

Programming Guide to the VisTracks® Platform

Installation of Digi Wireless Vehicle Device for use with VisTracks, Inc.

POWER WVA: attach the Digi WVA to the vehicle diagnostic port.

Step 1 - Reset the Digi WVA device

NOTE: This step is only to be followed if the device has never been setup, or the device is being changed from Push Button pairing to PIN pairing mode or vice-versa.

1. Press the WVA button on the device and hold it down for at least 10 seconds. This will reset the device to its original factory settings and is necessary for initial configuration of Wi-Fi Direct.

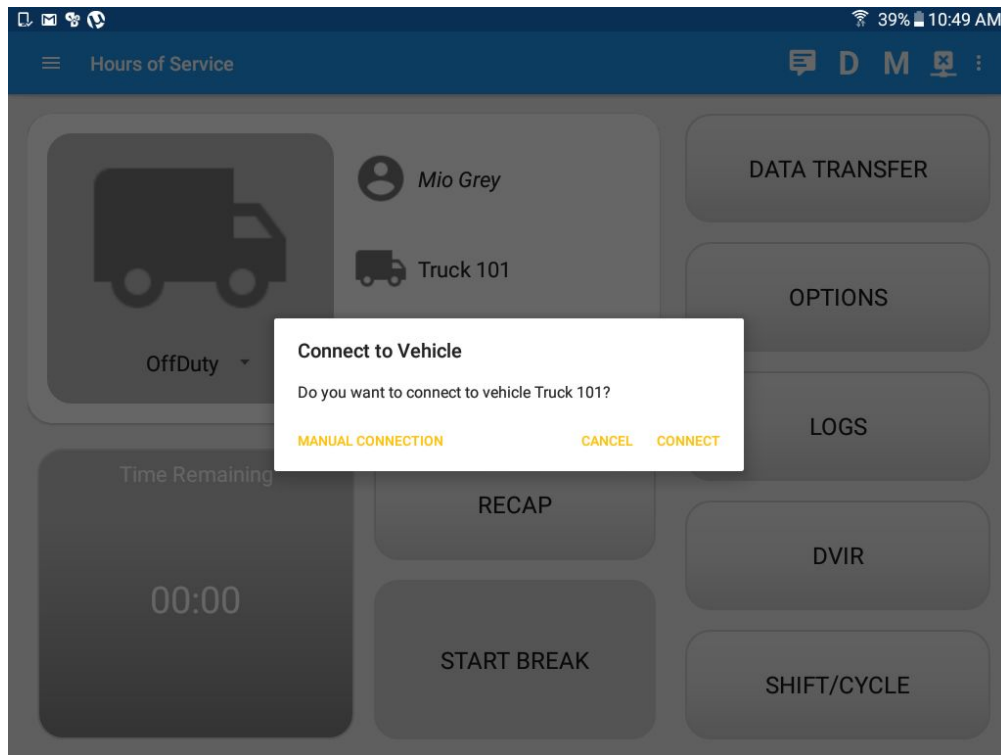


Step 2 – Configure WiFi Direct through the following options:

2.1 Digi WVA Configuration via VisTracks Application

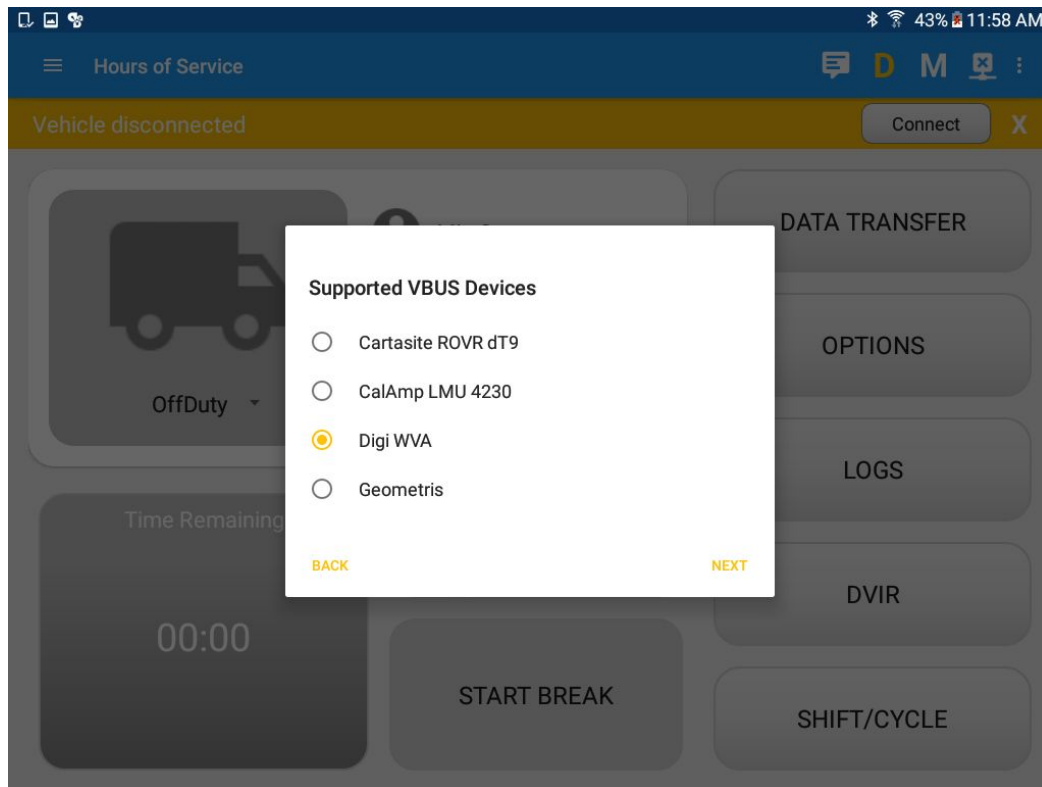
1. Install Barcode Scanner from the Play Store
2. Open VisTracks app (or Branded App)
3. Log into the app
4. On the main dashboard, tap the 'Connect' button which is located below the app header to display the 'Connect to Vehicle' dialog.
5. At this point, 2 options were present in order to establish a connection to the VBUS device: Manual Connection and Auto Connection.
 - a. **Manual Connection**
 - o Tap on the Manual Connection button

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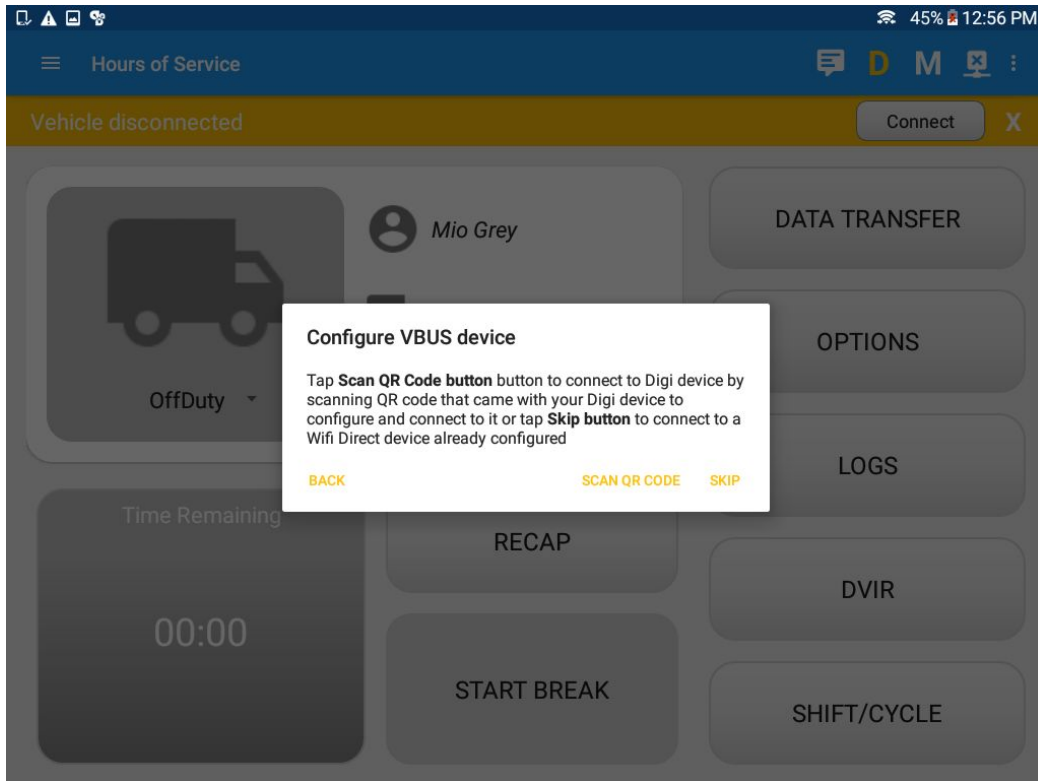
- o Select Digi WVA VBUS device

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- Tap on the Next button
- The '**Configure VBUS device**' dialog will be displayed.

