

Ubiquiti AP Normalization Guide:

1. Download and install Winscp and Putty (if not already installed)

a. Winscp can be found at: <https://winscp.net/eng/download.php>

- Improvements to sessions and workspace management, so that WinSCP can now easily restore tabs that were open when it was last closed.
- Hardware-accelerated [AES](#).
- Extension *Archive and Download* to archive remote files and download the archive.
- Improvements to Synchronization checklist window.
- Allowed sorting of find results.
- [SSH](#) core upgraded to PuTTY 0.73.
- The binaries are signed with new EV certificate valid until February 2023.
- [List of all changes](#).

DOWNLOAD WINSCP 5.17.10 (10.6 MB)

1,474,624 downloads since 2021-01-26



[What is this?](#)

OTHER DOWNLOADS

b. Putty can be found at:

<https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html>

Package files

You probably want one of these. They include versions of all the PuTTY utilities.

(Not sure whether you want the 32-bit or the 64-bit version? Read the [FAQ entry](#).)

MSI ('Windows Installer')

32-bit: [putty-0.74-installer.msi](#) ([or by FTP](#)) ([signature](#))

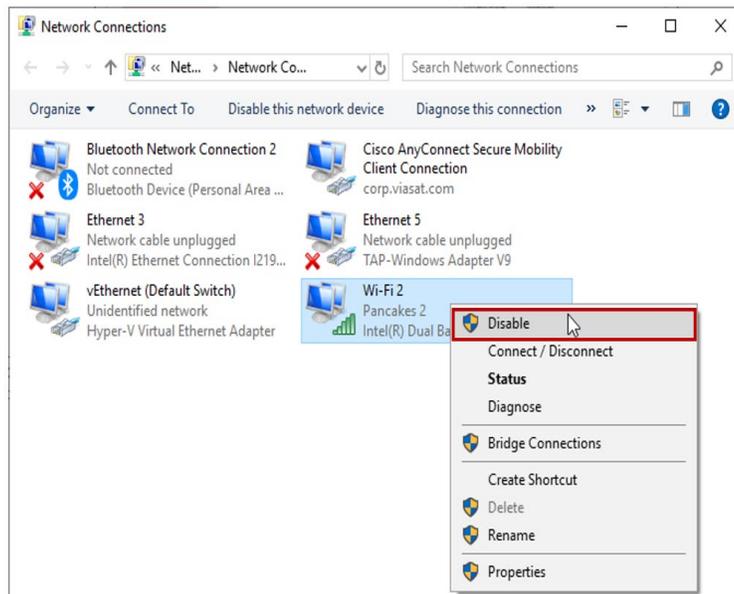
64-bit: [putty-64bit-0.74-installer.msi](#) ([or by FTP](#)) ([signature](#))

Unix source archive

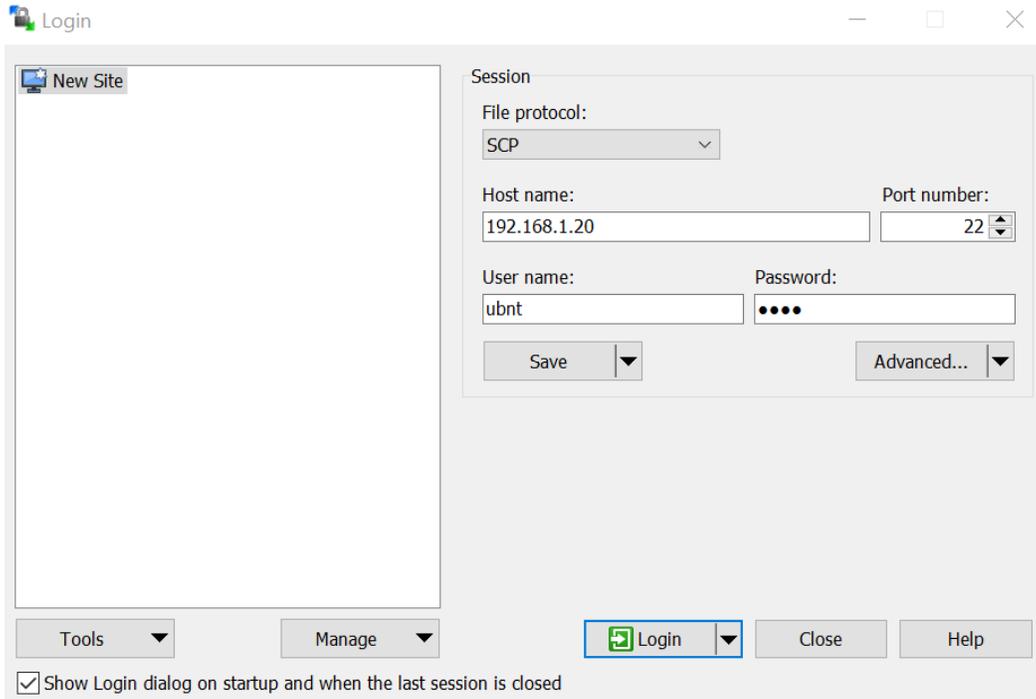
.tar.gz: [putty-0.74.tar.gz](#) ([or by FTP](#)) ([signature](#))

2. Plug in AP to be normalized into your computer with an RJ45 cord.

a. WiFi needs to be turned OFF!

