

Release Notes

Intel PROSet/Wireless WiFi Software V22.90.1.1 Hot Fix PV Release

Wireless Solutions Group

WW44



intel®

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Release Overview

- Intel is announcing the 22.90.1.1 Hot Fix Production Version (PV) release of the Intel® PROSet/Wireless WiFi Software.
 - This version is a PV version to support KBL, GLK, CNL, CFL, WHL, AML, CML, ICL, LKF, TGL, JSL, RKL, ADL-S platforms. This version is a maintenance release that addresses known issues reported in previous software versions
 - This software package includes updates in the 22.90.1.1 driver for the following devices: JfP2/1, CcP2, HrP2, TyP2, GfP2, GfP4
 - This release introduces support for Garfield Peak 4 (Intel® Wi-Fi 6 AX411).
 - Garfield Peak 4 (Intel® Wi-Fi 6 AX411) is the first product to feature Intel® Double Connect Technology, which allows simultaneous 2.4GHz and 5/6GHz connectivity, allowing Wi-Fi traffic to be routed in both bands.
 - Intel® Double Connect Technology is supported with the new WLAN NetAdapter driver model in Windows 11 – see details on [this](#) slide
 - This release introduces a new G-layout
 - Transition details from the current G-layout to the new G-layout (which includes support for NetAdapter) are available on [this](#) slide
 - This release contains certified drivers for Windows 11 – see details in next slide

General Information

Driver Version		OS
TIC	PHFW04801_22.90.1.1	Win10
22.90.1.1	JfP1/JfP2/CcP2/ HrP2/TyP2/GfP2*/GfP4**	RS5,19H1/2, 20H1/2, 21H1
21.80.19.1	JfP1/JfP2/ThP2	Win11 October 2021
20.70.27.1	WsP/SfP	Win10 19H1/2, 20H1/2, 21H1
19.51.38.2	StP/SdP	Win11 October 2021

Supported Operating Systems

Windows 10 October 2018 Update (RS5)
NetWTw08/10 drivers only

Windows 10 April 2019 Update (19H1)

Windows 10 November 2019 Update (19H2)

Windows 10 May 2020 Update (20H1)

Windows 10 October 2020 Update (20H2)

Windows 10 May 2021 Update (21H1)

Windows 11 October 2021 Update (aka Cobalt)

Note:

* - GfP2/GfP4 certified for Windows 11 only;

** - GfP4 supports NetAdapter driver model

Tested Platforms
Alder Lake S (ADL-S)
Tiger Lake(TGL)
Jasper Lake (JSL)
Rocket Lake (RKL)
Lakefield (LkF)
Kaby Lake (KbL) / Kaby Lake refresh (KbL-R)
Apollo Lake (ApL)
Sky Lake (SkL)
Broadwell (BDW)
Gemini Lake (GLK) / Gemini Lake Refresh (GLK-R)
Cannon Lake (CNL)
Coffee Lake (CFL)
Whiskey Lake (WHL)
Amber Lake (AML)
Ice Lake (ICL)
Comet Lake (CML)

Supported Hardware
Garfield Peak 4 (GfP4)/AX411
Garfield Peak 2 (GfP2)/AX211
Typhoon Peak 2 (TyP2)/AX210
Typhoon Peak 2 embedded (TyP2)/AX210-embedded
Typhoon Peak 2 industrial (TyP2)/AX210-industrial
Harrison Peak2 (HrP2)/AX201
Cyclone Peak 2 (CcP2)/AX200
Thunder Peak2 (ThP2)/9260
Jefferson Peak2 (JfP2)/9560
Jefferson Peak1 (JfP1)/9461/9462
Windstorm Peak(WsP)/8265
Sandy Peak (SdP)/3168
Snowfield Peak (SfP) / 8260
Oak Peak (OkP)/18265
Douglas Peak (DgP)/18260 (WiGig)
Maple Peak (MpL)/17265 (WiGig)
Stone Peak 2 D0 (StP2)/7265
Stone Peak 1 (StP1)/3165

22.90.1 Hot Fix Production Version Release – WiFi Package Layout

- The **Green** areas indicate the new SW in this release (22.90.1.1).

