

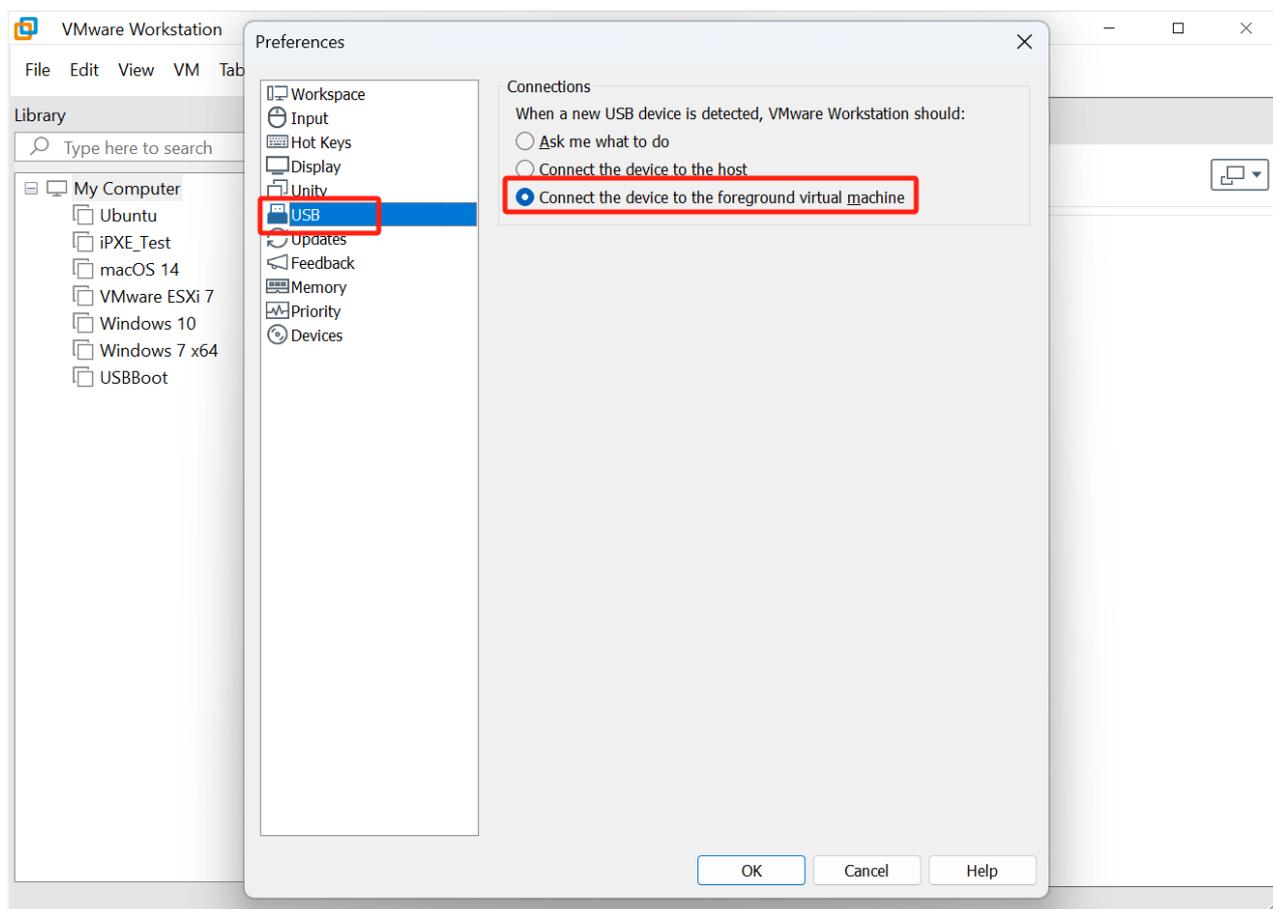
Install vmare workstation pro

<https://www.vmware.com/products/desktop-hypervisor/workstation-and-fusion>

vmware settings

Edit > Preferences > USB > Connect the device to the foreground virtual machine.

The usb mode will be switched several times during the dfu process, be sure to keep the mac device connected to the system in the VM!



Get vmware image

After purchasing DFUKit, you will receive a download e-mail, click on the link to download

🎉 Thank you for purchasing from our store! You can download your purchased files below.

M4-SSD DFUKit

Download any file up to 5 time(s)

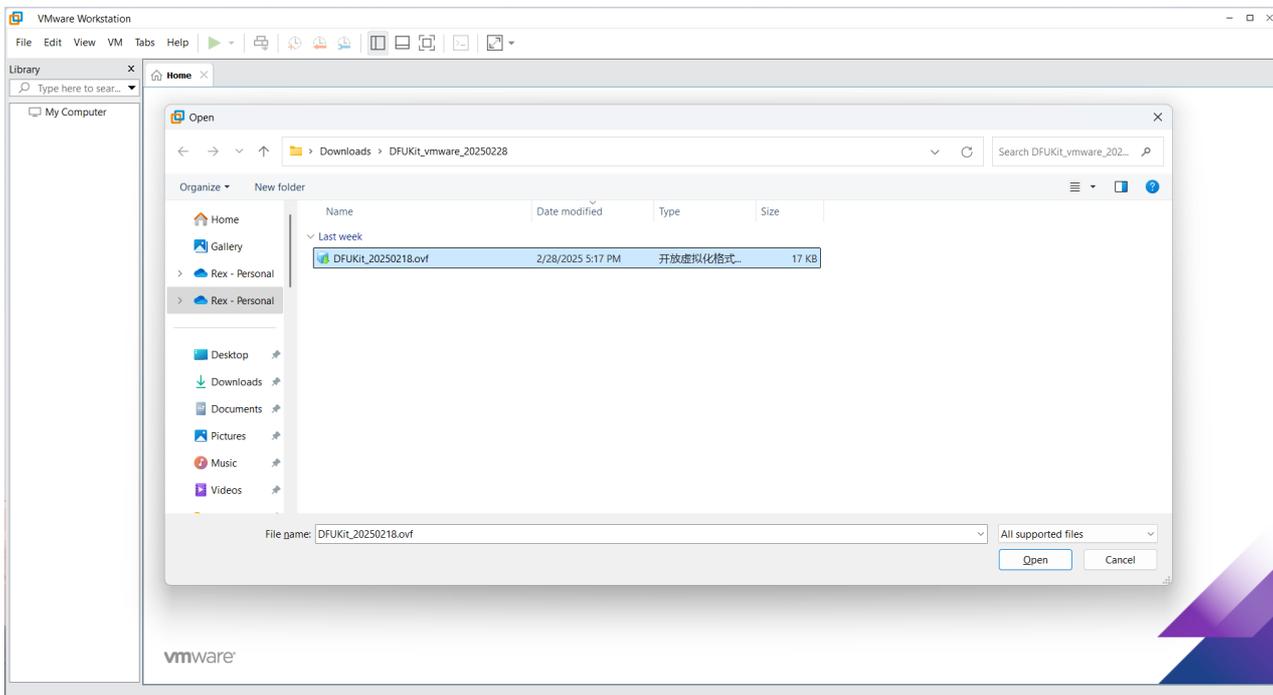
License key: 295QA5AQ

[DFUKit vmware image v20250228](#)

If you have any questions, don't hesitate to contact our team.

Thanks,
M4-SSD team

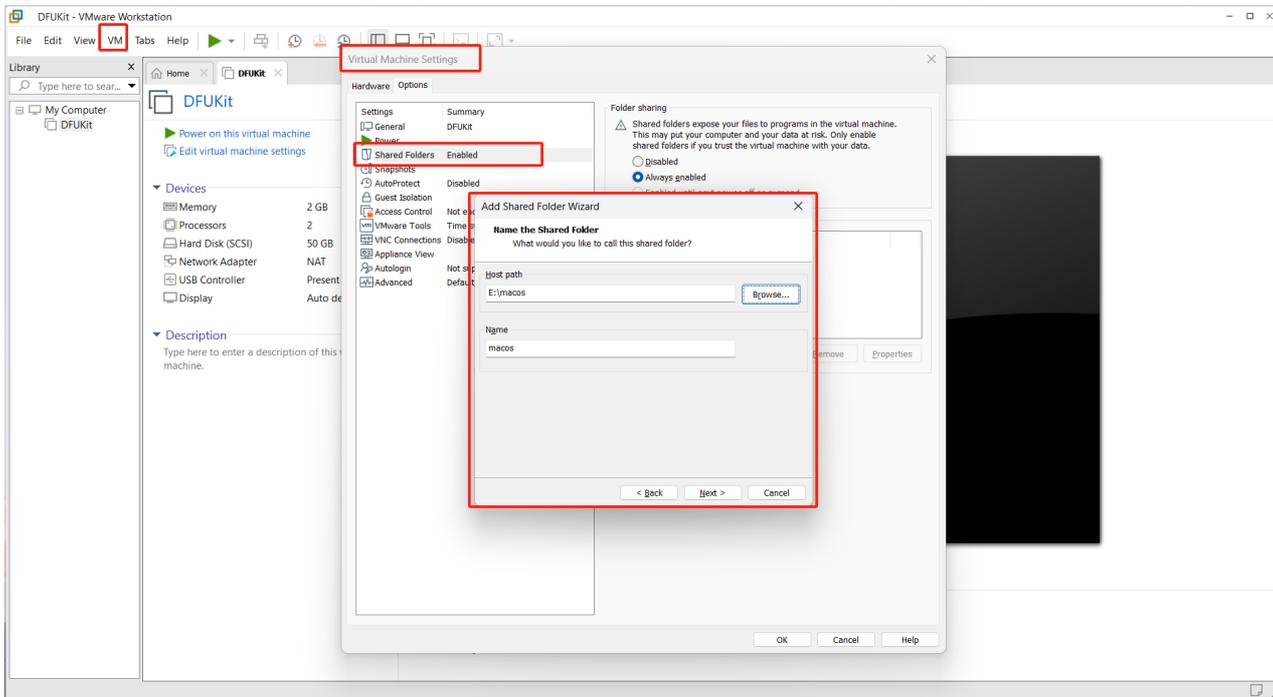
Unzip and open ovf file



Setting Share folder

Setting an share folder for this vm so that you can share the ipsw file from Winodws folder.