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6. At this point, there are two ways to connect to the Digi WVA device; the first time the Digi is being configured, or connecting to an already configured device. To connect for the first time, follow the steps below starting at step 7. If the device is already configured, then start the connection on step 8.
7. Configure Digi VBUS device screen will then display. Connect to Digi device by scanning QR code.
 - 10.1 Tap on 'Scan QR code'
 - 10.2 Barcode Scanner app will then launched

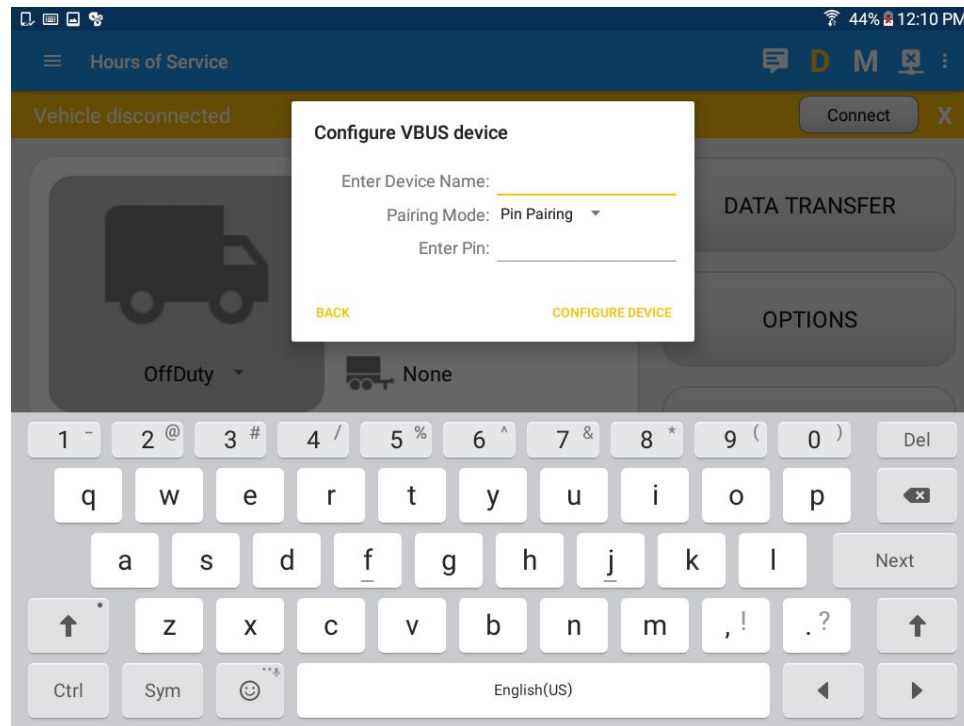
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10.3 Place Camera over QR Code



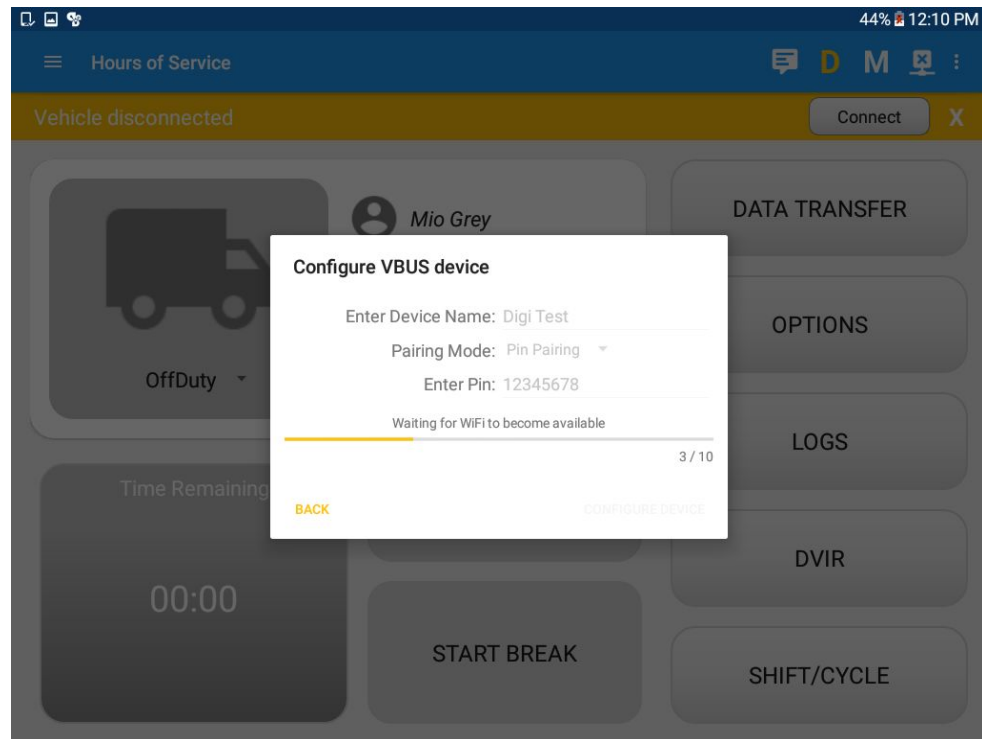
10.4 If the scanning of QR code is successful, then Digi WVA Configuration screen will then be displayed.

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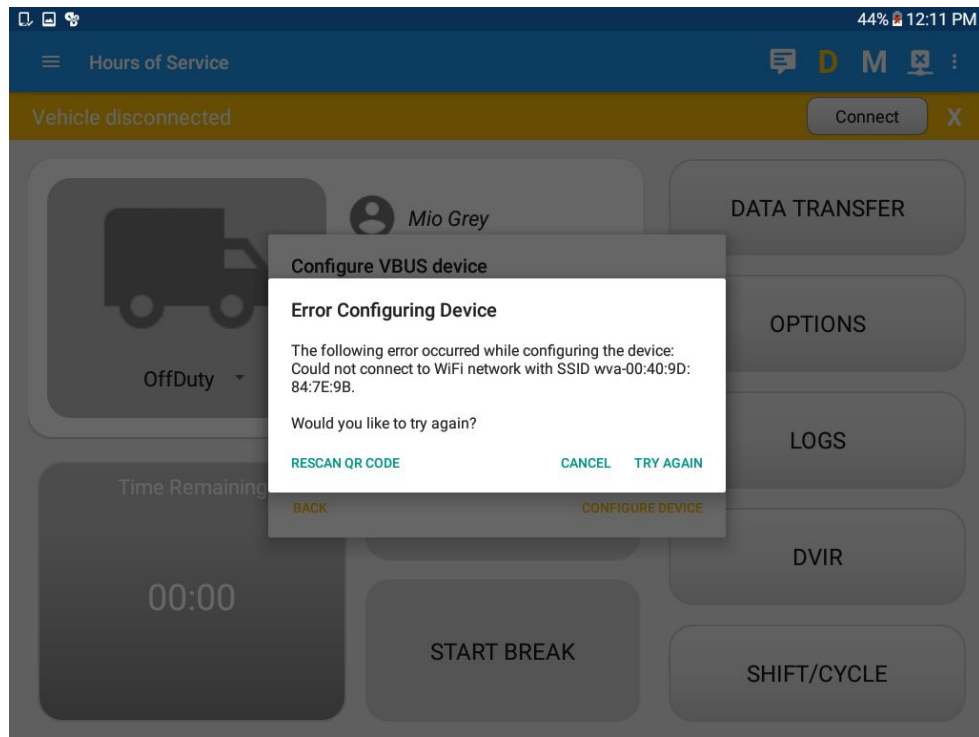
- 10.5 Enter a device name on the 'Enter Device Name' field. Example: "Digi Test"
- 10.6 Select a Pairing Mode
 - If you select Pin Pairing mode
 - Tap on the drop-down option and select 'Pin Pairing'
 - Input a Pin on the 'Enter Pin' field. (Note: It requires 8 digit pin)
 - Then tap 'Configure Device' button

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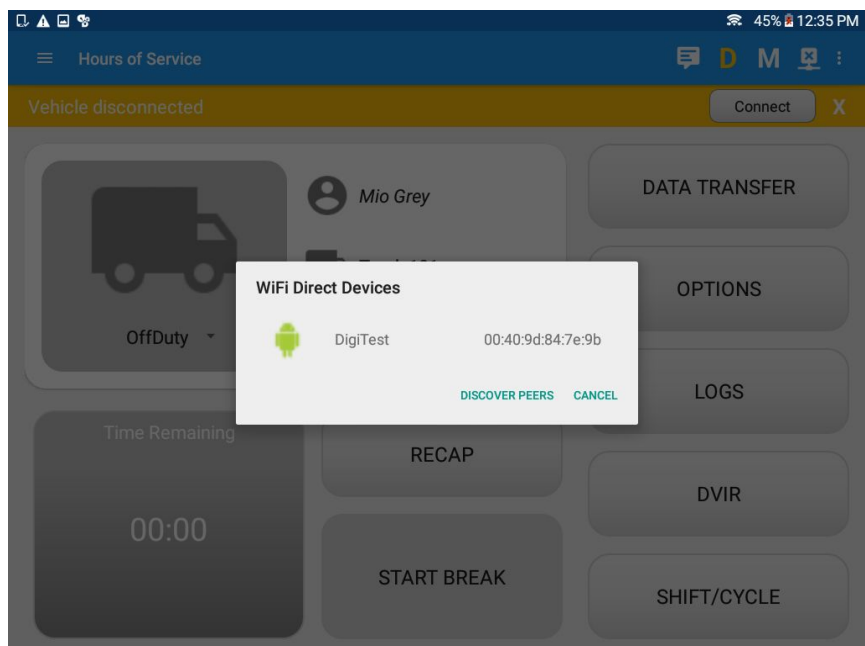
- If the an error was encountered during configuration process then an Error dialog will be displayed.

