THIS IS MY HOUSE, I HAVE TO DEFEND IT!

WAYS TO BETTER SECURE YOUR HOME NETWORK AGAINST THREATS

STEPS TO TAKE TO BETTER SECURE YOUR HOME NETWORK

- Determine what is connected to your network (take an inventory of all your assets)
- Determine What do you think is the most critical, what information is processed/stored
- Determine what are the likeliest risks to your network (malware, power outages, etc.)
- Determine what controls should be in place (e.g. no access to banking desktop/laptop)

WHAT DEVICES ARE CONNECTED TO YOUR NETWORK (ASSET INVENTORY)

- Laptop, desktop computers
- Internet accessible cameras, sensors. Also known as IoT devices
- Video streaming devices, such as Amazon Firestick, Roku, etc
- Video casting devices like Google Chromecast
- Amazon echo, Google Home, echo dot
- Tablets and Smart Phones
- Network Access Storage Devices
- Uninterruptable power supplies

DETERMINE WHAT DO YOU THINK IS THE MOST CRITICAL, WHAT INFORMATION IS PROCESSED/STORED

- Laptops/desktops being used for sensitive tasks like banking, viewing medical information, etc
- Wi-fi connected medical devices, pacemakers, insulin pumps, etc
- Tablets and Smart Phones
- Routers, switches and other networking equipment
- Uninterruptable power supplies
- Network access storage devices

DETERMINE WHAT ARE THE LIKELIEST THREATS/RISKS TO YOUR NETWORK

- Vulnerable IoT devices
- Vulnerable software
- Malware downloaded inadvertently (malware within downloaded video games, etc.)
- Unauthorized people accessing the network
- Vulnerable routers allowing attackers access to network
- Ransomware

DETERMINE WHAT CONTROLS SHOULD BE IN PLACE

- Control devices connected to your network (Pi hole, Pf sense, etc.)
- Software firewalls and anti-virus(Symantec, MS Defender, etc.)
- Hardware firewalls within Routers, modems, etc
- Authenticated access to laptops, desktop, tablets, etc
- Parental controls for kids to not access harmful content

SECURING MOBILE DEVICES

- Lock devices with a password or PIN
- Install a well-known anti-virus app on your mobile device, especially if its Android
- Only install apps that you need, the less apps the better, reduce attack surface
- Be wary of Text-based phishing, or smishing attacks
- Be cautious of free wi-fi
- Be aware of Bluetooth risks and know which devices you are connecting to
- Regularly update the operating system and installed apps

SECURING YOUR WEB BROWSER

- Using a secure browser that offers protection against threats like phishing
- Keeping your web browser up-to-date
- Don’t use remember password feature, but a password manager tool
- Look for the “lock” on the website! Website verification

BASIC ROUTER CONFIGURATION AND SECURITY CONTROLS

- Basics of router configuration consoles
- Admin access to the router console
- Settings you will find on all routers
- Wireless configuration and setup