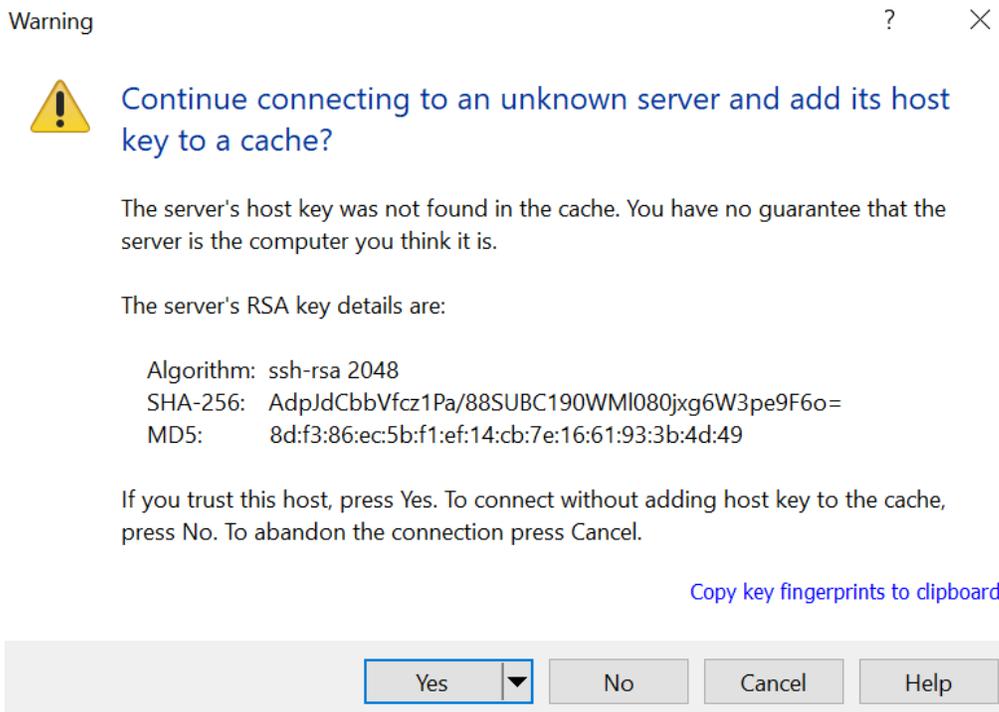


3. Open winscp and change the following:
 - a. Protocol: Switch to SCP
 - b. Host name/IP: 192.168.1.20
 - c. Port: 22
 - d. Username: ubnt, and password: ubnt
 - e. Press Login/Connect



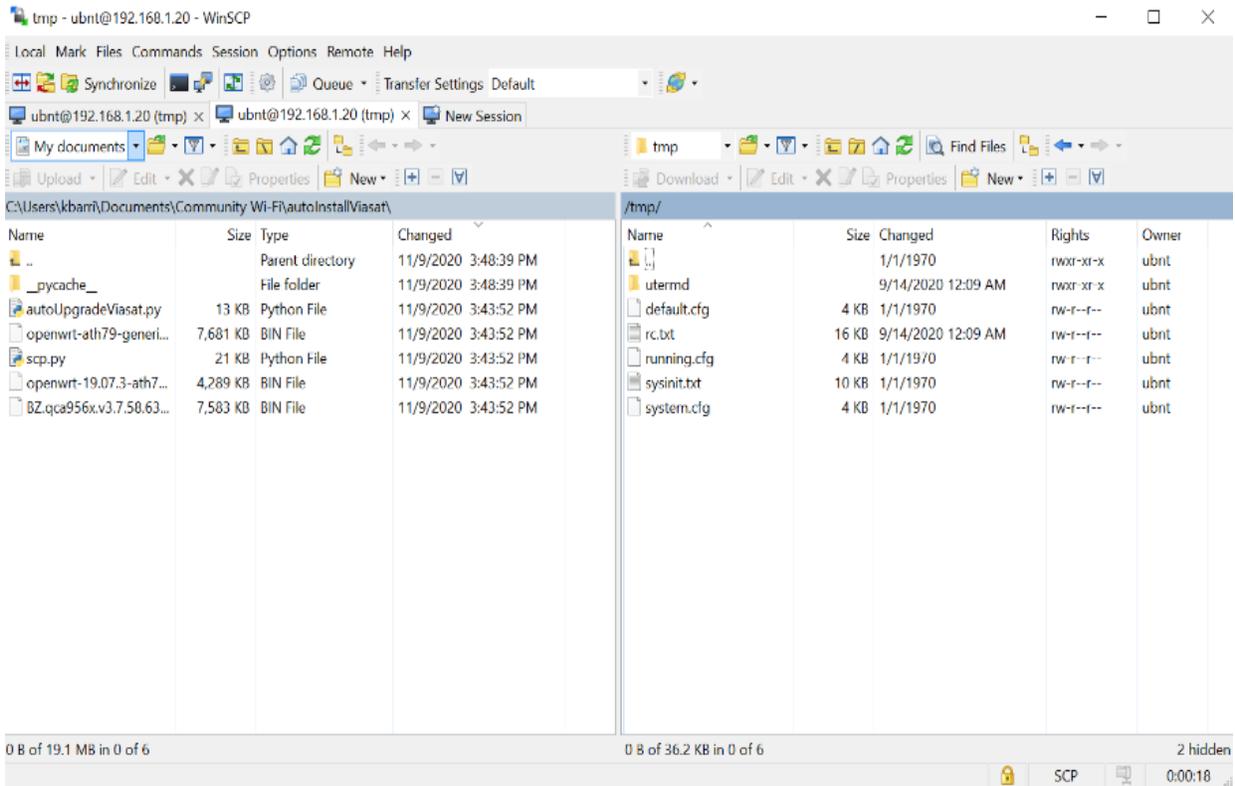
The screenshot shows the WinSCP Login dialog box. On the left is a 'New Site' list. The 'Session' configuration on the right includes: File protocol set to 'SCP'; Host name '192.168.1.20'; Port number '22'; User name 'ubnt'; and Password masked with dots. At the bottom, there are 'Tools', 'Manage', 'Login', 'Close', and 'Help' buttons. A checkbox at the bottom left is checked, labeled 'Show Login dialog on startup and when the last session is closed'.