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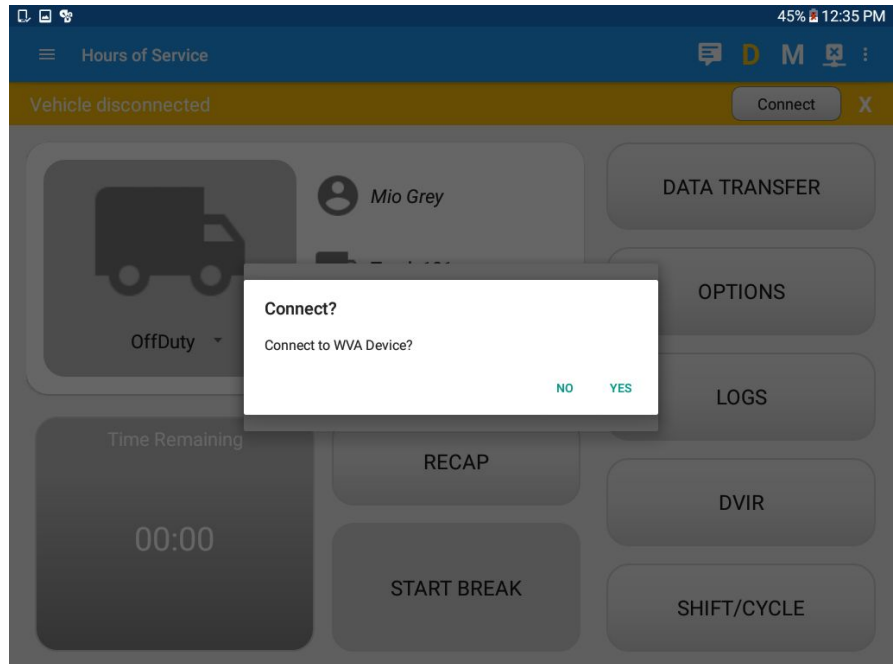
10.7 Upon successful configuration, the device will show up in the Available devices after the Discover Peers process

- o Tap the device name you recently configured

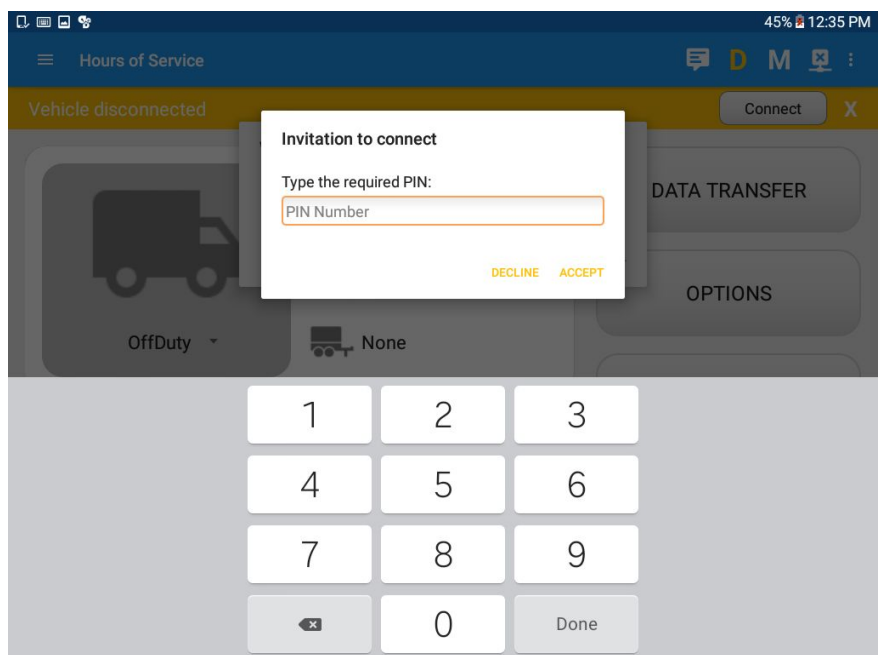


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- o A dialog will then display the asking if you want to connect to the Digi WVA device.

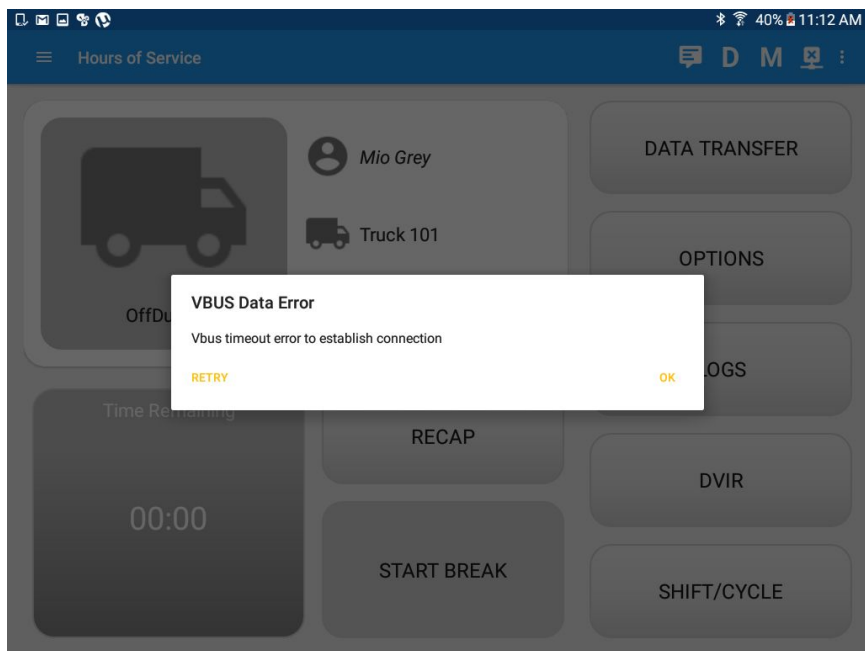


- o Tap Yes button, then a dialog will be displayed asking to enter the required Pin alongside with 'Accept' and 'Decline' buttons
- o Enter the Pin you recently configured and tap the Accept button



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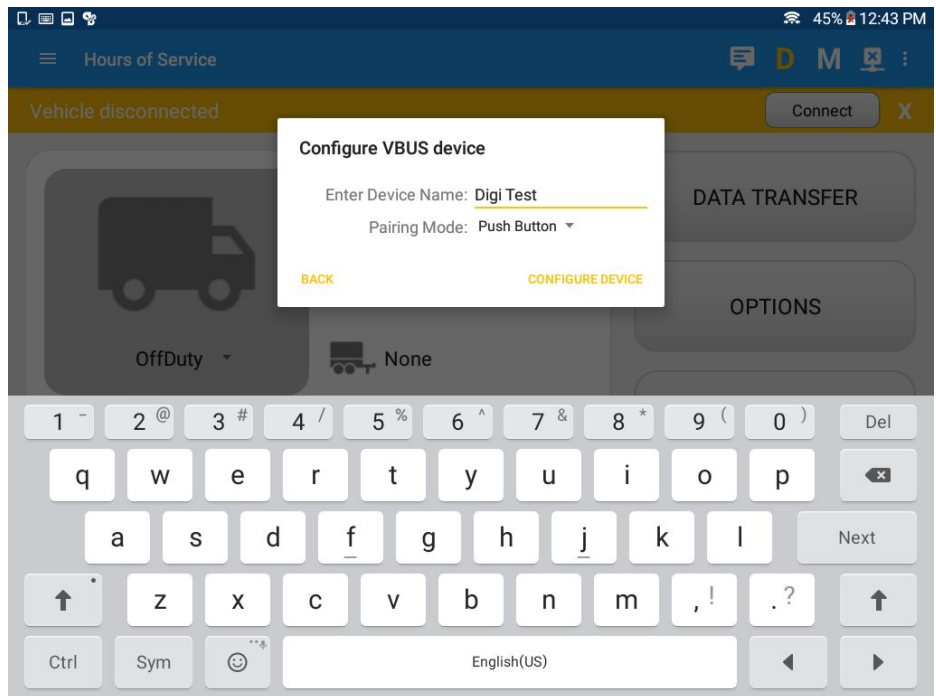
- It will then display the VBUS Progress dialog upon establishing a connection to the selected VBUS device.
 - If the VBUS connection results to an error (given the following situations below), an error dialog will display.
 - VBUS Connection Error
 - Interrupted Internet Connection
 - VBUS Power Failure



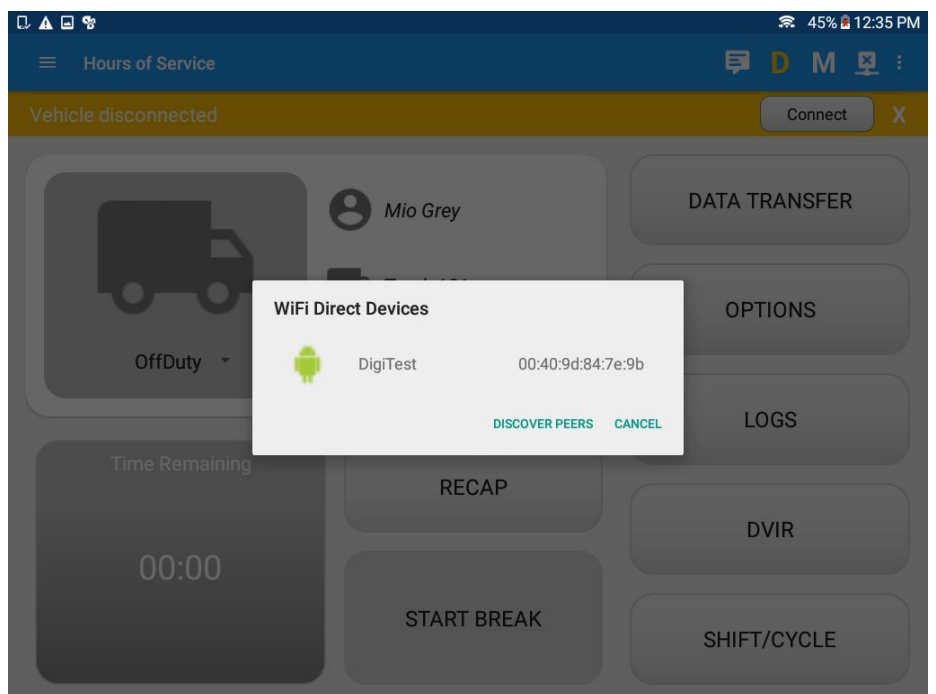
Note: The app will automatically disconnect from the device after attempting to connect for 1 minute and 30 seconds without receiving any data from the VBUS device.

