Tesla Powertrain Diagnostics ("TPD") for Toyota RAV4 EV v1.1.42 installation

Feedback indicates that this can be installed on WinXP, W7, W8.x, W10. 32-bit or 64-bit. I have personally tested it working on W10 installations only.

It is recommended to install this setup on a dedicated "garage" laptop, one that never connects to the internet, and especially *never allows Windows to apply an update* or patch. If there's a major software environment change (such as a major OS update), or *a significant hardware change (SSD, mainboard, or CPU), the program will fail to load . . . forever*, until another license key is obtained.

Yes, if you change the HDD or SSD, this program must be re-licensed. If you run the installer again, it must be re-licensed.

If you change it, it breaks. You are warned.

Obtain these files:

Installer:

• <u>setup-1.1.42-rav4-service.exe</u>

Additional gateway.dll

• gateway.dll

Latest firmware tarball:

• firmware-release-1.3.101.tar

(optional)

Toyota "User Manual" for TPD:

<u>RAV4EVsoftware_userman.pdf</u>

(Techstream-centric and mostly useless until pg. 28, but there are a couple of good nuggets)

Run the installer setup-1.1.42-rav4-service.exe

📊 🛃 📑 =	Application Tools RAV4			- 0	×
File Home Shar	re View Manage				~ ?
← → ~ ↑ 📙 > T	his PC > Downloads > RAV4		✓ Ö Search RAV	/4	Q
🔹 Quick access	Name	Date modified	Туре	Size	
Deskten d	firmware-release-1.3.101.tar	6/21/2020 1:58 AM	TAR File	1,820 KB	
	🗟 gateway.dll	1/16/2013 10:16 AM	Application extens	177 KB	
🕂 Downloads 🚿	RAV4EVsoftware_userman	6/21/2020 1:58 AM	PDF File	12,230 KB	
🔮 Documents 🛛 🖈	setup-1.1.42-rav4-service	6/21/2020 1:59 AM	Application	51,372 KB	
Pictures 💉	· · · · · · · · · · · · · · · · · · ·				
👌 Music					
Videos					
📥 OneDrive					
📃 This PC					
i Network					
4 items 1 item selected	50.1 MB				

(Verified steps for Windows 10 below)

Allow Windows User Account Control ("UAC") permission to install:



At the "Welcome" screen, select "Next" Agree to the License Agreement Choose an installation location (I accept the offered default) Let it add a shortcut to the Start Menu If you want a desktop icon for TPD, select that option Confirm the above choices by selecting "Install"

Do not launch the program; un-check that option, and select "Finish"



Copy the additional gateway.dll over the installed one, replacing it. Copy to:

<u>C:\Program</u> Files (x86)\Tesla Powertrain Diagnostics RAV4 – Service

or This PC > Local Disk (x:) > Program Files (x86) > Tesla Powertrain Diagnostics RAV4 – Service

Image: Image	ertrain Diagnostics RAV4 - Servic View gram Files (x86) > Tesla Power	Replace or Skip Files - X Copying 1 item from RAV4 to Tesla Powertrain Diagnostics RAV4 - Service The destination already has a file named "gateway.dll"	> b < ×
Common File Intel Internet Explc Microsoft.NE Tesla Powertr Ianguages	gateway.dll kernel32 lib.gateway.gateway.pyd lib.logging.logger.pyd lib.logparser.logparser.py lib.uds.udsenums.pyd log.dll	 Replace the file in the destination Skip this file Compare info for both files 	
gldrivers	ା mfc90.dll ତ୍ରି mfc90u.dll ତ୍ରି mfcm90.dll	More details 11/6/2007 2:51 PM Application extens 59 KB	
Windows Def Windows Ma 82 items 1 item selected	Microsoft.VC90.CRT.man	11/6/2007 2:51 PM Application extens 59 KB nifest 3/18/2013 12:22 PM MANIFEST File 2 KB	•

You will (probably) be asked for Administrator permission to overwrite the old file. Choose "Continue".



Start the program. It will display a licensing dialogue immediately. If it doesn't, select:

Help|Product Registration

to activate the licensing dialogue.

Product Registrat	tion	×
Product ID:	90ee d6d3 02b1 10ab	
Enter License Key:		
A valid license key is no Please obtain one by (ot found on this computer. CLICKING HERE.	×
	Close	Apply

From the Product ID: field, copy the 16 characters displayed and send them to me (or someone else who will help). I (they) will send back a 25-character license.

Paste the license key to the "Enter License Key" field. With, or without spaces is fine.

Product Registration		×
Product ID:	90ee d6d3 02b1 10ab	
Enter License Key:	fff3137456c1a50b2525a2c4f	
A valid license key is not found Please obtain one by <u>CLICKI</u>	l on this computer. <mark>NG HERE</mark> .	×
	Close	Apply

Select "Apply".

You should see "License expires on 2023-05-29". This is normal.

T Product Regist	ration	×
Product ID:	90ee d6d3 02b1 10ab	
Enter License Key:	fff3137456c1a50b2525a2c4f	- 🛐
License expires on 2	2023-05-29.	\checkmark
	Close	Apply

[If you see instead, "The entered license key is invalid.", then you probably forgot to copy *gateway.dll* above. *Close the program* and do that. The license key will *not* work in 2024-on if you don't do it in this order.]