Win10/11 WDI		Win11 NetAdapter
Solar + GfP4 AX411	N/A	22.90.1.1 Netwaw10
TyP2 AX210	22.90.1.1 NetWTw10	N/A
CcP2 AX200		
Solar + GfP2 AX211		
Quasar/Solar+ HrP2 AX201; JfP1/9461/9462; JfP2/9560;		
Pulsar + JfP1/9461/9462		
Pulsar + JfP2/9560	22.90.1.1 ¹ NetWTw08 (21.80.19.1)	
ThP2/9260		
WsP/8265		
SfP/8260	20.70.27.1 NetWTw06	
SdP/3168	19.51.38.2 NetWT(n/w)04	
StP1/3165		
StP2-D/7265		

- ¹. Please note: Since 22.90 and 21.80 drivers use same inf, device manager properties will show 22.90.1.1 driver. Relevant sys file (netwtw08.sys-21.80.27.1) shown at "driver file details".

New WLAN NetAdapter driver architecture

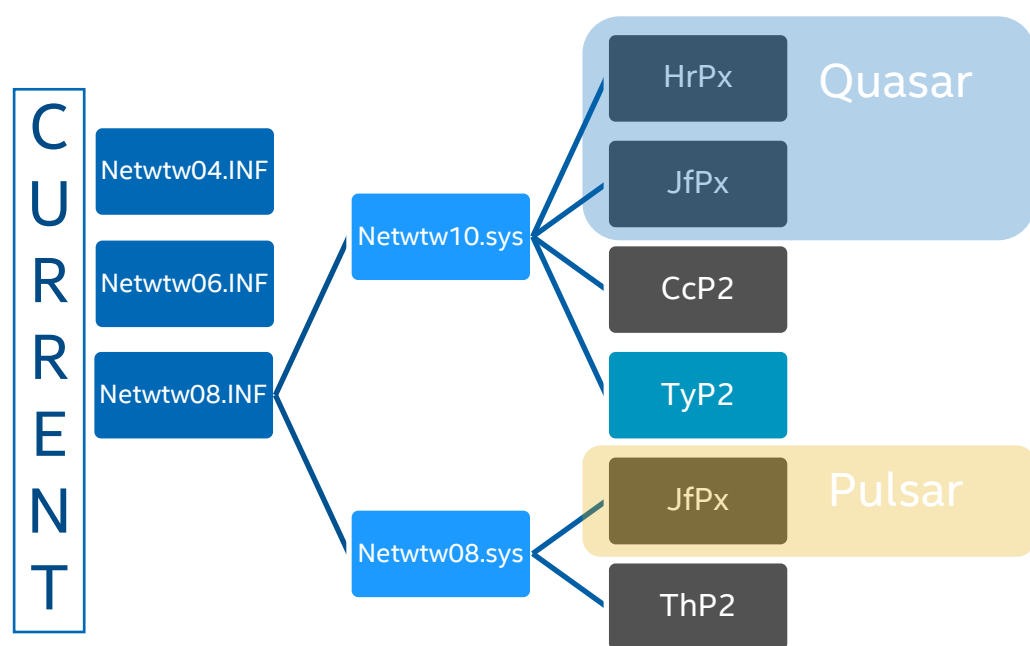
- Starting with the Windows 11* October 2021 Release, Microsoft* is enabling support for the new WLAN NetAdapter driver architecture (WiFiCx)
 - More details about the NetAdapterCx driver architecture can be found [here](#)
- Intel provides a NetAdapter driver for GfP4 only
- TyP2, GfP2 and earlier adapters will only support the current WDI driver architecture
- PIE software will work with both the existing WDI and the new NetAdapter drivers
- Wi-Fi tools will continue to work with both the WDI and NetAdapter drivers

