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Monitoring and Stabilizing the In-Kernel ABI

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The Kernel's API and ABI exposed to Kernel modules is not something that is usually maintained in upstream. Deliberately. In fact, the ability to break APIs and ABIs can greatly benefit the development. Good reasons for that have been stated multiple times. See e.g. [Documentation/process/stable-api-nonsense.rst](#).

The reality for distributions might look different though. Especially - but not exclusively - enterprise distributions aim to guarantee ABI stability for the lifetime of their released kernels while constantly consuming upstream patches to improve stability and security for said kernels. Their customers rely on both: upstream fixes and the ability to use the released kernels with out-of-tree modules that are compiled and linked against the stable ABI.

In this talk I will give a brief overview about how this very same requirement applies to the Kernels that are part of the Android distribution. The methods presented here are reasonable measures to reduce the complexity of the problem by addressing issues introduced by ABI influencing factors like build toolchain, configurations, etc.

While we focus on Android Kernels, the tools and mechanisms are generally useful for Kernel distributors that aim for a similar level of stability. I will talk about the tools we use (like e.g. [libabigail](#)), how we automate compliance checking and eventually enforce ABI stability.

I agree to abide by the anti-harassment policy

Yes

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