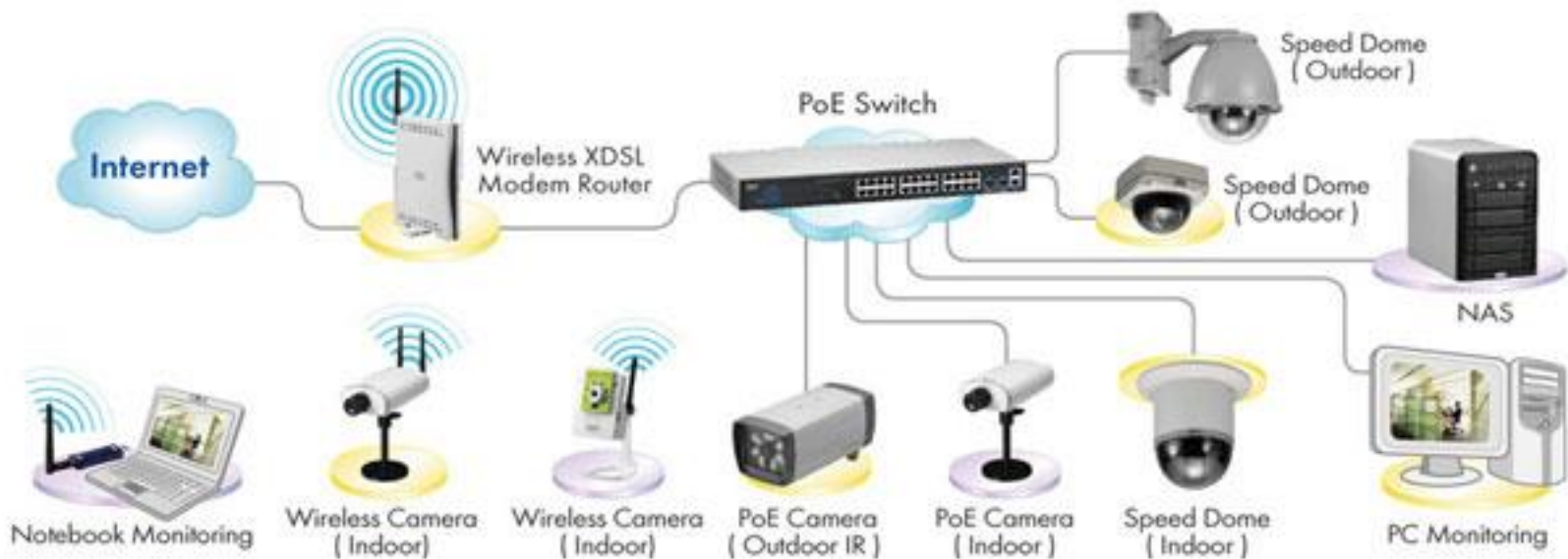
Knowledge 123

Powered by
Libchart

Top 10 passwords attempted



Home Network



Functions of a Home Wireless Router

- Router
- Access Point
- Firewall



What is a Router



- Connects your computer to the internet (cable modem or DSL Line) – keeps LAN traffic local
- Connects one network to another ... Sometimes called a “Gateway”

What is an Access Point

- A point where computers access a network
 - ▣ Device which links wireless users to network
 - ▣ Transmits and receives data (Transceiver)
 - ▣ Bridge between wireless and wired networks
- Can be linked together to cover broad area
- No security or firewall implemented
- Wireless Networking Standards
 - ▣ 802.11 a, b, g and n
 - configuration specifications to insure compatibility
 - Different speed/range capabilities
 - ▣ Equipment conforming to “n” is most popular/available
 - Good for 100-400 feet ... in a house
 - ▣ General rule – don’t mix equipment made to different standards

What is a Firewall

- A device that filters packets of data or traffic
- Its job is to be a traffic cop
- You configure the firewall:
 - ▣ What will allow to pass
 - ▣ What will it block
- Hides your home network from the outside world
- Can be either in hardware or software
- Most popular routers for home have built in firewall protection

What Does a Firewall do?

