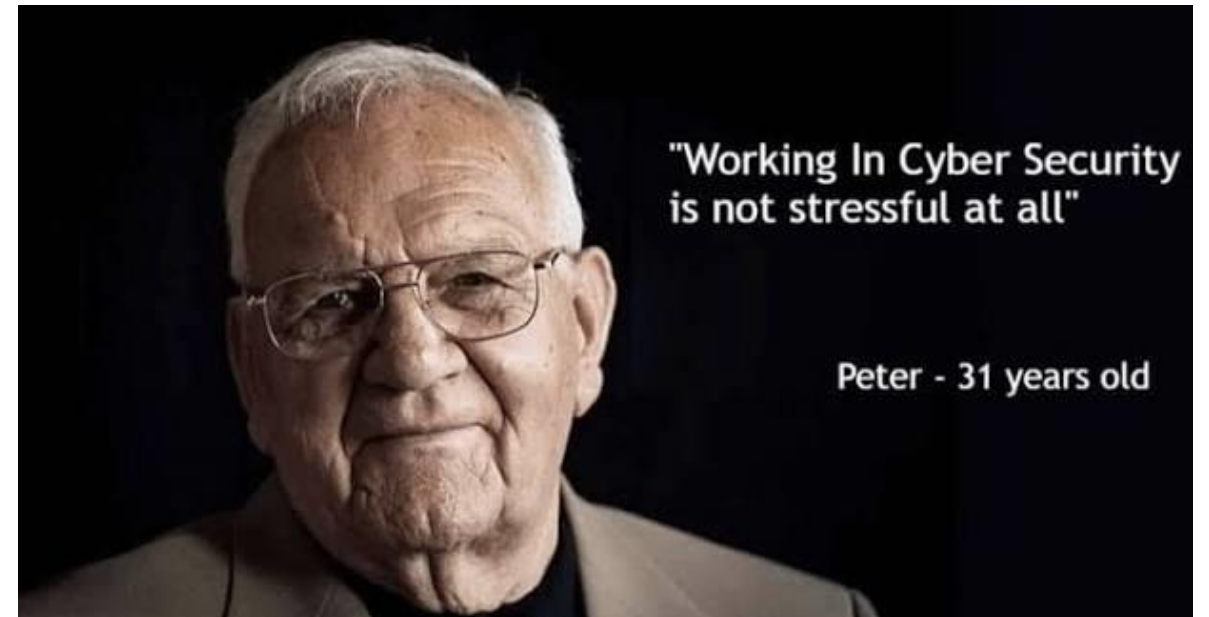


PAYING YOUR DUES

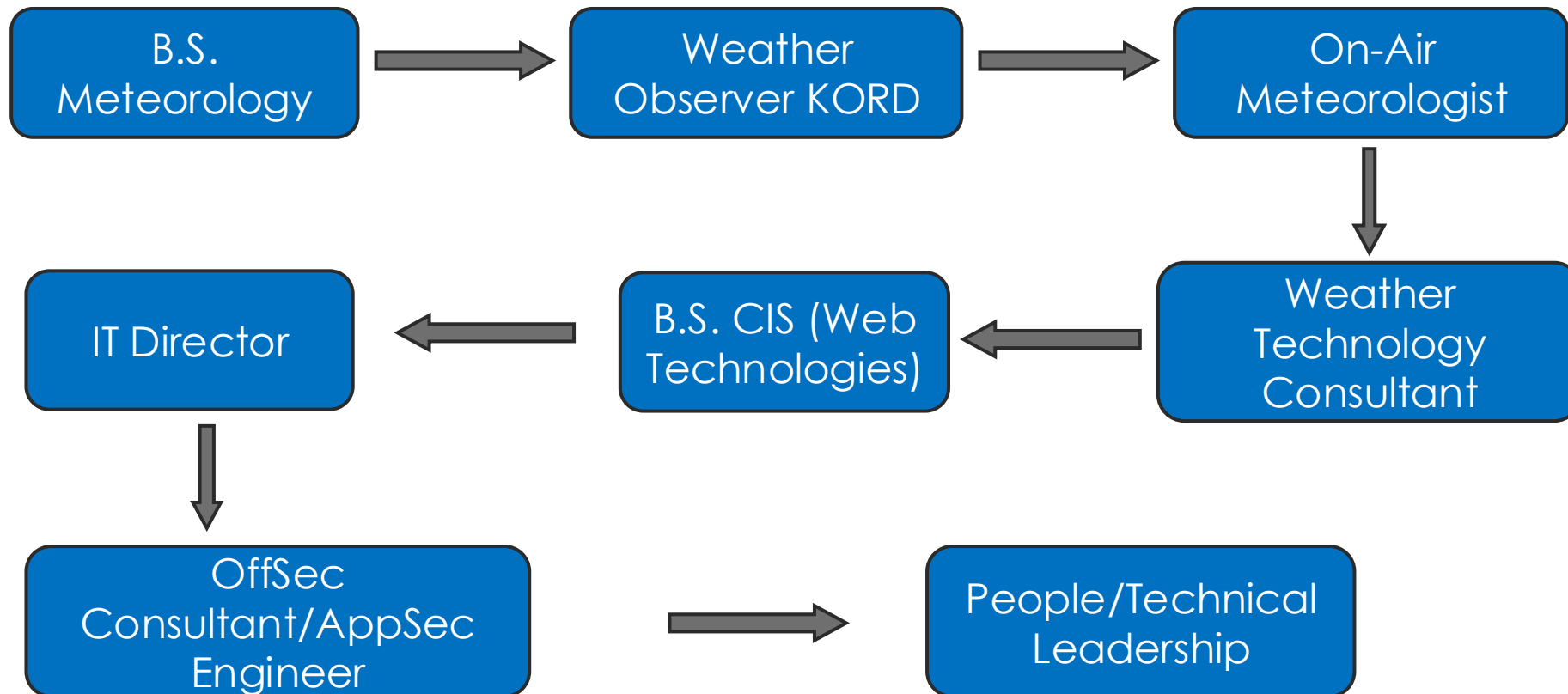
HOW AND WHY IT MATTERS FOR INFORMATION SECURITY

OVERVIEW

- PURPOSE
 - BUILDING A STRONG FOUNDATION
 - KEY PERSONALITY TRAITS FOR SUCCESS
 - SKILL ADVANCEMENT ON A BUDGET
- TARGET AUDIENCE
 - EARLY CAREER PROFESSIONALS/STUDENTS
