

Application Note

**Android Debugging with
Recon Jet Pro**

Setting up Android Debugging Bridge (adb) with Recon Jet Pro

Android Debug Bridge (adb) is a versatile command line tool that lets you communicate with connected Jet Pro devices. This document will walk through the steps to setting it up on Windows & Mac.

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Windows

Microsoft Windows requires the USB driver to be installed before the computer can communicate with the adb daemon on the device. All of the files required to perform the steps are included on the device itself.

Requirements:

- Windows PC (Windows 8+)
- Recon Jet (Pro)
- Micro-B USB cable

USB Debugging

By default, USB Debugging is already enabled on Recon Jet Pro devices. Thus you do not need to do any additional steps in order to attach it to your computer and run standard adb commands.

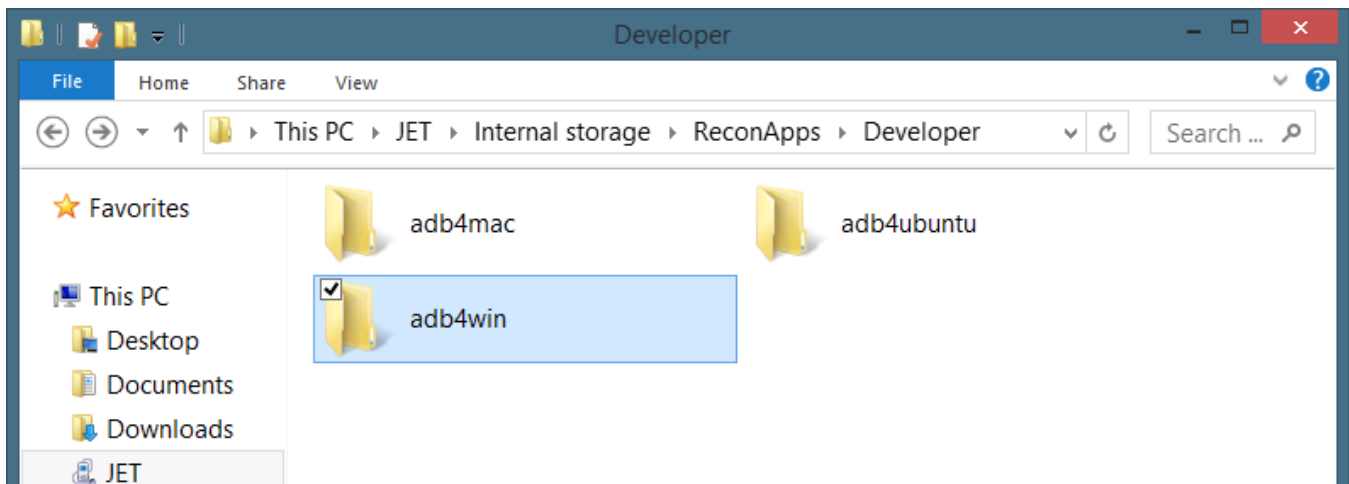
However, in the case where USB Debugging gets disabled (through user activity), if the device does not have a launcher on it and **Settings** cannot be accessed manually, a LispXML script can be used to enable USB Debugging. In this case, transfer an **adb.1x1** file to the Jet in the "ReconApps\Developer\LispXML\Input\" directory.

Contact the Applications Engineering team for assistance with LispXML.

Copy Files to PC

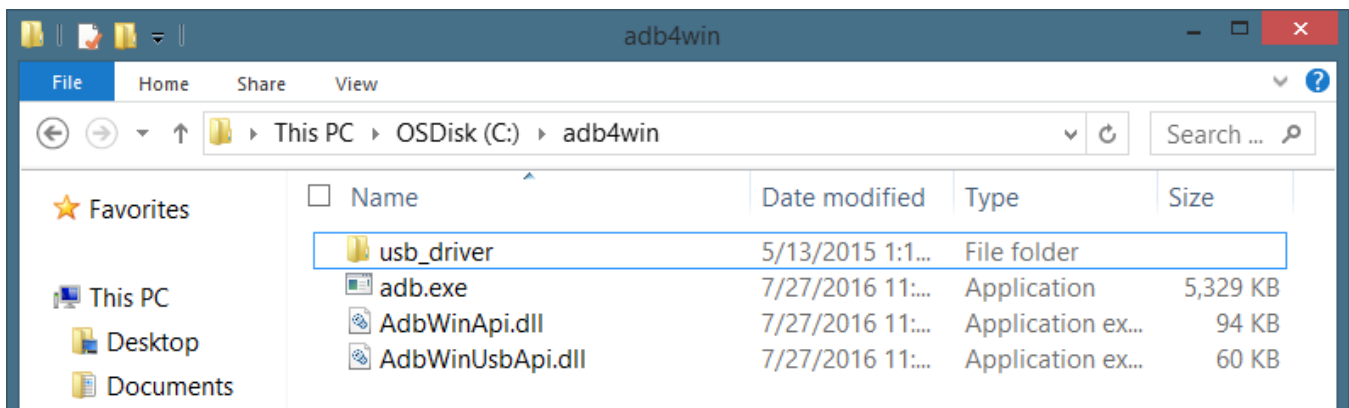
1. Connect the Jet to the PC with the USB cable, it will attempt to install all the drivers automatically (it is expected to fail)
2. Navigate using File Explorer and browse the Jet's file system (This PC → JET → Internal Storage).
3. Open "ReconApps\Developer\" and copy the **adb4win** folder to a desired location on computer.

