

Linux Plumbers Conference

Vienna, Austria | September 18-20, 2024



Userspace thermal thresholds

Power Management and Thermal Control MC

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Why ?

- Custom kernel code abusing the thermal framework
 - Fake trip points described in the device tree
 - Writable trip points to have the userspace to deal with
- Userspace needs to be woken up on temperature thresholds
- Userspace can't poll, it needs the interrupt driver temperature monitoring



On going work

- User thresholds v3 version sent
 - <https://lwn.net/Articles/986009/>
- Events and configuration are netlink based
- Thresholds are a temperature and direction
- A direction tells if the event is sent when crossing the way up or/and down
- Event gives the current temperature and previous temperature per thermal zone, it is enough information for the userspace
- Seems like we reached a consensus



Temperature	Direction
37400	U&D
38000	D
39200	U
41100	D
42300	U

t0 = 36900 m°C



t1 = 41700 m°C



1 notification:
tz_id, t0, t1



Temperature	Direction
37400	U&D
38000	D
39200	U
41100	D
42300	U

t0 = 41700 m°C



t1 = 43700 m°C

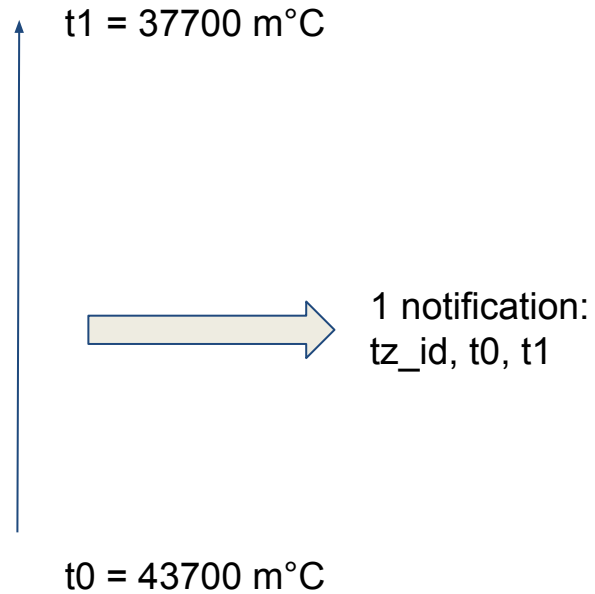


1 notification:
tz_id, t0, t1





Temperature	Direction
37400	U&D
38000	D
39200	U
41100	D
42300	U



Context of usage

- Monitored temperature is not supposed to change rapidly
- Up to userspace to set the intervals of temperature to prevent bouncing events
- Hysteresis can be setup with two thresholds and different directions



What is missing ?

- Per process notification ?
- Permissions ?



LPC 2023 - Overview

Conference Details

The Linux Plumbers Conference is the premier event for developers working at all levels of the plumbing layer and beyond.

Taking place on Wednesday 18th, Thursday 19th and Friday 20th of September, this year we will be both in person and remote (hybrid). However to minimize technical issues, we'd appreciate most of the content presenters being in-person.

The in-person venue is the Austria Center, Vienna, Austria.

Bruno-Kreisky-Platz 1, 1220 Wien, Austria

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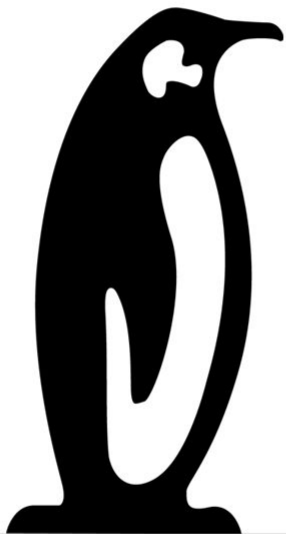
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