 - CAREER CHANGERS
 - LATE CAREER PROFESSIONALS
 - MENTORS WITH MENTEES

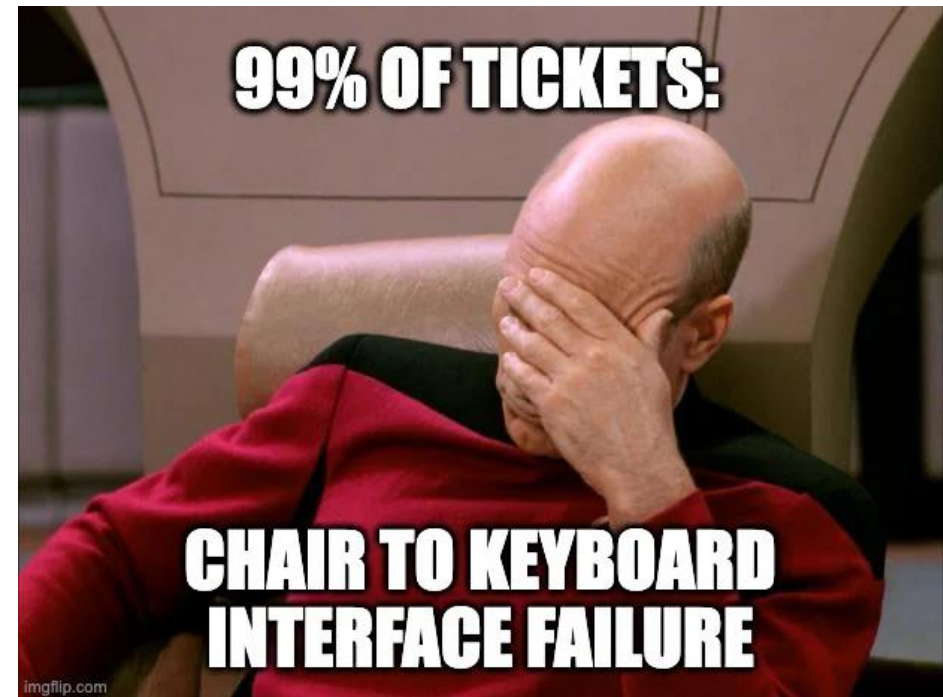


BACKGROUND – A DIFFERENT PATH



BUILDING A STRONG FOUNDATION

- OPTION 1: EARLY CAREER/CAREER CHANGERS
 - HELPDESK
 - ANY SIZE ORGANIZATION
 - IT GENERALIST/DEVELOPER
 - SMALL/MEDIUM BUSINESS
 - NON-PROFIT
 - SOC ANALYST



