monome/docs

WiFi / update / files

▼ sections

connect

Both standard norns and shield are capable of connecting to existing WiFi networks, or hosting their own as a hotspot.

shield has its own WiFi antenna built in (3B: 2.4Ghz, 3B+/4: 2.4Ghz and 5Ghz), thanks to its Raspberry Pi. Standard norns doesn't have WiFi built in, so it comes with a 2.4GHz USB WiFi adapter — if you need replacements please see replacement parts.

connecting norns to a WiFi network

The first few minutes of this video walks through how to host a hotspot from norns and how to connect norns to a known WiFi network:
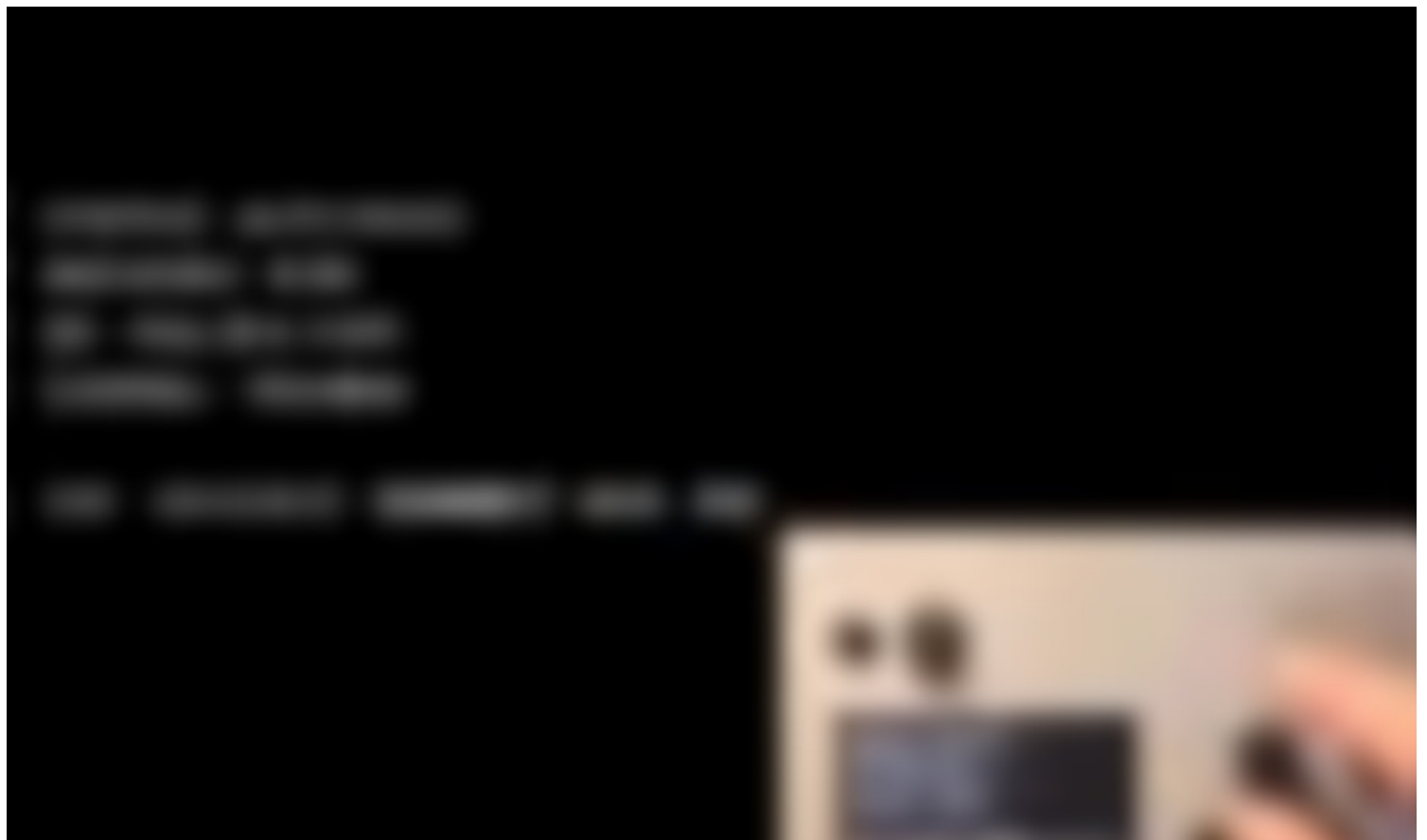
figure 1: WiFi + maiden access video