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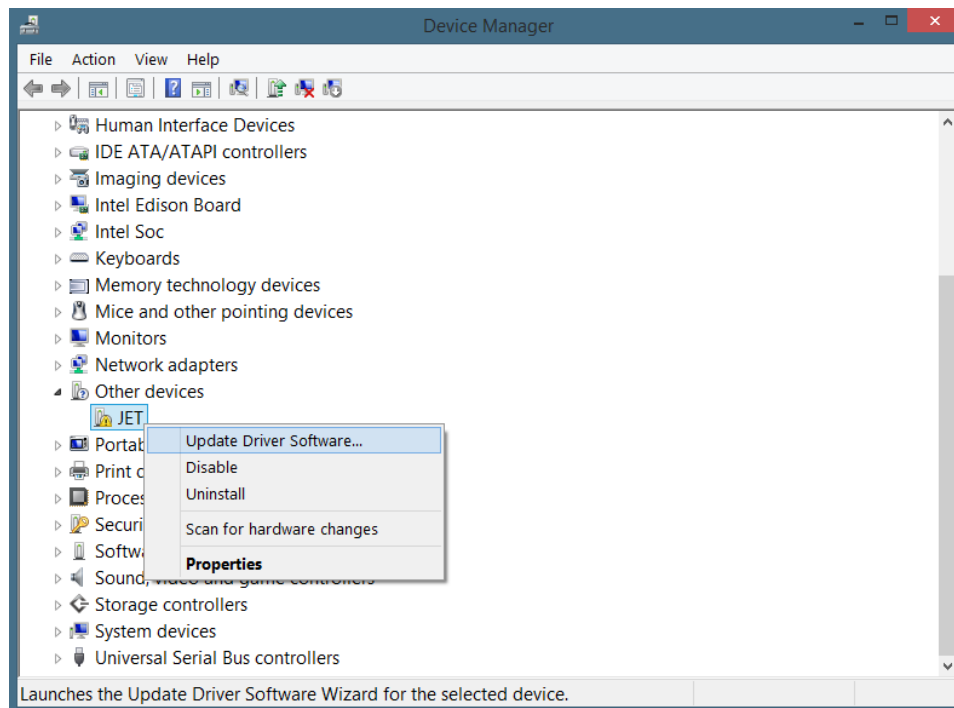
Install Driver Files

1. Open the **adb4win** folder that was transferred to the computer and extract "**usb_driver.zip**"
2. The **adb4win** folder should contain the following files (ZIP file was deleted after extraction).