The name of the shared folder in the tutorial uses **macos**, the windows file path holds the downloaded ipsw file.



DFUKit use

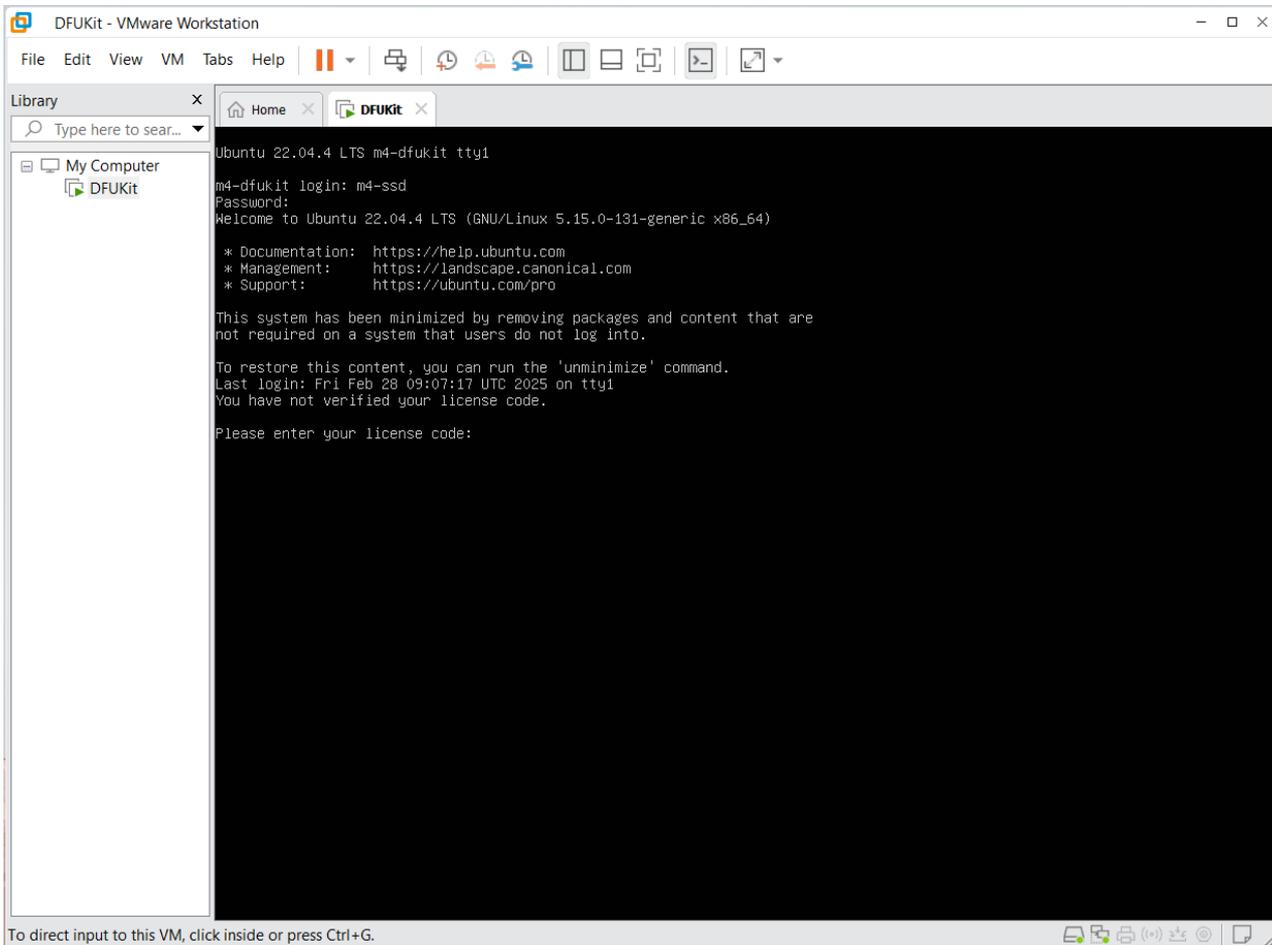
During the DFU process, the usb mode of mac mini will be switched several times, at this time, windows pc will be recognized as a **different usb device**, all need to be manually **connected** to the virtual machine

Start the virtual machine and login

User name: **m4-ssd**

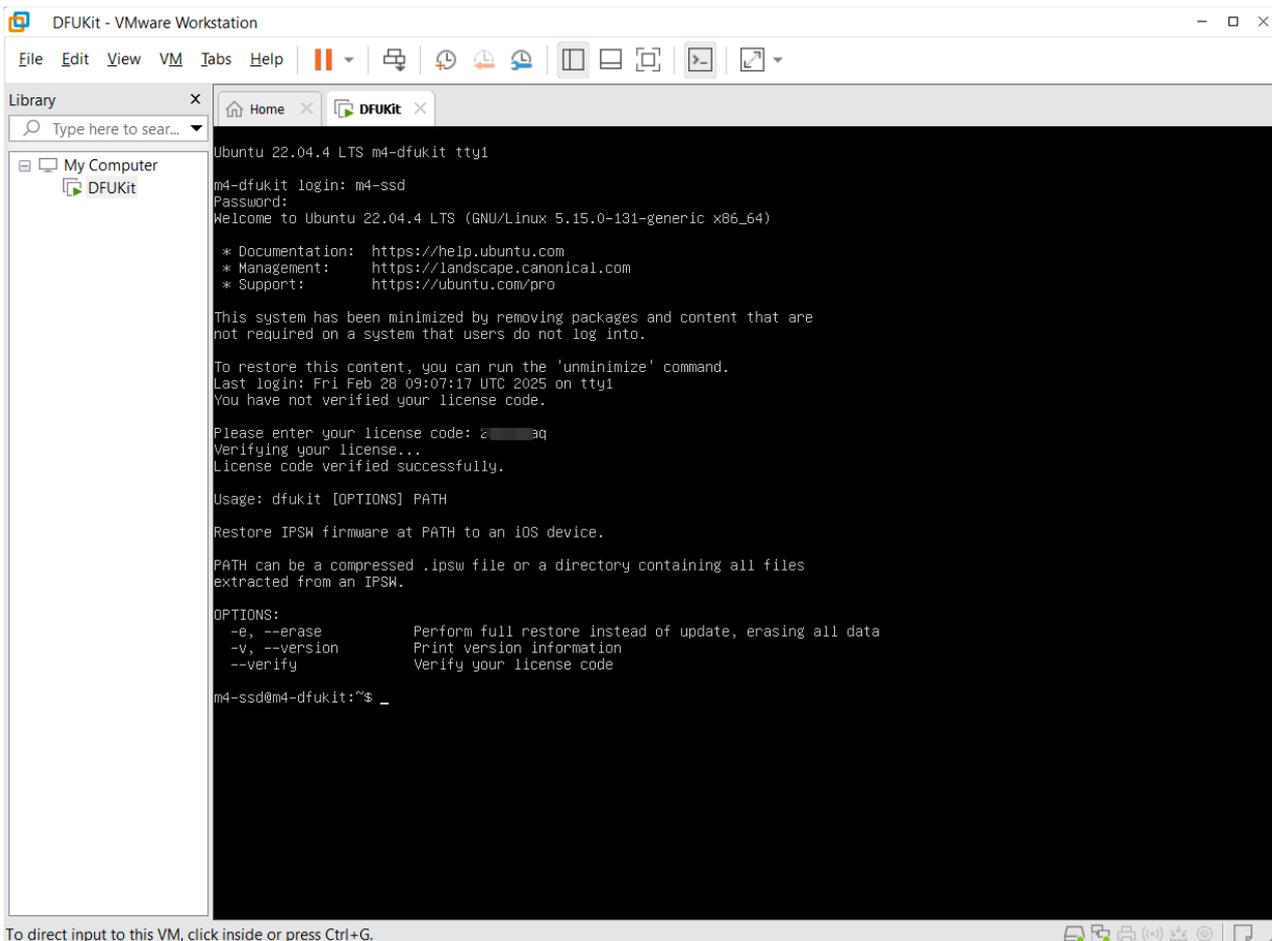
system password: **m4-ssd.com**

Enter license code from m4-ssd



To direct input to this VM, click inside or press Ctrl+G.