4. Press "Yes" or "Accept"

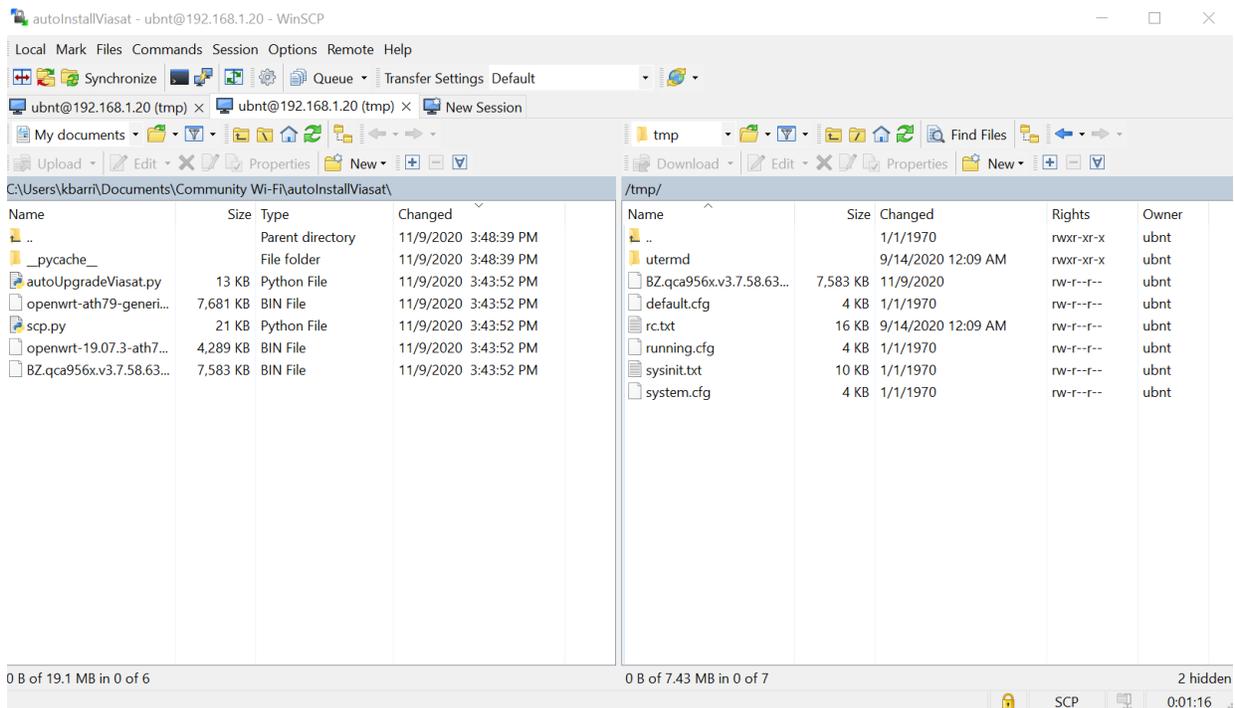


The warning dialog box has a yellow warning icon and the title 'Warning'. The main text asks: 'Continue connecting to an unknown server and add its host key to a cache?'. Below this, it explains: 'The server's host key was not found in the cache. You have no guarantee that the server is the computer you think it is.' It then lists the server's RSA key details: Algorithm: ssh-rsa 2048; SHA-256: AdpJdCbbVfcz1Pa/88SUBC190WMI080jxg6W3pe9F6o=; MD5: 8d:f3:86:ec:5b:f1:ef:14:cb:7e:16:61:93:3b:4d:49. A blue link 'Copy key fingerprints to clipboard' is provided. At the bottom, there are 'Yes', 'No', 'Cancel', and 'Help' buttons.