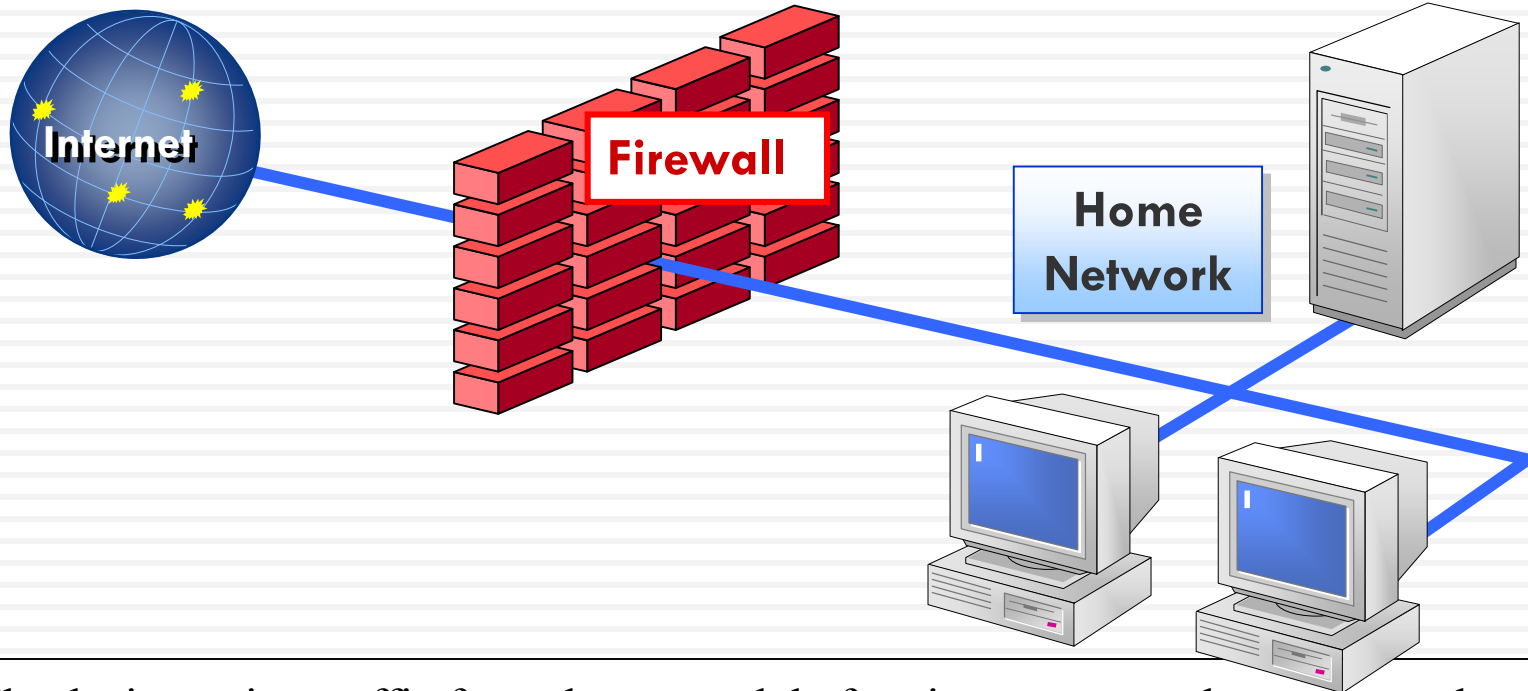
They:

- Protect your home computer from the bad guys
- Keep your information private
- Make you less of a target

By:

- Stopping viruses
- Hiding your computer from the world
- Making the bad guys work harder to get your info

Firewall Protection



1. Checks incoming traffic from the network before it gets to your home network default – Blocks all Incoming connections
2. Traffic leaving your home network ... default - Allow all outbound connections
3. Hardware firewalls protect you home network by stop all traffic before it get to your computers
4. Personal software firewall on your computer blocks incoming and outgoing (lets you know what is leaving your computer)

Configure Wireless Firewall/router

Overview

1. **Basic Settings** ... name, ip address, etc
 - Check for firmware updates
2. **Set Account name** and password
 - Change name and password ... don't used default
3. **Wireless Settings**
 - SSID broadcast ...
 - make sure that remote computers are set to automatically connect
 - Do not enable DMZ
 - Do enable ping blocking
4. **Security - Blocking and Filtering**
 - Wireless Security encryption
 - MAC filtering
5. **Back up settings**

Account Name

- Change SSID
 - ▣ Default name is set by manufacturer ... eg, Belkin54
 - ▣ Bad guys know defaults and default administrative passwords
- Create Administrative Password
 - ▣ Use Strong Password

Default Info

- Router default info is easily available on internet for consumers ... and the bad guys
 - eg
 - http://www.otosoftware.com/wwhelp/Default_Router_Usernames_and_Passwords.htm
 - <http://forum.pcmec.com/showthread.php?t=64258>
- So Change Name and Password