New layout in 22.90.1 Hot Fix PV

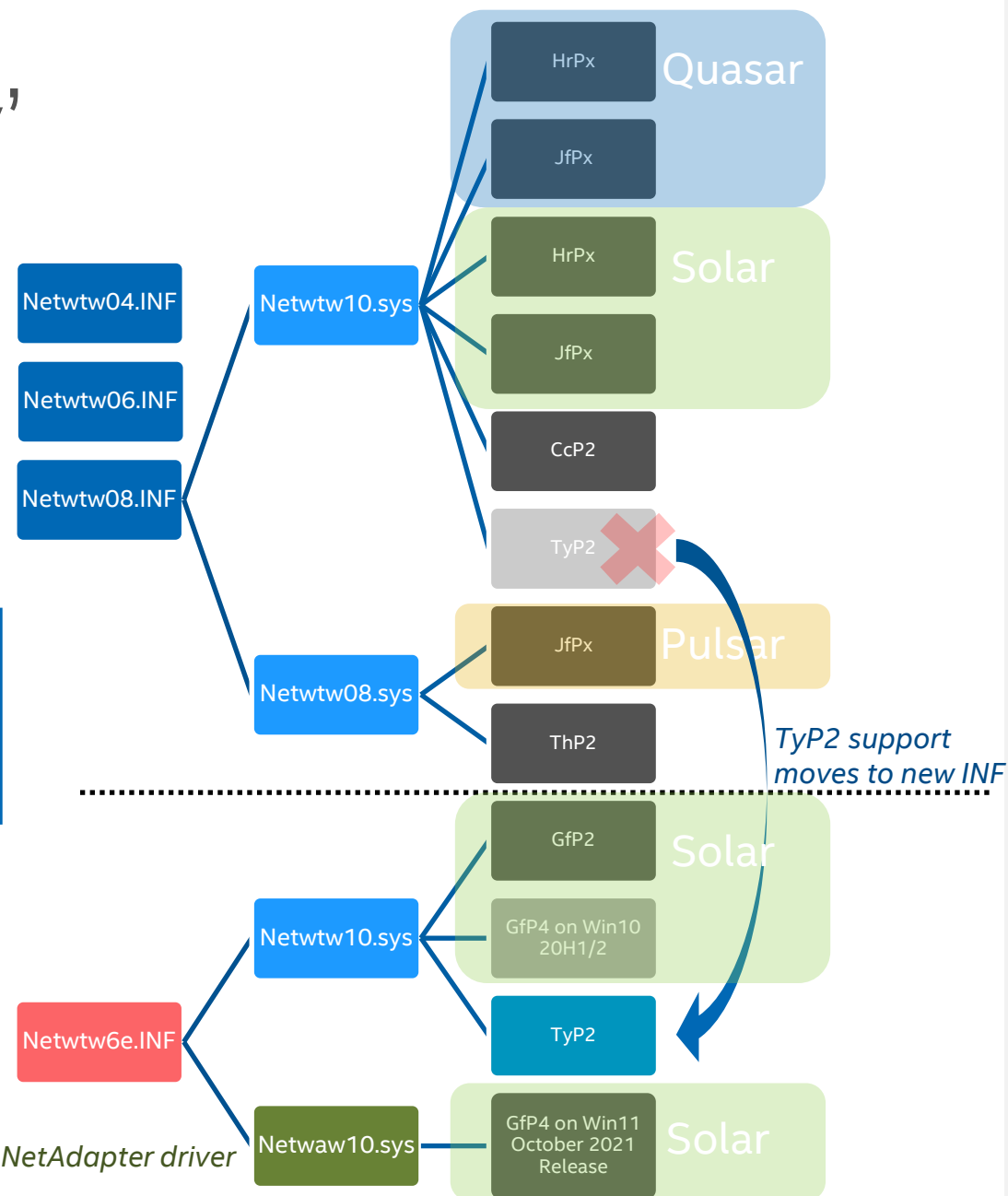
- Starting 22.90.1 Hot Fix Production Version a new layout is introduced
- The new G-layout contains a new INF (Netwtw6e.inf) that supports all Intel's Wi-Fi 6E products (TyP2, GfP2, GfP4)
 - This new INF will either install the WDI driver (Netwtw10.sys) for TyP2/GfP2 or the new NetAdapter driver (Netwaw10.sys) for GfP4 on Windows 11
 - GfP4 is not POR for Windows 10 OS

