Ubiquiti First Install Checklist for AC Devices

☐   **Prerequisites**

The installing computer must be capable of connecting to the command line of the target device. This will require that the computer support both the ***ssh*** and ***scp*** protocols. ***Ssh*** and ***scp*** are native to both Linux and MacOS. The OpenSSH package (which contains both commands) can be enabled on Windows computers. The procedure for Windows 10 is [here](). The procedure for Windows 11 is [here](). For Windows 7 & 8, the procedure is [here]().

☐   **Step 1: Preparing the device**

Before we can install AREDN® firmware on an AC device, we must first make sure it's running version **8.7.0** of the standard Ubiquiti firmware. This procedure will not work if the device is running any other version of AirOS. Fortunately we can upgrade or downgrade the standard firmware.

The IP address for a new Ubiquiti device is 192.168.1.20. Set the IP address of your computer to 192.168.1.10 and, when the device is powered up, enter 192.168.1.20 in a web browser. For a brand new device you'll be asked to select your country and agree to the EULA. Then hit *Continue*. Next you'll need to create a user with a password. Use the username `admin` and the password `admin!23`. Hit *Save*.

If all goes well you'll now be on the main Dashboard view in AirOS. On the left, click the *Gear* icon. This will take you to the System page. At the top of this page you will find the firmware version, For example, it might read "FIRMWARE VERSION XC.V8.7.1". If the firmware version reads either **XC**.V8.7.0 or **WA**.V8.7.0 then there's nothing more to do - you already have the correct firmware version and can move on to Step 2.

But if you see any version other than 8.7.0 you need to upload new AirOS firmware to the device. Download the correct AirOS firmware to your installing computer. The firmware can be found here:
     WA: https://dl.ubnt.com/firmwares/XC-fw/v8.7.0/WA.v8.7.0.42152.200203.1256.bin
     XC: https://dl.ubnt.com/firmwares/XC-fw/v8.7.0/XC.v8.7.0.42152.200203.1256.bin

Select the firmware appropriate for your device. If the current firmware starts **WA** download that version. If it starts **XC** download that version.

On the top right of the System page you will see "UPLOAD FIRMWARE" and *UPLOAD* in blue. Clicking the blue *UPLOAD* text will open a dialog and let you select the AirOS firmware you downloaded to your computer. The firmware will be uploaded to the device. Once completed a dialog in the top right will be displayed allowing you to either *UPDATE* or *DISCARD* the newly uploaded firmware. Hit *UPDATE*. The upgrade process will now start. Do **NOT** unplug the device until this step is completed.

Once the upgrade has been completed, the device will return you to the login page. Log in using the username and password set earlier (`admin` / `admin!23`). Once again you'll see the System page and if everything has been successful, the firmware version will now read either WA.V8.7.0 or XC.V8.7.0 and we can move to Step 2.

☐   Step 2: Copy the AREDN® firmware to the device

Before we can install AREDN® firmware on the device, we first need to put the AREDN® image in the device's /tmp directory. Be sure to download the correct firmware image for your device from the AREDN® download site. Copy the firmware to the device using the `scp` command:

```
scp <aredn-image-factory.bin> admin@192.168.1.20:/tmp/factory.bin
```

If you see the error "*Unable to negotiate*" please try the following:

```
scp -oHostKeyAlgorithms=+ssh-rsa <aredn-image-factory.bin> admin@192.168.1.20:/tmp/factory.bin
```

If you see an error "*sftp-server: not found*" please try the following:

```
scp -O -oHostKeyAlgorithms=+ssh-rsa <proper-image-factory.bin> admin@192.168.1.20:/tmp/factory.bin
```

Once this is successful, the AREDN® firmware will be in /tmp on the device waiting to be installed.

☐   Step3: Install the firmware

The installation procedure requires you to *ssh* to the command line of the device. On your computer, open a terminal session ("CMD" in windows) Type or copy/paste the following command:

```
ssh admin@192.168.1.20
```

If you see the error "*Unable to negotiate"* please try the following:

```
ssh -oHostKeyAlgorithms=+ssh-rsa admin@192.168.1.20
```

To install the AREDN® firmware we first need to create a program to do this. Ubiquiti devices expect signed firmware, but AREDN® firmware is not signed, so we need to circumvent the checking process. To do this type or copy/paste the following two commands:

```
hexdump -Cv /bin/ubntbox | sed 's/14 40 fe 27/00 00 00 00/g' | hexdump -R > /tmp/fwupdate.real

chmod +x /tmp/fwupdate.real
```

Finally flash the AREDN® firmware by typing:

```
/tmp/fwupdate.real -m /tmp/factory.bin
```

Do **<u>NOT</u>** unplug the device until the flashing process is complete and the device has rebooted. The device will install the AREDN® image, boot into it, and end up on IP address 192.168.1.1 as a normal AREDN® device. You may then configure the device by following the steps for *Basic Setup*.