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A Survey of Virtualization Techniques for Embedded Devices

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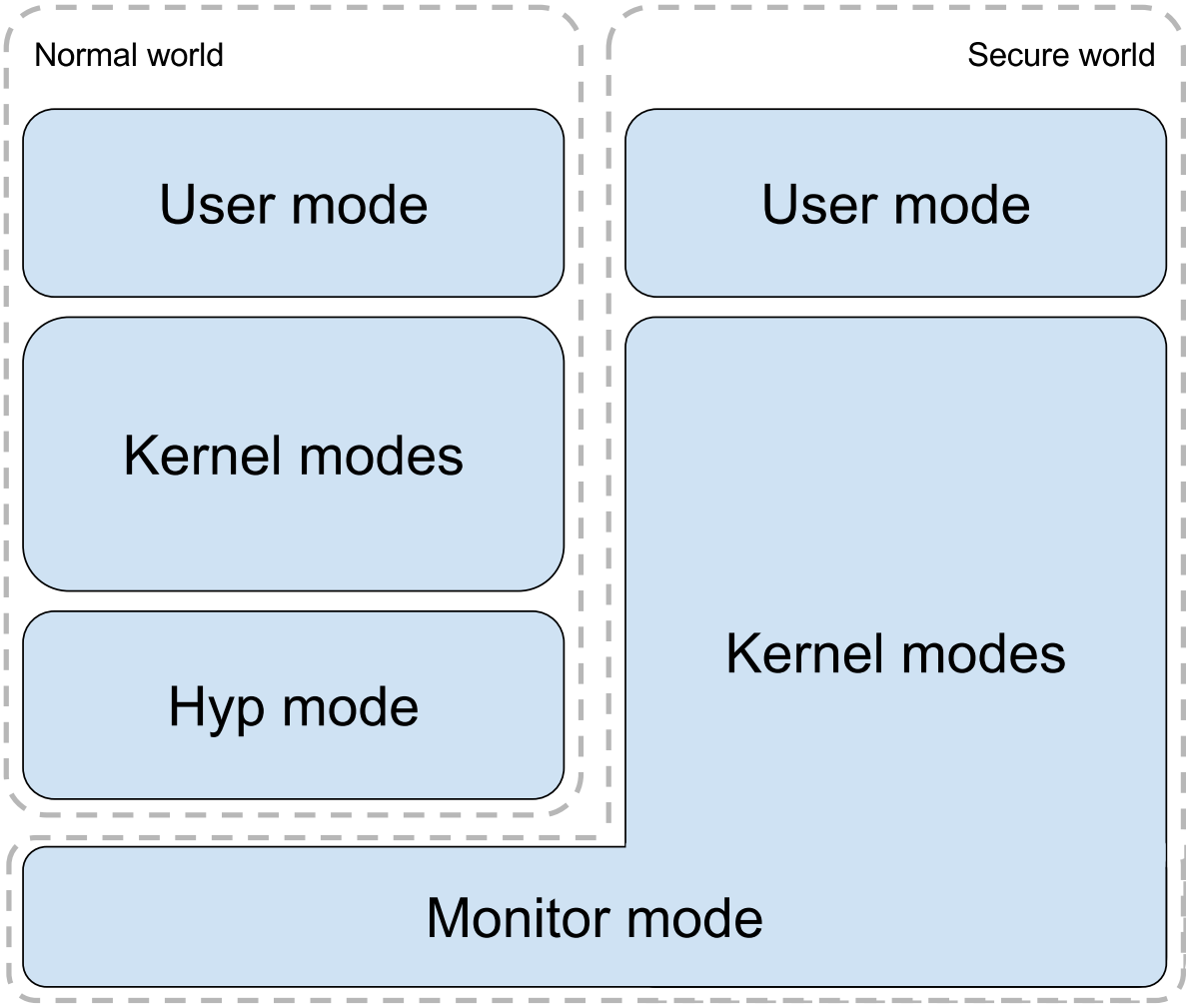
Virtualization

- Simulating an execution environment
- Predominantly used on servers
- Advances in hardware made it feasible on embedded devices
- Necessary to provide separation and abstraction