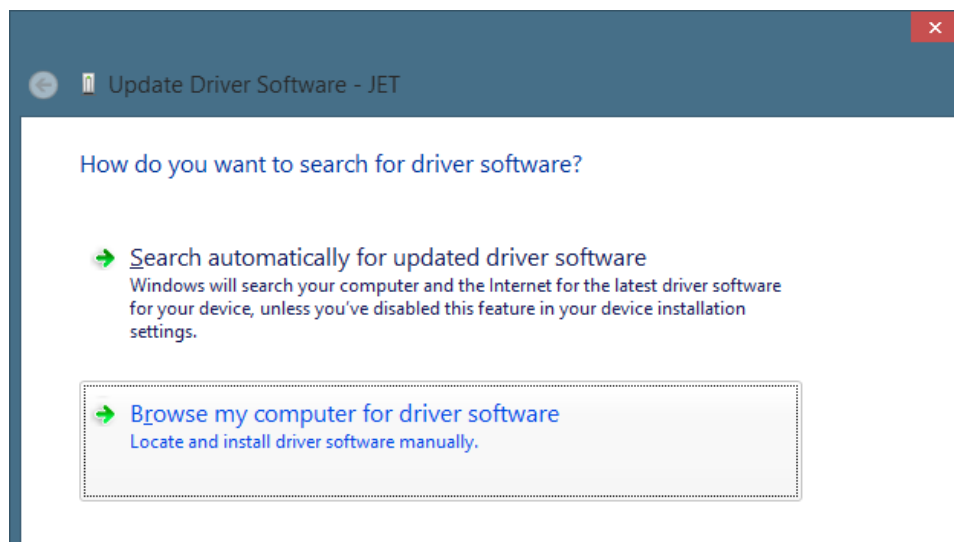


3. Open the **Device Manager** and locate the JET device. Right click on it and select "**Update Driver Software...**"

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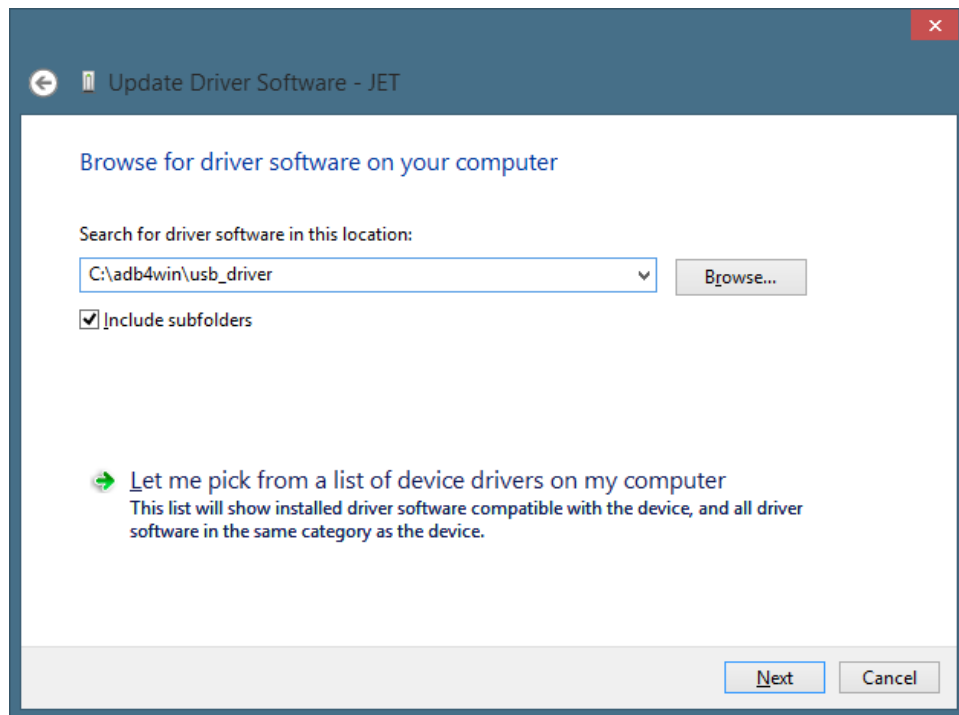