<i>Mfg</i>	<i>Default IP</i>	<i>User Name</i>	<i>Password</i>
Belkin	192.168.2.1	admin	blank
D-link	192.168.0.1	admin	blank
Linksys	192.168.1.1	blank	admin
Netgear	192.168.0.1	admin	password

Passwords

Your computer password is the foundation of your computer security

- ❑ NO one password for all!!!
- ❑ Set and change the “administrator” password on router (and your computer logon)
- ❑ STRONG PASSWORD ... 6-8 digit passwords
 - ▣ use upper, lower case, numbers and symbols

Password Length	Lowercase Only	Upper & Lower and Numbers
3	2 seconds	1 minute
4	1 minute	2.5 hours
5	20 minutes	9 days
6	8.7 hours	2 years

Wireless Settings

- SSID - service set identifier
 - ▣ name given to your wireless network
 - ▣ Broadcasting this ID makes network visible to PCs in area
 - can be turned off so it will not be detected by other PCs in area
 - Be sure to set up your own pc to automatically detect and logon to your WLAN
- DMZ –
 - ▣ allows you to select a PC to access WLAN outside the firewall
 - ▣ do not enable unless firewall interferes with some activity
- Ping Blocking –troubleshooting tool
 - ▣ Signal sent and echo received indicates valid ip address
 - ▣ Used by hackers to find active computers
 - ▣ Enable ping blocking ... won't send echo back
- WPS ... Wi-Fi Protected Setup
 - ▣ Disabling WPS after use.

Example: SSID Setting



Go to Advanced-> Wireless Settings → Disable SSID Broadcast option

Change the Default Settings

Go to set password-> Change the default password



Security

Blocking and Filtering

- **Encryption** – coding transmissions
 - ▣ Multiple variations. 2 most common:
- **WPA2-PSK** ... Wireless Protected Access (Pre-shared key)
 - ▣ Use same password for all computers
 - ▣ Use AES
 - ▣ Preferred Choice
- **WPA-PSK**
 - ▣ 2nd Choice (if WPA2 not supported)
- **WEP** ... Wired equivalent privacy
 - ▣ 64 or 128 bit encryption ...
 - ▣ Never never use this

Example: Authentication and Encryption

NETGEAR
SMARTWIZARD router manager
Wireless-G Router model WGR614v9

Wireless Settings

Wireless Network

Name (SSID):

Region:

Channel:

Mode:

Security Options

None

WEP

WPA-PSK [TKIP]

WPA2-PSK [AES]

WPA-PSK [TKIP] + WPA2-PSK [AES]

Security Options (WPA2-PSK)

Passphrase: (8-63 characters or 64 hex digits)

Go to Wireless Settings

- Authentication-WPA2-PSK
- Cipher type(Encryption)-TKIP or AES
- Pass phrase- Configure the pass phrase (Minimum 8 characters)
- SSID-Change the default SSID

MAC Filtering

- **MAC address** ... Media Access Control address
 - ▣ Unique ID permanently attached to each communication device by manufacturer – hardware id
 - ▣ Can find MAC address: run → cmd → ipconfig/all
- Enter MAC addresses of acceptable network clients
 - ▣ If address is not on filter list, access to network will be denied
- Very effective security method

Example: MAC Filtering

Wireless-B Broadband Router BEFW11S4

Wireless

Setup | Wireless | Security | Applications & Gaming | Administration | Status

Basic Wireless Settings | Wireless Security | Wireless Network Access | Advanced Wireless Settings

Wireless Network Access

Allow All

Restrict Access

Access List:

MAC 01:	<input type="text"/>	MAC 11:	<input type="text" value="000000000000"/>
MAC 02:	<input type="text"/>	MAC 12:	<input type="text" value="000000000000"/>
MAC 03:	<input type="text" value="000000000000"/>	MAC 13:	<input type="text" value="000000000000"/>
MAC 04:	<input type="text" value="000000000000"/>	MAC 14:	<input type="text" value="000000000000"/>
MAC 05:	<input type="text" value="000000000000"/>	MAC 15:	<input type="text" value="000000000000"/>

Wireless Network Access

The Wireless Network Access screen is where you can restrict wireless access. The restriction is based on wireless device MAC address. MAC address is a unique 12 digit hexadecimal value given to each network device.

