NETWORK TIME PROTOCOL

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NETWORK TIME PROTOCOL

NTP is one of the oldest internet protocols used in time synchronization

NTP Track (NTPSEC)
Deliverable
1. Setup an NTP server.
2. Exhibit key exchange.

Some Facts

- In 2014, there were over 7m abusable NTP servers as a result ISPs and IXPs have decided to block NTP traffic
- “Segal's Law states”
- A group of volunteers at NTP pool project maintain the timeservers.

Time-keepers of the Internet

- Without it, if machines don't know what time it is, it would mean;
- Backups would fail,
- Financial transactions would fail,
- Many fundamental network services wouldn’t work.

Requirements

- A linux Box + cmd skills
- Wireshark installed
- Internet connectivity

Wireshark

- *Its a network protocol analyzer*
- Select an interface to capture
- Start & filter NTP with **“udp.port==123**
- Check each of the packets for time synchronization

Wireshack in Action

Setting up NTPSEC

- Get root privileges
- Clone the ntpsec resources from github
  - **“git clone https://github.com/ntpsec/ntpsec.git”**
- Cd into the ntpdsec directory and follow the instructions in the **/root/ntpsec/INSTALL file.**

Main contents of INSTALL file

- ./buildprep -n (prerequisites for install)
- ./waf configure' (web App firewall)
- ./waf build'
- ./waf install
- **waf protects the web app from the internet**

Configuring NTPSEC

- Edit **/etc/ntp.conf** **(ntpsec configuration file)**
- to comment out **#server ipa.hostname.local**
  which by default shows your hostname
- Add public servers for NTP e.g.
  pool.ntp.org project, 0.africa.pool.ntp.org
  - **server ntpmon.dcs1.biz nts**

Testing the client

- Run **./build/main/ntpd/ntpd -n** to point to the server as indicated in /etc/ntp.conf
- Take note of the hole poked by the server

Testing the Server

Note ntpd must be running for the command below to work, On redhat systems use

#systemctl start ntpd

./build/main/ntpclients/ntpq -p localhost confirmation is noted with ntpsec server and your public IP.

END

- End of presenatation.