To connect norns to your local network router:

- navigate to **SYSTEM > WIFI**
  - if hotspot is already enabled, select `OFF` and press **K3** to disable it
- select **ADD** and press **K3**
- choose your network from the list displayed
- enter the password
  - **E3** toggles between the character selector and the controls at the bottom of the screen
  - when in the character selector, **E2** scrolls character and **K3** selects it
    - both lowercase and uppercase letters are available, as network passwords are case-sensitive
  - if you've made a mistake in entry, turn **E3** to highlight the controls row, then turn **E2** to highlight DEL and press **K3** to delete the last character
- when your password is completely entered, turn **E3** to highlight the controls row, then turn **E2** to highlight OK, and press **K3** to submit the password
- you should be assigned an IP address shortly after

After a network is added, norns remembers the credentials. Known networks are stored under **CONNECT**. You can remove known networks under **DEL**.

Having trouble with connectivity? Please see the WiFi section of our extended help docs.

hosting a hotspot from norns

If you do not have access to a router, you can also turn the norns into a WiFi hotspot. This will create a new network which you can then connect to with your computer.

Navigate to **SYSTEM > WIFI** and select **HOTSPOT**. After a few seconds, norns will begin broadcasting a network. To connect to it from another device:

network name / SSID: `norns`
default password: `nnnnnnnn`

See *change default password + address* to change these two credentials for increased security.

update

Once norns is connected to a network, you can access system updates which fix bugs, add new features, and improve the overall experience.

```
AWAKE

SELECT >
SYSTEM >
SLEEP >
```

K3

```
DEVICES >
WIFI >
RESET
UPDATE
```

K3

```
checking for update...
```

K2: see SYS info

```
BAT 100  0mA        DISK 935M
CPU 4%  50c      IP 192.168.1.100

SELECT >              NONE
SYSTEM >              201115
SLEEP >
```

if already updated:

```
up to date.
```

if disk full:

```
disk full. need 400M.
```

K3: confirm install

```
update found: 201115
install?
```

```
downloading...
```

```
done. any key to shut down.
```

press any key

[figure 2: update process](#)

To check for and install updates:

- connect to a WiFi network (updates cannot be performed via norns-powered hotspot)
- navigate to **SYSTEM > UPDATE** and press **K3**
- norns will check for available updates
  - *nb. if this takes a while, confirm norns is connected to WiFi and/or perform a SYSTEM > RESTART*
- if norns finds an update, press **K3** to confirm installation
- after installation, press any key to safely shut norns down

To re-run an update, navigate to **SYSTEM > UPDATE**, then hold **K1** and press **K3**.

running 220129 or earlier?

If your norns is running software version `220129` (January 29 2022) or earlier, you **must** reflash your norns to the [latest disk image](#) in order to use the **SYSTEM > UPDATE** menu action. While a bit of a hassle, this gives a consistent base operating system across all norns devices, and makes future updates and support much easier.

To see which version of the norns software you're running, navigate to the **SELECT / SYSTEM / SLEEP** menu and hit K2 to toggle the informational display. Software version is listed on mid-right of your screen, under the currently-running script's name.

If you are running anything *earlier* than `220306` (March 06 2022), be sure to perform a [backup](#) and follow the [fresh install instructions](#) instructions to get the necessary norns software installed on your device.