4. Choose "Browse my computer for driver software".

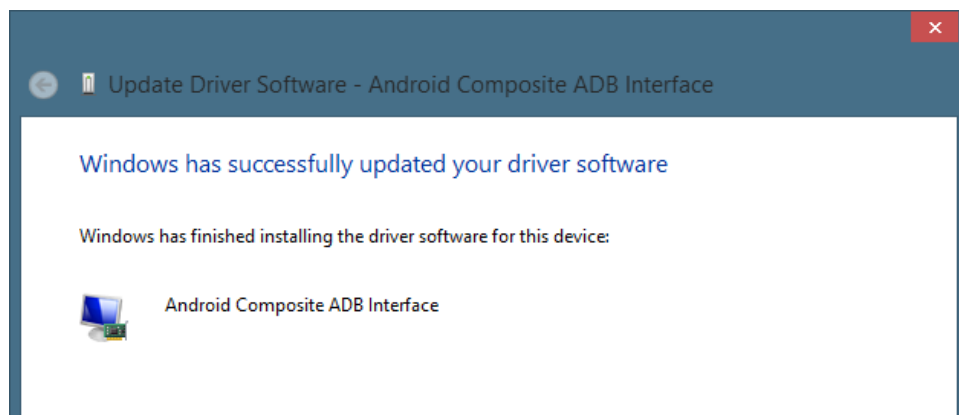


5. Browse to the path of the extracted `usb_driver` folder.
6. Ensure "Include subfolders" is checked.
7. Press "Next".

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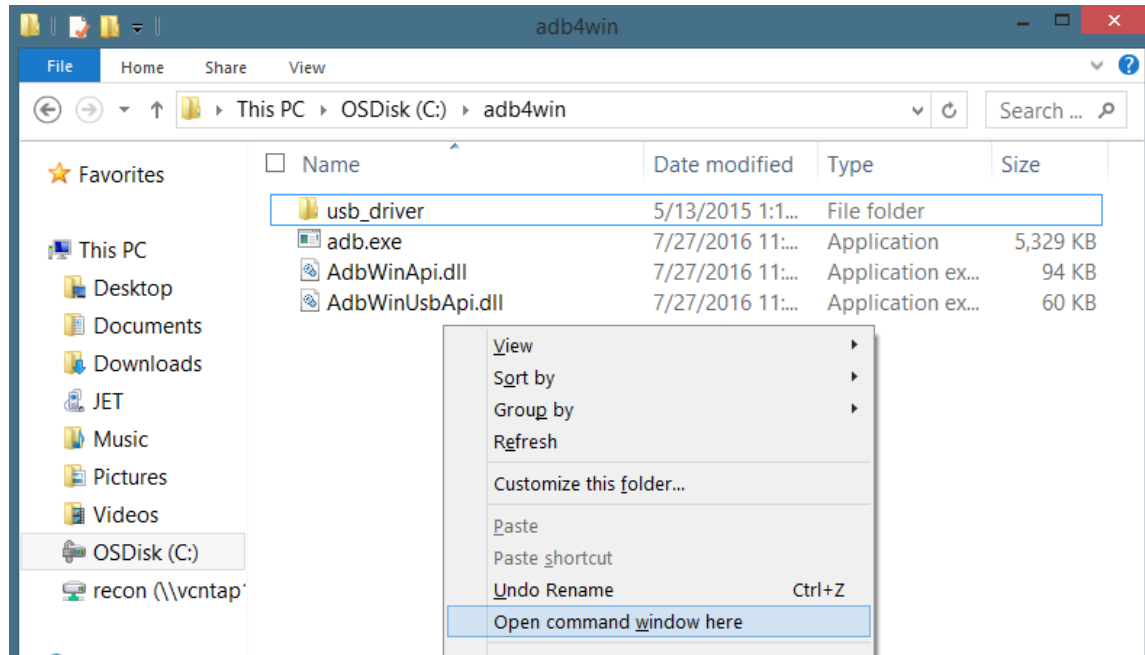
8. If Windows warns of an unverified publisher (Recon Instruments) choose "Install this driver software anyway".
9. The installation should now be complete.



Verify Installation

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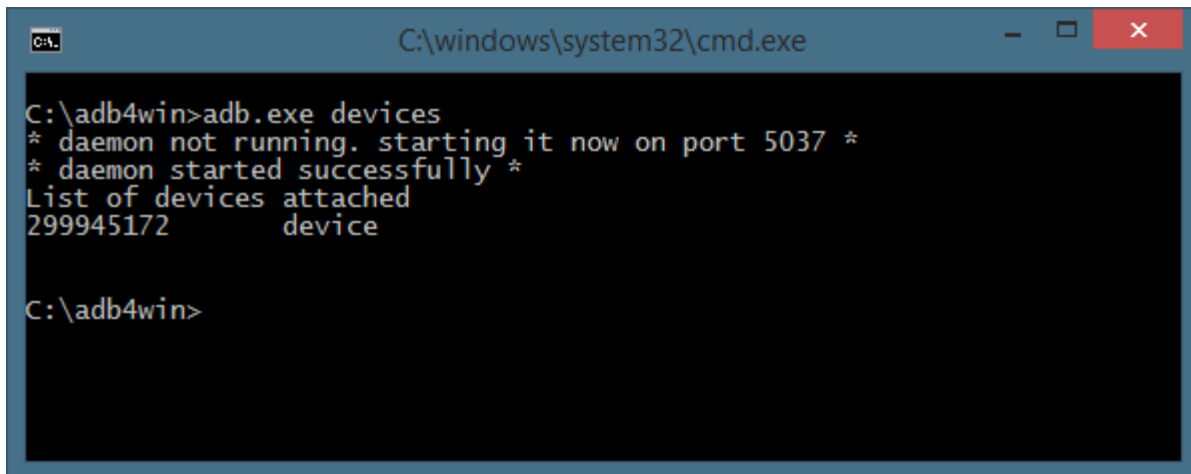
1. Open a command prompt and navigate to the **adb4win** folder.
2. A quick way to do this is to open the folder, hold the SHIFT key, right click, and select "Open command window here".