- Wait until the Device shows as 'Connected' status
- If you select Push Button mode

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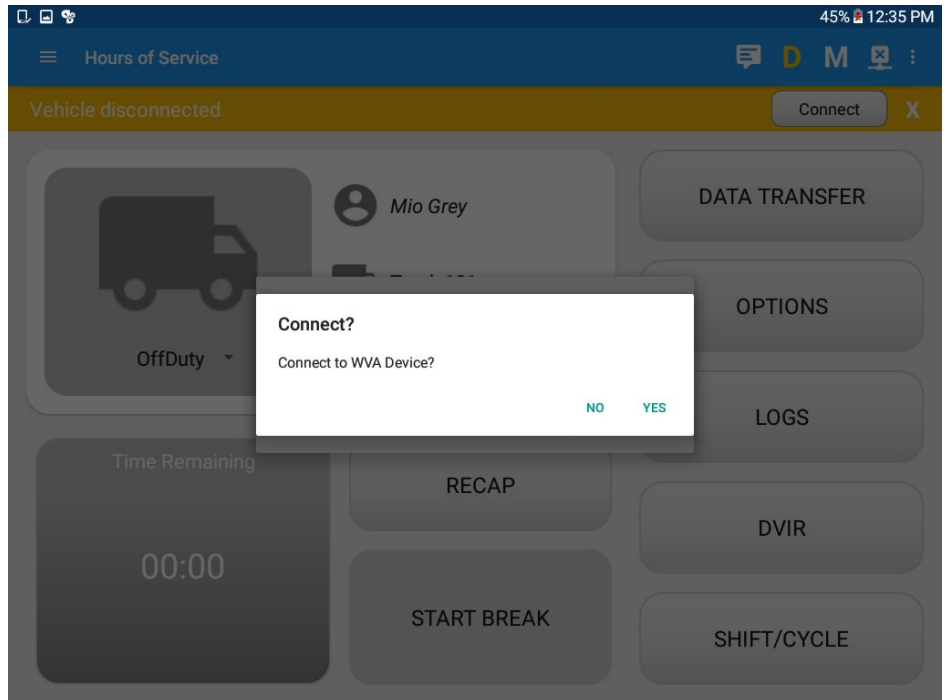


- o Tap on the drop-down option and select 'Push Button'
- o Then tap 'Configure Device' button
- o The device will show up in the Available devices after the Discover Peers process



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- o Hold the Digi WVA button down for 3 seconds (do not hold down for more than 3 seconds or you will have to repeat the entire process).



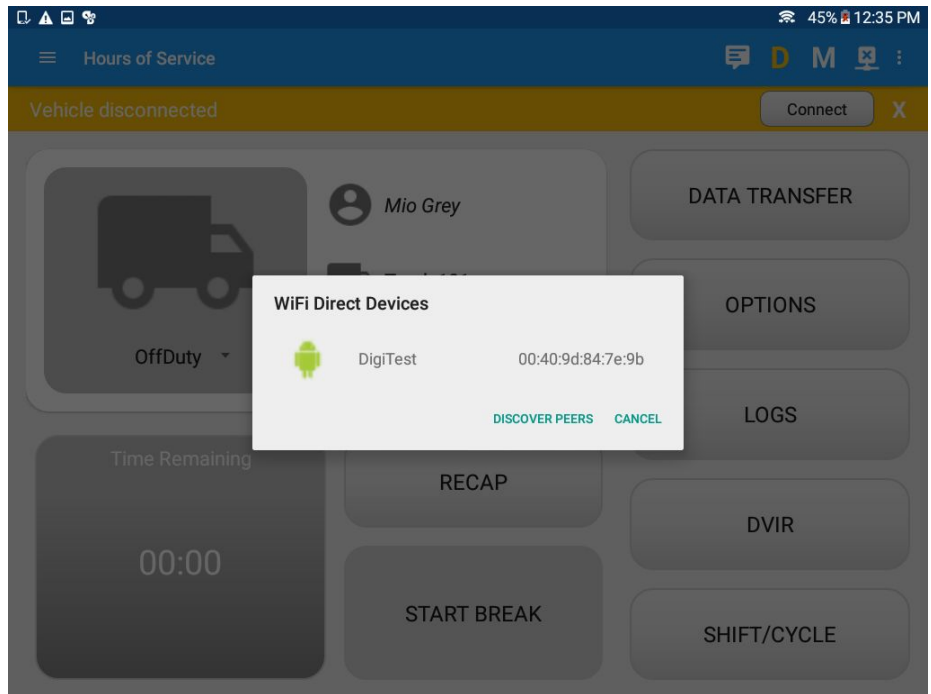
- o After successfully pressing the Digi WVA button, the device status will then be shown as 'Connected'

Note: If this did not work please follow the below manual setup method to connect to the Digi WVA in Wi-Fi direct mode. Prior to following the manual setup method you will need to press the WVA button on the device and hold it down for at least 10 seconds in order to reset the device to its original factory settings.

8. Connect to a WiFi Direct Digi device already configured
 - A. For a Digi WVA device configured for PIN Pairing mode.

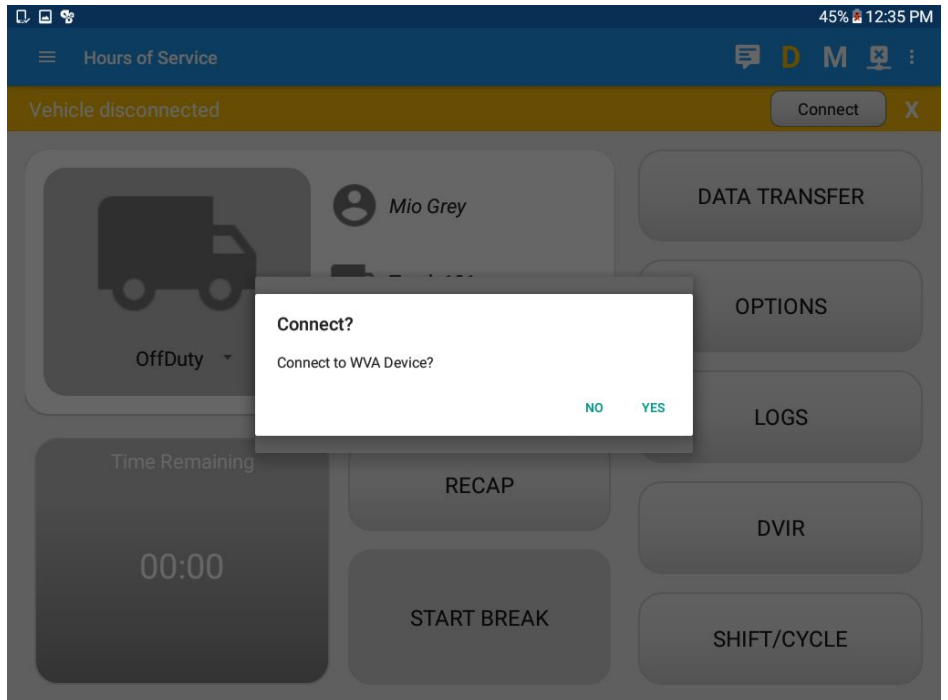
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- o Tap 'Skip' button

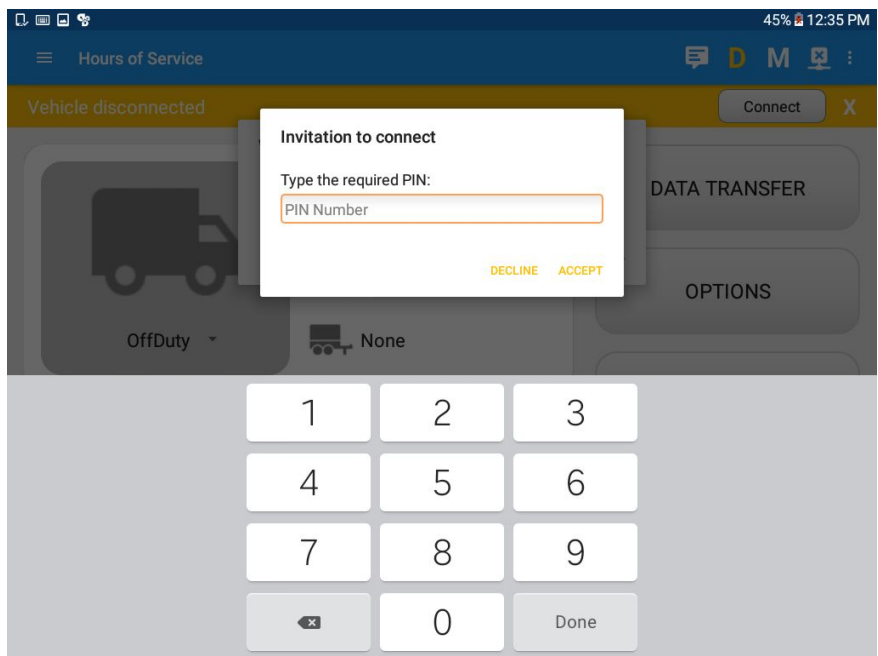


- o The device will show up in the Available devices after the Discover Peers process
- o Tap the device name you recently configured
- o A dialog will then display the asking if you want to connect to the Digi WVA device.

