Containers in Embedded
an open discussion
About us
About me

• Embedded Software Engineer
  – BSP Team for Toradex Computer on Modules
• Working on U-Boot/Kernel
• OpenEmbedded BSP
• Project lead in new BSP offerings with Container support
• Otherwise not Container Native :-)

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About you
Container in Embedded advantages

• High level application distribution
• Lightweight compartmentalization
  – Resource allocation
  – Security benefits
• Interoperable applications
• Independently updateable
Container Runtime

- OCI Runtime Specification
  - Docker (runc)
  - rkt
  - ....
- systemd-nspawn
- LXC/LXD

- System vs. Application Container
Container Images

- Using Linux Distributions
  - Docker Hub
  - Import tarballs directly

- Cross compile using OpenEmbedded
  - No native container image support (OCI Image Format)
  - Import tarballs directly
Developing using Containers

• Using Linux Distributions
  – Native on target
  – Native using Qemu User-mode emulation (e.g. on x86)

• Cross Compile using OpenEmbedded
  – SDK

• Container aware build systems/IDE