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Ethernet Cable Diagnostic using Netlink Ethtool API

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Many Ethernet PHYs contain hardware to perform diagnostics of the Ethernet cable. Breaks in the cable and shorts within a twisted pair or to other pairs can be detected, and an estimate to the length along the cable to the fault can be made. The talk will explain, at a high level, how such diagnostics work, sending pulses down the cables and looking for reflections. There is no standardization on such diagnostics, and what information the PHY reports varies between vendors. The ongoing work to allow ethtool to make use of a netlink socket makes the ethtool API much more flexible. This flexibility has been used to provide a generic API to request a PHY performs diagnostics tests and to report the results. Some aspects of this API will be discussed, using the Marvell PHYs as examples. The talk aims to spread knowledge on this work and encourage driver writers to implement diagnostics for other PHYs.

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