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- o Tap Yes button, then a dialog will be displayed asking to enter the required Pin alongside with 'Accept' and 'Decline' buttons
- o Enter the Pin you recently configured and tap the Accept button



- o Device should show as 'Invited'
- o Wait until the Device shows as 'Connected' status

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B. For a Digi WVA device configured for Push Button pairing.

- Tap 'Select Device' button
- The device will show up in the Available devices after the Discover Peers process
- The device should show as 'Invited' status
- Hold the Digi WVA button down for 3 seconds (do not hold down for more than 3 seconds or you will have to repeat the entire process).

After successfully pressing the Digi WVA button, the device status will then be shown as 'Connected'

b. Auto Connection

- Tap on the Connect button
- The VBUS Progress dialog will then display
- Upon establishing a connection to the VBUS device, You should hear a tone letting you know that device is now connected.

■ Prerequisites to successfully perform Auto Connection

- Create a Pre-configured device in the Portal's Equipment Management Page or in the App's Manage Vehicles/Trailers screen
- Set the ELD Configurations

Note: Only users with Asset admin roles can create equipment in the app.

2.2 Digi WVA Configuration via Web Browser

a. Connect to WVA hot spot

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1. Go to the wireless connections on your computer. The WVA will announce itself as a hotspot wireless network using the naming convention of wva-mac-address.

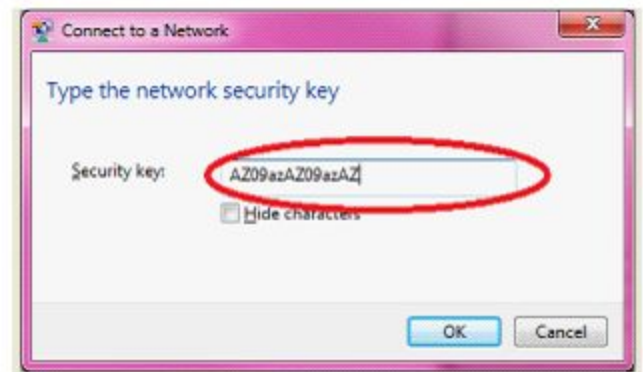


2. Connect to WVA on Wi-Fi using PASS from QR Label as shown below:

QR Label



Passcode for Wi-Fi



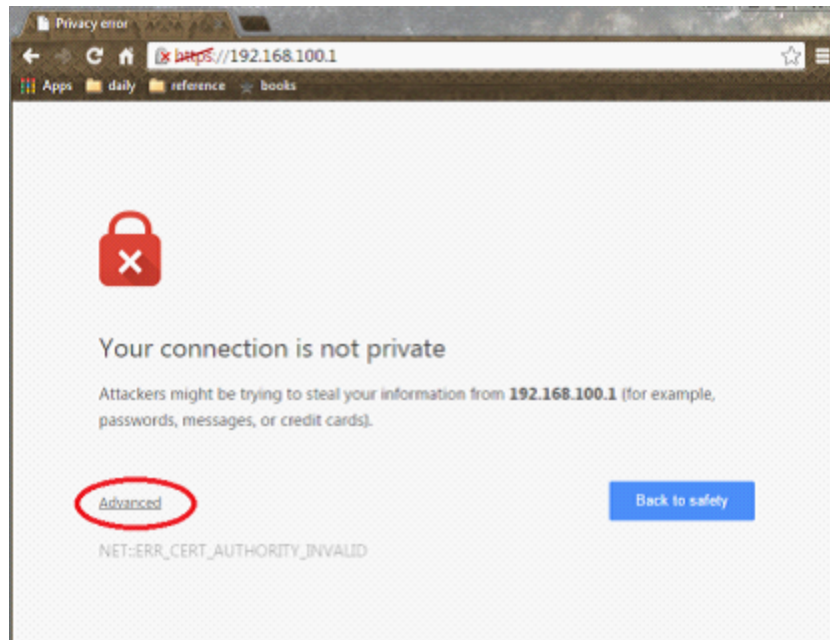
b. WVA Configuration

1. Open your web browser and type in the following URL in order to connect to the device configuration homepage: 192.168.100.1

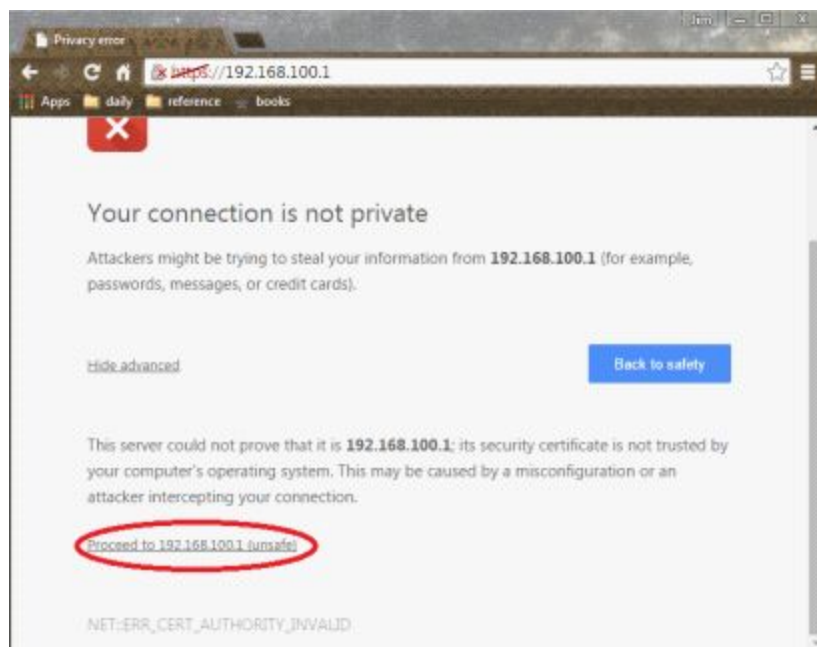


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2. The following message may be displayed. If so, click on Advanced

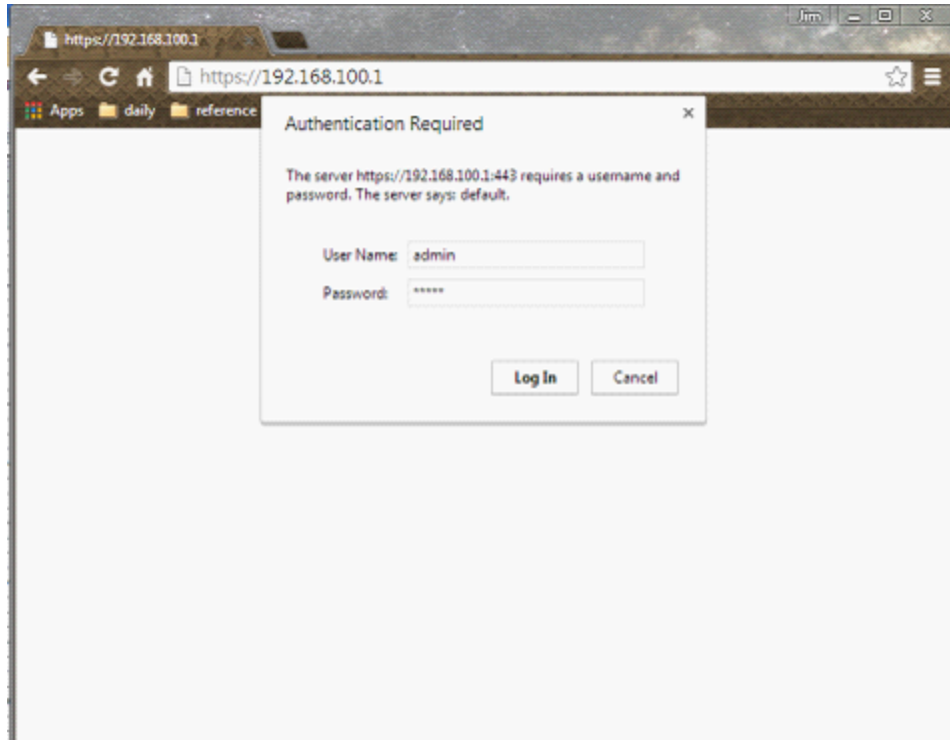


3. Click on Proceed to 192.168.100.1 (unsafe)



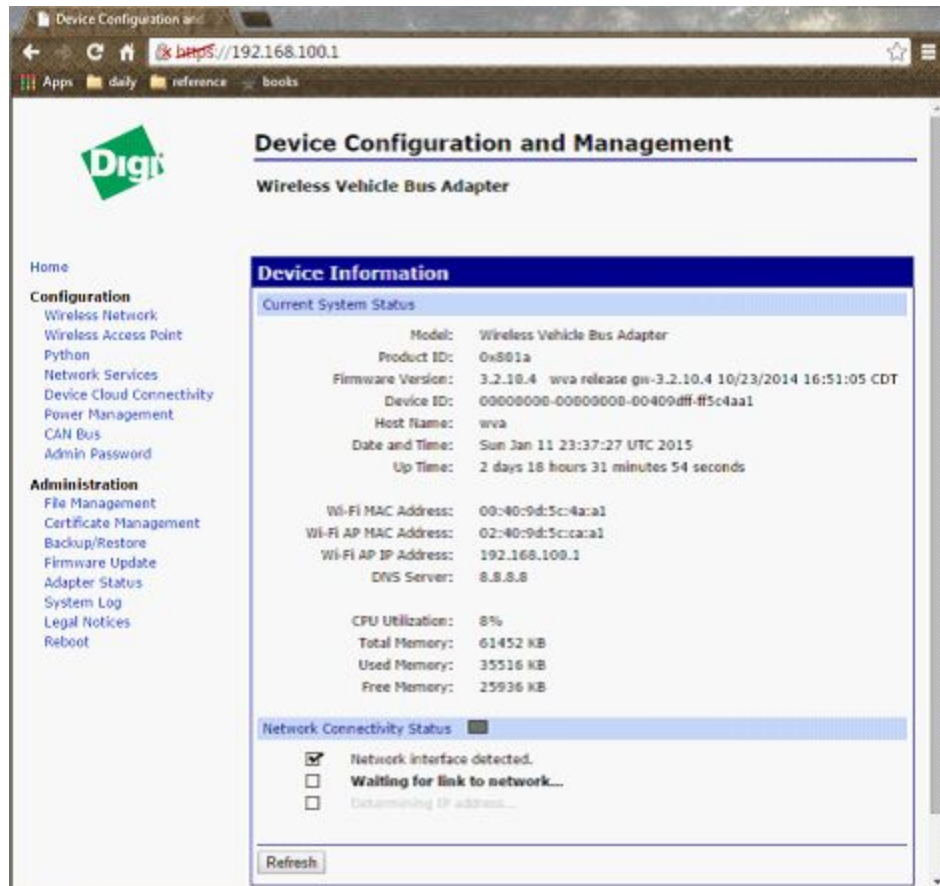
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4. Authenticate using admin for both username and password.