BUILDING A STRONG FOUNDATION

- SKILLS GAINED
 - PATIENCE WITH PEOPLE (!)
 - COMMUNICATION (!)
 - FOUNDATIONAL NETWORKING (!)
 - FOUNDATIONAL SYSTEM/OPERATING SYSTEM (!)
 - FOUNDATIONAL PROTOCOL KNOWLEDGE (!)
 - PROBLEM SOLVING
 - SPECIFIC VENDOR PRODUCT EXPERIENCE
 - TIME/TASK MANAGEMENT

When you try to find your way to
success without skills



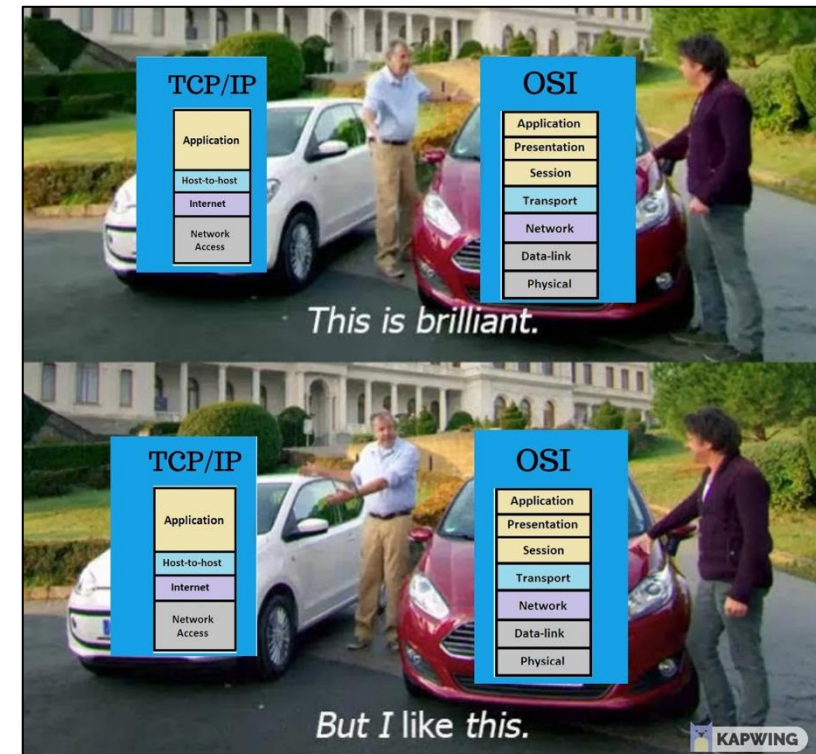
BUILDING A STRONG FOUNDATION

- PATIENCE WITH PEOPLE (!)
 - DIFFERENT PERSONALITIES
 - DIFFERENT LIFE EXPERIENCES
 - DIFFERENT EMOTIONAL MATURITY
- COMMUNICATION (!)
 - DIFFERENT COMMUNICATION STYLES
 - INTERNAL/EXTERNAL PROCESSING
 - PERSONALITY TYPE INFLUENCE