Select "Close".

If the program has closed, open it. You will see a dialogue

"The product license will expire in *-nnn* days. Please renew your license soon." This is normal:



It will display every time you start the program and every time you'll have to . . .

Select "OK". The program will continue loading.

At this time, the lower left corner of the program will show a red dot and "Monitoring".



If, instead, it shows a red dot and says "Invalid License":



... then something has gone amiss; re-check your steps above. You cannot proceed unless you see "Monitoring" at the lower left.

TPD is installed . . . but not configured. Its network connection needs a minor configuration

TPD Ethernet Configuration

It's best to plug in the Tesla Gateway cable to the car and laptop now. Why?

TPD's Network Configuration utility will only show **active** networks, and until you plug the laptop to the car, the network likely won't be active, and you won't be presented with it to select.

Background details

With the cable not connected on both devices: If you were to choose Help|Network Configuration (you'll be asked by Windows UAC to run a program; grant it access), you'll only be presented with whatever ethernet adapter(s) that is/are currently *active*, probably only your laptop's Wi-Fi adapter that's currently in use. This is confusing, because TPD doesn't yet "see" the car's Tesla Gateway, and it can't let you choose it. That's why you need to plug in the cable -- to the laptop AND the car.

TPD wants to be told which network adapter interface to use. Most laptops these days have but one: Wi-Fi, but older laptops have a physical ethernet port (usually 8P8C/RJ45). Your Tesla Gateway adapter cable's RJ45 end will need to plug into something. If your laptop has a ethernet port, you're set. If not, you'll need to invest in a USB<->ethernet adapter and use that. Once all connected, TPD will "see" the USB adapter as if it was a native ethernet interface.

For 1.1.4**2** (.46 is similar, but from the Help menu): Select:

Configuration | Network Configuration

Tesla Powertrain Diagnostics - Service 1.1.42			
File Views Perspectives	Configuration Help		
Firmware Download to Veh	🔀 Network Configuration		
	CAN Connection		
	Preferences		

Grant UAC access for network_configuration.exe :

User Account Control		×
Do you want to allow this app from an unknown publisher to make changes to your device?		
network_configuration.ex	e	
Publisher: Unknown File origin: Hard drive on this computer		
Show more details		
Yes	No	Ľ.

You'll be presented with all active network interfaces. If you have Wi-Fi active, it'll show. If you have a physical ethernet port or a working/configured USB<->ethernet interface, that'll show, too. Something akin to this (your adapters will be different):

X Network Configuration	_		×
Select Adapter			
O [0000001] Realtek PCIe FE Family Controller			
O [00000002] Dell Wireless 1705 802.11b g n (2.4GHZ)			
袭 Refresh Network Ok	Cancel	Арр	ly

Select the network adapter that corresponds to your physical ethernet (RJ45) port. *Do not select your Wireless interface*.

Once you've selected your ethernet port (**NOT** Wi-Fi), the dialogue will expand and you'll be presented with more options:

🔀 Network Configuration		_		×
Select Adapter				
[00000001] Realtek PCIe FE Family Controller				
○ [00000002] Dell Wireless 1705 802.11b g n (2.4GHZ)				
Adapter Mode				
Vehicle Mode O Ethernet Mod	de			
🕏 Refresh Network Ok	Can	cel	Apply	y

Select Adapter Mode: Vehicle Mode.

Select OK (or Apply). Windows will present a Firewall configuration.

Select Public (other choices may work for you, but I have encountered at least two situations where selecting Private did **not** work).

💣 Windows Secu	ırity Alert		\times	
Windo app	ws Defende	er Firewall has blocked some features of this		
Windows Defender private networks.	Firewall has bloc	ked some features of tesla_diagnostics.exe on all public and		
	Name:	tesla_diagnostics.exe		
	Publisher:	Unknown		
	Path:	C:\program files (x86)\tesla powertrain diagnostics rav4 - service\tesla_diagnostics.exe		
Allow tesla_diagnos	stics.exe to com	nunicate on these networks:		
Private netw	orks, such as my	/ home or work network		
Public networks, such as those in airports and coffee shops (not recommended because these networks often have little or no security)				
What are the risks of allowing an app through a firewall?				
		Allow access Cancel		

Select OK

🔏 Network Co	nfiguration —		\times
Select Adapter	Information X Successfully set the selected adapter to vehicle mode		
Adapter Mode	ОК		
Vehicle Mod	e 🔿 Ethernet Mode		
ᡷ Refresh Net	work Ok Cancel	App	ly

TPD ethernet configuration is complete.

TPD: Connecting to the car

The Tesla Gateway goes to sleep. Opening the rear hatch does not awaken it (though it does awaken the Toyota CAN). However, opening the driver's door will trigger the Tesla side to awaken, and the instrument cluster will display its usual stuff, such as the GOM (estimated range). If things are working correctly, with the laptop connected to the car, TPD configured for the correct network interface, and the Tesla Gateway awake, within ~3 seconds the red indicator at the lower left of the TPD's main screen will turn to green, and shortly the VIN field to the right of it will become populated.



– end

Rev. history: 20240525 Initial 20241028 Revised Network Config instructions. Added Firewall info. 20241028a Removed "Simplified" from intro.