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5. User is at the device configuration homepage.



c. Confirm Adapter Status

1. Click the Adapter Status tab

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2. Verify there are values being displayed for the CAN Bus Statistics, example below

Wireless Vehicle Adapter Status

Current Wireless Network Status

Active SSID: off/any
Access Point: Not-Associated
Signal Level: N/A
Link Quality: N/A

Current Vehicle Status

VIN: N/A
Engine Speed: 4016.000 rpm
Vehicle Speed: 125.492 km/h

CAN Bus Statistics

Bus	Bytes Received	Packets Received	Bytes Sent	Packets Sent
can0	113640	14205	433	141
can1	0	0	0	0

Refresh Once

Refresh Automatically

Automatic refresh requests a status update every 5 seconds.

3. If the values remain as 0, click on the Refresh Once button and wait a few seconds to see if the values change
4. If the values still do not change proceed to the section below for 'Change CAN Bus Configuration'. Else if you see values skip to the section titled 'Configure the WVA for Wi-Fi Direct'.

d. Change CAN Bus Configuration

1. Click the CAN Bus tab to configure the device Bus settings

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2. Change the Baud Rate for CAN Bus 1 and CAN Bus 2 from 'Auto Baud' to '25000'

CAN Bus Configuration

Current Settings

Each CAN bus may be individually configured.

CAN Bus 1 Settings

☒ Enable CAN Bus

Baud Rate: 250000 ▼

CAN Bus 2 Settings

☒ Enable CAN Bus

Baud Rate: 250000 ▼

Apply

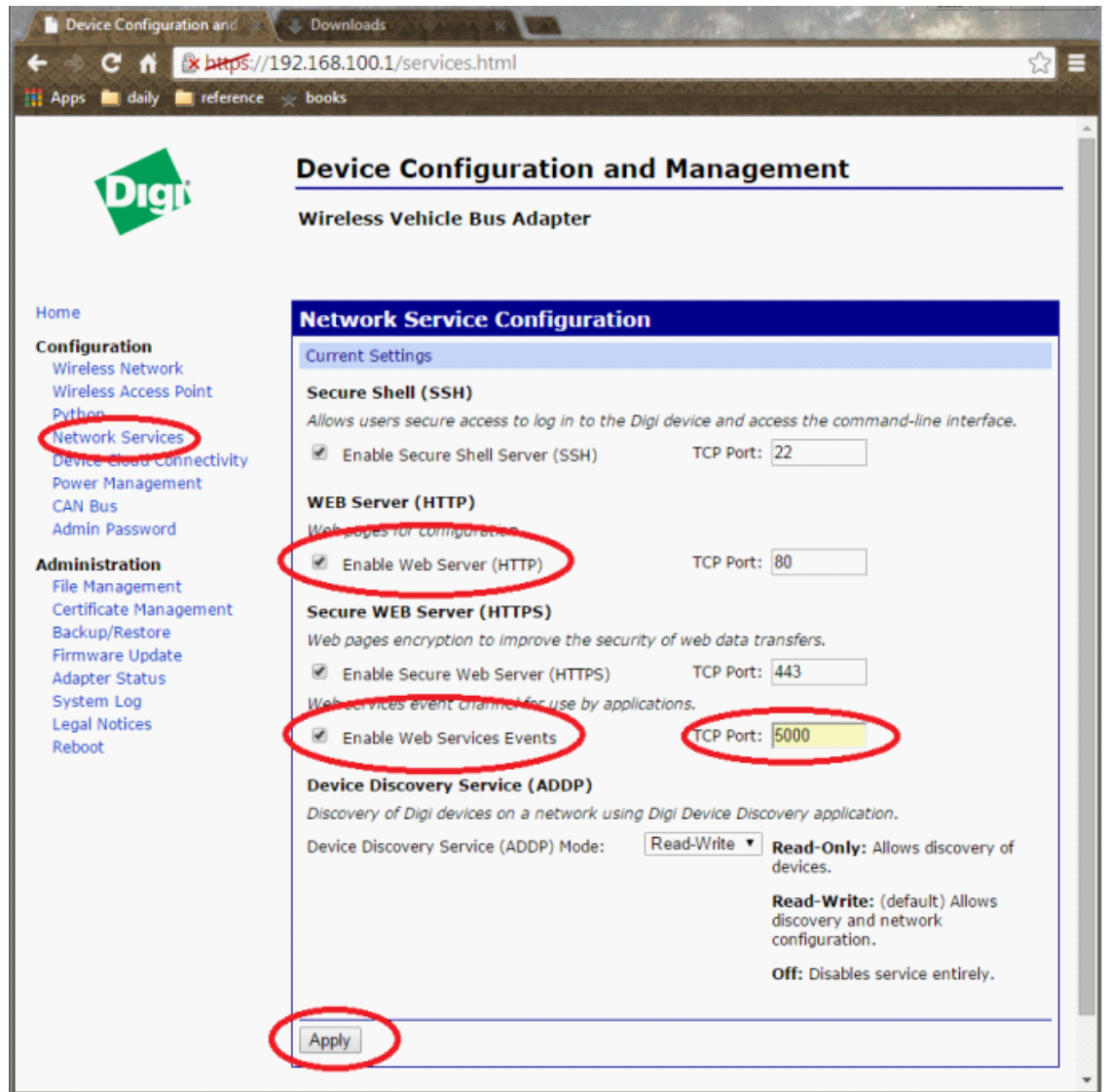
3. Click Apply and wait a few seconds
4. Confirm the Adapter status by following the steps described in the above section
5. Verify values are being displayed for the CAN Bus Statistics
6. If the value do not change repeat the above steps and select another baud rate

e. Configure WVA for Wi-Fi Direct

1. Click Network Services tab to get to Network Service Configuration screen.
2. Enable Web Server (HTTP)
3. Enable Web Services Events on TCP Port 5000
4. Click Apply

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5. Wait for 2 minutes then refresh the page and confirm the above settings were applied



6. Click Wireless Network tab

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7. Click Wi-Fi Direct button

The screenshot shows a web browser window with the URL https://192.168.100.1/network_wifi.html. The page title is "Device Configuration and Management" and the subtitle is "Wireless Vehicle Bus Adapter". On the left sidebar, under "Configuration", the "Wireless Network" option is circled in red. The main content area is titled "Wireless Network Configuration" and contains several sections:

- Current IP Parameters:** Automatic address assignment via DHCP is **enabled**. IP Address: 0.0.0.0, Subnet Mask: 0.0.0.0, Default Gateway: 0.0.0.0.
- Interface Configuration:** ☒ Enable this network interface. Two buttons are present: "Infrastructure" and "Wi-Fi Direct", with "Wi-Fi Direct" circled in red. Below the buttons, it says "Now configured for **Infrastructure** mode."
- Stored IP Configuration:** ☒ Obtain an IP address automatically using DHCP. ☐ Use the following IP address: IP Address: 192.168.43.1, Subnet Mask: 255.255.255.0, Default Gateway: 0.0.0.0.
- Host Name Configuration:** Host Name: wva
- Domain Name Service Configuration:** Primary DNS: 8.8.8.8, Secondary DNS: 0.0.0.0.

An "Apply" button is located at the bottom of the configuration section.

8. Enter in a Device Name. The name must contain the contiguous text "Digi_WVA". You can also add the vehicle number associated with the device as in the example below where "**Digi_WVA_Truck_01**" was entered. A VIN # as part of the name may be a great choice as well.

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9. Select Push Button for the WPS Method and click the Finish button.

The screenshot shows a web browser window with the address bar displaying `https://192.168.100.1/wizard_wifidirect.html`. The page title is "Device Configuration and Management" and the subtitle is "Wireless Vehicle Bus Adapter". The main heading is "Wi-Fi Direct Configuration Wizard". Below this, there are two input fields: "Device Name" with the value "Digi_WVA_Truck_01" and "WPS Method" with the value "Push Button". Both fields are circled in red. Below these fields, there is a checkbox labeled "Reconfigure IP addresses for Wi-Fi Direct" which is checked. At the bottom, there is a message: "Click 'Finish' to continue or 'Cancel' to end the wizard and return to the Wireless Configuration page." Below this message, there are two buttons: "Finish" and "Cancel". The "Finish" button is circled in red. At the very bottom, there is a copyright notice: "Copyright © 1996-2014 Digi International Inc. All rights reserved. www.digi.com".

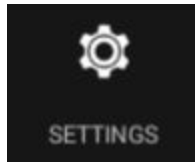
10. User will be asked to reboot. User must reboot in order to complete the install.