3. Run the following command to test if adb can detect the device.

```
adb.exe devices
```

4. ADB should detect the Jet and display its serial number, indicating it can be used for communication.

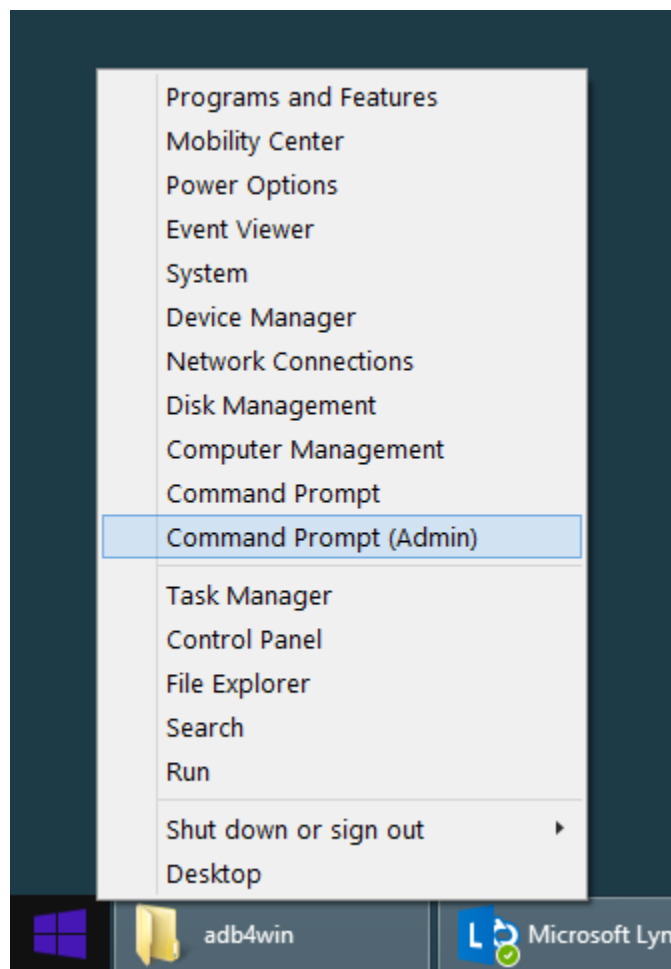


Optional: Adding Executable to PATH

When using command line tools such as adb, it can become tedious always specifying or navigating to their containing directory to use them. Adding the directory to the PATH environment variable allows the command prompt to check those directories automatically for the command being used.

Caution: This process will change the system environment variables, do this at your own risk.

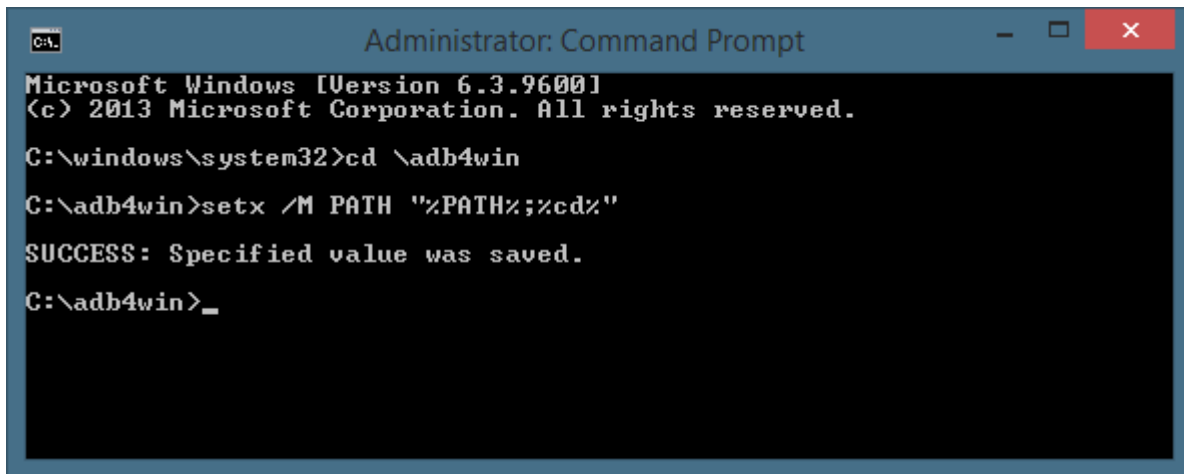
1. Open a command prompt as an Administrator by right clicking the Start button and selecting "Command Prompt (Admin)". Press **Yes** to continue when prompted by User Account Control.



2. Navigate to the **adb4win** directory in the command prompt and then run the **setx** command below to add it to the PATH.

```
setx /M PATH "%PATH%;%cd%"
```


3. The command prompt should report "SUCCESS: Specified value was saved."



```
Administrator: Command Prompt
Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\windows\system32>cd \adb4win
C:\adb4win>setx /M PATH "%PATH%;%cd%"
SUCCESS: Specified value was saved.
C:\adb4win>_
```

4. Now adb can be run from any location in the command prompt simply by entering the command "adb".

Troubleshooting

Before seeking assistance, try rebooting both the PC and the Jet Pro and re-trying the steps to use adb.