The New G-layout 'Visually'

(Addition of Netwtw6e.inf)



NEW



New INF supporting all 6E adapters

New NetAdapter driver

The New G-layout 'Physically'

UWD	Win64		
		Tools	
		Installer	
			Diagnostics
			setup.xml
			WirelessSetup.exe
			*** Wrapped content in Setup.exe ****
			Extensions
			pieextension.cat
			PieExtension.INF
			WifiDrv04Customizations.cat
			WifiDrv04Customizations.inf
			WifiDrv06Customizations.cat
			WifiDrv06Customizations.inf
			WifiDrv08Customizations.cat
			WifiDrv08Customizations.inf
			WifiDrv6eCustomizations.INF
			WifiDrv6eCustomizations.CAT
		Utilities	
			PIE
			PieExtension.INF; OEM customization File
			PieExtension.CAT;
			PieComponent.INF
			PieComponent.CAT
			MurocApi.dll
			Intel_PIE_SDK_Common.dll
			Intel_PIE_IHV.dll
			Intel_PIE_Service.exe
			IntelIHVPipeClient.dll
			Special Configs
			WifiDrv04Customizations.INF
			WifiDrv04Customizations.cat
			WifiDrv06Customizations.INF
			WifiDrv06Customizations.cat
			WifiDrv08Customizations.INF
			WifiDrv08Customizations.cat
			WifiDrv6eCustomizations.INF
			WifiDrv6eCustomizations.CAT
		Drivers	
			Netwfw04.dat
			netwtw04.cat
			Netwtw04.INF
			netwtw04.sys
			Netwfw06.dat
			netwtw06.cat
			Netwtw06.INF
			Netwfw06.sys
			netwtw08.cat
			Netwfw08.dat
			Netwtw08.INF
			netwtw08.sys
			IntelWifiIhv04.dll
			IntelWifiIhv06.dll
			IntelWifiIhv08.dll
			netwtw10.sys
			Netwfw10.dat
			Netwtw6e.INF
			Netwtw6e.CAT
			Netwaw10.sys

- Files added to the Wi-Fi layout are shown in blue

The existing Intel WifiIhv08.dll will get installed with the new Netwaw10.sys NetAdapter driver

Extension INF/ Component INF

INF	Version	Summary	HW
PieComponent.inf	22.1090.0.1	No change	GfP4/GfP2/TyP2/HrP2/CcP2/JfP/ThP2/SfP/WsP/SdP/StP
PieExtension.inf	22.1070.2.1	Added GfP4	GfP4/GfP2/TyP2/HrP2/CcP2/JfP/ThP2/SfP/WsP/SdP/StP

Software Known Issues and Limitations – 22.90.1 HF

Key related	Description	OS	Notes
TyP2 HW support	This release supports only QS and SRA samples for TyP2	Windows 10/11	
GfP2 HW support	This release supports only QS and SRA samples for GfP2	Windows 11	
GfP4 HW support	This release supports only QS and SRA samples for GfP4	Windows 11	

Product Health

Domain	22.90.1.1	Details
Connectivity		
Platform		
Data Path \ TpT		
Miracast		
SoftAP		
BT-Coex		
WiFi Device Power		
Cert (WHQL)		

Legend:

