Intel® Dynamic Tuning Technology (Intel® DTT), Client Version 9.0

9.0.11202.31222 Win 11 22H2 20H2,20H1
RPL

Release Notes

March 2023

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Revision History

Package Definition	Intel® Dynamic Tuning Technology Software Package Revision	Release Date
RPL	9.0.11202.31222	March,2023

Note: Intel® DTT 9.x version represents the DTT Client 9.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* 11 x64 Edition 22H2,20H2, 20H1

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

- RPL

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 9.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

Ingredient	Description
IPF Windows SDK	This is IPF EF SDK only. For development using IPF EF.
IPF Windows Setup	This is the IPF package to use for RPL and beyond. It contains both IPF Core and EF components. Need for DTT and CST.
IPF Core SDK	This is IPF Core SDK package only – no EF SDK. This is for development purpose contains IPF core SDK primitive commands.

2.1.3 Intel® DTT Software Stack Installation

1. Install the Chipset and Graphic driver.
2. Install IPF infs. Once Installation is complete it will show under "System Devices" of Device Manager.
3. Install DTT infs. It will show under software components
4. Install tool/IpfDttUi_9.x_Install.exe
5. Reboot your system.
6. Make sure no device yellow bang in device manager.
7. Open http://localhost:8888 in HTML5 web browser and press "Ctrl+F5" to reload.

Note: -

- For DTT use DTT UI and for development of tools using IPF use IPF UI.
- UI is only for tunning purpose, no need to install on end-user system.

2.1.4 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 9.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 9.x) that can show and modify DTT 9.x policy / participant settings.

2.2.1 Configuring Startup Scripts in DTT 9.x

DTT 9.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. A desktop shortcut is no longer created for DTT UI and instead the UI needs to be accessed by opening a browser and navigating to localhost:8888.

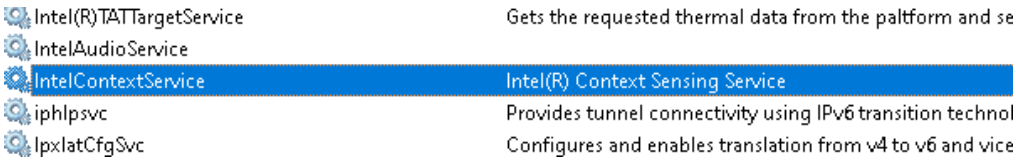
2.2.3 Troubleshooting

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.**

If Unistall is not happening in presence of ICSS follow the given steps:

1. **Uninstall the existing DTT/DTT UI** (and ipf If present)
2. **Reboot**
3. **Go into Services and stop the Intel Context Service**:



4.
5. **Clean out** all remaining drivers:
   a. See the powershell commands at the end of the email

6. **Delete** the contents of these directories
    a. C:\Windows\System32\Intel*
    b. C:\Windows\ServiceProfiles\LocalService\AppData\Local\Intel*
    c. C:\Windows\System32\drivers\DriverData\Intel*
7. **Verify** no dtt drivers are left in devicemanager
8. **Reboot**
9. **Verify that the ICSS service** is no longer in services
10. **Install** IPF
11. **Install** DTT
12. **Install**
13. **Reboot**

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 9.x functionality for OEMs development / system validation use. After installing the DTT 9.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

Table 2. Fixed Issues

Reference No:	Description	Root cause	Solution
22016234790	Window driver foundation have high CPU usage in task manager when DTT ITM policy is enable	ITM policy doesn't be updated to calculate appropriate threshold and causing numerous ACPI event	ITM policy updated to calculate and set the appropriate thresholds on receiving the temperature threshold crossed event
22016239741	Window driver foundation have high CPU usage in task manager	ITM policy doesn't be updated to calculate appropriate threshold and causing numerous ACPI event	ITM policy updated to calculate and set the appropriate thresholds on receiving the temperature threshold crossed event

6 Issues – Known in this Release

Table 3. Known Issues

Reference No:	Description	Impact	Workaround
N/A			