Idp network security

Acknowledge it; we've all cut off someone else's WiFi network at some point. However, the world of WiFi is not as innocent as we would like to believe. Connecting to an unsealed wireless network can leave your computer or mobile device susceptible to a plethora of security risks and unwanted activity. Not only that, but unauthorized users can slow your connection down to a crawl, access your private data, or even use the network to perform shady activities that can be traced back to you. Although it seems incredibly complicated (what is WPA, anyway?), securing your wireless network is quite simple. It just takes a little standard encryption, limiting access, and password creativity. We're here to help you secure your wireless network so you can thwart pesky intruders and protect your oh-so-precious personal data from falling into the wrong hands. We can't guarantee it will keep the hacking guru in the block - but it's a start. The basics When you access a wireless connection, you typically pick up an Internet connection that is wirelessly sent from a router or similar device. If un secured, any computer can access this network within reach. Most routers can be accessed by enping 192.168.1.1 in your browser address bar and typing in a user name and password. The default varies from router to router. Check the instructional tutorial included with your router for the default IP address, user name, and password. If this is not available, try setting the router's defaults on a routerpasswords.com, or cirt.net. Most security settings can only be accessed by the router's administrative console and settings. Encryption encryption is one of your first lines of defense when it comes to securing a wireless network. It encodes the data sent wirelessly between your device and the router, essentially scrambling the information and limiting open access. There are two main types of encryption you can use: Wired Equivalent Privacy (WEP): Set in the late '90s, WPA was one of the first security algorithms available to help ensure a protected network. While this may still be an option for older routers and equipment, it has shown numerous errors over the years, essentially leading to its demise in terms of Internet security. It's better than nothing, but it's diped and pretty easy to crack. Wi-Fi Protected Access (WPA &amp; WPA2): Developed as a successor to WEP, WPA and WPA2 are two of the more common advanced security protocols currently used to protect wireless networks. The encryption keys they use, each time a device accesses the network, making it harder to hack than WEP. WPA2 is the encryption of choice. Keep in mind that your device, router, and any other equipment used should use the same encryption to work properly. Your network is only if as the least secured device connected to it. If you have an older router, we suggest replacing it with one that contains WPA2 capability. If you're serious about securing your wireless network, check out our wireless router buying guide for some useful tips. Wireless routers are often not set up with the encryption feature enabled and you must turn it on before choosing your security settings. Most manufacturers will include instructions on how to enable security, while others will go a step further and provide a setup wizard that will include security options when you first access the router. If they don't, go to the company's website for more information. Select WPA2 if possible and create a strong password to ensure limited access. Try a combination of letters and numbers that only you would know. Also, the longer the password, the harder it will be to crack. Strive for 10 characters or more. Check out our guide to picking strong passwords for more information. Change the router defaults Make sure that you change your router's factory suggestions (i.e. your admin login and password) to something more secure to prevent any unauthorized users from accessing and changing your router settings. You may also want to change the Service Set Identifier (SSID) name while you are with it. Most router manufacturers will simply name the SSID to the manufacturer, such as Linksys, but it's a good idea to change the name so others don't assume you're using the router's default username and password as well. Turn off SSID broadcasting The SSID functions as a broadcast message that sets your presence to any and each device within reach of your network. All wireless routers have an option to turn off this broadcast, hiding your network from people who might want to access it. It won't encrypt your data, but no one will try to access a network they don't know you have. However, this option isn't for everyone, since some devices have trouble connecting to wireless networks if they don't broadcast the SSID. Allow access to mac addresses Each network-enabled device – from desktops to tablets – is equipped with a unique, identifying number called a machine access code (MAC). Most common wireless routers will have an option to filter access exclusively based on the MAC address, allowing wireless access only to devices you have pre-declined and prohibit all others. Simply add the MAC addresses to your router's administrative settings to enable the filtering option. The process of locating the MAC address for a specific device depends on which device you intend to use. you are using Windows, open a command prompt, type cmd and press the Enter key. Then type ipconfig .all and press Enter again to see a detailed list of your computer's IP settings. The MAC address will be listed as the Address, or the six pairs of alphanumeric characters secluded by dashes. When using Mac OS X, open the system preferences pane, click the Network option, and select WiFi from the list in the left-hand column. From there, click the Advanced option to see the Mac address (it will be listed under Wi-Fi ID). Other devices, such as a smartphone or tablet, will take a little more detective work, but you can always refer to the owner's tutorial if you're having trouble finding where the information is listed. It is possible to clone a MAC address to fool the router, so that restricting access based on MAC addresses should be used alongside