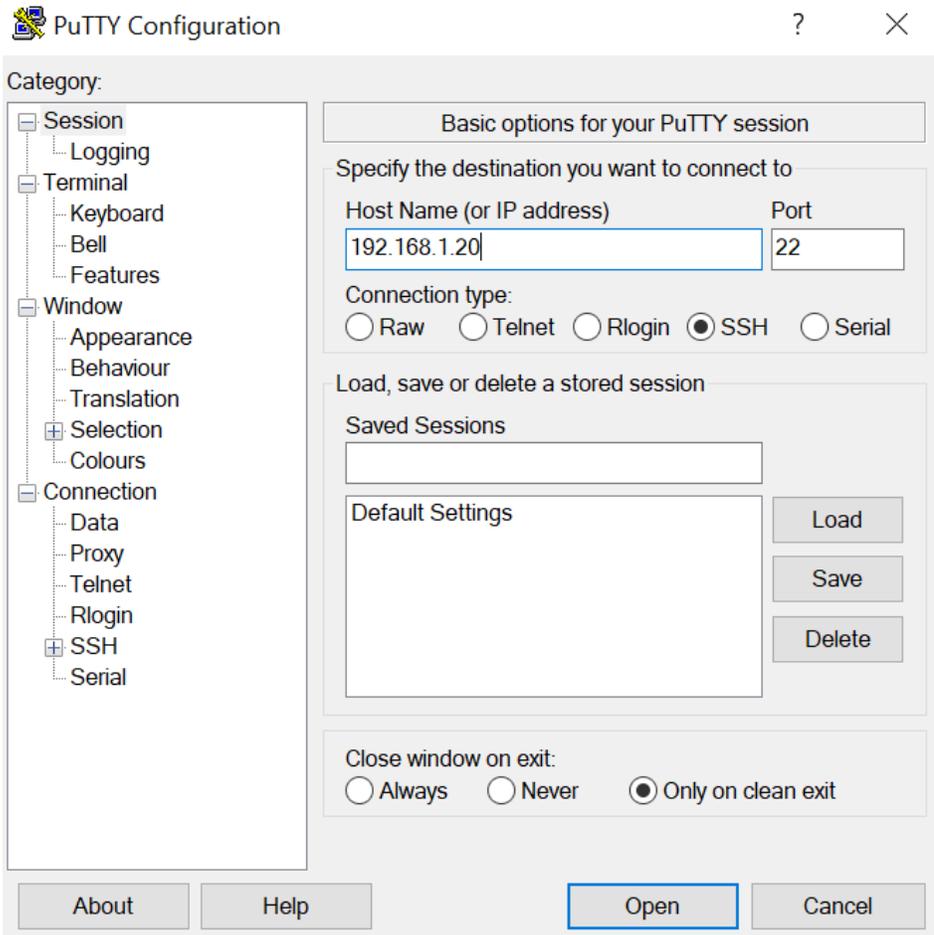
5. On the right-hand side, go to top directory "root" in drop down and double click 'tmp' folder
 - a. On the left side open the folder containing the unzipped AP image files



- b. Transfer the **bin** (BZ) file by dragging it to the tmp folder and press "OK"
 - i. DO NOT drag it into a folder within 'tmp', if you do the file must be deleted from that folder.

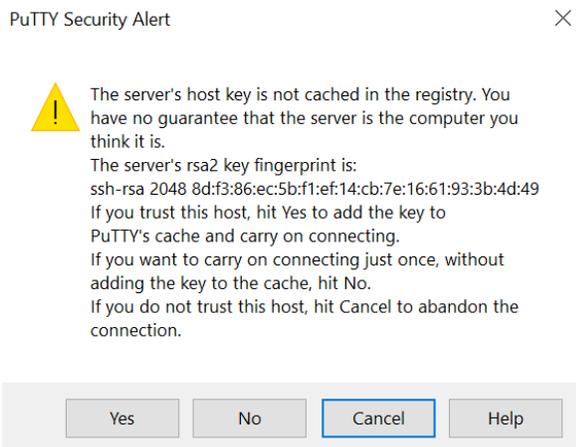


6. Open putty and enter the same IP and port as entered into winscp and press 'open'



7.

