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Netdev CI: what is being validated, and what Network subsystems can do

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The Netdev CI has been checking patches sent to the Netdev mailing list for a couple of years now. Thanks to that, Netdev maintainers are able to easily check which patches are causing issues despite the high volume of patches that are shared every day. Until this year, the CI was limited to kernel builds, and various static checks, but the good thing is that all results were already available publicly. Kernel developers can then access the logs to understand what went wrong, without too much assistance from the maintainers.

In 2024, the Netdev CI has seen the introduction of functional tests by running many Network kernel selftests and unit tests. Even if some of these tests were certainly executed regularly by some, they are now automatically tested, and their results are available to all. This really helps Netdev maintainers and contributors to catch regressions early, and encourage everybody to have their new features and fixes covered by new test cases.

This talk will present how the Netdev CI is currently working, and the small details that are important to know. But it will also explain how it can be extended, e.g. to run some tests on real hardware to validate some drivers, to execute other specific tests that are not part of the kernel repo, tracking performance regressions in a dedicated environment, etc.

Another topic that will be mentioned is how Network subsystems, can have a similar service on their side. The MPTCP CI will be taken as an example, using GitHub Actions with KVM support to run various tests on development patches without having to maintain custom servers similar to what is in place with the Netdev CI.

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