other security precautions. Restrict DHCP Dynamic Host Configuration Protocol (DHCP) allows you to limit the number of IP addresses your router can assign on your wireless network, thereby limiting the amount of devices that can connect. This can be done by accessing your router's administrative setting and updated the number of devices you want to connect (both wired and wireless). A decent hacker may byk around the security measure, but it will likely keep the everyday user at bay. Reduce wireless signal series This often proves harder to access a wireless network that is not in the range. Your router may have fantastic signal strength, but what if you live in an apartment building where other tenants live just on the other side of the wall? Try limiting your router's signal range to only a specified area by one or more options. It can take a little trial and error depending on the method. Some routers will give you an option to reduce the transmitted power in the administrative settings. If possible, change the mode of the router to 802.11g instead of higher signal strengths such as 802.11n or 802.11b, or use a separate wireless channel altogether. More old-school approaches to limit your wireless signal include placing the router in certain areas of your home, away from windows, under a bed or in a closet. You can also try wrapping foil around the router antennas to better target the wireless signal, but it can also slow down your connection or even boost your signal strength depending on how you do it. Disabling remote administration privileges Disable remote administration privileges is a great way to close the door on anyone looking to access your security settings. The option must be located in your router's administrative settings and require all security modifications to be changed directly through a wired connection to your router. Try one or all of this It is difficult to completely secure a wireless network, but these steps will ensure that your wireless signal is better protected. a combination (preferably all) of the steps when securing wireless networks, instead of just one or two of the methods. Also remember that you can always turn off wireless network when not used as an extra precautionary measure. Security is not something to slack on. Editor's recommendations This is the 5th course in the intermediate, undergraduate level offering that makes up the larger Cybersecurity Fundamentals MicroBachelors Program. We recommend taking them in order unless you already have a background in these areas and feel comfortable hitting forward. These topics build on the learning taught in the introductory level Computer Science Fundamental MicroBachelors program, presented by the same instructor. It's a standalone course that offers a continuation of network security topics. Among the topics covered are cryptographic algorithms used in network protocols, TLS/SSL, IPSec Layer 2 Security, and Wireless Security. The material is essential in later classes that will develop ethical hacking skills. Students are provided with a broad understanding of cryptography, from its classic applications dating from the Roman empire to modern cryptography, including the public key cryptography and hashing techniques today. Next, we take what we learned from cryptography and apply it as a tool against attackers. Specifically, we'll discuss IP security, TLS/SSL, and their use in Virtual Private Networks. We follow up with coverage of Layer 2 security and vulnerabilities, such as MAC attacks, VLAN hop attacks, DHCP attacks, ARP attacks, spoofing attacks, and attacks on other protocols. We will also be about general countermeasures to these attacks. We conclude the course with an overview of how WiFi works, basic terminology and architecture, and how wireless networks are secured. Define and match a replacement cipher Define crypt analysis Explained at a high level the process by which an ordinary message is encrypted, transmitted, and decrypted. Describes at least two strategies for breaking an encryption scheme Identify the differences between public key encryption, symmetric key encryption, and hashing List and sum up the characteristics of good ciphers Describe the vulnerabilities of stream ciphers Define AES and explain why it is recommended across 3DES Define cipher block chain List the steps in creating an RSA public/private key pair Explaining why RSA is safely Defining Message Integrity and explaining how it ensures define IPSec and list its services Define Authentication Header and ESP Explain the primary purpose of IKE and describe its subprotox Sum up the five steps of IPSec Operation Summarize the history of SSL Explain how closing alerts can prevent a truncation attack Identifying the protocols that the SSL architecture describes how SSL/TLS provides protected channels State the differences between IPSec and SSL VPN connections explain why Important is to consider Low 2 security Layer 2 attacks Describe countermeasures to low 2 2 and security best practices to prevent attacks Explain the differences between the 2.4GHz and 5GHz spectrums Provide definitions of basic wireless terms Explain how 802.11ac differs from earlier 802.11 standards Identify and define the types of802. 11 frames List and define the states of 802.11 sessions List the steps in establishing an 802.11 session Summarized the existing wireless security protocols and reliance on which protocols should not be used to WPA, WPA Enterprise, summarize and general WiFi attacks Week 1 - Cryptography Week 2 - TLS/SSL and IPSec Week 3 - Layer 2 Security Week 4 - Wireless Security Week 5 - Final examReceive an instructor-signed certificate with the institution's logo to verify your performance and increase your job prospectsAdd the certificate to your resume or resume , or place it directly on LinkedInGive yourself an additional incentive to complete the courseedX, a nonprofit, relying on verified certificates to help fund free education for everyone worldwide Unfortunately, learners from one or more of the following countries or regions will not be able to register for this course: Iran, Cuba and the Crimea region of Ukraine. 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