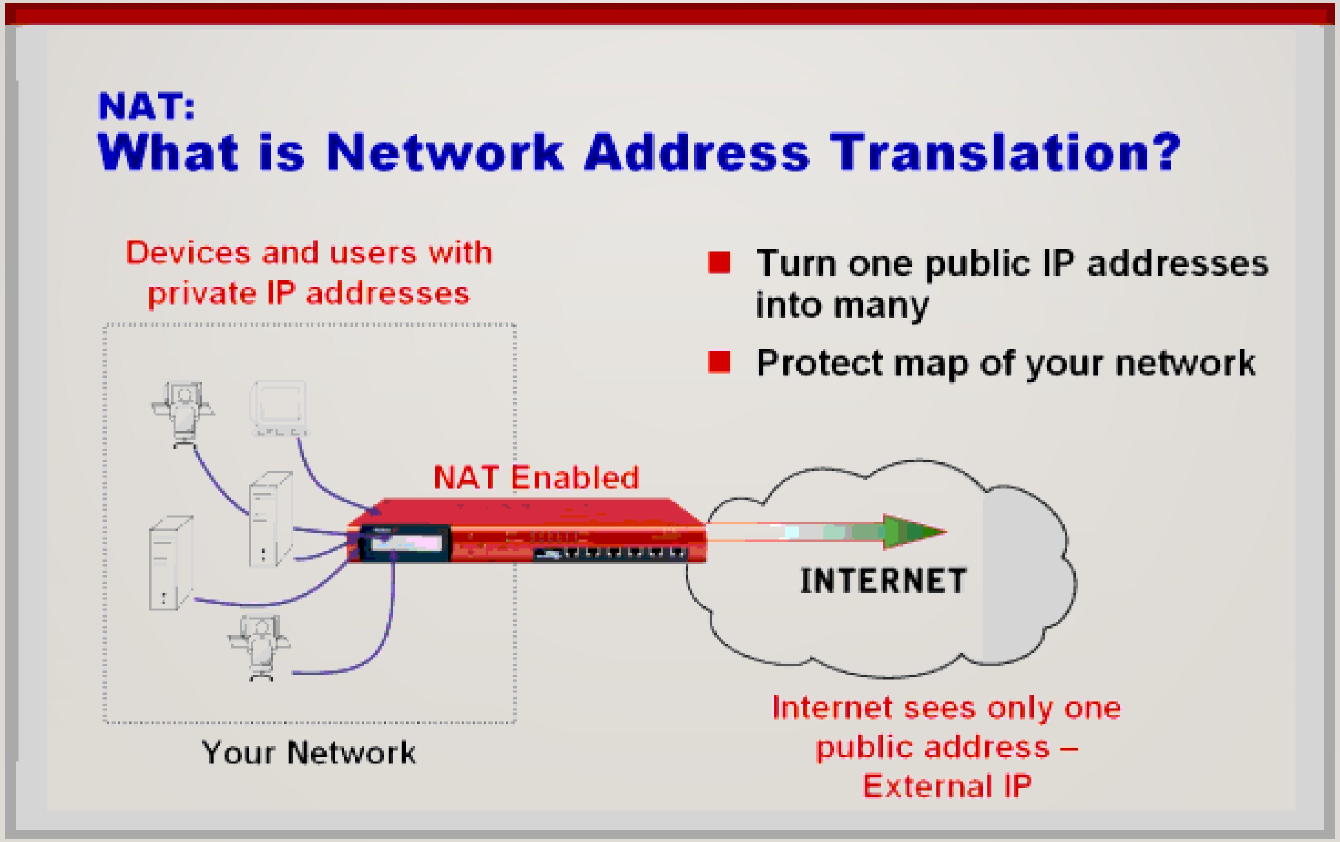
CONFIGURING ROUTER FOR OPTIMAL SECURITY

- Securing admin access to router
- Ensuring router configuration console is not accessible via the public internet
- About upnp and should it be disabled
- Configuring firewalls if your router has that functionality
- Configuring Parental controls
- Ensure that no device is on DMZ unless needed

A LITTLE BIT ABOUT NETWORK ADDRESS TRANSLATION OR NAT

- What is Network Address Translation
- What protection does NAT offer
- What does NAT not do

EXAMPLE NETWORK ADDRESS TRANSLATION DIAGRAM



NAT:
What is Network Address Translation?