Ensure that the network is working properly and the activation is successful

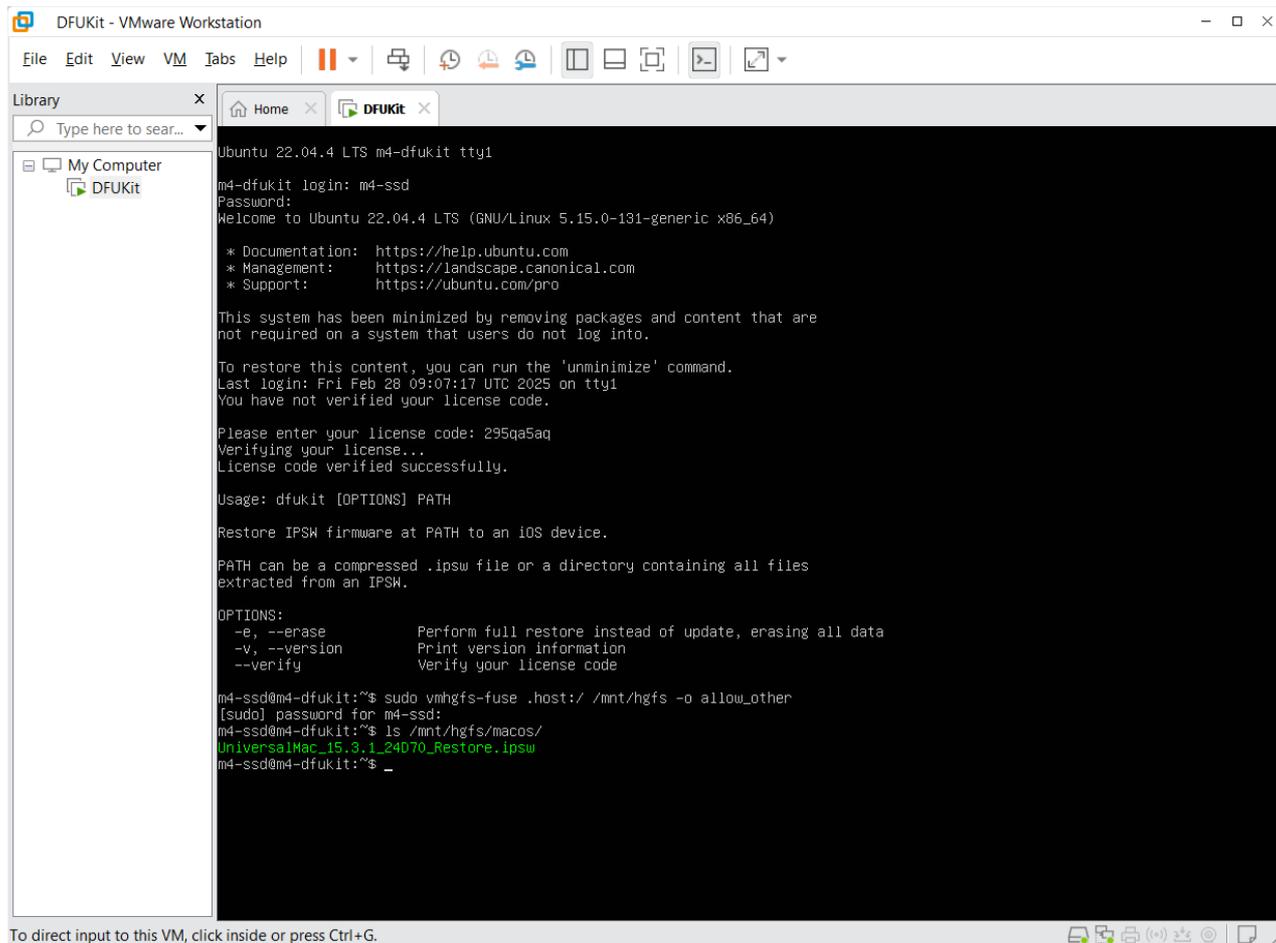


To direct input to this VM, click inside or press Ctrl+G.

mount the shared folder

```
1 sudo vmhgfs-fuse .host:/ /mnt/hgfs -o allow_other
2 ls /mnt/hgfs/macros/
```

macros is the shared directory we set up earlier, at this point you can see that there is already a **pre-downloaded ipsw** file in the directory



The screenshot shows a terminal window titled "DFUKit - VMware Workstation". The terminal output includes the following text:

```
Ubuntu 22.04.4 LTS m4-dfukit tty1
m4-dfukit login: m4-ssd
Password:
Welcome to Ubuntu 22.04.4 LTS (GNU/Linux 5.15.0-131-generic x86_64)

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

This system has been minimized by removing packages and content that are
not required on a system that users do not log into.

To restore this content, you can run the 'unminimize' command.
Last login: Fri Feb 28 09:07:17 UTC 2025 on tty1
You have not verified your license code.

Please enter your license code: 295qa5aq
Verifying your license...
License code verified successfully.

Usage: dfukit [OPTIONS] PATH

Restore IPSW firmware at PATH to an iOS device.

PATH can be a compressed .ipsw file or a directory containing all files
extracted from an IPSW.

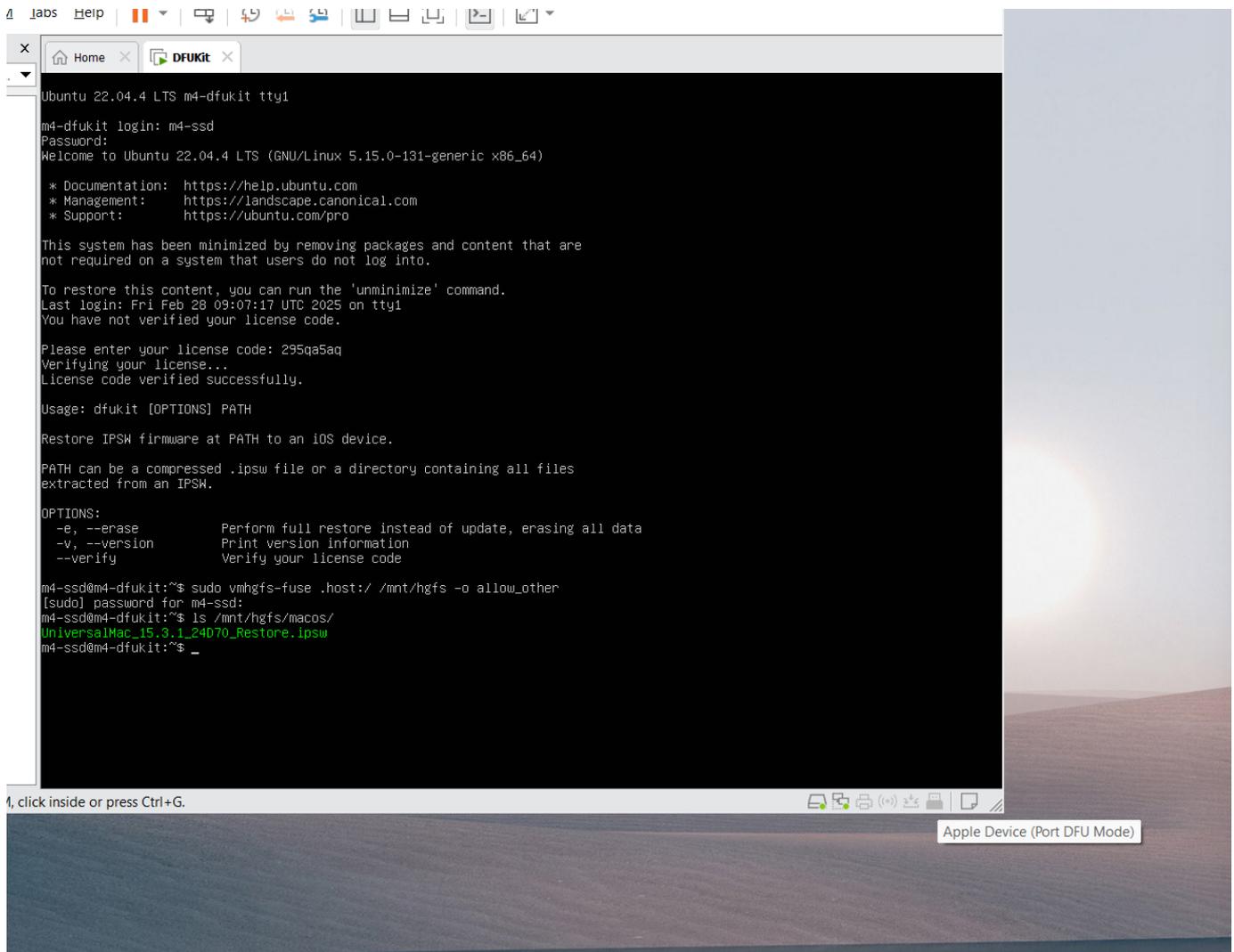
OPTIONS:
-e, --erase          Perform full restore instead of update, erasing all data
-v, --version       Print version information
--verify            Verify your license code

m4-ssd@m4-dfukit:~$ sudo vmhgfs-fuse .host:/ /mnt/hgfs -o allow_other
[sudo] password for m4-ssd:
m4-ssd@m4-dfukit:~$ ls /mnt/hgfs/macros/
UniversalMac_15.3.1.24070_Restore.ipsw
m4-ssd@m4-dfukit:~$ _
```