	Broken, Not usable
	Usable, major issues exist
	Usable

<Color Guidelines>

Critical bug(s) or critical usability issues

minimum 1 High P1. if >=5 High P1 – mandatory. Also If > 20 High - mandatory

Notes on the DDD Debug Layout Usage

- Included with the user distributed layouts is also a DDD debug layout. This layout incorporates debug capabilities to be used by OEM validation teams to provide logs and information about an issue to Intel engineering.
- This layout is not to be included on production systems or to be shared with end-user customers.
- To use the DDD layout, follow the instructions below:
 - 1) Clean the Windows event log by the following commands with administrator prompt.
wevtutilcl system
wevtutilcl application
wevtutilcl Microsoft-Windows-WLAN-AutoConfig/Operational
 - 2) Install DDD release.
 - 3) Perform test until issue reproduction.
 - 4) Note down the exact time when issue reproduced.
 - 5) Disable WiFidevice in the device manager.
 - 6) Copy all files below to share with Intel:
 - I. "System.evtx" under C:\Windows\System32\winevt\Logs
 - II. "Application.evtx" under C:\Windows\System32\winevt\Logs
 - III. "Microsoft-Windows-WLAN-AutoConfig%4Operational.evtx" under C:\Windows\System32\winevt\Logs
 - IV. "dddLog_XXX.bin" for ThP/JfP/CcP/HrP is under C:\Windows\Temp\DDDLogs\ (for RS3/RS4) and under C:\Windows\System32\Drivers\DriverData\Intel\Wlan\Out\DDD (for RS5 or later).
For legacy devices "dddLog_XXX.bin" is under C:\Windows\Temp\DDDLogs\ (for RS5 or later)
 - V. "MurocLog.log" under C:\Program Files\Intel\WiFi\UnifiedLogging\
 - VI. "MEMORY.DMP" under C:\Windows\System32

Abbreviations

Acronym	Codename	Intel product name
GfP4	Garfield Peak 4	Intel® Wi-Fi 6E AX411
GfP2	Garfield Peak 2	Intel® Wi-Fi 6E AX211
TyP2	Typhoon Peak 2	Intel® Wi-Fi 6E AX210
CcP2	Cyclone Peak 2	Intel® Wi-Fi 6 AX200
HrP2	Harrison Peak 2	Intel® Wi-Fi 6 AX201
JfP1- DA	Jefferson Peak 1 Diversity antenna	Intel® Wireless-AC 9462
JfP1- SA	Jefferson Peak 1 Single antenna	Intel® Wireless-AC 9461
JfP2	Jefferson Peak 2	Intel® Wireless-AC 9560
ThP2	Thunder Peak 2	Intel® Wireless-AC 9260
WsP	Windstorm peak	Intel(R) Dual Band Wireless-AC 8265
SdP	Sandy Peak	Intel(R) Dual Band Wireless-AC 3168
StP2	Stone Peak 2	Intel(R) Dual Band Wireless-AC 7265
StP1	Stone Peak 1	Intel(R) Dual Band Wireless-AC 3165
SfP	Snowfield Peak	Intel(R) Dual Band Wireless-AC 8260
WkP2	Wilkins Peak 2	Intel(R) Dual Band Wireless-AC 7260
WkP1	Wilkins Peak 1	Intel(R) Dual Band Wireless-AC 3160

Glossary

- COEX = Coexistence. This refers to when Bluetooth and Wifi are both operating simultaneously in the 2.4Ghz band. Collisions between the radios can occur and degrade performance.
- PC = Production Candidate – Part of the initial software series on a new adapter (e.g. alpha, beta, PC, PV)
- PV = Production Version – Software that is approved for shipping
- SP = Service Pack – an intermediate release between major release. It usually only has defect corrections.
- MR = Major Release – Includes new features and defect corrections.
- WA = Workaround
- RN = Release Note
- HF = Hot Fix – a software release with minimal change. Created to resolve a urgent customer need.
- YB – Yellow exclamation mark in device manager. Indicates that a driver is not functioning properly
- POA – Platform, OS, Adapter e.g. (Kaby lake, RS1, WsP) – usually refers to OS/Adapter combo.
- ATS – ACL Time Share

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