The screenshot shows the same web browser window as the previous one, but the content has changed. The main heading is still "Wi-Fi Direct Configuration Wizard". Below this, there is a message: "Configuration save is complete. Reboot is required." followed by three lines of text: "The device has successfully saved the requested parameters. A reboot is required to apply the changes.", "The reboot process will take approximately 1 minute to complete.", and "After the reboot completes, it may be necessary to reconnect to this device using Wi-Fi Direct." Below this text, there is a message: "Click the 'Reboot' button to end the wizard and reboot the device." Below this message, there is a button labeled "Reboot". The "Reboot" button is circled in red. At the very bottom, there is a copyright notice: "Copyright © 1996-2014 Digi International Inc. All rights reserved. www.digi.com".

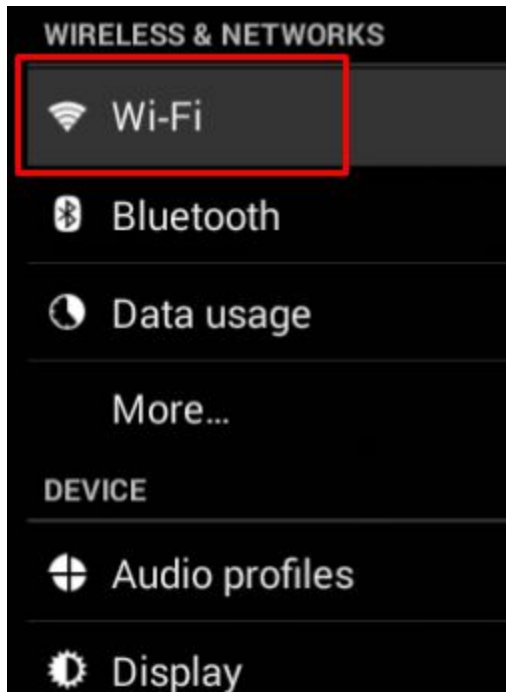
f. Initial Pairing of Device

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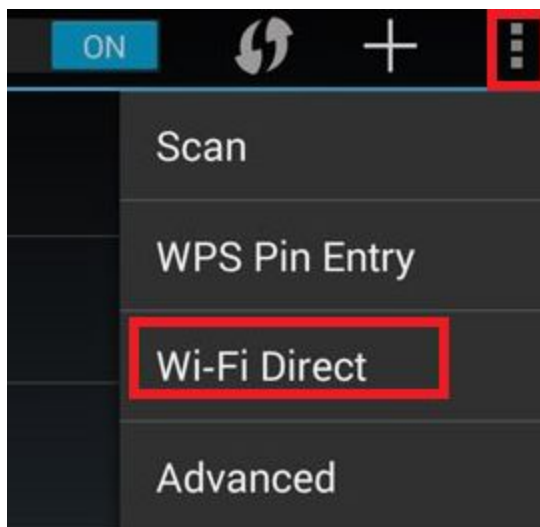
1. On the Android tablet tap on the Settings icon



2. Tap on Wi-Fi

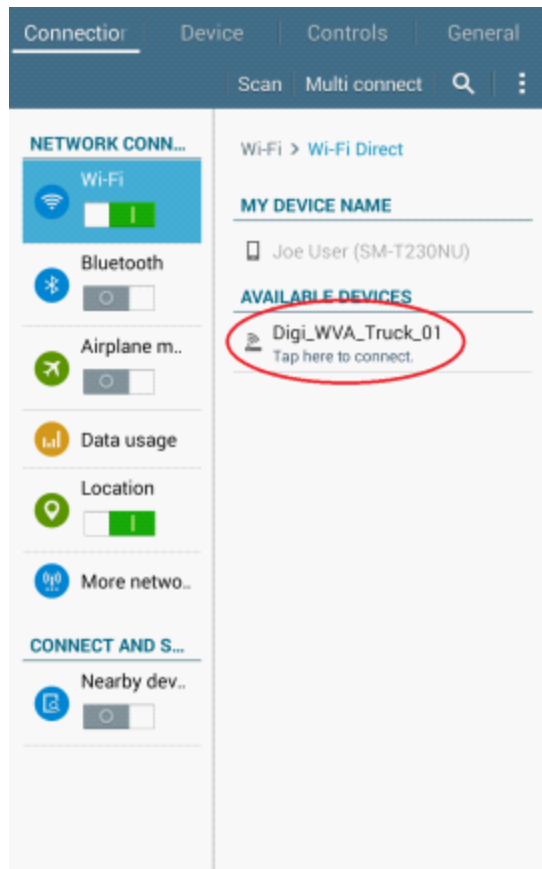


3. On the Wi-Fi screen tap on the additional options icon at the top right and select Wi-Fi Direct



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4. Tap on the WVA Wi-Fi Direct network and immediately afterwards press the button on the WVA device for 3 seconds. Do not press the button any longer than ten seconds as this will reset the device and user will have to start over.

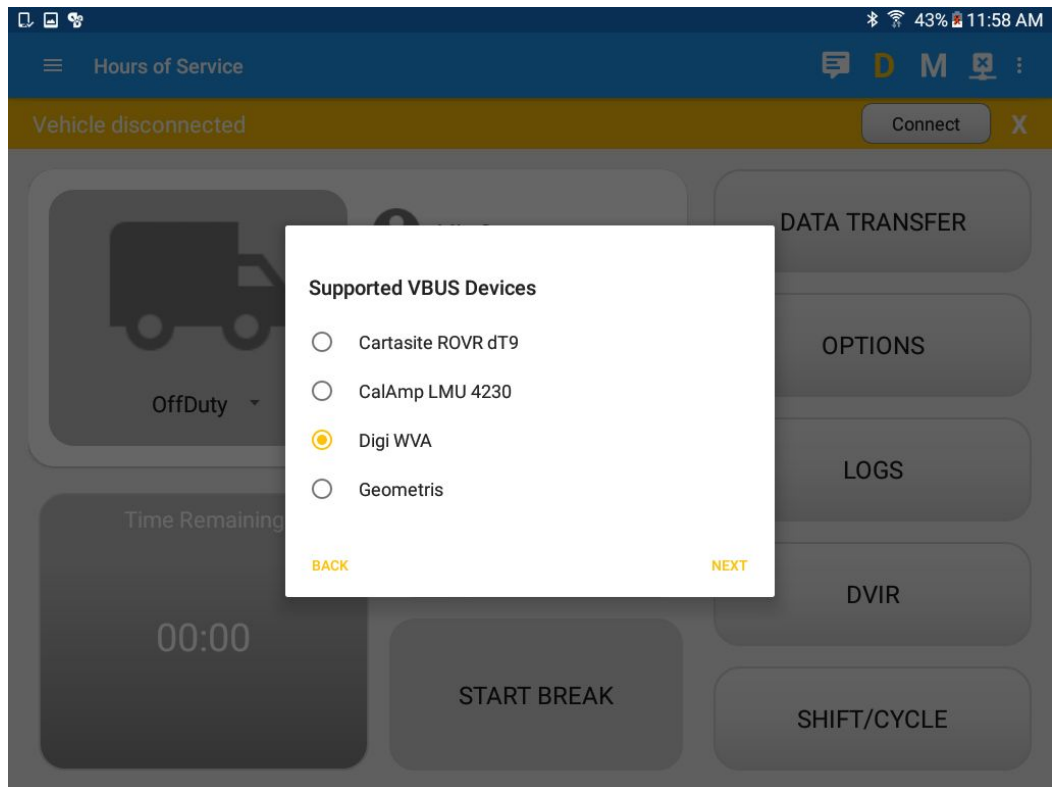


5. Once the initial pairing is complete the device is ready for use with the VisTracks android application.

g. Launching VisTracks Mobile App Settings and connecting it to a WiFi Direct device already configured

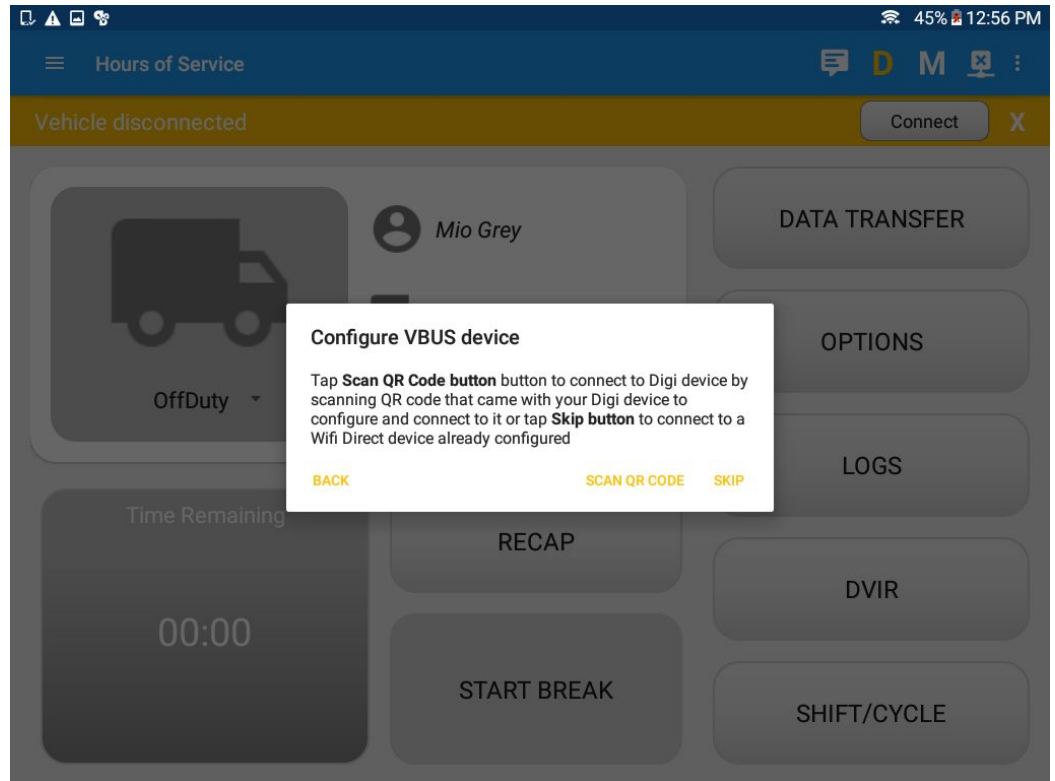
1. Open VisTracks App
2. Log into the app
3. On the main dashboard, tap the 'Connect' button which is located below the app header
4. Tap on 'Manual Connection' button
5. Select VBUS device - "Digi WVA"

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6. Tap on the 'Next' button
7. The 'Configure VBUS device' dialog will then display
8. You have the option to scan the QR code that came with your device or connect to it yourself via Wifi-Direct. In this example, we will be connecting via Wi-Fi Direct device already configured. Tap "**Select Device**" Button.