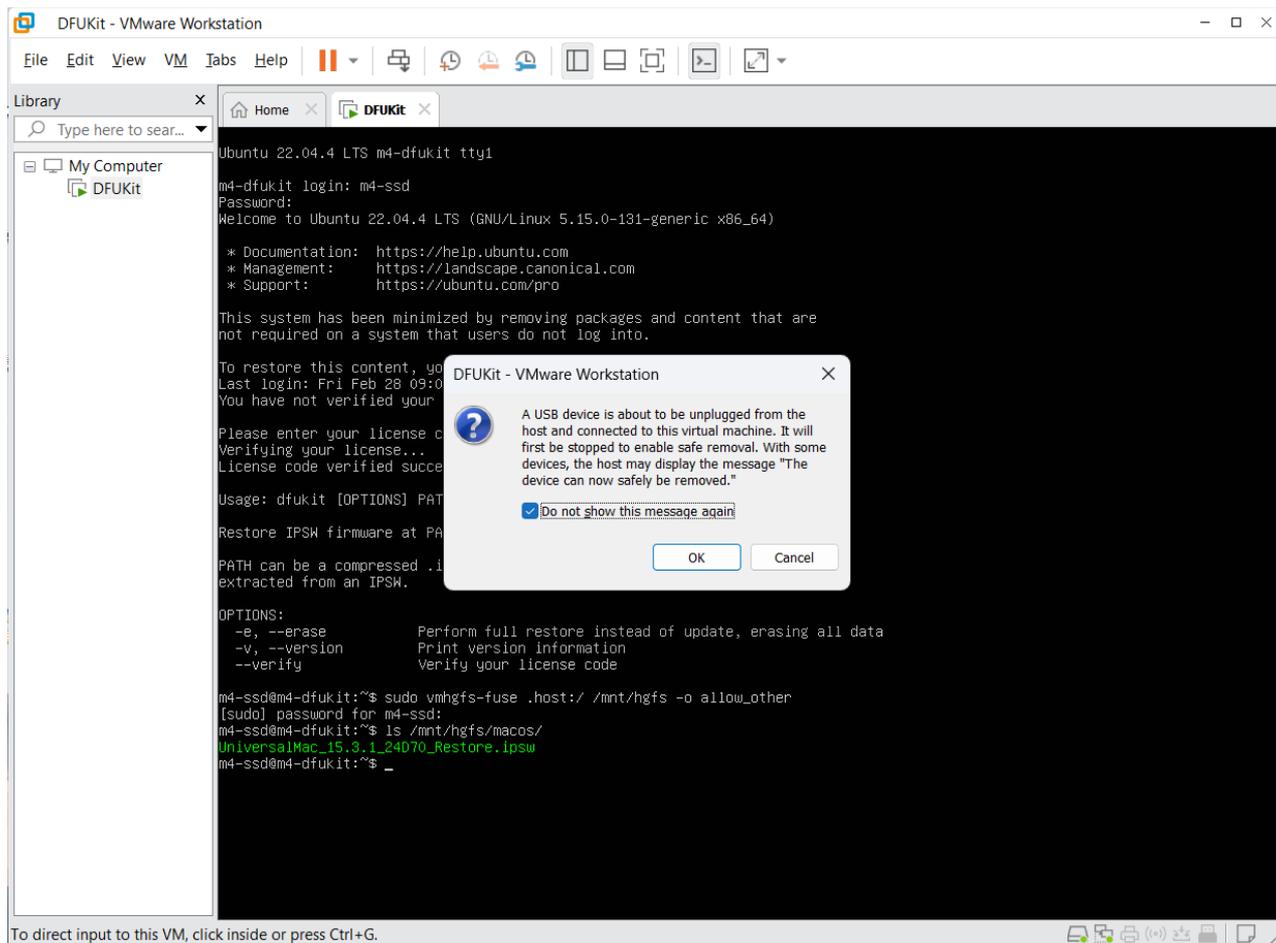
Connect the DFU Mode Mac mini

Put the Macmini with the replacement SSD module into DFU mode and plug it into the pc.

Sometimes the macmini in dfu state will not be inserted into the VM and you need to manually click to connect to the VM

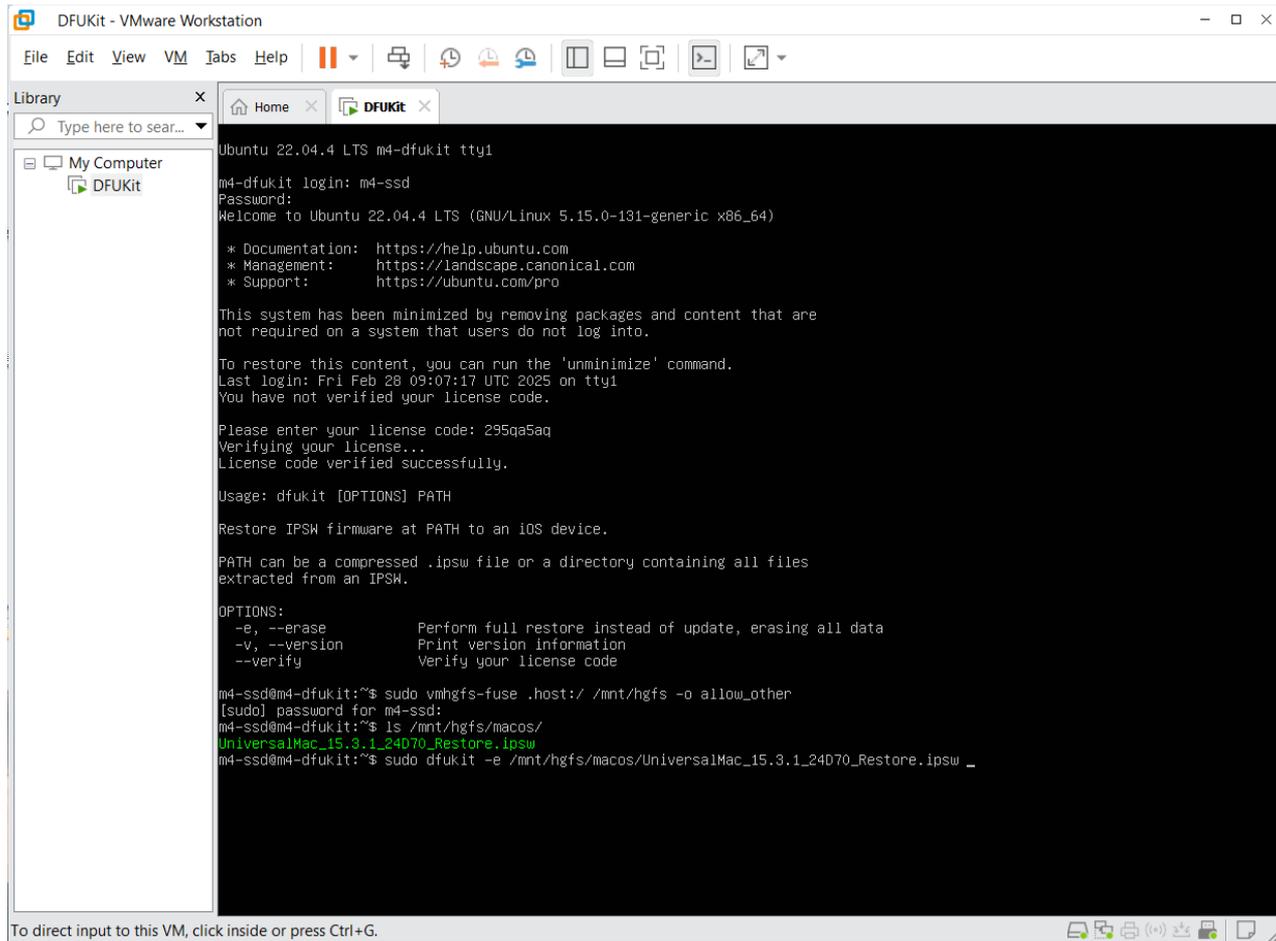


Verify that the dfu mode mac is unplugged from the host and inserted into the virtual machine