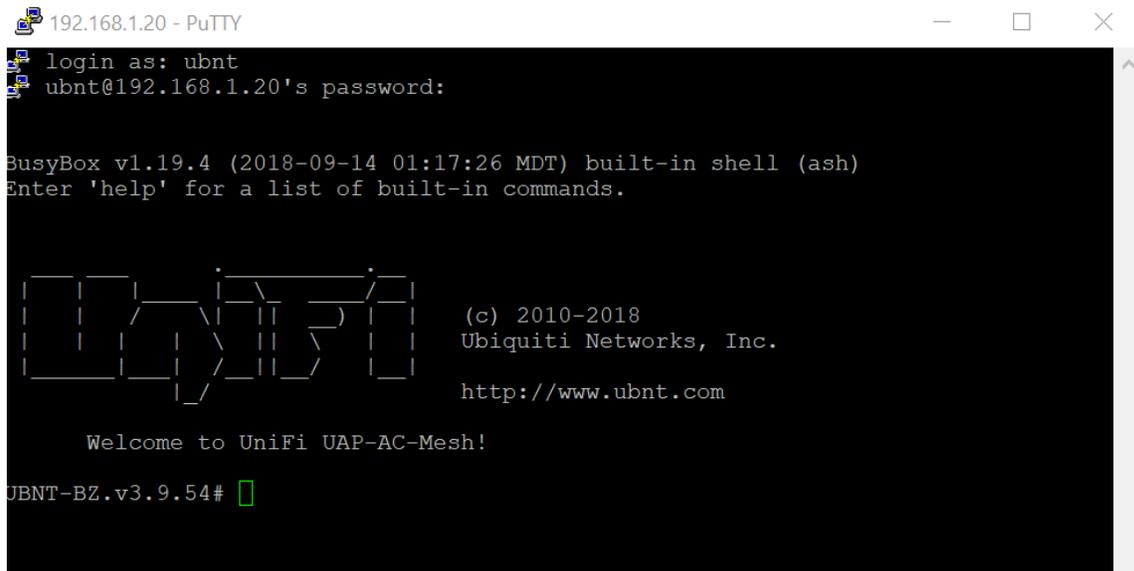
- a. Press "ok"/"yes"



- b. Type in username 'ubnt' and press Enter



- c. Type in “ubnt” as password (it won’t show on screen) and press enter. Verify the following screen appears:



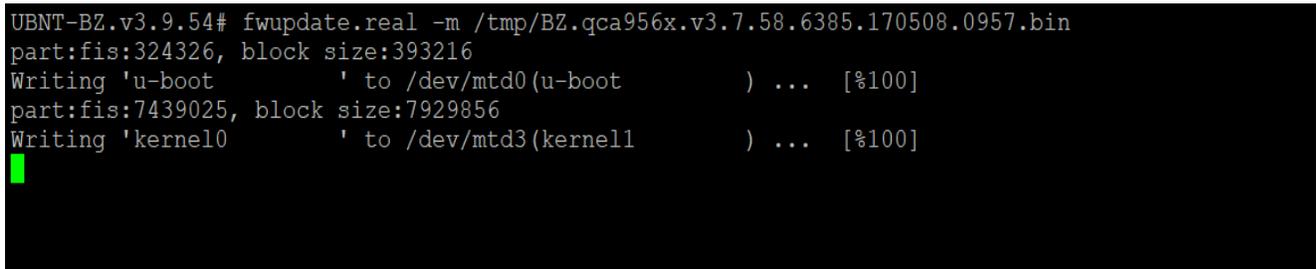
```
192.168.1.20 - PuTTY
login as: ubnt
ubnt@192.168.1.20's password:

BusyBox v1.19.4 (2018-09-14 01:17:26 MDT) built-in shell (ash)
Enter 'help' for a list of built-in commands.

UBNT (c) 2010-2018
Ubiquiti Networks, Inc.
http://www.ubnt.com

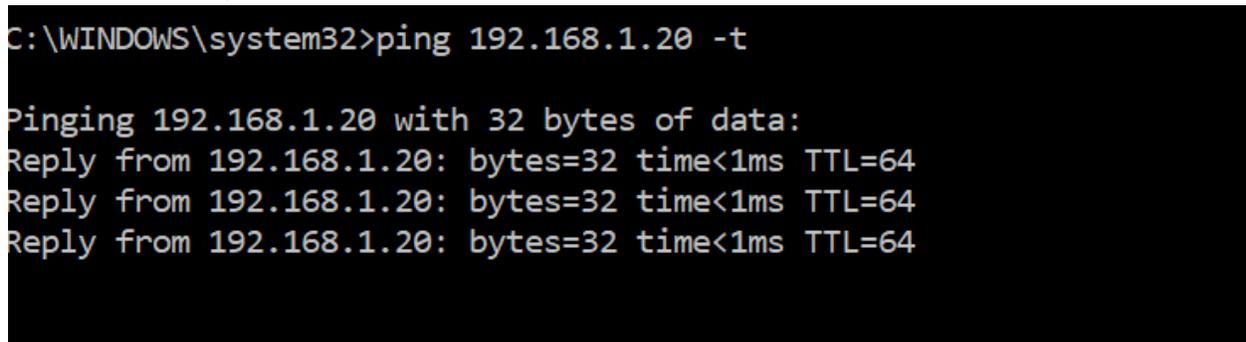
Welcome to UniFi UAP-AC-Mesh!
UBNT-BZ.v3.9.54#
```

- d. Type ‘fwupdate.real -m /tmp/BZ.qca956x.v3.7.58.6385.170508.0957.bin’ and press enter
- There is a tab shortcut they can use once starting to type a filename
 - ONLY PRESS ENTER ONCE** – if interrupted the device may break.
 - DO NOT LET CONNECTED DEVICE LOSE POWER OR THE AP MAY BREAK**
 - Takes 2 minutes max
 - It is supposed to timeout and a “network failure” error will likely appear, this is OK



```
UBNT-BZ.v3.9.54# fwupdate.real -m /tmp/BZ.qca956x.v3.7.58.6385.170508.0957.bin
part:fis:324326, block size:393216
Writing 'u-boot' to /dev/mtd0(u-boot) ... [%100]
part:fis:7439025, block size:7929856
Writing 'kernel0' to /dev/mtd3(kernel1) ... [%100]
```