- Turn one public IP addresses into many
- Protect map of your network

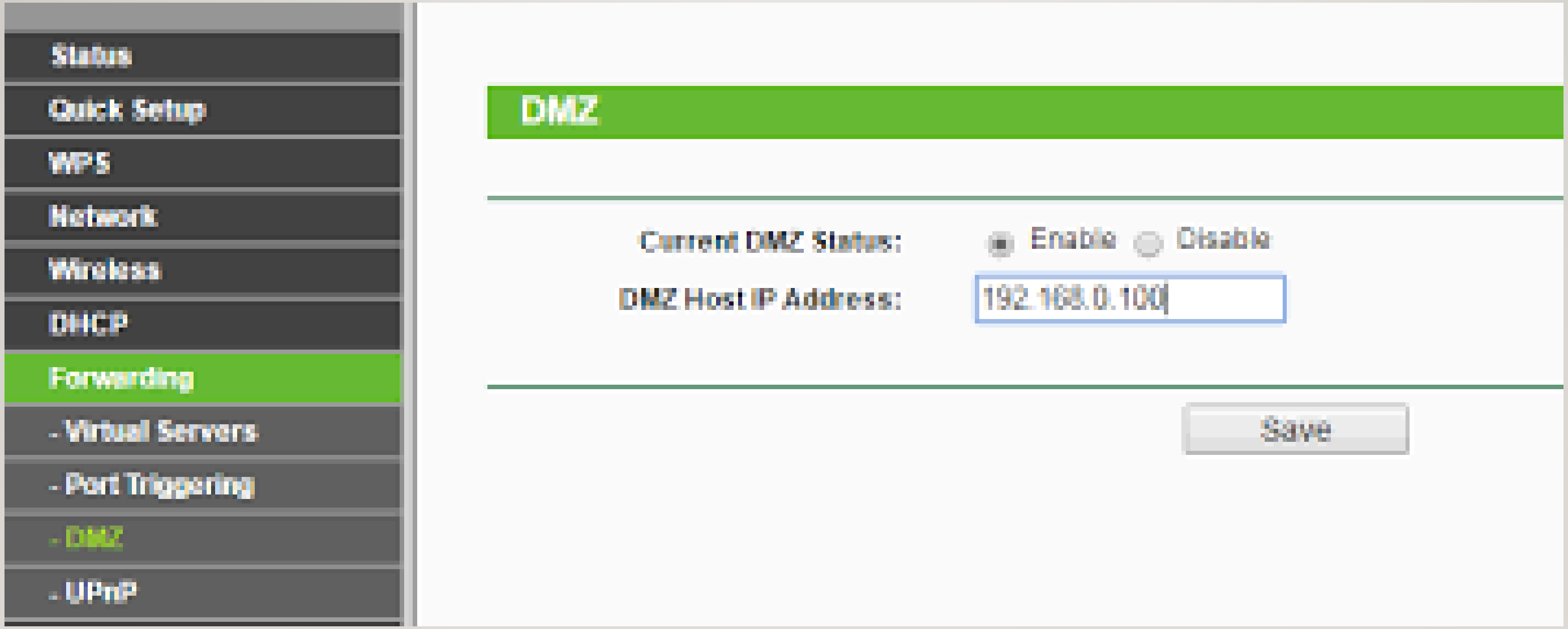
Devices and users with private IP addresses

Internet sees only one public address – External IP

A LITTLE BIT ABOUT THE DEMILITARIZED ZONE OR DMZ

- What is the DMZ?
- Device exposure to the public internet
- Outside of Firewall/NA
- Home Router DMZ Host

EXAMPLE DMZ HOST CONFIGURATION



Current DMZ Status: ● Enable ○ Disable

DMZ Host IP Address: 192.168.0.100

LINKS AND SOURCES

- Telus Digital Safety and Privacy Tips: https://assets.ctfassets.net/1izjqx4qtt8c/6vHJfOlBamZZuIZwnXoimM/2efd54dd99c9e8967e127afe78d52d57/TELUS_-_Digital_safety_and_privacy_tips_06252019.pdf
- Shaw Web Browser Security Tips: https://support.shaw.ca/t5/internet-articles/internet-security-web-browser-security-tips/ta-p/6772#content-section-1
- More info on NAT: https://en.wikipedia.org/wiki/Network_address_translation
- More info on DMZ: https://www.tp-link.com/us/support/faq/28/

QUESTIONS?