

IoT: Client Devices

Reversing: HS110 Filesystem

Take a look around!

Here, we've listed the /bin directory (I used *tree*; to install, type *sudo apt install tree* at the command line)

```
cclamb — ssh -X 192.168.120.134 — 58x31
[cclamb@ubuntu:~/Work/tplink/hs110/squashfs-root $ ls
bin  etc  linuxrc  proc  sbin  tmp
dev  lib  mnt      root  sys   usr
cclamb@ubuntu:~/Work/tplink/hs110/squashfs-root $ tree bin
bin
├── ash -> busybox
├── busybox
├── cat -> busybox
├── chmod -> busybox
├── cp -> busybox
├── date -> busybox
├── echo -> busybox
├── ip -> busybox
├── kill -> busybox
├── length-decode
├── login -> busybox
├── ls -> busybox
├── minidump
├── mkdir -> busybox
├── mount -> busybox
├── ping -> busybox
├── ps -> busybox
├── pwd -> busybox
├── rm -> busybox
├── rmdir -> busybox
├── sh -> busybox
├── umount -> busybox
└── vi -> busybox

0 directories, 23 files
cclamb@ubuntu:~/Work/tplink/hs110/squashfs-root $
```

```
cclamb — ssh -X 192.168.120.135 — 89x26
[cclamb@ubuntu:~/Work/tplink/hs110/squashfs-root/etc $ tree .
.
├── 2048_newroot.cer
├── ath
│   ├── activateVAP
│   ├── apcfg
│   └── apup
├── fstab
├── group
├── inittab
├── passwd
├── public.key
├── rc.d
│   ├── rcS
│   └── rc.wlan
├── resolv.conf -> /tmp/resolv.conf
├── shadow
├── sw.version
└── wpa2

3 directories, 14 files
cclamb@ubuntu:~/Work/tplink/hs110/squashfs-root/etc $
```

/etc is always fun!

We have password files, certificates, and startup configs

```
cclamb — ssh -X 192.168.120.135 — 89x26
[cclamb@ubuntu:~/Work/tplink/hs110/squashfs-root/etc $ tail rc.d/rcS
# lets force them to write
echo 20 > /proc/sys/vm/dirty_ratio

# when the dirty pages cross more than 5% of sys memory,
# kick in the pdflush
echo 5 > /proc/sys/vm/dirty_background_ratio

#/usr/sbin/telnetd &

/usr/bin/shd &
cclamb@ubuntu:~/Work/tplink/hs110/squashfs-root/etc $
```

Startup Files

Various services and a non-standard daemon

```
cclamb — ssh -X 192.168.120.135 — 89x26
[cclamb@ubuntu:~/Work/tplink/hs110/squashfs-root/usr/bin $ tree .
.
├── [ -> ../../bin/busybox
├── arping -> ../../bin/busybox
├── calDump
├── shd
├── shdTester
├── test -> ../../bin/busybox
├── tftp -> ../../bin/busybox
└── tty -> ../../bin/busybox

0 directories, 8 files
cclamb@ubuntu:~/Work/tplink/hs110/squashfs-root/usr/bin $
```

/usr/bin

Application level software!