8. Open command prompt and type ‘ping 192.168.1.20 -t’ and press enter
- Verify that it gets a reply then exit (does not need to stop, will continue endlessly with replies)

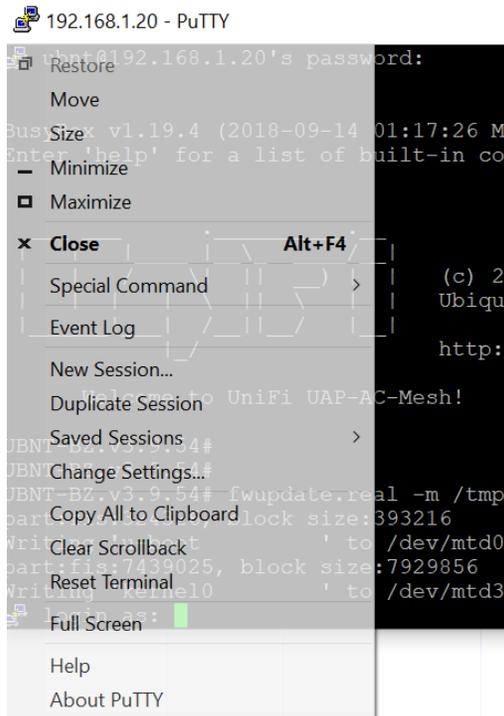


```
C:\WINDOWS\system32>ping 192.168.1.20 -t

Pinging 192.168.1.20 with 32 bytes of data:
Reply from 192.168.1.20: bytes=32 time<1ms TTL=64
Reply from 192.168.1.20: bytes=32 time<1ms TTL=64
Reply from 192.168.1.20: bytes=32 time<1ms TTL=64
```

9. Afterwards, reopen Putty

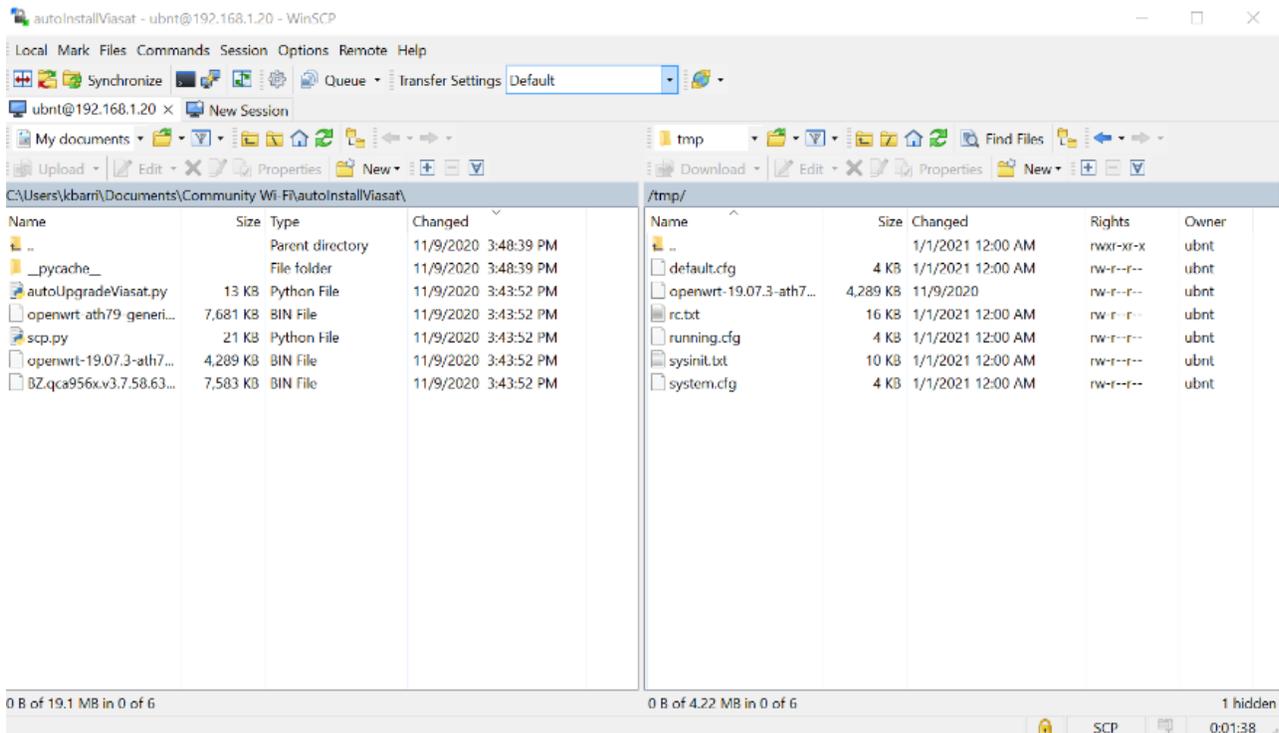
- Right click the icon in top left corner and press “New Session”



