Intel® Dynamic Tuning Technology (Intel® DTT), Client Version 8.7

8.7.10402.18389 Win10 20H2,20H1,19H2,19H1 TGL-H PV Release

Release Notes

January 2021

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Revision History

Package Definition	Intel® Dynamic Tuning Technology Software Package Revision	Release Date
CVF Beta	8.7.10402.17340	December, 2020
CVF PV	8.7.10402.18389	January, 2021

Note: Intel® DTT 8.x version represents the DTT Client 8.x package version.

Intended Audience

The target audiences for the release notes are OEM/ODM platform thermal and hardware engineers, BIOS and system software engineers, component ingredient (WiFi PSM, WWAN, NVMe Storage, Camera) procurement and design engineers.

Where to Find the Release

This release can be found on the Validation Internet Portal (VIP):
"https://platformsw.intel.com" .

Customer Support

For OEM/ODM technical support, contact your assigned Intel enabling engineers.

1 Introduction

1.1 Supported Operating Systems

This package supports following Operating Systems.

- Microsoft Windows* 10 x64 Edition 20H2,20H1,19H2,19H1

Note: This is the information for validated platforms at ingredient level. For a complete list of supported hardware and operating systems, please refer to platform BKC or contact your Intel representative.

1.2 Supported Hardware

- Tiger Lake H

Note: This version of Intel® DTT only supports Intel Mobile Platforms. This is the information for validated platforms. For a complete list of supported hardware and operating systems, please contact your Intel representative.

1.3 Supported BIOS

Please refer to the BKC to get the latest version.

1.4 Supported KSC

Please refer to the BKC to get the latest version.

1.5 Supported Intel® Graphics Driver

Please refer to the BKC to get the latest version.

1.6 Supported Collaterals

Please refer to the below mentioned supporting documents for the latest update on DTT.

- Intel® Dynamic Tuning Technology 8.x BIOS Specification#613332
- 2020 Intel® Dynamic Tuning Technology Configuration Guide#618762
- Intel® Dynamic Tuning Technology Feature Enabling Guide#572349
- Intel® Dynamic Tuning Decommissioning IA-P/T State GFX P State Control Technical Advisory WW13, 2019#610760
- Intel® Dynamic Tuning Radio Frequency Interference Mitigation (RFIM) Policy Enabling and Validation White Paper#613280

2 Installation and Configuration Guide

2.1 Intel® DTT 8.x Software Stack Installation Guide

2.1.1 BIOS Setup Guide

Please make sure DTT is enabled in your BIOS setup menu.

1) Reboot the system and enter BIOS setup screen.
2) Go to "Intel Advanced Menu".
3) Enter "Power & Performance", then "CPU – Power Management Control" page.
    a. Make sure "Intel(R) SpeedStep(tm)" is enabled.
    b. Make sure "Turbo Mode" is enabled.

4) Enter "Thermal Configuration ", then "Intel(R) Dynamic Tuning Technology Configuration" page.
    a. Ensure "Intel® Dynamic Tuning Technology" show as "Enabled".
    b. Most everything will be pre-configured, so change settings as desired.

5) Save and Exit.

2.1.2 Intel® DTT Software Stack Installation

1) Install the Chipset and Graphic driver.

2) Unzip the DTT install package and find the folder "DTT".

3) Run the setup.exe from within the DTT Software Installation package. This will install the DTT 8.x software that is needed on production systems. Any utilities including testing / debug tools for OEMs use will not be installed in this operation.

2.1.3 Driver Behavioral Considerations

- Windows service Wudfpf.sys is not loaded in the beginning sometimes might cause DTT device INT3400 unable to be loaded at the first time. Windows will try to load the driver again once Wudfpf.sys is loaded. There will be a warning event (ID: 219) found in event viewer, WUDFRd failed to load DTT device. If the driver is installed successfully, the message could be ignored.

2.2 Intel® DTT 8.x Configuration Tool Configuration Guide

For OEMs testing, validation, and system performance optimization purposes, Intel is providing a tool (Configuration Tool, or UI tool for DTT 8.x) that can show and modify DTT 8.x policy / participant settings.

2.2.1 Configuring Startup Scripts in DTT 8.x

DTT 8.x is comprised of several application components that are designed to work together to provide a flexible application framework for enabling certain application features. These components include:

1. Lower Framework (LF) – Device Drivers that run in the Kernel.
2. Upper Framework (UF) – User Mode application for abstracting OS and platform from Loadable Apps such as DTT and provides features such as a Web Socket server.
3. DTT Loadable App – Loadable Libraries that implement the DTT application and Policies.