Start DFU

```
1 sudo dfukit -e /mnt/hgfs/macos/UniversalMac_15.3.1_24D70_Restore.ipsw
```



```
DFUKit - VMware Workstation
File Edit View VM Tabs Help
Library
Type here to search...
My Computer
DFUKit
Ubuntu 22.04.4 LTS m4-dfukit tty1
m4-dfukit login: m4-ssd
Password:
Welcome to Ubuntu 22.04.4 LTS (GNU/Linux 5.15.0-131-generic x86_64)

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

This system has been minimized by removing packages and content that are
not required on a system that users do not log into.

To restore this content, you can run the 'unminimize' command.
Last login: Fri Feb 28 09:07:17 UTC 2025 on tty1
You have not verified your license code.

Please enter your license code: 295qa5aq
Verifying your license...
License code verified successfully.

Usage: dfukit [OPTIONS] PATH

Restore IPSM firmware at PATH to an iOS device.

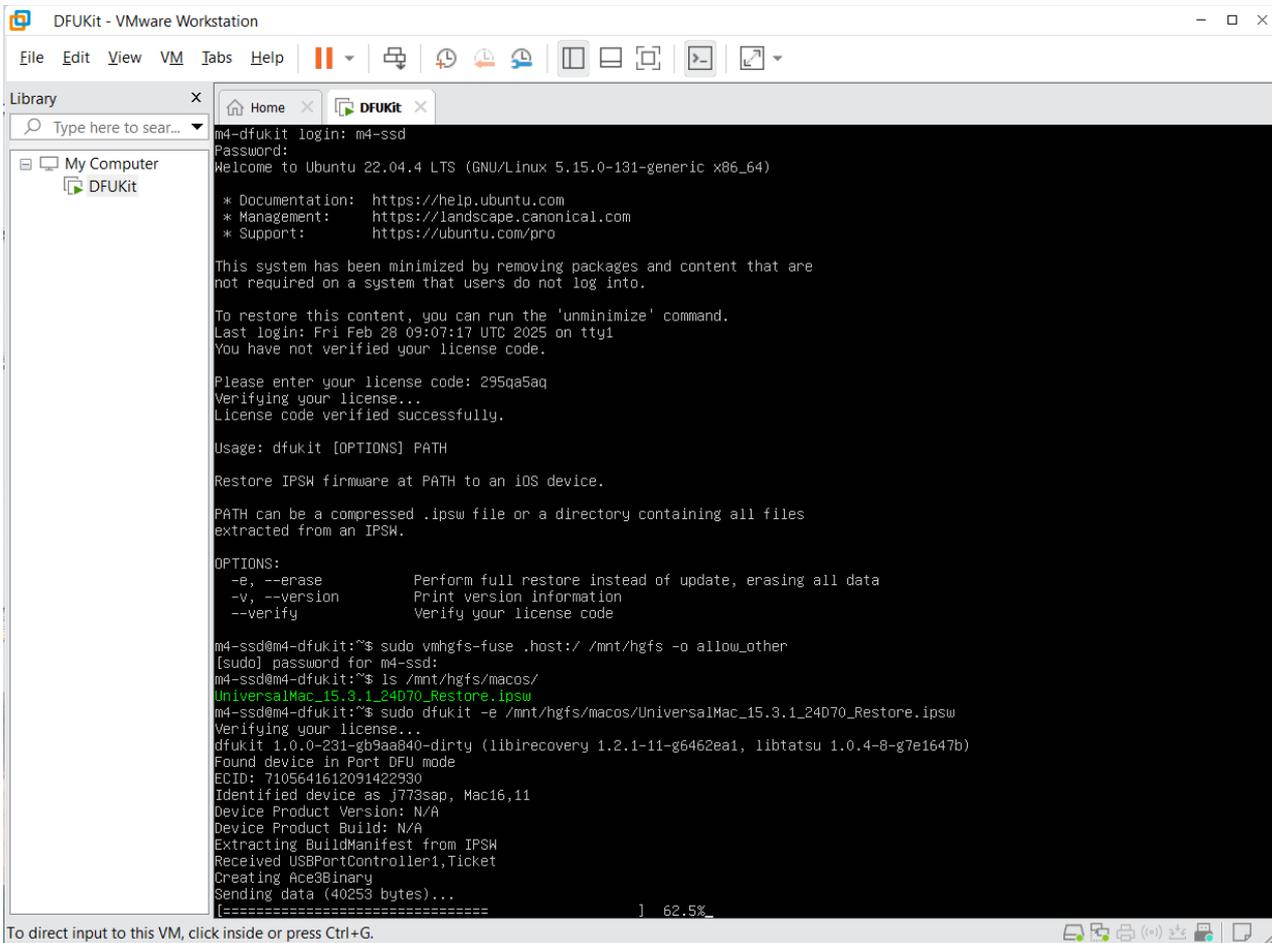
PATH can be a compressed .ipsw file or a directory containing all files
extracted from an IPSW.

OPTIONS:
  -e, --erase          Perform full restore instead of update, erasing all data
  -v, --version        Print version information
  --verify             Verify your license code

m4-ssd@m4-dfukit:~$ sudo vmhgfs-fuse .host:/ /mnt/hgfs -o allow_other
[sudo] password for m4-ssd:
m4-ssd@m4-dfukit:~$ ls /mnt/hgfs/macos/
UniversalMac_15.3.1_24D70_Restore.ipsw
m4-ssd@m4-dfukit:~$ sudo dfukit -e /mnt/hgfs/macos/UniversalMac_15.3.1_24D70_Restore.ipsw _
```

To direct input to this VM, click inside or press Ctrl+G.

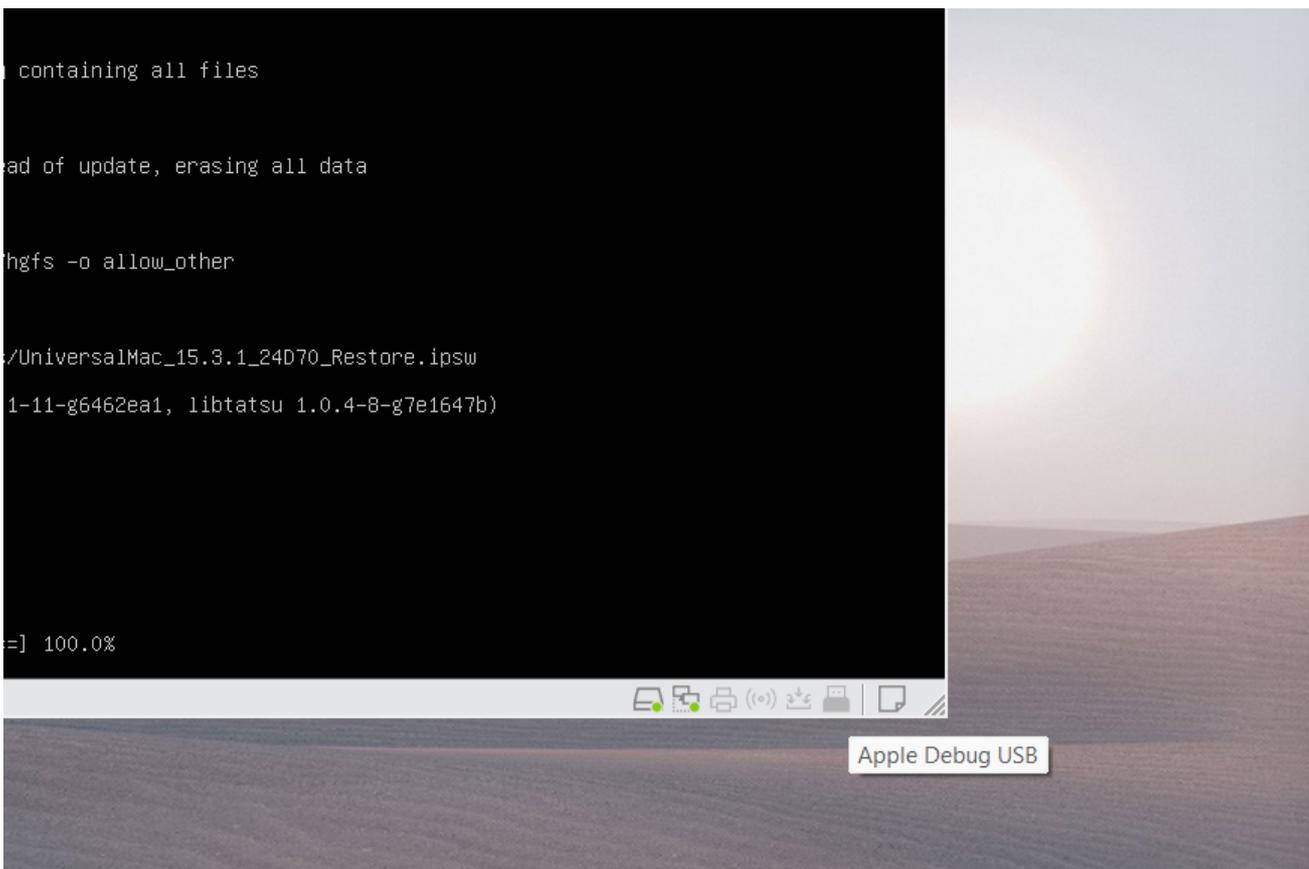
DFUKit detects a DFU-mode mac and goes to work!



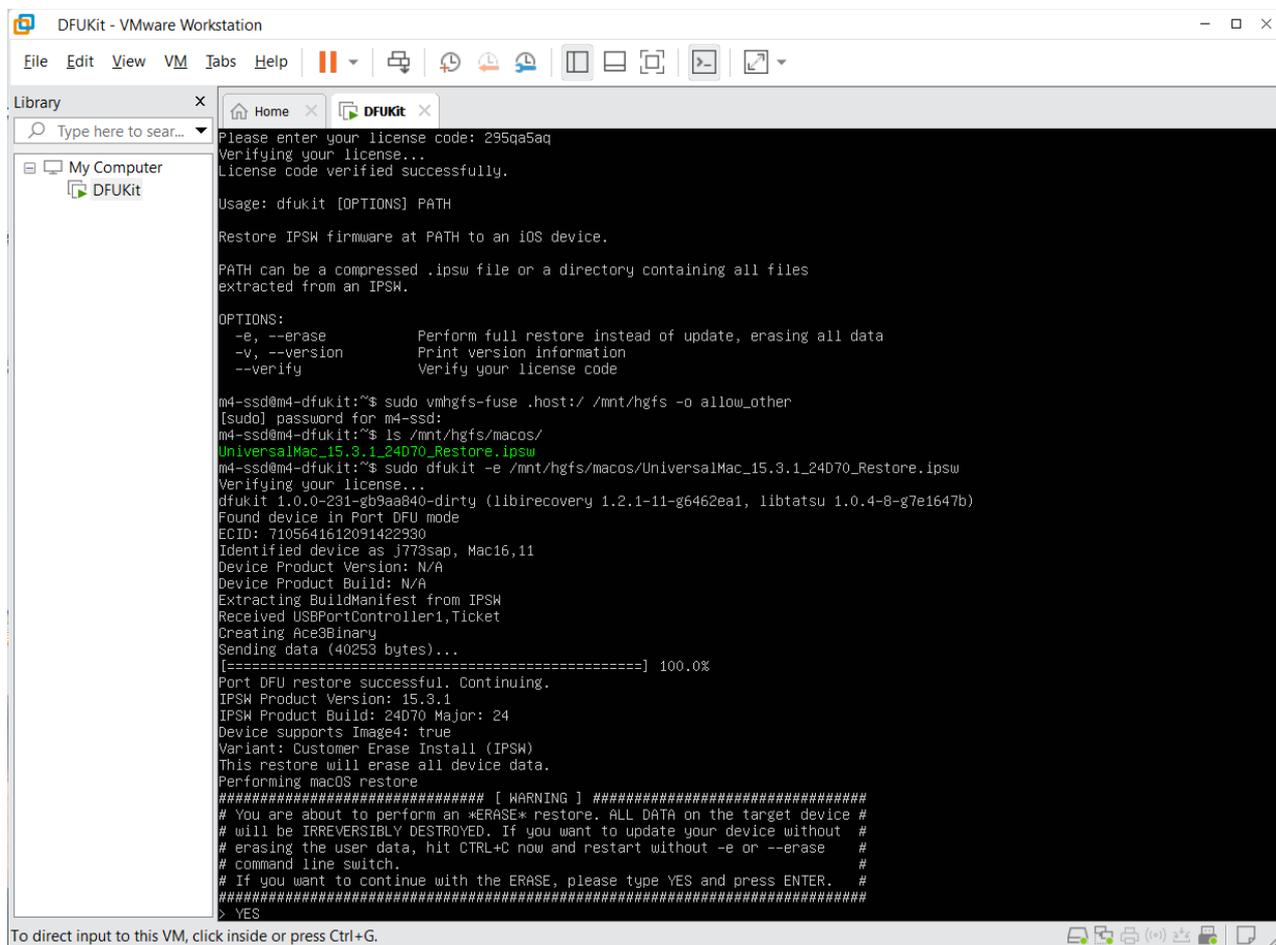
To direct input to this VM, click inside or press Ctrl+G.