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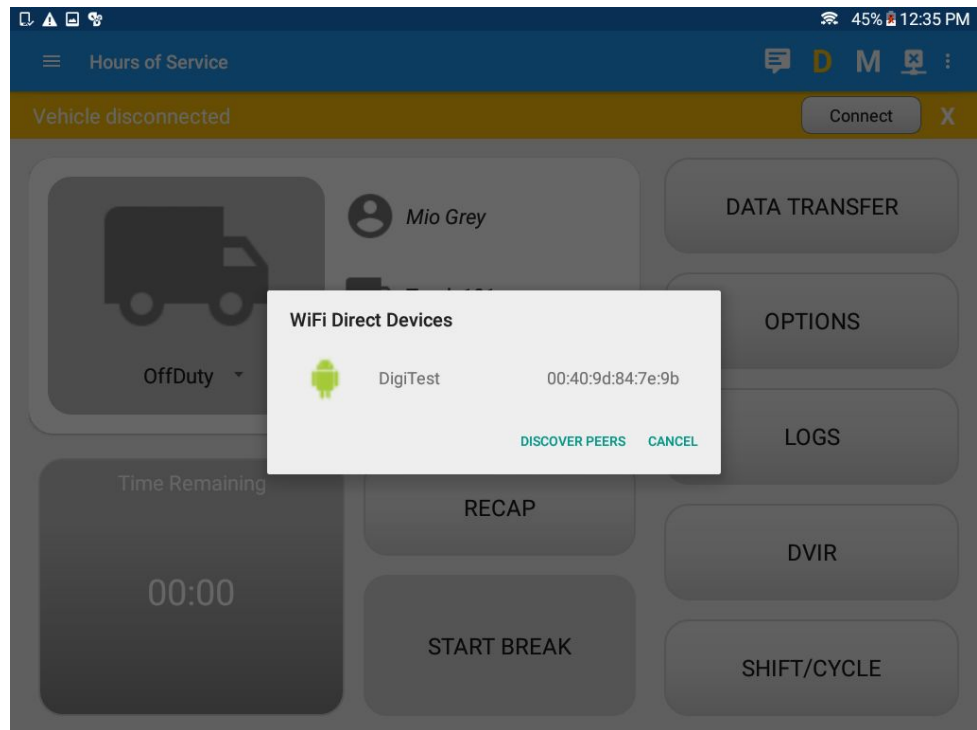


(Note: If you haven't configured a WiFi Direct device, you can also select the Scan QR Code option. Refer to 2.1 Step #7 for the instructions.)

9. Tap on the WiFi direct device name: **Digi Test**

(Note: If the WiFi Direct device is paired through 'Push Button' mode then you will see the device as 'Invited' screen. Hold WVA button down for 3 seconds (do not hold down for more than 3 seconds or you will have to repeat the entire process). If the WiFi Direct device is paired through 'Pin' mode, then it will ask you for a PIN)

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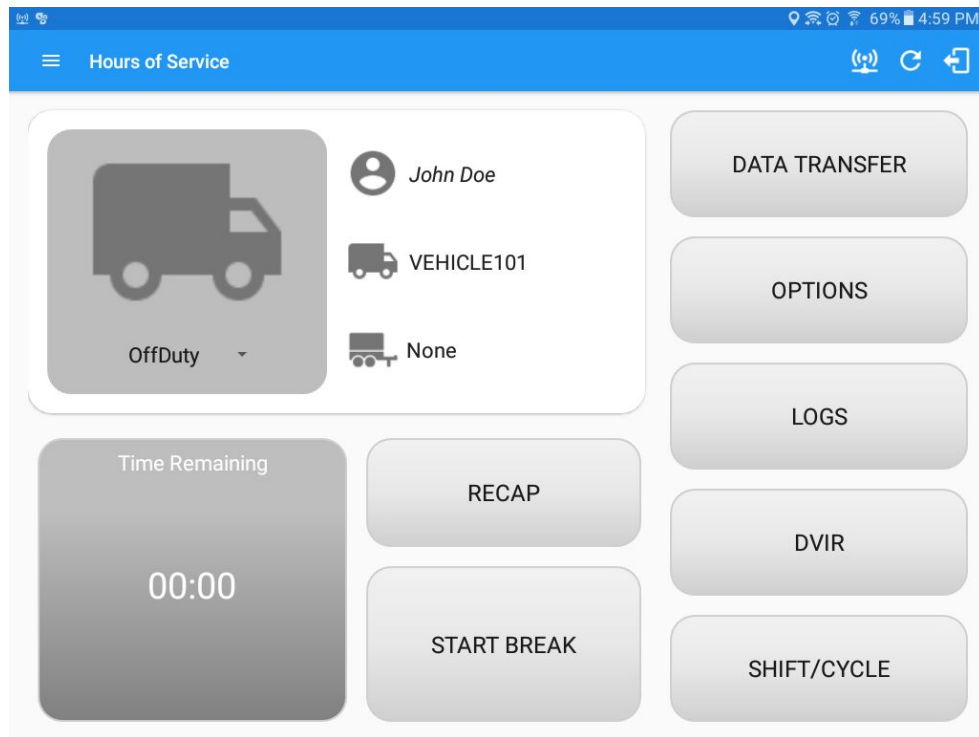


10. You should hear a tone letting you know that device is now connected.
11. To check if you are successfully connected to the Digi Test Wi-Fi Direct network, navigate to the

Main Dashboard and the VBUS status indicator should be displayed as “Connected” which is located on the app header

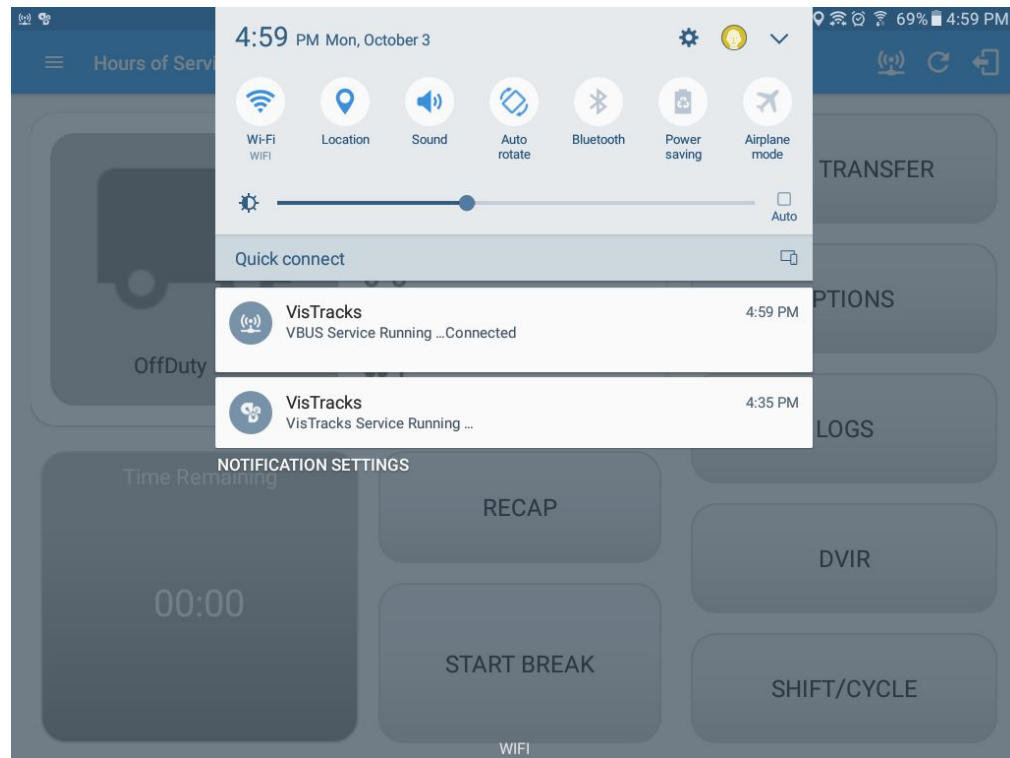


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12. You can also check on the Android Notification Bar and you should see the VBUS Service status as “Connected”

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Troubleshooting Steps

1. Exit out of the VisTracks application
2. Go to Settings on the Android device and verify that the device is connected to the WVA Wi-Fi Direct network
3. If the network status states 'Available' tap on the network to initiate a connection
4. If the WVA Wi-Fi Direct network is not displayed tap on the Search button at the top of the Wi-Fi Direct screen to search for the network
5. Once the connection has been confirmed repeat the previous section for "VisTracks Mobile App Settings"