

# Using Linux, Zephyr, & Greybus for IoT

*Thursday 27 August 2020 10:15 (40 minutes)*

We provide a gentle introduction to Greybus, its integration into the Zephyr RTOS, and how Linux uses the Greybus application layer protocol to control peripherals attached to wireless micros. There are a lot of technologies at play, so it's important to give some attention to each. Details of the software architecture will be provided, as well as a guide to help developers wire up and speak Greybus with their own sensors and boards.

The second half of the talk will involve some demonstrations on readily available dev kits such as the nRF52840 from Nordic Semi and the CC13552R SensorTag from Texas Instruments. The configuration and build process will be shown and hopefully we will highlight some of Zephyr's many features along the way. Demos will use the IEEE 802.15.4 and BLE physical layers (both of which use 6LowPAN and IPv6 in layers 2 and 3). We will use Greybus to toggle some GPIO and to read data from I2C sensors.

Lastly, we will list the open problems on the roadmap to completion. Work needs to be done within the Linux kernel, within the Zephyr ecosystem, within the Zephyr kernel, as well as in the Linux userspace. Some of the open problems include

- Authentication and Encryption in Greybus
- Automatic Joining and Rejoining of devices
- Additional Device Tree Bindings Greybus in Zephyr

## **I agree to abide by the anti-harassment policy**

I agree

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