Connect the Apple Debug USB mode mac mini to virtual machine

The mac mini will go into Apple Debug USB mode and must be quickly clicked to connect to the virtual machine



Enter YES to continue



```
DFUKit - VMware Workstation
File Edit View VM Tabs Help
Library
My Computer
DFUKit

Please enter your license code: 295qa5aq
Verifying your license...
License code verified successfully.

Usage: dfukit [OPTIONS] PATH

Restore IPSW firmware at PATH to an iOS device.

PATH can be a compressed .ipsw file or a directory containing all files
extracted from an IPSW.

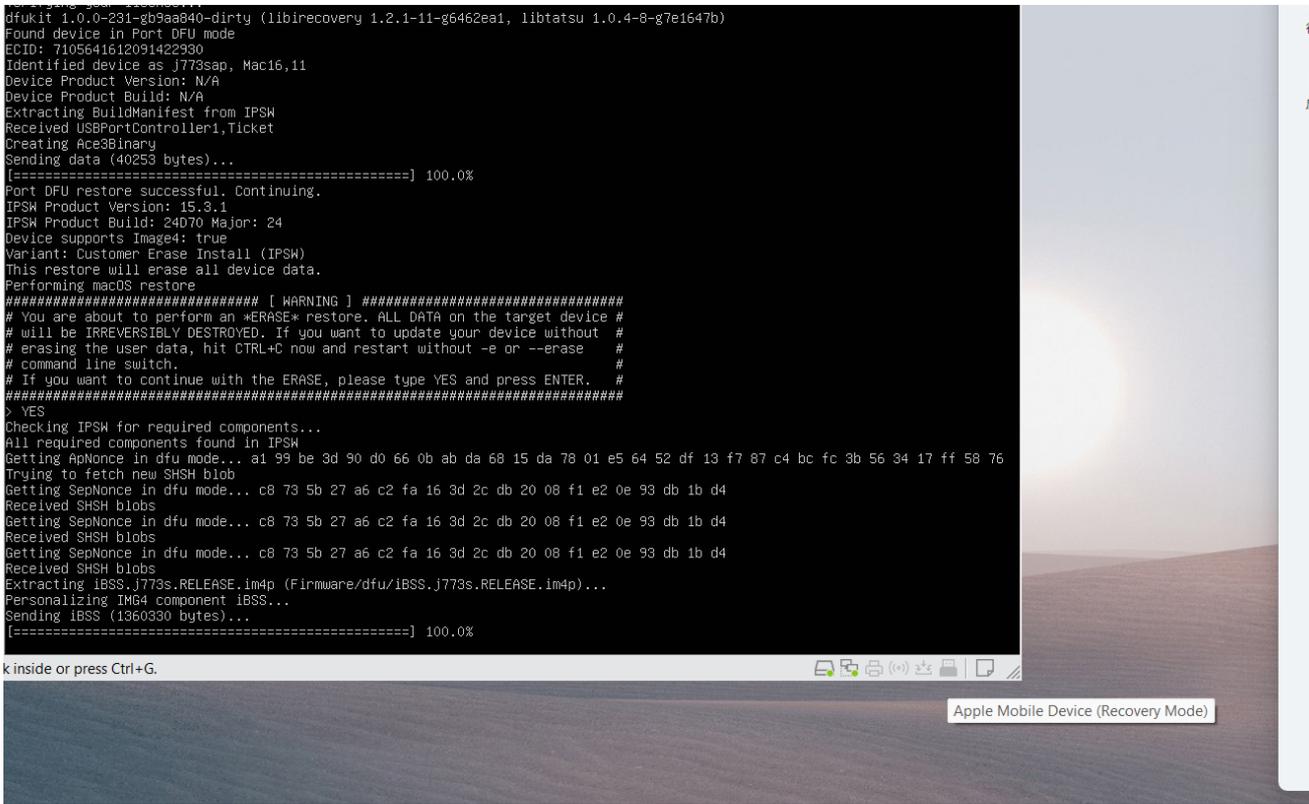
OPTIONS:
-e, --erase          Perform full restore instead of update, erasing all data
-v, --version        Print version information
--verify            Verify your license code

m4-ssd@m4-dfukit:~$ sudo vmhgfs-fuse .host:/mnt/hgfs -o allow_other
[sudo] password for m4-ssd:
m4-ssd@m4-dfukit:~$ ls /mnt/hgfs/macos/
UniversalMac_15.3.1_24070_Restore.ipsw
m4-ssd@m4-dfukit:~$ sudo dfukit -e /mnt/hgfs/macos/UniversalMac_15.3.1_24070_Restore.ipsw
Verifying your license...
dfukit 1.0.0-231-gb9aa840-dirty (libirecovery 1.2.1-11-g6462ea1, libtatsu 1.0.4-8-g7e1647b)
Found device in Port DFU mode
ECID: 7105641612091422930
Identified device as J773sap, Mac16,11
Device Product Version: N/A
Device Product Build: N/A
Extracting BuildManifest from IPSW
Received USBPortController1,Ticket
Creating Ace3Binary
Sending data (40253 bytes)...
[=====] 100.0%
Port DFU restore successful. Continuing.
IPSW Product Version: 15.3.1
IPSW Product Build: 24070 Major: 24
Device supports Image4: true
Variant: Customer Erase Install (IPSW)
This restore will erase all device data.
Performing macOS restore
##### [ WARNING ] #####
# You are about to perform an *ERASE* restore. ALL DATA on the target device #
# will be IRREVERSIBLY DESTROYED. If you want to update your device without #
# erasing the user data, hit CTRL+C now and restart without -e or --erase #
# command line switch. #
# If you want to continue with the ERASE, please type YES and press ENTER. #
#####
> YES
```

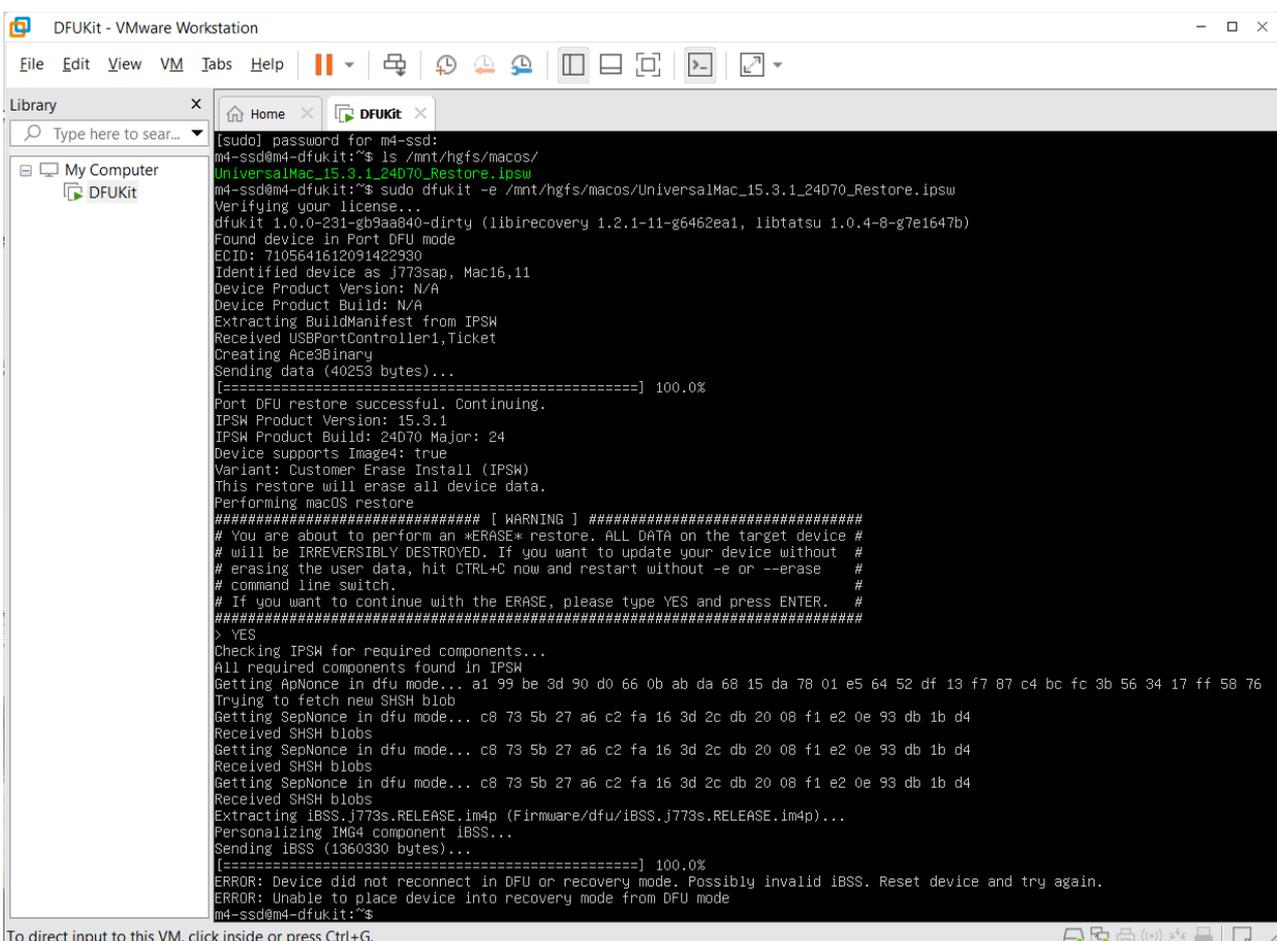
To direct input to this VM, click inside or press Ctrl+G.