"disk full. need 400M."

If you encounter this message while attempting to update, it means the amount of storage allocated to norns by the filesystem has less than 400 megabytes currently available.

If you're using a high-capacity card/chip (eg. 32gb), this is likely the result of the filesystem not being expanded after a [fresh install](#) (eg. re-flashing the norns to overcome technical issues) or after the initial norns shield assembly (eg. the final [expand](#) steps). Either way, this is normal – norns can't anticipate how much space it's allowed to allocate for itself, so it retains a minimal installation size until directed otherwise. To expand the filesystem of a standard norns, follow [step 7 of the 'fresh install' docs](#). To expand the filesystem of a shield, follow [steps 1-8 here](#).

If filesystem expansion doesn't resolve the issue (or if you know you have a *lot* of stored audio files), you'll want to transfer files from norns to another computer. See the next section of these docs to learn how to mount norns as a networked drive.

transfer

In **play**, we loaded loops and recorded our own audio using the **TAPE**. All of the files that you interact with (audio, scripts, PSETs, etc), live inside a special folder in norns called `dust` .

Here's the `dust` file tree:

```
dust/
   audio/          -- audio files
     tape/             -- tape recordings
     ...
   code/           -- contains scripts and engines
     awake/
     mlr/
     ...
     we/
   data/           -- contains user data created by scripts
     awake/            -- for example, pset data
```

`dust` **management is best achieved via Samba, a protocol that allows you to directly connect your computer's file browser to norns. If you haven't already, please connect your norns and your computer to the same WiFi network.**

connecting to norns via macOS

Open Finder and hit CMD/Apple-K or navigate to `Go > Connect to Server` .

In the top IP address bar, enter: `smb://norns.local` and click Connect:
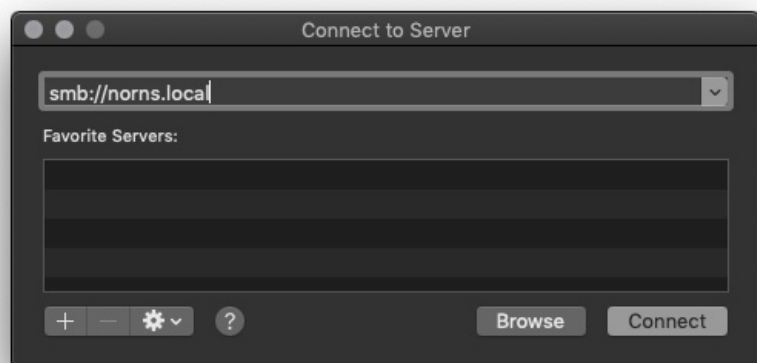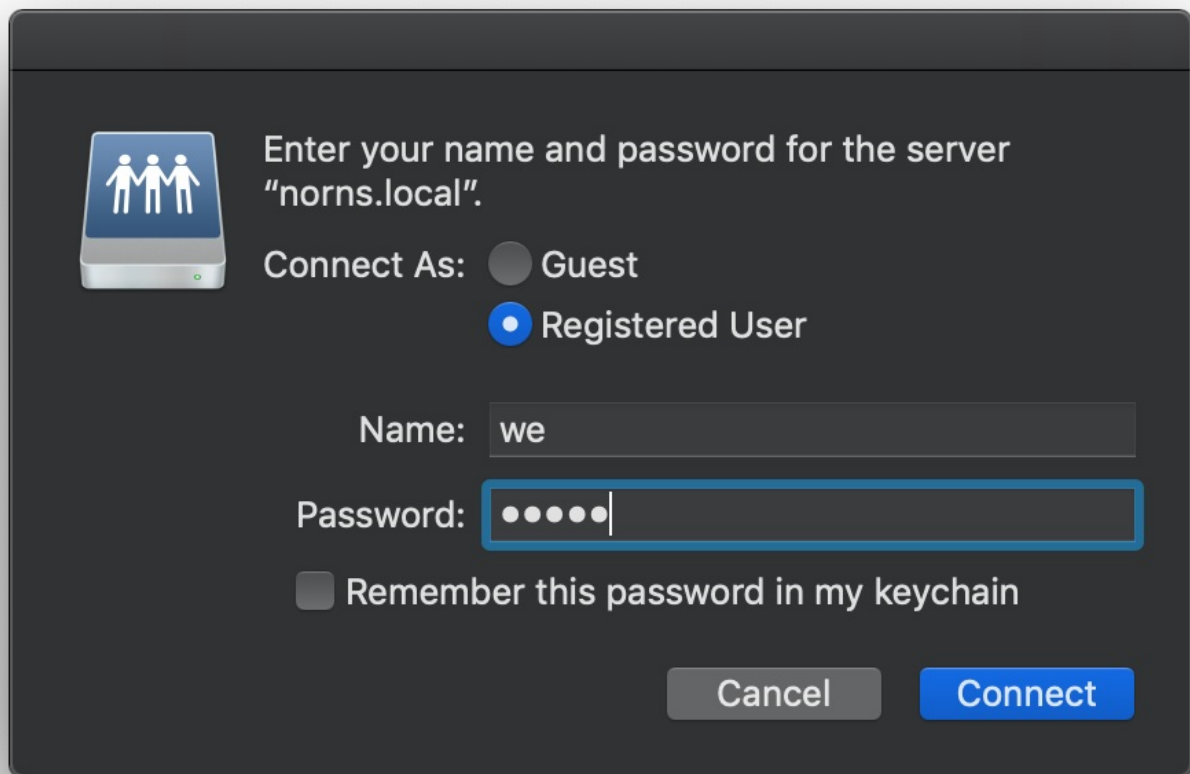
You may see an "Unsecured Connection" warning, but you can safely ignore it and click Connect.