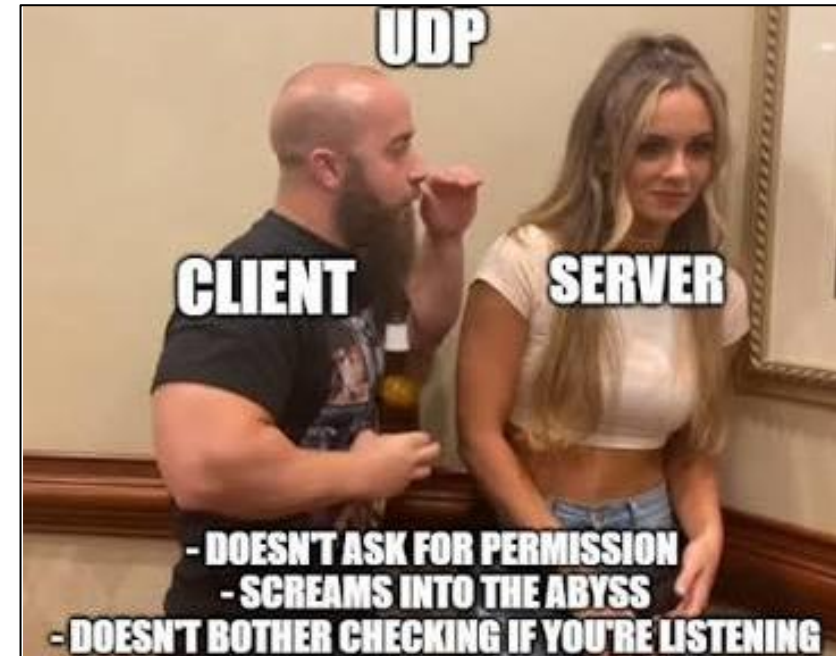
BUILDING A STRONG FOUNDATION

- FOUNDATIONAL NETWORKING (!)
 - ROUTING
 - SWITCHING
 - FIREWALLS
 - OSI vs. TCP/IP (!)
 - MULTICAST VS. BROADCAST VS. UNICAST
 - HARDWARE BASICS
- FOUNDATIONAL SYSTEM/OPERATING SYSTEM (!)
 - WINDOWS
 - *NIX
 - MAC OS (EXPENSIVE BSD)
 - SCRIPTING (SHELL/POWERSHELL/BATCH/CMD)



BUILDING A STRONG FOUNDATION

- FOUNDATIONAL PROTOCOL KNOWLEDGE (!)
 - TCP/UDP/IP/ARP
 - DNS/mDNS/LLMNR/NBT-NS
 - HTTP
 - SSL/TLS
 - NTP
 - FILE TRANSFER
 - FTP/FTPS/SFTP/SCP/SMB
 - REMOTE ACCESS
 - RDP/SSH/TELNET
 - DIRECTORY SERVICES/AUTHENTICATION
 - LDAP/KERBEROS/NTLM/LM
 - SMTP/POP/IMAP



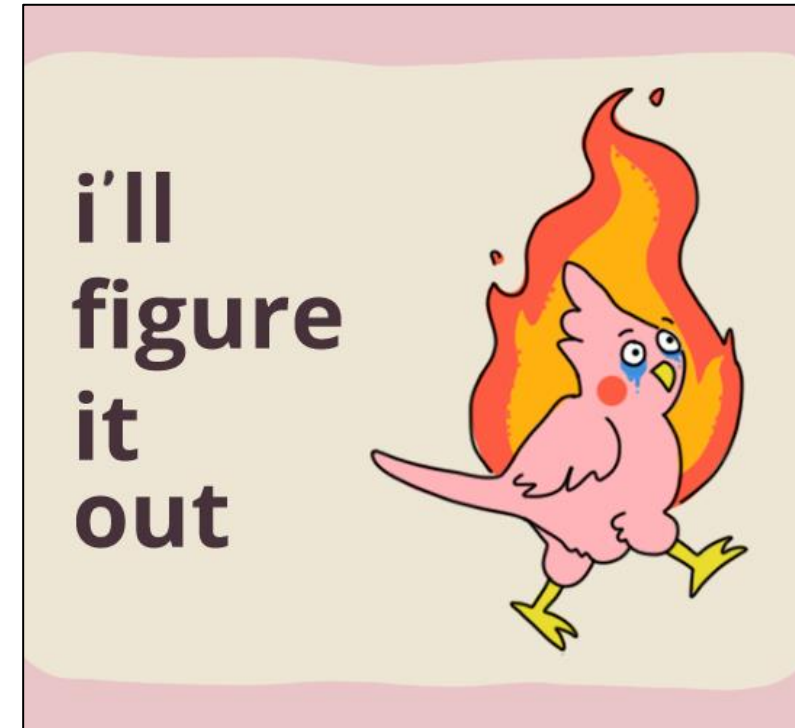
BUILDING A STRONG FOUNDATION

- PROBLEM SOLVING
 - THE CRUX OF ANY TECHNICAL CAREER
 - BUSINESS/INDUSTRY CONTEXT
- SPECIFIC VENDOR PRODUCT EXPERIENCE
 - SWITCHES/FIREWALLS/ACCESS POINTS
 - SOFTWARE
 - OS
 - HARDWARE
- TIME/TASK MANAGEMENT
 - DEADLINE AWARE
 - GOAL/MILESTONE FOCUSED