Cannot browse to device in File Explorer

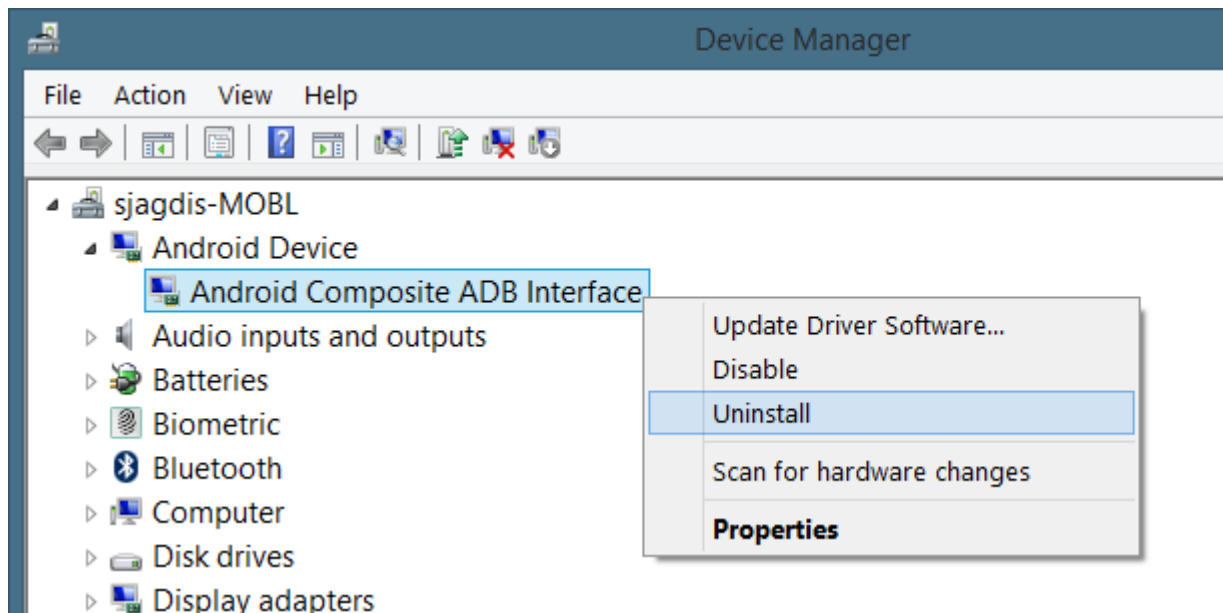
Some versions of Windows (N / KN) do not come with MTP out of box. In order to browse the Jet filesystem, the media feature pack, or Windows Media Player must be installed. They are available at the following link: <https://support.microsoft.com/en-us/help/14209/get-windows-media-player>

Device not detected by adb

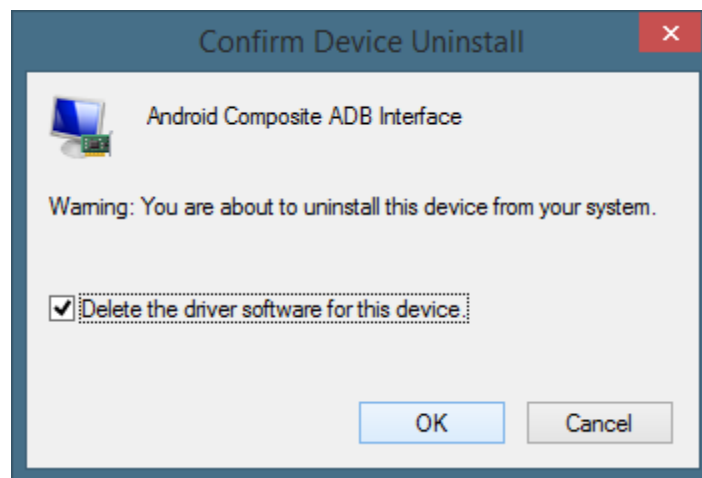
This can happen sometimes with older versions of the driver, when there is some sort of state change like switching Jets or changing USB ports. It can be remedied by reinstalling the driver for that device very quickly.

1. With the Jet powered on and connected to computer, open the **Device Manager** and locate Android Device → Android Composite ADB Interface. Right click on it and select "Uninstall".

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2. When prompted, select Delete the driver software for this device and press OK.



3. Unplug the USB cable, wait a few seconds, and then plug it back in. The device should appear as JET once more without a valid driver.
4. Continue to reinstall the drivers as done in Step 3 of section [Install Driver Files](#).