Login as a Registered User with the following credentials:

- Name: `we`
- Password: `sleep`

…and click Connect one last time!

figure 4: Samba connect dialogue

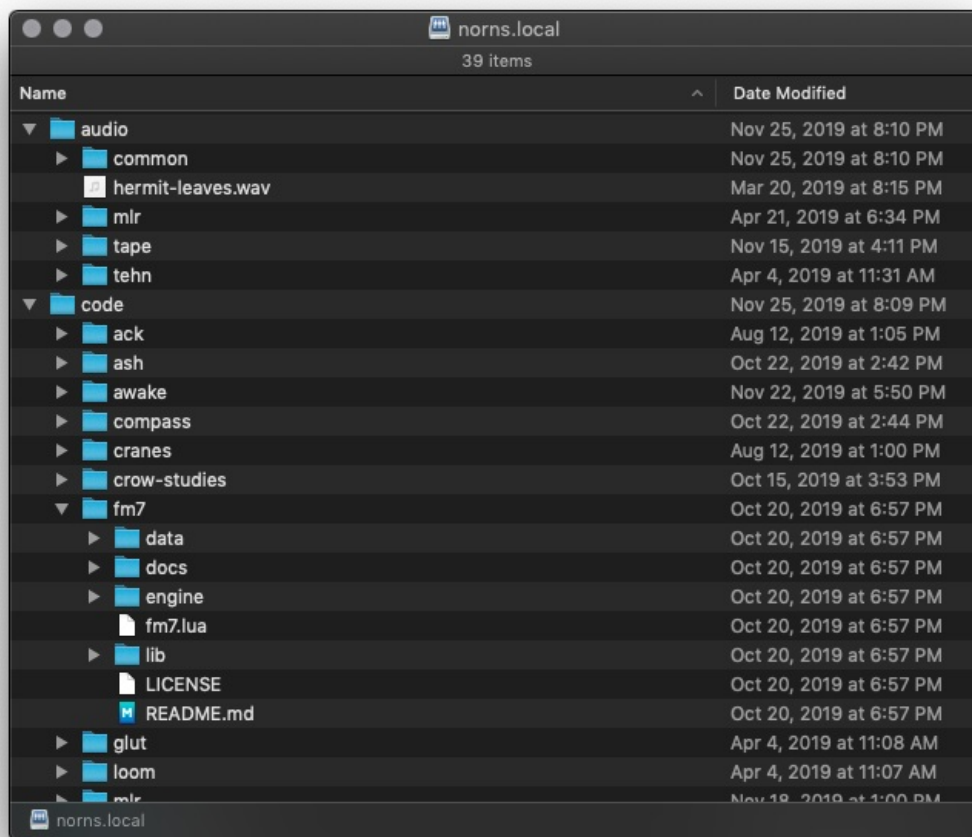Once connected, you can freely navigate through files on norns:

connecting to norns via Windows

To use Samba (also known as "SMB") network sharing on Windows 10, navigate to Control Panel > Programs > Programs and Features > Turn Windows features on or off, and turn on the SMB features.

Then, reboot.

Using File Explorer, the norns.local file tree should be available at `\\norns.local` . If `\\norns.local` does not resolve, please try navigating to `\\IP-ADDRESS-OF-YOUR-NORNS` , eg. `\\192.168.1.100` .

Login as a Registered User with the following credentials:

*   Name: `we`
*   Password: `sleep`

Samba alternatives

We prefer Samba because it mounts norns as a virtual flash drive, which makes file management feel familiar and approachable. However, if you have any trouble connecting to norns via Samba using the methods described above, you may be interested in accessing norns via SSH File Transfer Protocol (also known as "SFTP").

For more info on establishing an STFP connection, visit the STFP section of the docs.

transferring audio to/from norns

You can use Samba to share audio files between norns and your computer. On norns, these files are stored under `dust/audio` — depending on which scripts you have installed, you may see many folders under `audio` or just a few.

Recordings made on norns will be stored under `dust/audio/tape` .

You'll also find an `index.txt` file which logs the TAPE index — if you wish to reset the auto-generated counter, edit this file to start back at 0.
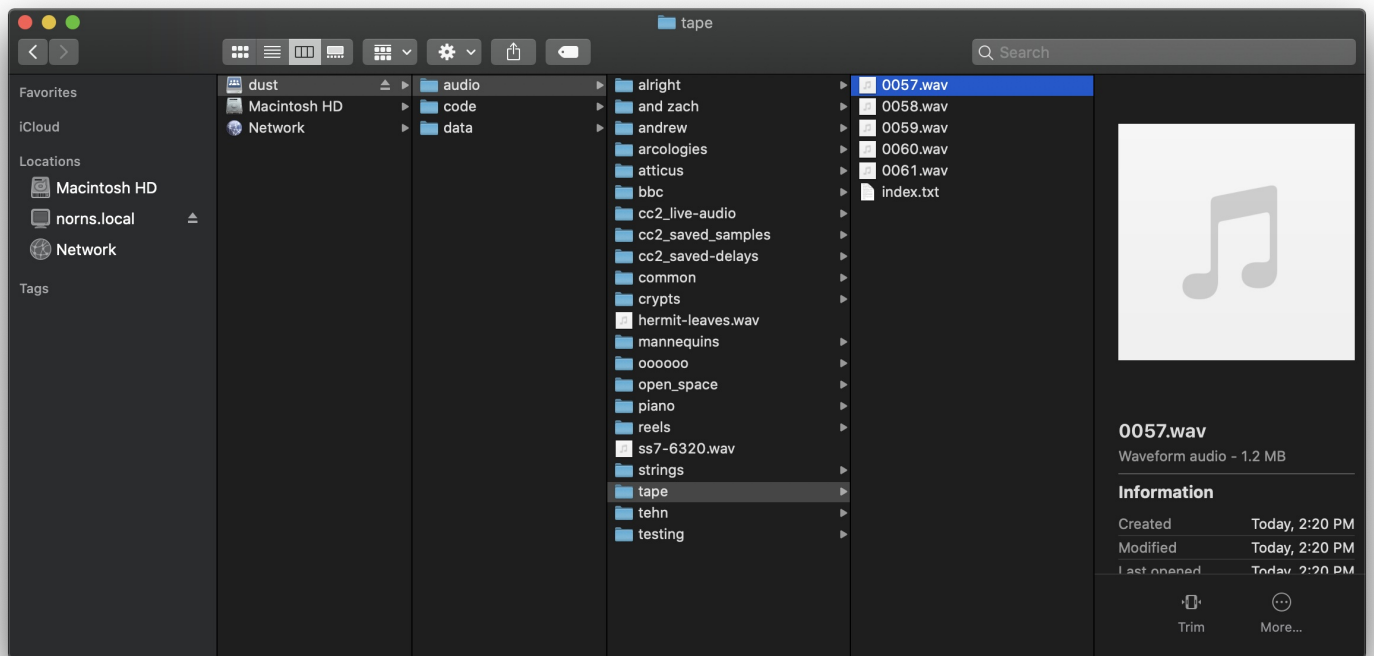
Feel free to make folders inside `audio` to store various samples, field recordings, single cycle waveforms, etc. Each of those folders can also store subfolders, but please note that you cannot nest more than ten folder layers.