In order for DTT to function, the DTT Loadable App must be started by the DTT Upper Framework. This is done automatically during system startup for a standard installation. By default, the following features are disabled when DTT is installed on a system:

1. UI and Web Socket server used to monitor and configure DTT in a web browser.

OEMs can enable these features by following the instructions in this document.

2.2.2 Configuration Tool Quick Start Guide

To enable the UI and Web Socket Server, the quickest way to accomplish this is to run the "setup.exe" in the "Tool" folder to automatically install the Configuration Tool and reboot the system. Load the UI using one of the following methods with a HTML5 supported web browser. (Chrome or Internet Explorer 10 or higher)

a. Open http://localhost:8888 in your web browser
b. Double click the shortcut "Intel(R) Dynamic Platform and Thermal Framework" from the desktop.

2.2.3 Troubleshooting

If you are unable to load the UI using http://localhost:8888 after installing Configuration Tool or you are unable to view any data in the "Monitor Mode" of the UI after manually loading the index.html file, you may have to adjust some security settings in order to allow your browser to connect to "localhost". The following are general troubleshooting steps:

1. **Verify Firewall and Security Settings:** Ensure that there is not a firewall (or another application) blocking access to port 8888 (or your specified port). Also, for Microsoft Internet Explorer, ensure that your security zone settings are not preventing an upgrade from the http to websocket protocol. To do this, go into Tools > Internet Options > Security > Local Internet > Sites > Advanced and add http://localhost to the list to force localhost into the Local security zone.
2. **Uninstall Intel® Dynamic Tuning Technology driver and tool.**
3. **Delete the folder "C:\Windows\system32\drivers\DriverData\Intel\DPTF".**
4. **Reinstall driver & tool and confirm the version is aligned.**
5. **Press "Ctrl+F5" to reload your browser.**

Note: If this does not resolve the problem, check with your BIOS vender to see if they have the same symptom or contact your Intel representative.

3 Tools Support

Table 1. Tool Support

Feature	Description
Configuration Tool	DTT Configuration Tool is provided to monitor and test DTT 8.x functionality for OEMs development / system validation use. After installing the DTT 8.x software stack, the user can run the tool and observe the policies, participants and temperature changes. Capture all the settings as one file.

4 Feature Set – New to this release

- Phidget support in DTT UI package
- Passive 2 resets power limit values to MAX
- Primitive Support for Processor & DG1 tau
- Change kernel so UI polling doesn't cause threshold crossing events
- ICSS process watcher added to monitor whether DTT is running and signal the user if it is not
- CST dimming (Adaptive User Presence Policy) switch to using soft brightness (OS slider bar) instead of hard brightness
- Clean ICSS files after uninstalling

5 Issues – Fixed in this Release

Table 2. Fixed Issues

Reference No:	Description	Root cause	Solution
22010949381	Fix to PL1 tau reset on PPCC change	When Passive 2 has registered for the Power Control Capabilities Changed event and a change is made in PPCC and the targets are not monitored, it resets the PL1 Time Window in addition to other PLx values	Fix to only reset PL1 Power Limit to max, when Passive 2 has registered for the Power Control Capabilities Changed event and a change is made in PPCC and the targets are not monitored
16011288869	RCR for removing temp crossed event after get_temperature call	UI polling for temperature causes a temperature threshold crossed event	Fix to not send temperature threshold crossed event when UI polls for temperature
1508236422	When user renames their windows login account, IUAS is not able to detect the client application installed and hence disables all features.	When MonitorApp is set to true, upon starting IUAS tries to detect the client application installed using the username and app installed location. When user renames their username using lusrmgr.msc, it doesn't change the user profile path or the user local folder which is where local apps are installed. IUAS tries to find the app installation folder using the new/changed username, and hence fails to find the installed app.	Code is fixed to find the local profile path using registry keys instead of using username.
22011404962	Unable to query settings values while in External Monitor event	WCF client callback did not handle multiple threads	Allow multiple threads so that client can make API calls while inside events

6 Issues – Known in this Release

Table 3. Known Issues

N/A	When creating a dynamic participant, deselecting the polling checkbox does not disable polling.	Deselecting polling checkbox was not disabling polling.	The dynamic participant must be deleted and recreated without polling. This will be fixed in 9.0.10000
N/A	When the DTT UI package is installed, DTT's upe_phidget.dll is installed at C:\Windows\System32\Intel\DPTF. DTT tries to load this dll on every reboot. On systems with NO phidget software installed, the load fails and errors corresponding to the load failing pop up in event viewer. On systems with phidget software installed, no errors are observed.	This only occurs when the DTT UI is installed, it will not affect end user systems since DTT UI is NOT installed on end user systems.	Delete upe_phidget.dll from C:\Windows\System32\Intel\DPTF.