Session Overview
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- Challenges when creating a custom Linux System
- Yocto Project for Embedded Devices
- Yocto BSPs for Seeed SBCs
- Seeed SBCs Overview
- Building a Custom Linux Image for reTerminal
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- reTerminal LVGL Demo Showcase
- Mender Client on ODYSSEY – X6 Showcase
Challenges when creating a custom Linux System
Challenges when creating a custom Linux System

- Process of creating a Linux System is complicated
- Not easy to customize different features for the Linux System
- Mostly don’t have product support
- Must go through same build process again for a different hardware platforms
Yocto Project for Embedded Devices
Yocto Project for Embedded Devices

- Provides free templates, tools, methods and working code to create a custom Linux System

- Uses Layer Model

- Yocto BSPs provided by board manufacturers

- Easy workflow with fast build times after initial build

- Don’t have to go through same build process for multiple hardware platforms
Yocto BSPs for Seeed SBCs
Yocto BSPs for Seeed SBCs

- reTerminal -
  https://github.com/Seeed-Studio/meta-seeed-reterminal

- ODYSSEY – X86J4125 -
  https://github.com/Seeed-Studio/meta-odyssey-x86

- ODYSSEY – STM32MP157c -
  https://github.com/Seeed-Studio/meta-st-odyssey

- Dual Gigabit Ethernet Carrier Board for Raspberry Pi Compute Module 4 – In Progress
Seeed SBCs Overview
Seeed SBCs Overview

reTerminal

- Powered by Raspberry Pi Computer Module 4 with 4GB RAM & 32GB eMMC
- 5-Inch IPS capacitive multi-touch screen at 1280 x 720 and 293 PPI
- Wireless connectivity with dual-band 2.4GHz/5GHz Wi-Fi and Bluetooth 5.0 BLE
- Cryptographic co-processor with secure hardware-based key storage
- Gigabit Ethernet Port and Dual USB 2.0 Type-A ports
Seeed SBCs Overview

- Dual Gigabit Ethernet Carrier Board for RPi CM4
  - Powered by Raspberry Pi Computer Module 4 with 4GB RAM & 32GB eMMC
  - Dual Gigabit Ethernet connectors for soft router applications
  - Camera/ display connectivity using MIPI CSI, MIPI DSI and micro-HI
  - Onboard dual USB 3.0 with an additional USB 3.0 9-pin header for more external ports
  - More Expandability via FPC Connector (I2C, SPI)
Seeed SBCs Overview

● ODYSSEY - X86J4125

- Intel® Celeron® J4125, Quad-Core 2.0-2.7GHz
- Intel® UHD Graphics 600
- Dual-Band Frequency 2.4GHz/5GHz WiFi/ Bluetooth 5.0
- Dual Gigabit Ethernet
- Integrated Arduino Coprocessor ATSAMD21 ARM® Cortex®-M0+
- 2 x M.2 PCIe (B Key and M Key)
- Support Windows 10 & Linux OS
Seeed SBCs Overview

**ODYSSEY – STM32MP157C**

- Dual-core Arm-Cortex-A7 core processor with Cortex-M4
- SoM (system on module) with MPU, PMIC, RAM, eMMC.
- Raspberry Pi 40-Pin Compatible Carrier Board
- Gigabit Ethernet, WiFi 802.11 b/g/n 2.4GHz and Bluetooth 4.1 with BLE
- Camera/ display connectivity using DVP, MIPI DSI
- Grove connectors for easy prototyping
- Open-source hardware/SDK/API/BSP/OS
Building a Custom Linux Image for reTerminal