

**CoLAB TalentReady IT Pathways
Cyber Technologist KSAs for Curriculum Alignment**

6. Network Security

| | KSA Description | Knowledge, Skill, or Ability? | Bloom's Taxonomy Level? | Cross-cutting KSAs | Notes |
|-----|--|-------------------------------|-------------------------|---|-------|
| a | Apply networking fundamentals to infrastructure systems. | Skill | 3 | Cyber Security Specialist 1f | |
| a.1 | Select network storage techniques (e.g., fiber channel, Internet Small Computer System Interface [iSCSI], Fiber Channel over Ethernet [FCoE], Serial Attached SCSI [SAS], Network File Systems [NFS], Network Attached Storage/Server Message Blocks [NAS/SMB]). | Knowledge | 3 | | |
| b | Setup and maintain secure roles and system management techniques (e.g., password, group, and user privilege policies and monitoring). | Skill | 4 | | |
| c | Apply secure network protocols (e.g., IPsec, SNMP, SSH, DNS, TLS, SSL, TCP/IP, FTPS, HTTPS, SCP, ICMP). | Skill | 3 | Cyber Security Specialist 6a, Networking 2g | |
| d | Apply principles of IPv4 and IPv6 securely. | Skill | 2 | | |
| e | Apply wireless security configurations (e.g., Disable SSID broadcast, TKIP, CCMP, Antenna placement, Power level controls). | Skill | 2 | | |
| f | Manage PKI and certificates (Transport encryption, Non-repudiation, Hashing, Key escrow, Steganography, Digital signatures). | Skill | 2 | | |
| g | Install and configure network devices (firewalls, switches, load balancers, proxies, web security gateways, VPN concentrators). | Skill | 3 | | |
| h | Install and configure network security devices. (Protocol analyzers, Spam filter, UTM security appliances, URL filter, Content inspection, Malware inspection). | Skill | 2 | | |
| i | Implement port security. | Skill | 2 | | |
| j | Demonstrate an understanding of port scanning and network traffic monitoring. | Knowledge | 2 | | |
| k | Monitor and manage network Unified Threat Management. | Skill | 3 | | |
| l | Understand how to mitigate network threats (e.g., Flood guards, Loop protection, Implicit deny, Network separation, Log analysis, Unified threat management, peripheral and removable media). | knowledge | 2 | | |
| m | Apply the principles of secure Network Design (e.g., DMZ, Subnetting, NAT/PAT, Remote access, Telephony, Virtualization). | Skill | 3 | | |
| n | Understand and apply the principles of Defense in Depth. | knowledge | 2 | | |
| o | Understand and use basic network assessment tools (e.g. Wireshark, NMAP, port scanner, ...). | knowledge | 3 | | |
| p | Design and secure small office/home office (SOHO) network. | Skill | 3 | | |
| q | Demonstrate an understanding of network security devices (IDS, IPS, FW, NGFW, WAF, CDN,..). | Knowledge | 3 | | |