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# A Performance Study of KVM

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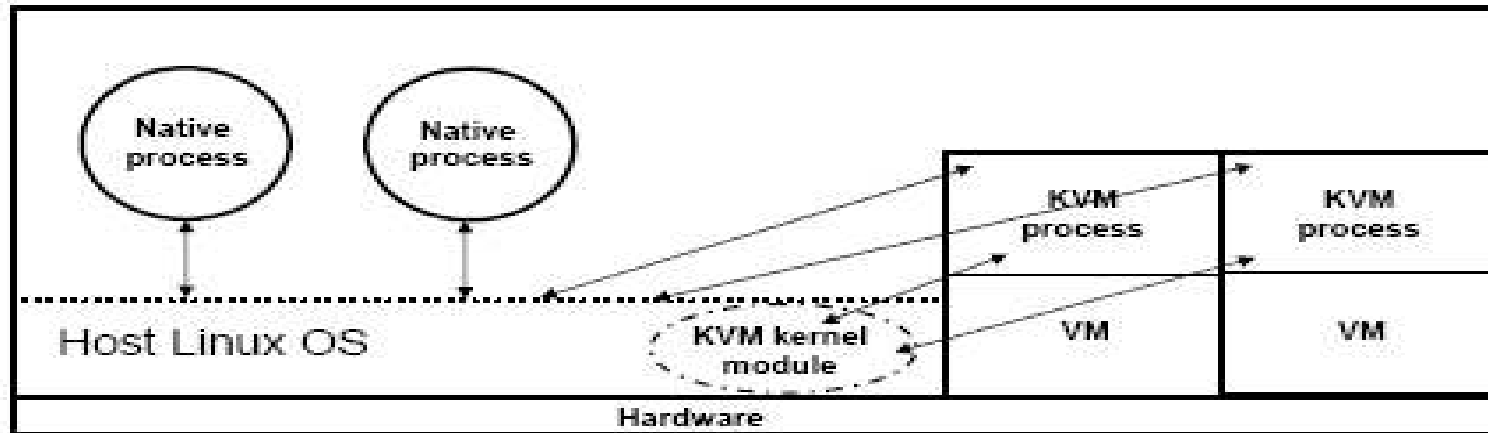
Simon Grinberg and *Shlomo Weiss*  
Tel Aviv University

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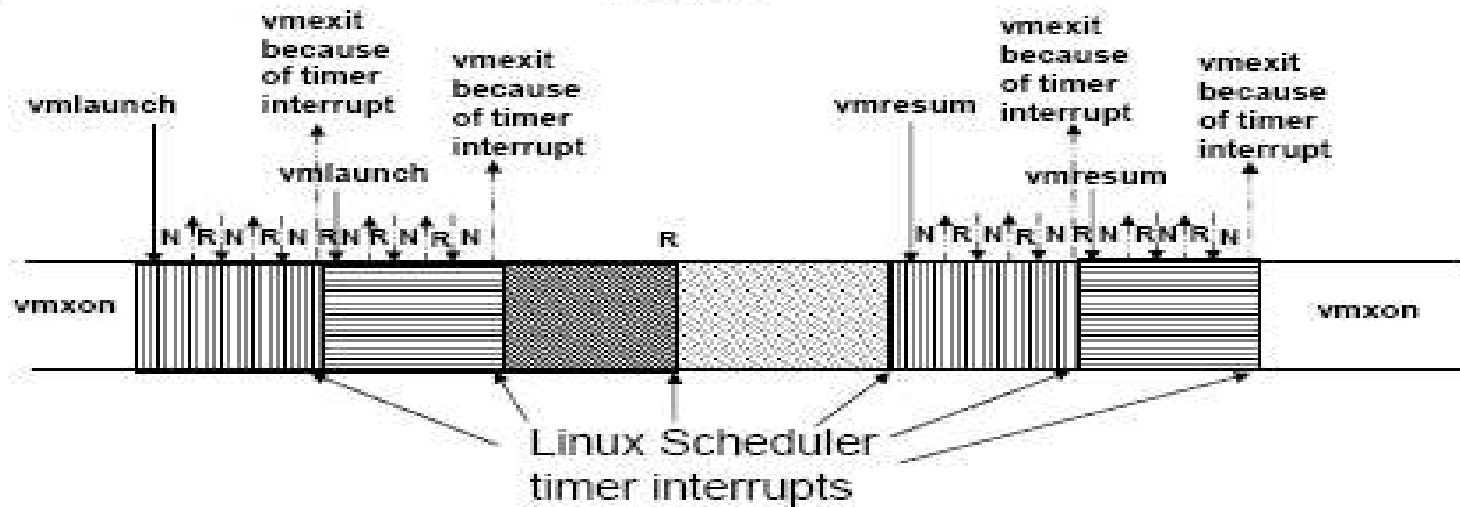
## KVM

- KVM – Kernel Based VM
  - Linux based, dual-mode VM
  - Device drivers provided by Linux
  - Consists of two basic modules, one running in user mode, one running in system mode
- Uses Intel VT-x technology
  - Provides Root and Non-Root modes of operation
  - Each mode supports the four IA-32 rings (0 to 3)
  - Challenge: every I/O access requires VM-exit and VM-resume

# VM exit/resume



(a)



(b)

VM process    
  Native process    
 ↑ vmexit     ↓ vmresume    
 R = Root mode     N = Non root  
 VM process    
  Native process

# Root and Non root operation