Mac

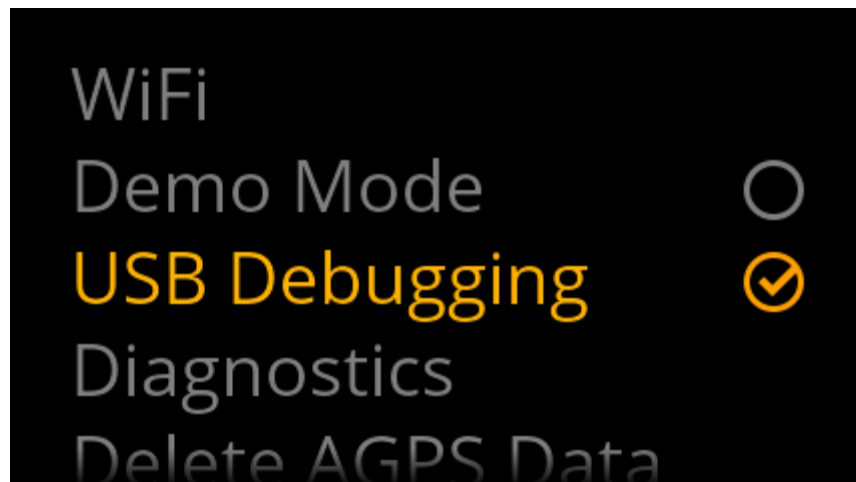
Apple computers do not require driver installation which makes it simpler to get adb functioning. However, they are not capable of communicating with the Jet via MTP by default; an application must be installed.

Requirements:

- Mac computer (OS X Yosemite+)
- Recon Jet (Pro)
- Micro-B USB cable
- Internet connection

Enable USB Debugging

1. Power on Jet and navigate to the **Settings** → **Advanced** menu.
2. Ensure the **USB Debugging** feature is enabled.



If the device does not have a launcher on it and **Settings** cannot be accessed manually, a LispXML script can be used to enable USB Debugging. In this case, transfer an **adb.1x1** file to the Jet in the "**ReconApps\Developer\LispXML\Input**" directory. Android File Transfer will be required to do this.

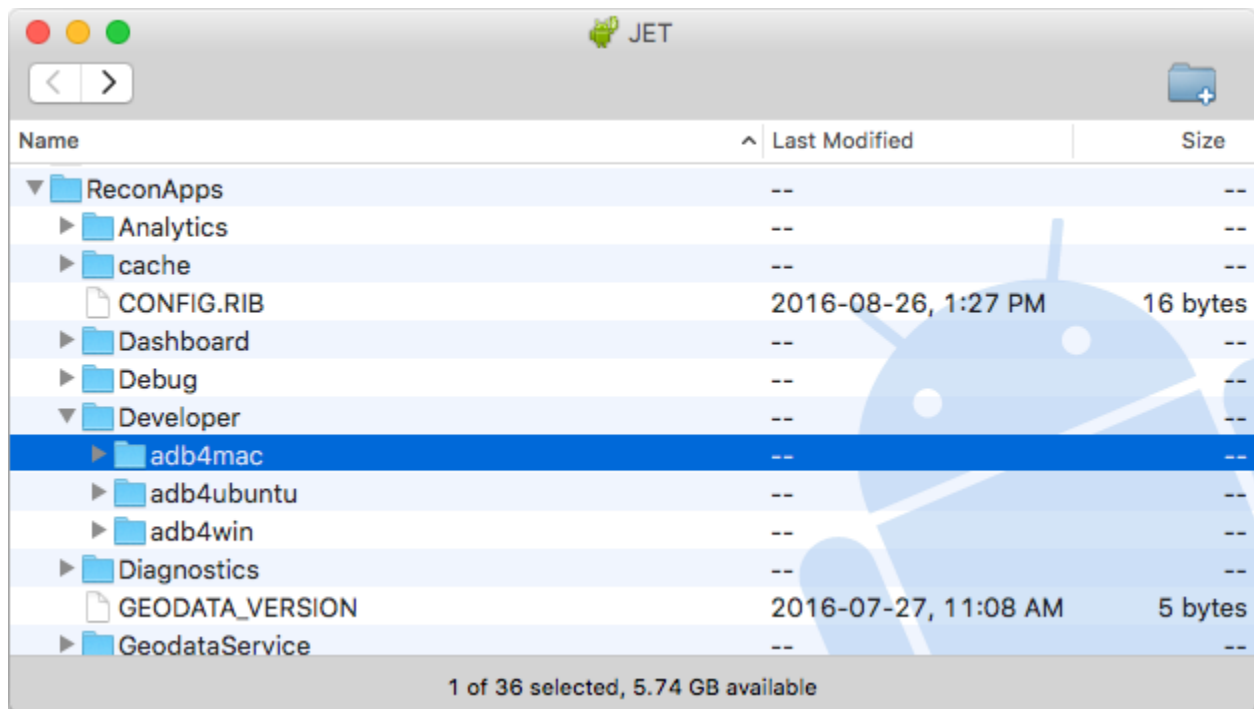
Contact the Applications Engineering team for assistance with LispXML.

