

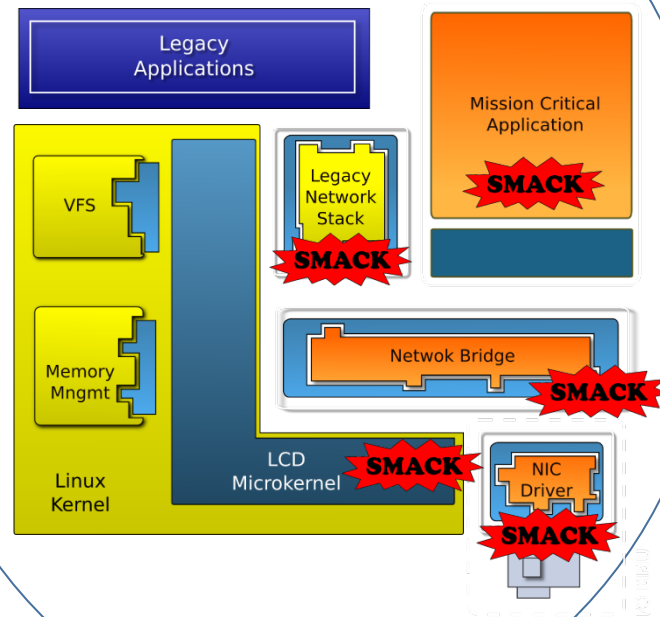
DEKER: DECOMPOSING COMMODITY OS KERNELS FOR VERIFICATION

Challenge:

- In a modern system, an attacker is one kernel vulnerability away from gaining complete control of the entire machine
- Make kernels secure

Solution:

- Decompose commodity kernel into strongly isolated modules
- Light-weight verification of modules in isolation



Scientific Impact:

- Techniques and principles enabling kernel decomposition in practice
- Identifying *patterns of decomposition* for legacy components
- Custom kernel verifier

Broader Impact:

- Practical foundation for building secure systems
- Eliminate large class of security threats
- Open source and implemented as part of Linux kernel

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