KEY PERSONALITY TRAITS

- CURIOUS
 - ACTIVELY SEEKS OPPORTUNITIES
- DRIVEN
 - TAKES INITIATIVE
 - NEVER BELIEVES THEY “CAN’T”
- COURAGEOUS
 - EMBRACES A CHALLENGE (AND THE PAIN)
- HARD WORKING
 - CONSISTENTLY IMPROVES EFFECTIVENESS
- DISCIPLINED
 - HIGHLY STRUCTURED TASK/TIME MANAGEMENT
 - CONSISTENT



WHY THIS MATTERS

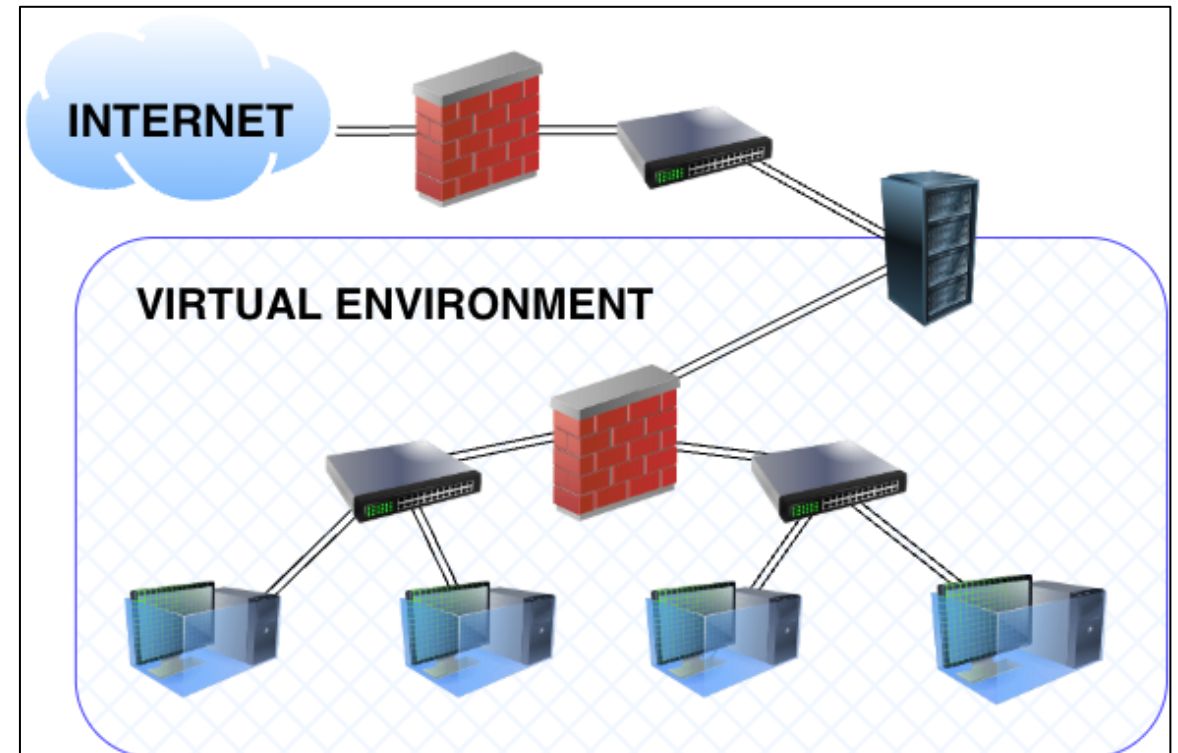
- CREDIBILITY/REPUTATION
 - RELIABILITY
 - TRUSTWORTHINESS
- EFFICIENCY
 - ORGANIZATIONAL RESOURCES
 - FINANCIAL RESOURCES
 - TIME RESOURCES [CONSULTING (!)]
- OUTPUT QUALITY
 - AVOIDS CUTTING CORNERS
- RELATIONSHIP MANAGEMENT



THE “HOW” ON A BUDGET

SKILL ADVANCEMENT

- SMALL COMPANIES (JACK OF ALL TRADES)
- NON-PROFITS (JACK OF ALL TRADES)
- HELP DESK (I KNOW...) / ENTRY LEVEL ENTERPRISE "X"
- HOME LAB
 - NETWORKING
 - HYPERVERSOR WITH VIRTUAL NETWORKING
 - MANAGED SWITCH
 - FIREWALL
 - OPERATING SYSTEM
 - HYPERVERSOR AND VIRTUAL MACHINES
 - CONTAINERIZED SYSTEMS
 - VENDOR SPECIFIC PRODUCTS
 - CONTAINERS
 - WEB SERVER



