

Filename: comptia-linuxxk0004-10-3-1-troubleshooting_network_connections

Show Name: CompTIA Linux+ (XK0-004)

Topic: Managing Networking

Episode Name: Troubleshooting Network Connections

Description: In this episode, Zach and Don examine what to do when a Linux system's network connection is not functioning. They run through a series of troubleshooting commands and explain which scenarios require which tools. They also review several of the configuration files involved in supporting the TCP/IP stack.

Troubleshooting Network Connections

[?] Where do you start when troubleshooting network connectivity?

Establish Scope

- IPv4
 - ping
 - traceroute
 - `yum install traceroute`
 - tracepath
- IPv6
 - ping6
 - traceroute6
 - `yum install traceroute`
 - tracepath6

[?] Where do we go if the problem is on our end?

- Configuration Files
 - RedHat based distros
 - `/etc/sysconfig/network-scripts/ifcfg-eth0`
 - `/etc/sysconfig/network`
 - Debian based distros
 - `/etc/network/interfaces`
 - Check name resolution servers/order
 - `/etc/resolv.conf`
 - `order hosts,bind,nis`
 - `order bind,hosts,nis`
 - Check local name resolution
 - `/etc/hosts`
- Verifying Settings
 - ip
 - Replacement for `ifconfig`
 - `ip addr`
 - Lists interface addresses
 - Netmasks and CIDR
 - `ip link`
 - Displays current link status

- `ip -s link` provides statistics
- `ip route`
 - Displays the routing table

[?] What if our settings don't match the running configuration?

- Reset Networking
 - `service network restart`
 - `systemctl restart network.service`

[?] Can we see if traffic is actually coming in and out?

- `ss` - Display network connections
 - `ss -atp` (All sessions)
 - `ss -tp` (Active sessions)
 - `ss --route` displays routing table
 - `ss --program` attempts to display software using ports
- Packet Capture
 - `tcpdump`
 - Displays packets passing through an interface
 - `tcpdump -i eth0 > data.txt`
 - `tail -f ./data.txt`

[?] Is there anything we can do if we think a firewall is blocking us?

- `netcat`
 - `nc`
 - Tests connections to hosts
 - `nc itpro.tv 80`
 - `GET`
 - `netstat -an | grep itpro.tv`