[More...](#)

Check this to restrict access to prescribed MAC ids

Enter allowed MAC ids

To get the MAC address of your Wireless card, Go to DOS and type "ipconfig /all"

RECAP- Steps to protect your wireless network



- 1. Change the default password on your router**
- 2. Enable WPA2(AES) on router and wireless workstation**
- 3. Disable WPS after use**
- 4. Use MAC address filtering**
- 5. SSID broadcast off**
- 6. Prohibit Peer-to-peer (Ad Hoc) networking**
- 7. Keep current on hardware bios upgrades**
- 8. Turn on VPN, if available**

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- [France \(1271\)](#)
- [Japan \(1096\)](#)
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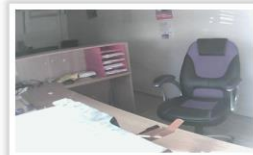
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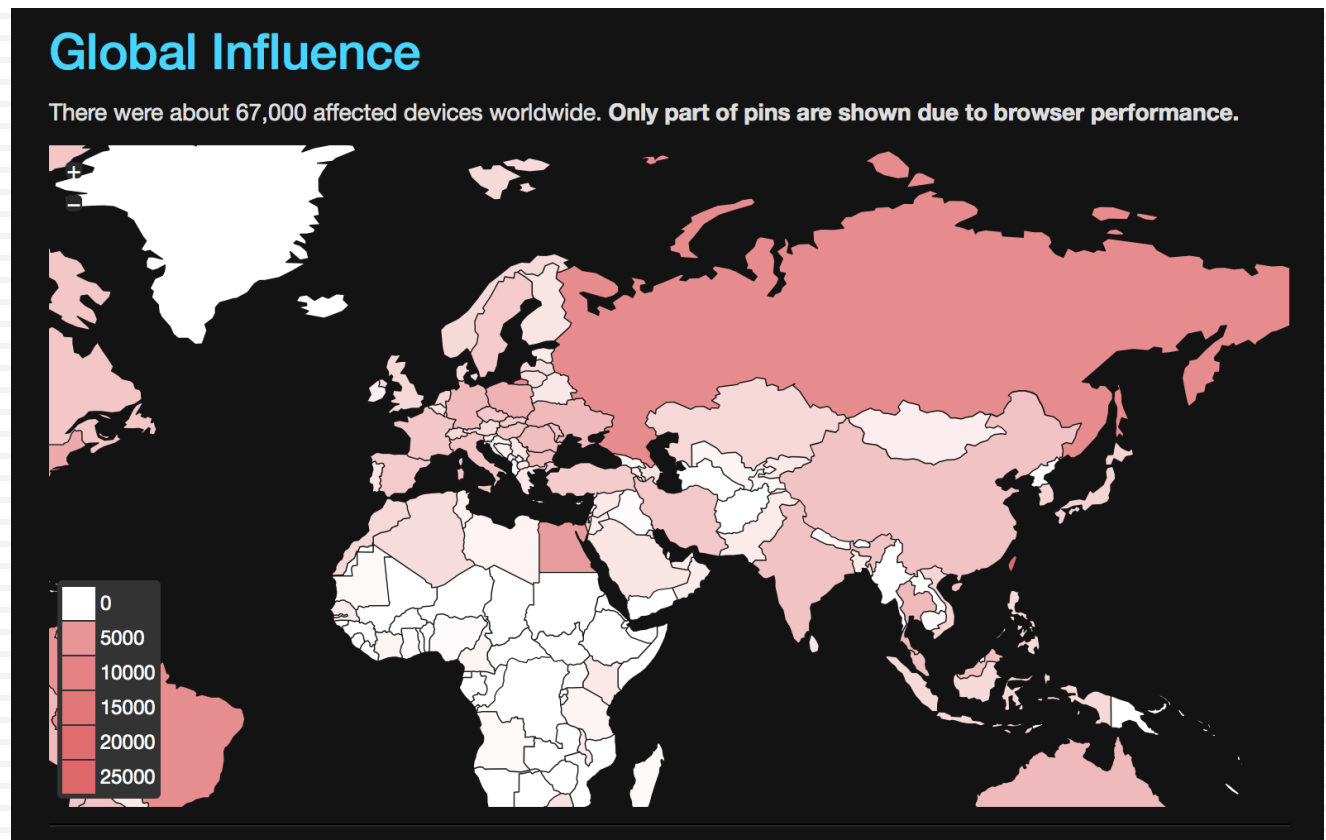
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Internet Scanner – Dlink Backdoor Router

- Use Agent Setting: "xmlset_roodkcableoj28840ybtide"
- 67,000+ Device affected
 - DIR-100, DIR-120, DI-524, DI-524UP, DI-604S, DI-604UP, DI-604 +, TM-G5240, BRL-04R, BRL-04UR, BRL-04CW, BRL-04FWU.





Questions

