Configuring Chromebooks for Acquisitions and Casting

Introduction

This guide covers the configuration steps for enabling screen casting and facilitating the acquisition of device data with a Chromebook device.

This document applies to the following applications		
ADFPRO Mobile & Computer Triage	DEI Digital Evidence Investigator	

Chromebook Setup and Configuration

Before you can establish a connection between your Chromebook and the Windows machine running the ADF application (DEI Digital Evidence Investigator ADFPRO Mobile & Computer Triage), it's essential to enable both Linux and Android Debug Bridge (ADB) on the Chromebook device.

Setup Linux

To make sure Linux is set up (Linux is off by default), follow these instructions:

- On the ChromeOS device, at the bottom right, select the time.
- Select **Settings** and then **About ChromeOS (**on older ChromeOS versions: **Advanced** > **Developers**).
- Next to "**Linux development environment**," select **Set up**(on older versions **Turn On**).
- Follow the on-screen instructions. Setup can take 10 minutes or more.
- A terminal window opens. You have a Debian 11 (Bullseye) environment.

Set up Android Debug Bridge (ADB)

Important: Once you turn on ADB, it’s available to all accounts on the Chromebook. If you turn off ADB, the Chromebook will factory reset (Powerwash). All the stored data will be lost.

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- On the ChromeOS device, select the time.
- Select **Settings** and then **About ChromeOS (**on older ChromeOS versions: **Advanced** > **Developers**).
- Select **Linux development environment** > **Develop Android apps**.
- Turn on **Enable ADB debugging**.
- Select Restart. The ChromeOS device will close any open apps.
- Select Confirm and sign in.

Connection Options

The following connection options are available:

- **Direct connection** (recommended): peer-to-peer connection via an Ethernet cable. A USB to Ethernet adaptor may be required.
- **Wired connection**: both ChromeOS and the Windows machine connect to a router via Ethernet cables.
- **Wireless connection**: both ChromeOS and the Windows machine connect to the same Wi-Fi network.

Direct Connection Steps

For optimal stability and reduced potential for interference, we recommend connecting the ChromeOS device and the computer running the ADF software (DEI Digital Evidence Investigator ADFPRO Mobile & Computer Triage) using an Ethernet cable. This wired connection ensures a secure and high-speed data transfer between the two devices.

- Connect the ChromeOS device and the computer running the ADF software via an ethernet cable.
- On the ChromeOS device, select the time at the bottom right.
- Select **Settings** .
- Using the left hand side menu, select “**Network**”.
- Within the "**Network**" section, select the connected network.
- Scroll down to expand the “**Network**” section.
- Switch off “**Configure IP address automatically**”.
- Assign a static IP address. The IP addresses must start with “169.254”, but the rest of the address (.x.x) can be anything between 0 - 255. For example, “169.254.1.1”.
- Assign the Subnet mask value to “255.255.0.0”.
- Ensure the Gateway values are left blank.
- The ChromeOS device will now be discovered automatically by the ADF software (DEI Digital Evidence Investigator ADFPRO Mobile & Computer Triage).

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- In the ADF application, click Add Device and select ChromeOS. In the Connect to a ChromeOS Device dialog, select the device in the list and click “OK”.
- On the ChromeOS device, select “Always allow from this computer” and confirm when you are asked to allow USB debugging.

Wired (via Router) Connection Steps

- Connect both the ChromeOS device and the Windows machine to the same router via ethernet cables.
- In the ADF application, click **Add Device** and select **ChromeOS**. In the **Connect to a ChromeOS Device** dialog, select the device in the list, or enter its IP address in the “Target device IP address” field (shown in the ChromeOS settings under **Network** > the connected network), and click “OK”. On the ChromeOS device, select “Always allow from this computer” and confirm when you are asked to allow USB debugging.

Wireless (via Wi-Fi) Connection Steps

A Wi-Fi connection may be used as an alternative if a wired connection is not feasible. Wi-Fi enables wireless communication between your ChromeOS device and the Windows machine. This option is suitable for scenarios where Ethernet is not available.

- Ensure the windows machine and the ChromeOS device are connected to the same Wi-Fi network.
- In the ADF application, click **Add Device** and select **ChromeOS**. In the **Connect to a ChromeOS Device** dialog, select the device in the list, or enter its IP address in the “Target device IP address” field (shown in the ChromeOS settings under **Network** > the connected network), and click “OK”. On the ChromeOS device, select “Always allow from this computer” and confirm when you are asked to allow USB debugging.

Wi-Fi network options

There are a number of Wi-Fi network options that can be used to connect the Windows OS computer and target device, including the ability to disable a public internet connection.

- **Router:** A wireless router acts as a central hub and allows multiple devices to connect to its local network via Wi-Fi. Connect the Windows OS computer and the target device to the Wi-Fi network provided by the router. This ensures that both devices are on the same network and can communicate with each other seamlessly.

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- **Mobile Hotspot:** Many smartphones and tablets have a built-in feature called "mobile hotspot" or "personal hotspot." This feature allows the device to act as a portable Wi-Fi router, enabling other devices to connect to it. Users can activate the mobile hotspot feature on their device, set a password if desired, and connect their Windows PC and the target device to the hotspot network. This establishes a local Wi-Fi network, and the screen casting can be performed.

- **Virtual Router Software:** Users can also create a local Wi-Fi network using virtual router software installed on their Windows PC. These software applications leverage the computer's built-in Wi-Fi capabilities to broadcast a Wi-Fi signal. By configuring the virtual router software, users can define a network name (SSID) and password for their local network. Both the Windows PC and the target device can then connect to this network, allowing for screen casting. Popular virtual router software options include Connectify, MyPublicWiFi, and Virtual Router Plus.

- **Ad Hoc Network:** An ad hoc network is a temporary and direct connection between two devices without the need for a router. In this scenario, users can set up an ad hoc network on their Windows PC, which acts as a host device, and then connect the target device to it. The ad hoc network can be created through the network settings on the Windows PC, and once established, both devices can connect to the network, enabling screen casting.

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