SKILL ADVANCEMENT

- BUDGET OPTIONS
 - FIREWALL (CAN RUN ON OLD HARDWARE)
 - PFSense
 - OPNSense
 - OPENWRT
 - HYPERVISOR
 - VMWARE WORKSTATION PRO (FREE)
 - VMWARE FUSION (FREE)
 - PROXMOX



SKILL ADVANCEMENT

- BUDGET OPTIONS
 - NETWORKING
 - CONSUMER MANAGED SWITCH
 - NETGEAR/LINKSYS/TP-LINK
 - \$27.99 (8-PORT) TO \$300 (PoE+)
 - UBIQUITI (USED / REFURBISHED)
 - HYPERVISOR WITH VIRTUAL NETWORKING
 - GOODWILL GOODBYTES
 - E-BAY
 - BUILD YOUR OWN
 - REMOTE ACCESS
 - CLOUDFLARE TUNNELS
 - OPEN VPN (NATIVE SUPPORT ON PFSense)



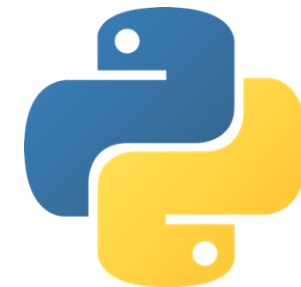
SKILL ADVANCEMENT

- BUDGET OPTIONS
 - OPERATING SYSTEM
 - WINDOWS (EVALUATION, STUDENT LICENSE)
 - DESKTOP
 - SERVER
 - *NIX DISTRIBUTIONS
 - DEBIAN (MATURE)
 - UBUNTU / KUBUNTU
 - LINUX MINT
 - ARCH (EXTREMELY CUSTOMIZABLE)
 - FREEBSD
 - FEDORA
 - GENTOO



SKILL ADVANCEMENT

- BUDGET OPTIONS
 - CODING / SCRIPTING / WEB DEVELOPMENT
 - SHELL (*NIX)
 - POWERSHELL (CROSS-PLATFORM)
 - BATCH (WINDOWS)
 - PYTHON (CROSS-PLATFORM)
 - HTML (PLATFORM INDEPENDENT)
 - JAVASCRIPT (PLATFORM INDEPENDENT)
 - PHP/ASP.NET/JAVA/C# (FOCUS ON WEB)
 - POSTGRESQL/MARIADB (THANKS ORACLE...)



SHOPPING LIST

- OPENWRT OPTION
 - TP-LINK N450 (TL-WDR450N) - \$39.99
- MANAGED SWITCH
 - NETGEAR GS308E (8-PORT) - \$27.99
- MINI PC OPTION (FOR VIRTUALIZATION)
 - VARIOUS (16GB RAM) - \$350 TO \$500
 - ASUS NUC 13 PRO (16GB + 512GB) - \$699
 - ASUS NUC 13 PRO (32GB + 1TB) - \$899
- FREE FOR PERSONAL USE
 - VMWARE FUSION PRO (MAC)
 - VMWARE WORKSTATION PRO (WINDOWS/LINUX)
- OPEN-SOURCE
 - PFSense
 - OPENWRT
 - OPNSense
 - *NIX DISTRIBUTIONS
 - PROXMOX (HYPERVISOR)
- EVALUATION
 - WINDOWS DESKTOP OS
 - WINDOWS SERVER OS

SHOPPING LIST

- IDE FOR CODING/DEVELOPMENT
 - VSCODE (FREE)
 - JETBRAINS SUITE (~\$30/MONTH)
 - ECLIPSE (FREE)
- OTHER COSTS
 - DOMAIN NAME (~\$12 TO \$50 A YEAR)
 - PASSWORD MANAGER (~\$5 TO \$10 A MONTH)
- OTHER OPTIONS
 - MS365 E3 (~\$50/MONTH) PER USER
 - WINDOWS OS DESKTOP LICENSE INCLUDED
 - CLOUD CONFIGURATION EXPERIENCE
 - AWS
 - CLOUD EXPERIENCE
 - PAY AS YOU GO (CAN GET COSTLY)

