

# Rump Kernels, Just Components

## FOSDEM 2014

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rump kernel CANs ...

... driver container

... unmodified NetBSD kernel drivers

... runs anywhere

... interconnection agnostic

... component-oriented

... application interfaces

... any other interfaces

rump kernel CANNOTs ...

... execute programs

... create/modify vm spaces

... deal with privileged instructions

... schedule/preempt threads

original focus: *kernel development*

==>

*run-anywhere driver+app stacks,  
shoehorn into them as you please*

so !policy

rump kernels ...

WOW

... run when called

... are indifferent to vm

... do not use privileged instructions

... use host threads

very integration

tick tock

1: anykernel  
2: hypercalls

platform hypercalls:

*any machine architecture (ISA)*

posix (and javascript)

linux kernel

xen

# i/o hypercalls: networking

dpdk

netmap

snabb switch

tap

tap'ish

xen



# i/o hypercalls: block devices

read/write

aio

xen

be lazy

do **not** be lazy!

too little is less than more

# coding is easy

(disclaimer1: making it work is hard)  
(disclaimer2: keeping it working is also hard)

Lester says:  
*test or die*

contributions, always wanted

use, give feedback

contribute to NetBSD

fund/develop: e.g. tcp/ip or zfs

<http://rumpkernel.org/>

<https://github.com/rumpkernel/>

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