Connect the Apple Mobile Device (Recovery Mode) mac mini to virtual machine

The mac mini will go into Apple Mobile Device (Recovery Mode) and must be quickly clicked to connect to the virtual machine

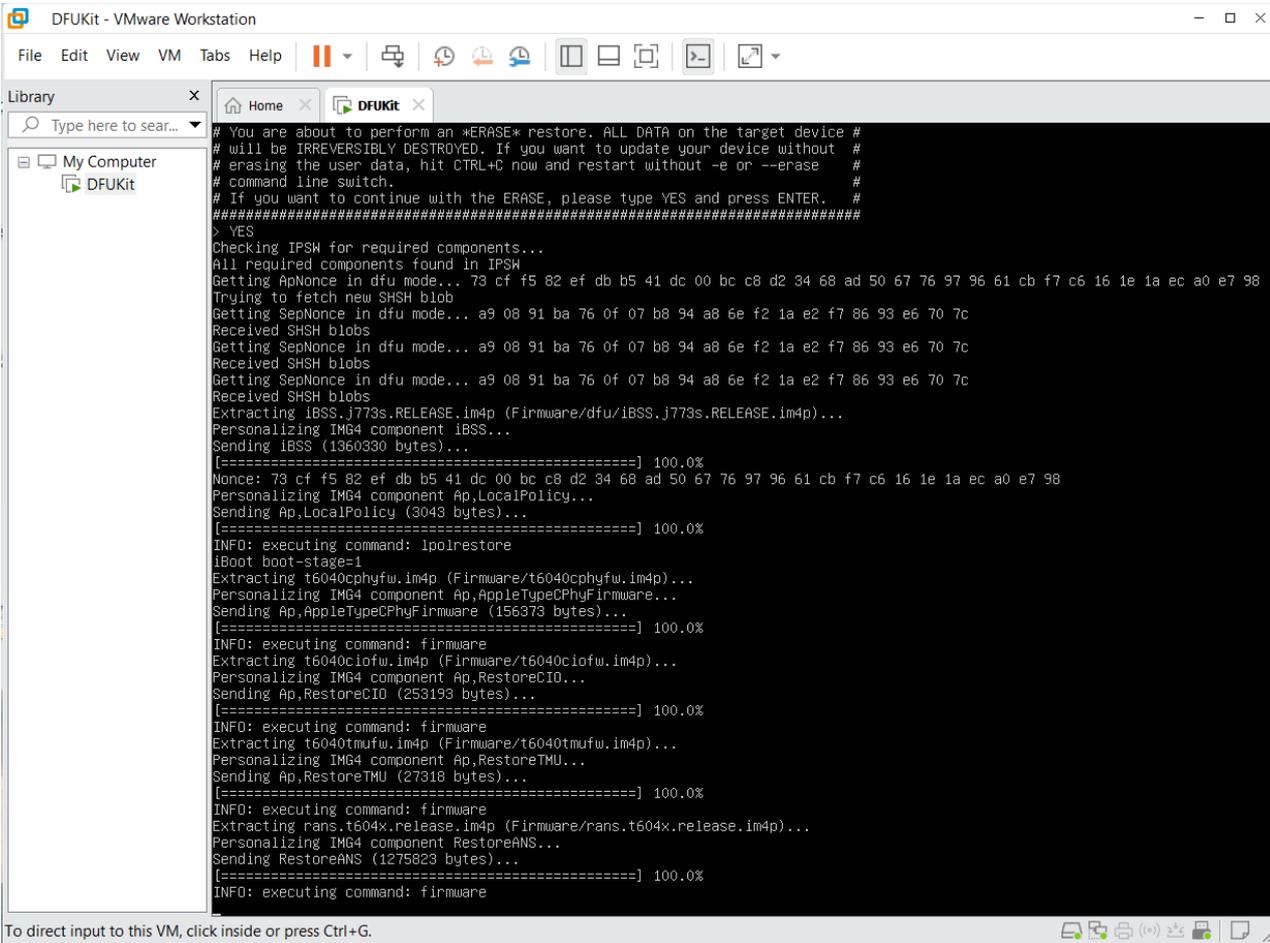


The previous operation leaves very little time for the user to operate, and if too much time passes it will report an error and quit



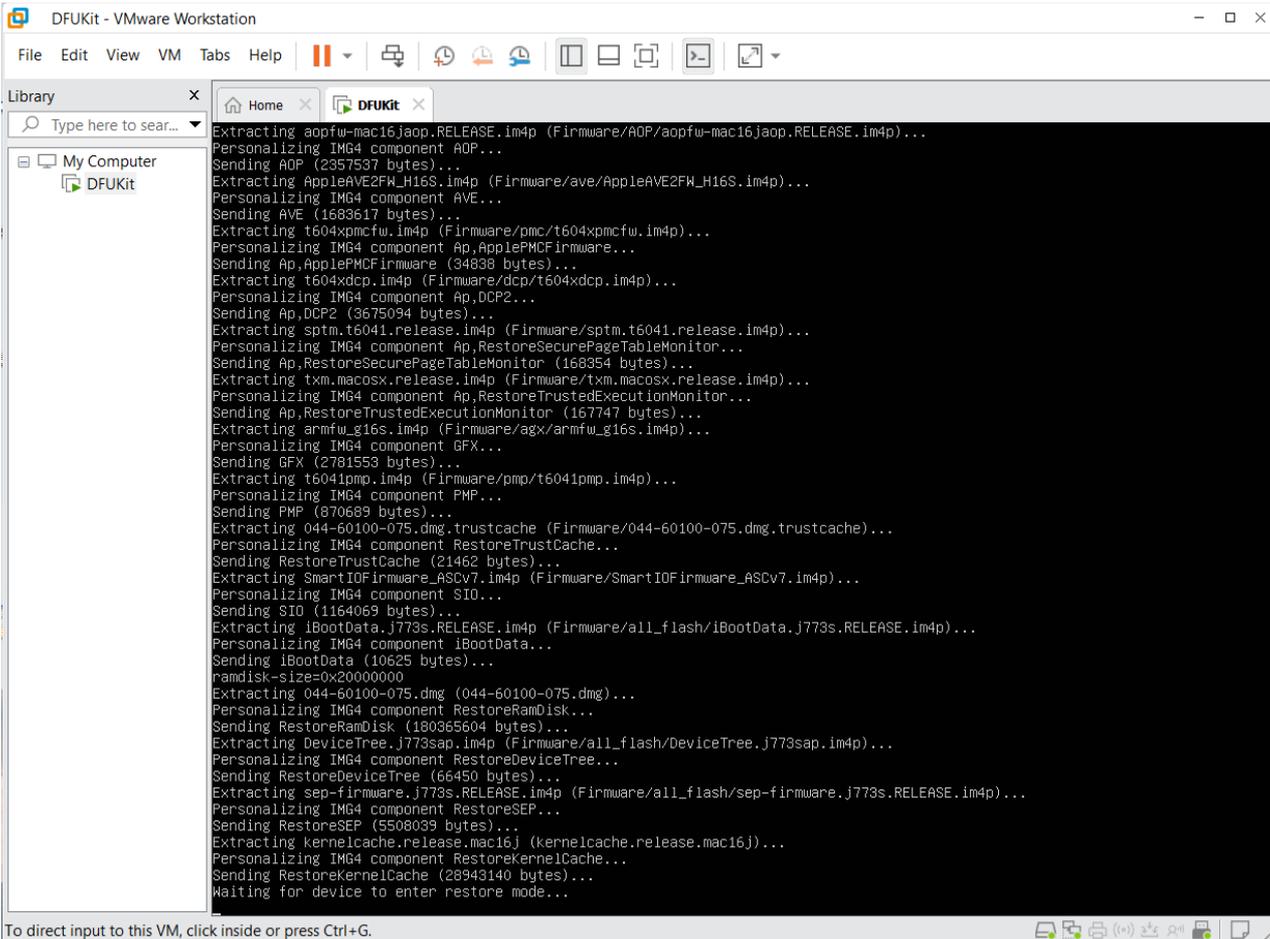
If that fails, unplug the Mac mini power cable and try again in dfu mode.

Usually after failing once or twice you will have the experience of being able to quickly click on the usb icon and successfully dfu



To direct input to this VM, click inside or press Ctrl+G.