- Reenter login credentials

10. Open winscp

- Click “Session” → “Restore Session”
- Transfer ‘openwrt- 19.07...’ to the ‘tmp’ folder



11. Return to Putty

- a. Enter 'cat /proc/mtd' and press enter

```
BZ.v3.7.58# cat /proc/mtd
dev:      size    erasesize  name
mtd0: 00060000 00010000  "u-boot"
mtd1: 00010000 00010000  "u-boot-env"
mtd2: 00790000 00010000  "kernel0"
mtd3: 00790000 00010000  "kernel1"
mtd4: 00020000 00010000  "bs"
mtd5: 00040000 00010000  "cfg"
mtd6: 00010000 00010000  "EEPROM"
BZ.v3.7.58#
```

- b. Take note of which mtd# the "bs" is assigned to (usually mtd4) for later reference
- c. Enter 'mtd write /tmp/openwrt-19.07.3-ath79-generic-ubnt_unifac-mesh-squashfs-sysupgrade.bin kernel0' and press enter once
 - i. ONLY PRESS ENTER ONCE (ALWAYS)
 - ii. **Tab shortcut doesn't get the 'kernel0' – this needs to be typed.**

```
BZ.v3.7.58# mtd write /tmp/openwrt-19.07.3-ath79-generic-ubnt_unifac-mesh-squashfs-sysupgrade.bin kernel0
Unlocking kernel0 ...

Writing from /tmp/openwrt-19.07.3-ath79-generic-ubnt_unifac-mesh-squashfs-sysupgrade.bin to kernel0 ...
BZ.v3.7.58#
```

- d. Type 'mtd erase kernel1' and press enter

```
BZ.v3.7.58# mtd erase kernell
Unlocking kernell ...
Erasing kernell ...
BZ.v3.7.58#
```

- e. Type 'dd if=/dev/zero bs=1 count=1 of=/dev/mtd4' – use the mtd assigned to 'bs' instead of 4 if it is different and press enter.
 - i. Verify 1+0 record in and out

```
BZ.v3.7.58# dd if=/dev/zero bs=1 count=1 of=/dev/mtd4
1+0 records in
1+0 records out
BZ.v3.7.58#
```

- ii. May be a way to make the mtd selection automated, but don't worry about it for now
- f. Type "reboot" and press enter. Wait for # line

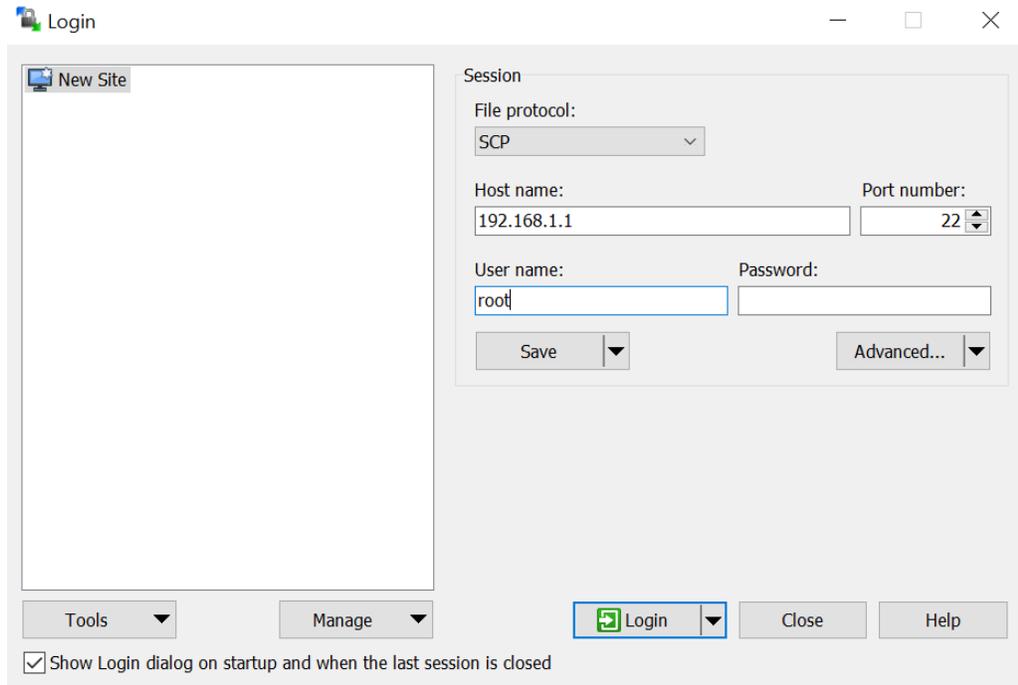
```
BZ.v3.7.58# reboot
BZ.v3.7.58#
```

12. Open command prompt

- Type 'ping 192.168.1.1 -t' this has changed from the .20 used before!
- Verify it gets a reply then exit

13. Open winscp

- Exit out of winscp then reopen to new session
- Enter 192.168.1.1
- Username: root, leave password blank
- Port: 22
- Press connect



The screenshot shows the WinSCP Login dialog box. The window title is "Login". On the left, there is a "New Site" panel which is currently empty. On the right, the "Session" configuration is shown: "File protocol" is set to "SCP"; "Host name" is "192.168.1.1"; "Port number" is "22"; "User name" is "root"; and "Password" is empty. There are "Save" and "Advanced..." buttons below the session fields. At the bottom of the dialog, there are "Tools" and "Manage" dropdown menus, a "Login" button with a green icon, "Close", and "Help" buttons. A checkbox at the bottom left is checked and labeled "Show Login dialog on startup and when the last session is closed".