Install Android File Transfer

1. Download [Android File Transfer](#) on Mac.
2. Install the application.
3. Connect the Jet to the computer using the USB cable.
4. Open Android File Transfer and ensure it can browse the Jet filesystem.

Copy Files to Mac

1. Using Android File Transfer, browse to the "ReconApps\Developer\" directory.
2. Copy the **adb4mac** folder to a desired location on computer.



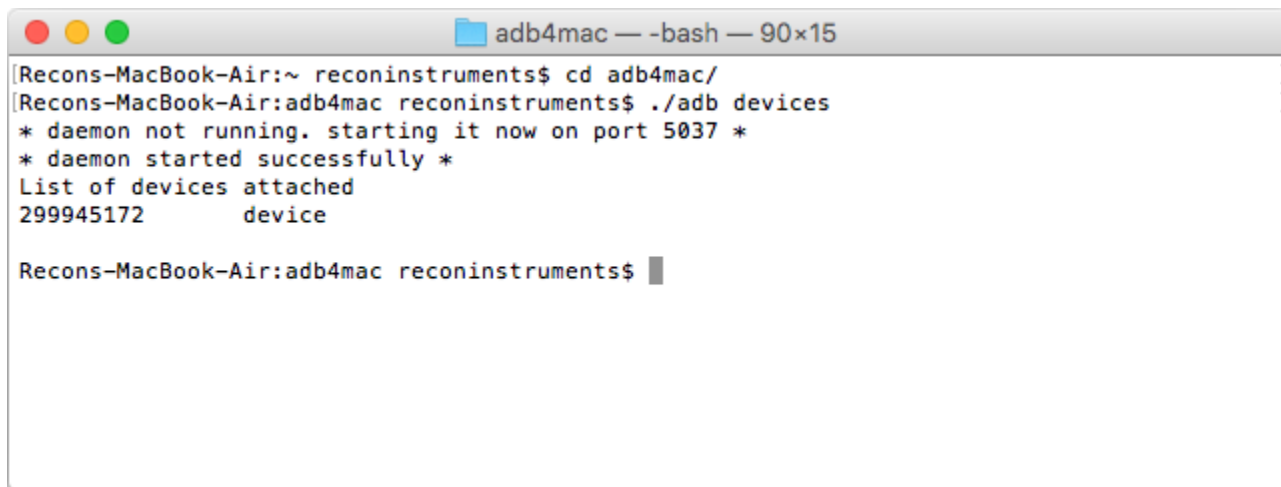
Verify Operation

1. Launch the Terminal application. This can be done by opening Finder → Applications → Utilities → Terminal.
2. Using Terminal, navigate to the **adb4mac** directory.

3. Run the following command to test if adb can detect the device.

```
./adb devices
```

4. ADB should detect the Jet and display its serial number, indicating it can be used for communication.



```
adb4mac — -bash — 90x15
[Recons-MacBook-Air:~ reconinstruments$ cd adb4mac/
[Recons-MacBook-Air:adb4mac reconinstruments$ ./adb devices
* daemon not running. starting it now on port 5037 *
* daemon started successfully *
List of devices attached
299945172      device

Recons-MacBook-Air:adb4mac reconinstruments$
```

Optional: Adding Executable to PATH

When using command line tools such as adb, it can become tedious always specifying or navigating to their containing directory to use them. Adding the directory to the PATH environment variable allows the terminal to check those directories automatically for the command being used. To change the path permanently, the **.bash_profile** must be altered.

Caution: This method will add a line to the **.bash_profile**. If it has been altered previously this should be edited manually.

1. Launch the Terminal application. This can be done by opening **Finder → Applications → Utilities → Terminal**.
2. Using Terminal, navigate to the **adb4mac** directory as done in the previous section, then run the following command.

```
echo "export PATH=$PATH:$(pwd)" >> ~/.bash_profile
```

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3. The terminal will execute the command and append the new PATH to the `.bash_profile`.



```
adb4mac — -bash — 99x14
Recons-MacBook-Air:adb4mac reconinstruments$ echo "export PATH=\\$PATH:$(pwd)" >> ~/.bash_profile
Recons-MacBook-Air:adb4mac reconinstruments$
```

4. Run the following command to reload the new `.bash_profile`.

```
. ~/.bash_profile
```

5. Now adb can be run from any location in the command prompt simply by typing the command `"adb"`.