norns records 48khz stereo WAV files – please only import uncompressed 48kHz files (bit-depth irrelevant).

backup

Backup is best done by hosting a hotspot from norns and connecting your destination computer to its network – this will greatly improve transfer speeds.

If you have edited any scripts to your own needs, or written any scripts of your own, please make sure you've copied those files to another computer or web repository.

If you have only downloaded scripts from others (or have already backed up your own scripts/modifications) and wish to retain audio files, script PSETs, midi mappings (PMAPs), etc, simply copy your entire `audio` and `data` folders, which live inside of `dust`, via Samba (as described above) or SFTP.

Restoring from this backup is as simple as copying the contents of the folders from your non-norns computer back to the `/home/we/dust/audio` and `/home/we/dust/data` directories on norns.

After you restore these files, we encourage downloading fresh copies of the community scripts you want to use.

note for norns shield users: on Windows + MacOS, the norns partition on your SD card is unfortunately not accessible by simply inserting it into an SD card reader. For the adventurous, here are steps to surface the `ext4` filesystem: Windows and MacOS.

change default password + address

Since all norns units come configured with the same username + password, we encourage you to personalize + protect your setup by changing the default hostname and password for the `we` user.

via SETTINGS menu

In the norns SETTINGS menu, there's a `PASSWORD` entry which will open up a text selector for you to enter a new password. This will be the password you use to connect to your norns via SSH, as well as your SMB (samba) + hotspot passwords. **nb. this password must be between 8 to 63 characters in length – otherwise hotspot (which is WPA-PSK) will not work.**

While you can simply reset this password again via this menu option, we encourage you to set it to something memorable so you don't worry about troubleshooting connectivity in a critical moment.

hostname

To change the hostname for maiden access, log in to the norns via ssh and execute:

```
sudo raspi-config
```

This will lead you to the Raspberry Pi Software Configuration Tool, where you can follow these steps:

- press ENTER on `1 System Options`
- press ENTER on `S4 Hostname`
- press ENTER on `<ok>` and type in a new hostname for your norns device (no need to type `.local`
- navigate down to `Finish` and press ENTER – if asked to reboot, please do
- the unit will restart after a few seconds

Now, you'll be able to use your new hostname for maiden access (what once was `norns.local` will now be `your_unique_name.local` !) and your new password for ssh access!

where to next?

Now that you know how to get connected to WiFi, your norns is up to date, and you've got some fresh new audio to mangle, let's find some new community scripts through **maiden**!

help