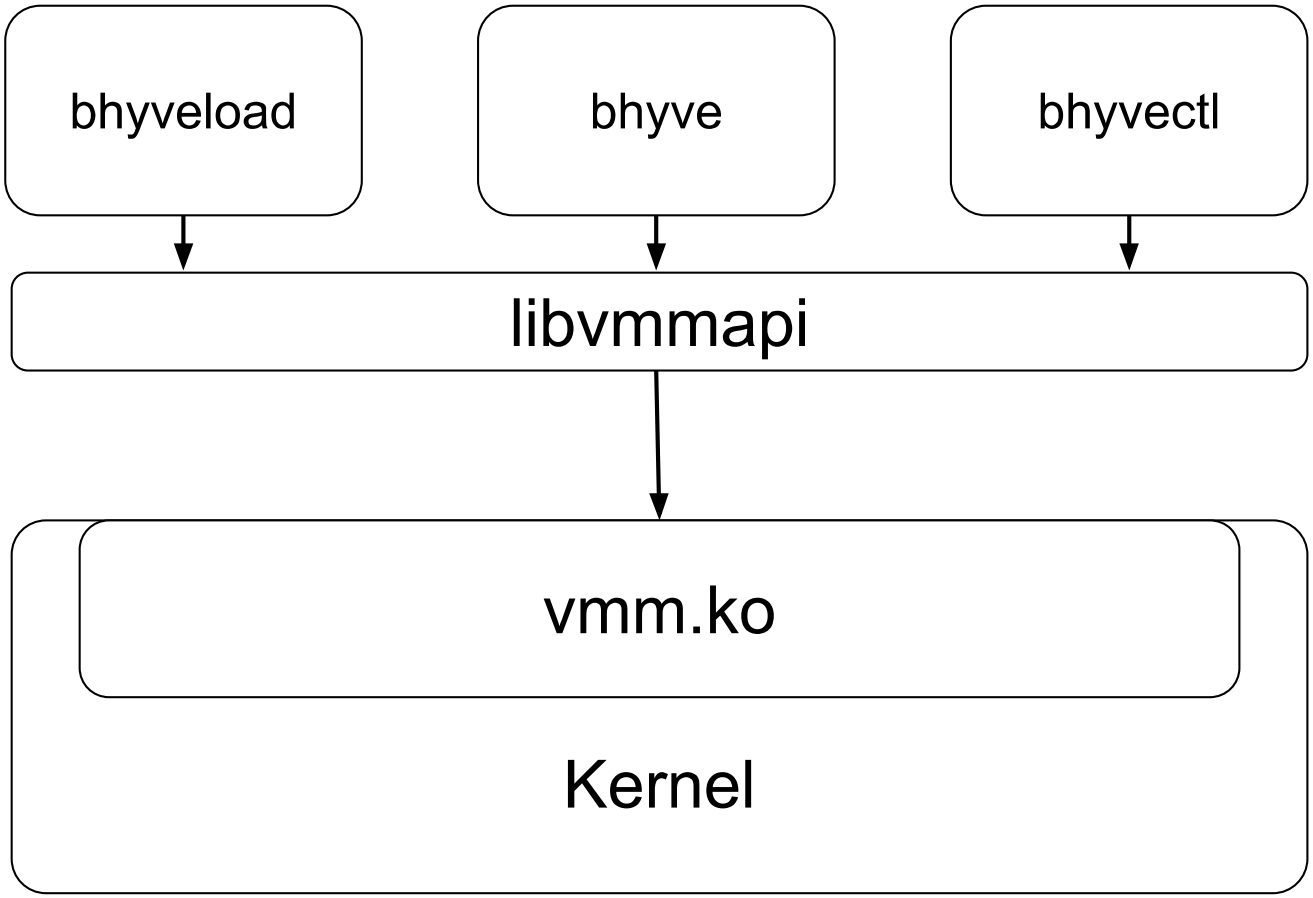
Virtualization on ARM



bhyve

- FreeBSD hypervisor
- Supports BSD, Linux and Windows guests
- Similar to Linux KVM

bhyve



FreeBSD on Arndale

- Compile FreeBSD
- Obtain bootloader components
- Assemble bootable image

KVM on Arndale

- Compile modified host kernel
- Build system
- Build qemu
- Compile guest kernel

Conclusions

- Virtualization is necessary in embedded systems to enable server-like functionality
- Chosen board is suitable environment for further research