Warning



Continue connecting to an unknown server and add its host key to a cache?

The server's host key was not found in the cache. You have no guarantee that the server is the computer you think it is.

The server's RSA key details are:

Algorithm: ssh-rsa 2048
SHA-256: AdpJdCbbVfcz1Pa/88SUBC190WMI080jxg6W3pe9F6o=
MD5: 8d:f3:86:ec:5b:f1:ef:14:cb:7e:16:61:93:3b:4d:49

If you trust this host, press Yes. To connect without adding host key to the cache, press No. To abandon the connection press Cancel.

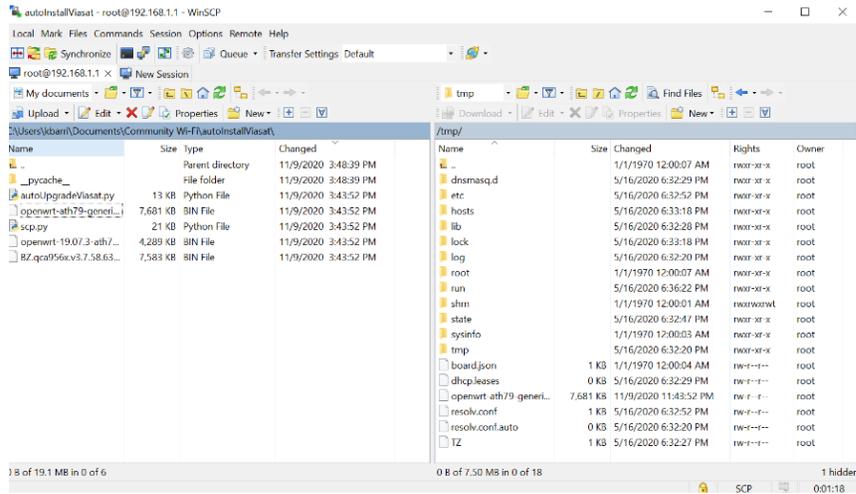
[Copy key fingerprints to clipboard](#)



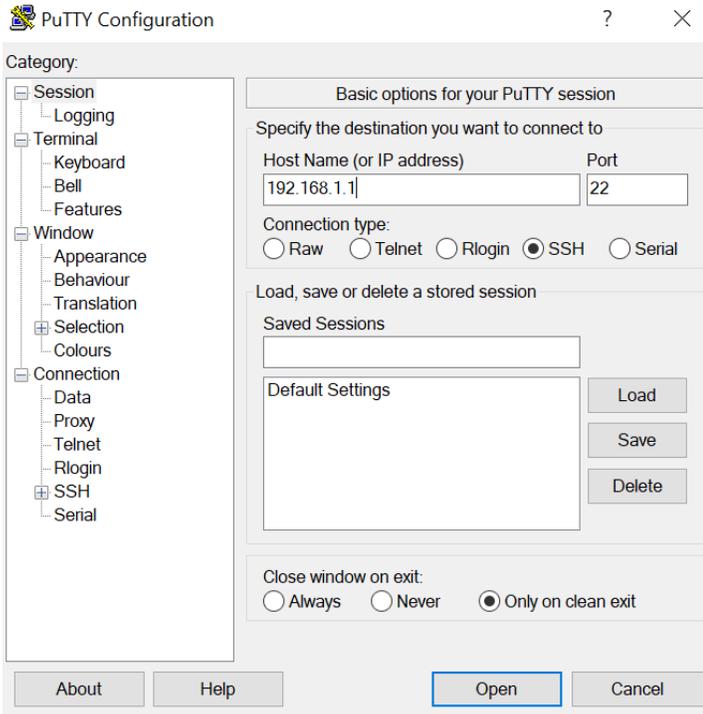
The warning dialog has four buttons at the bottom: "Yes", "No", "Cancel", and "Help". The "Yes" button is highlighted with a blue border.

14. Same viasat image file folder on left and 'tmp' on the right

a. Transfer 'openwrt-ath79...' file to 'tmp'



15. Go back to PuTTY and click new session. Enter the same new credentials as above and click "yes".



PuTTY Security Alert



The server's host key is not cached in the registry. You have no guarantee that the server is the computer you think it is.
 The server's rsa2 key fingerprint is:
 ssh-rsa 2048 8d:f3:86:ec:5b:f1:ef:14:cb:7e:16:61:93:3b:4d:49
 If you trust this host, hit Yes to add the key to PuTTY's cache and carry on connecting.
 If you want to carry on connecting just once, without adding the key to the cache, hit No.
 If you do not trust this host, hit Cancel to abandon the connection.



