Embedded Virtualization

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Embedded Virtualization

For development

- Run on host as testing tool
- Native development platform

On target

- Fast cheap capable hardware
- Multiple machine instances

Embedded Virtualization

Advantages/Disadvantages:

- Self contained restartable boxes
- Combine multiple machines into one
- Feature/functionality isolation
- Hardware abstraction (“real” hardware)
- Resource requirements (RAM/flash/etc)

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Software Support:

- QEMU
- KVM
- Libvirt

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Building for Target:

- Cross compiling
- Use of other libc (uClibc, musl, etc)
- Other missing libs

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Performance:

- Slower?
- Custom hardware
- Driver acess
- Acceleration technologies (openvswitch, Intel VT, AMD-V, PCI-SRIOV, DPDK, etc)

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Managing Virtual Machines:

- Libvirt
- Web management
- VNC