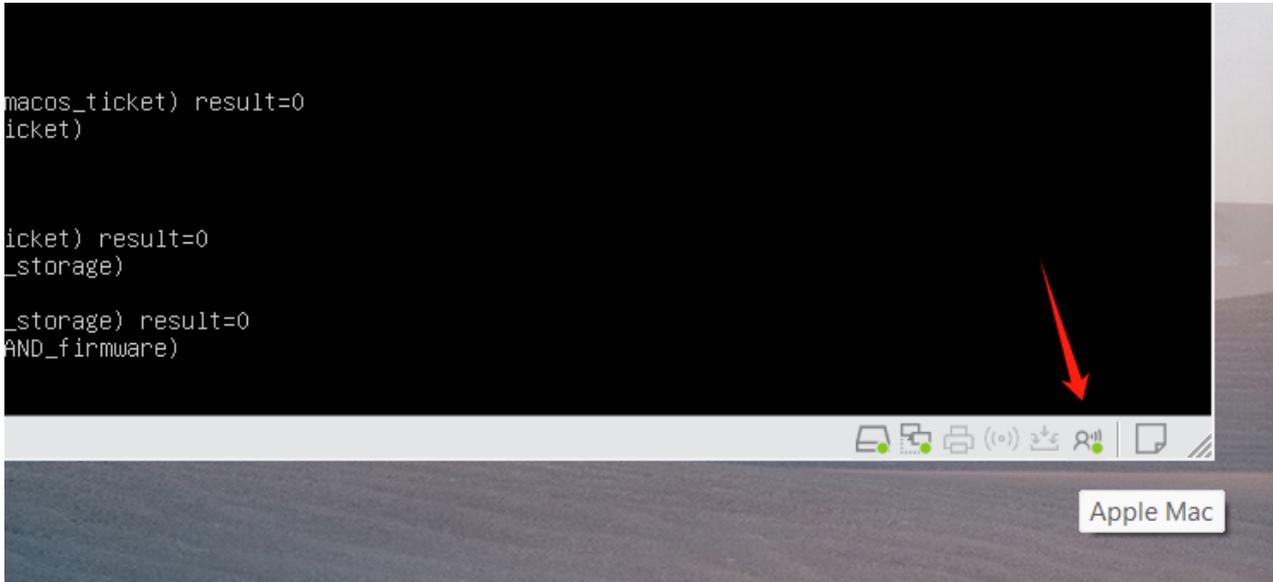
Normally when this is displayed this DFU mode Mac mini should display the Apple Logo.



To direct input to this VM, click inside or press Ctrl+G.

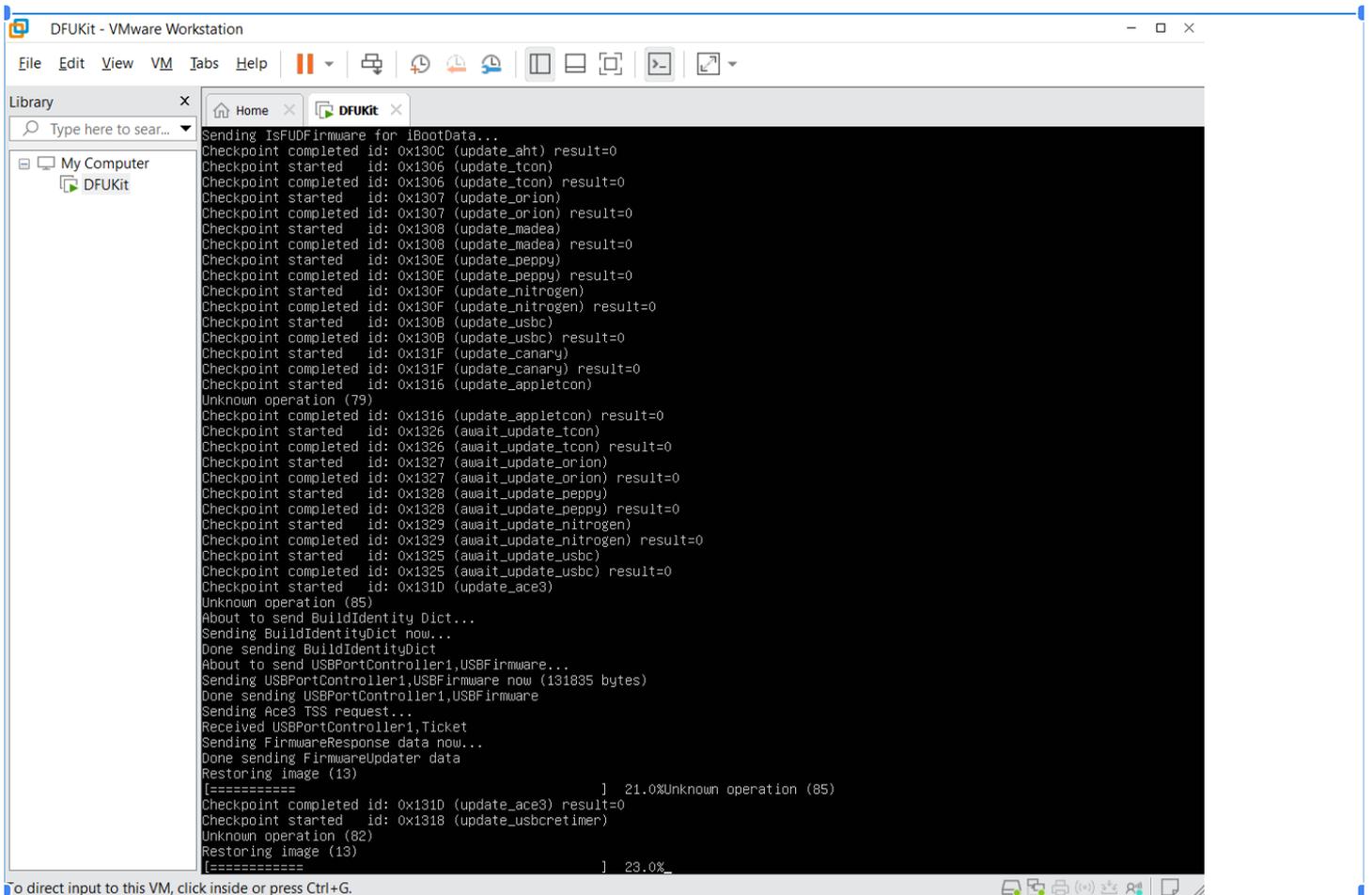
Connect the Apple Mac to virtual machine

Notice that the usb mode of the mac mini at the bottom right of vmware switches to an Apple Mac device, click Connect to Virtual Machine.



Waiting for completion

At this time to see the constant repetition of the various progress bars, the monitor will also already have dfu progress display, wait for dfu can be completed.



All work done, enjoy your mac mini!

DFUKit - VMware Workstation

File Edit View VM Tabs Help

Library

- Home
- DFUKit

Type here to search

My Computer

- DFUKit

```
Checkpoint started id: 0x68B (seal_system_volume)
About to send BuildIdentity Dict...
Sending BuildIdentityDict now...
Done sending BuildIdentityDict
About to send Ap,SystemVolumeCanonicalMetadata...
Extracting 044-60011-072.dmg.aea.mtree (Firmware/044-60011-072.dmg.aea.mtree)...
Personalizing IMG4 component Ap,SystemVolumeCanonicalMetadata...
Sending Ap,SystemVolumeCanonicalMetadata now (62571669 bytes)...
[=====] 100.0%
Done sending Ap,SystemVolumeCanonicalMetadata
About to send BuildIdentity Dict...
Sending BuildIdentityDict now...
Done sending BuildIdentityDict
About to send SystemVolume...
Extracting 044-60011-072.dmg.aea.root_hash (Firmware/044-60011-072.dmg.aea.root_hash)...
Personalizing IMG4 component SystemVolume...
Sending SystemVolume now (10732 bytes)...
Done sending SystemVolume
Unmounting filesystems (29)
Sealing System Volume (77)
Checkpoint completed id: 0x68B (seal_system_volume) result=0
Checkpoint started id: 0x669 (create_system_snapshot)
Checkpoint completed id: 0x669 (create_system_snapshot) result=0
Checkpoint started id: 0x640 (set_autoboot_delay)
Checkpoint completed id: 0x640 (set_autoboot_delay) result=0
Checkpoint started id: 0x642 (unmount_filesystems)
Unmounting filesystems (29)
Unmounting filesystems (29)
Checkpoint completed id: 0x642 (unmount_filesystems) result=0
Checkpoint started id: 0x67C (cleanup_boot_command)
Checkpoint completed id: 0x67C (cleanup_boot_command) result=0
Checkpoint started id: 0x1613 (cleanup_recovery_os_volume)
Checkpoint completed id: 0x1613 (cleanup_recovery_os_volume) result=0
Checkpoint started id: 0x647 (cleanup_check_result)
Checkpoint completed id: 0x647 (cleanup_check_result) result=0
Checkpoint started id: 0x6C2 (cleanup_send_crash_logs)
Checkpoint completed id: 0x6C2 (cleanup_send_crash_logs) result=0
Checkpoint started id: 0x648 (cleanup_send_final_status)
Got status message
Status: Restore Finished
ReverseProxy[Ctrl]: (status=2) Terminated
DDNE
[=====] 100.0%
m4-ssd@m4-dfukit:~$
```

To direct input to this VM, click inside or press Ctrl+G.

VMware Workstation icons: VM, Refresh, Print, Copy, Paste, Undo, Redo, Home, End, Stop, Start, Power, Help