Developing Matter 1.0 products with nRF Connect SDK

Nordic Tech Webinar

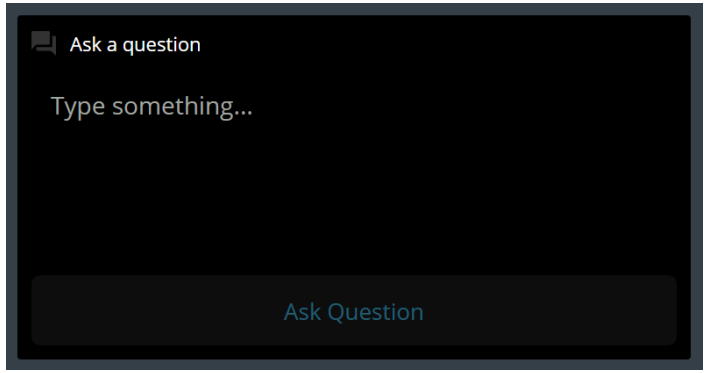
Kamil Kasperczyk / Firmware Engineer

Marcin Kajor / Firmware Engineer

November 2022

Practicalities

- Duration: about 60 minutes
- Questions are encouraged!
  - Please type questions in the top of the right sidebar
  - All questions are anonymous
  - Try to keep them relevant to the topic
  - We will answer towards the end
- The chat is not anonymous, and do not use for questions
- Go to DevZone if you have more questions
- A recording of the webinar will be available together with the presentation at webinars.nordicsemi.com



{ DevZone

Today's Host

Finn Boetius

Product Marketing Engineer

Today's Speakers

Kamil Kasperczyk

Firmware Engineer

R&D

Marcin Kajor

Firmware Engineer

R&D

Previous Nordic Matter webinars

- Introduction to Matter – Sep 2021

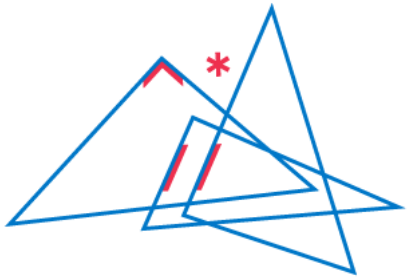
  Krzysztof Loska

  https://youtu.be/v_285vCHifw

- Developing Matter Products with nRF Connec SDK – Nov 2021

  Łukasz Duda & Damian Królik

  https://youtu.be/kdMJQFDRoss



NORDICTECH WEBINARS

Missed this webinar?
Sign up: **nordicsemi.com/webinars**

Agenda

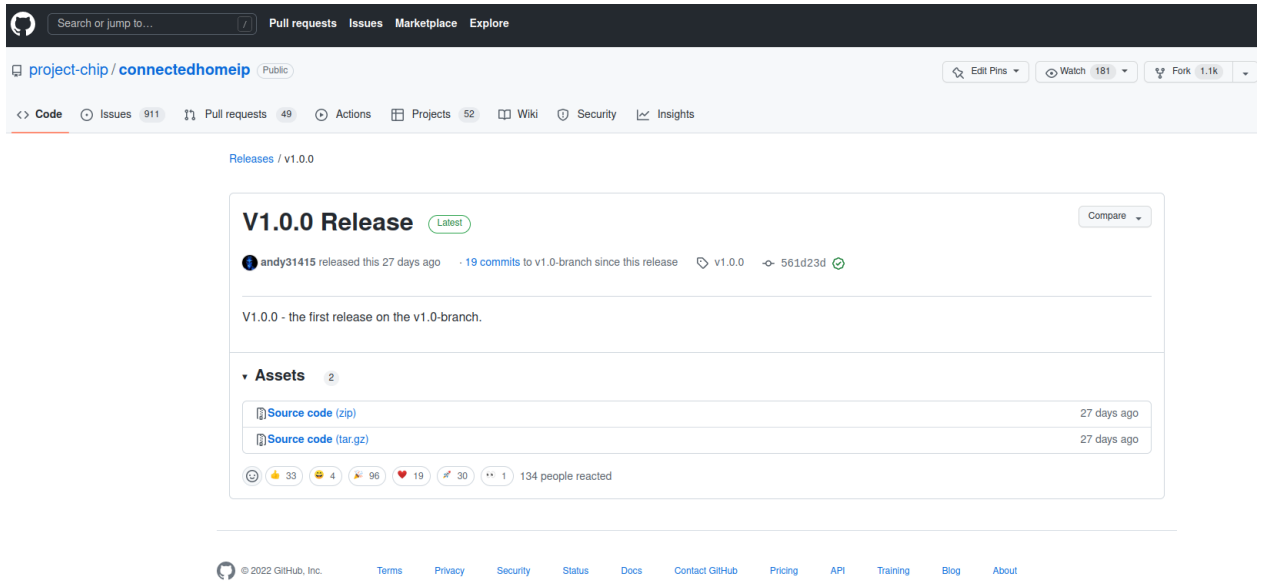
- Introduction
  - Matter 1.0 is here!
  - Support for Matter in nRF Connect SDK
  - Development tools
- Matter over Thread and Matter binding
  - Setting up the environment
  - Building Matter over Thread applications in nRF Connect SDK
  - Controlling accessories from PC
  - Controlling Matter over Thread light bulb from Matter over Thread light switch
- Matter multi-fabric scenario
  - Controlling accessory from Android smartphone
  - Adding accessory to the new Matter fabric
- Creating Matter accessory
  - Configuring data model
  - Network topology
  - Developing application logic and testing of the setup
- Q&A session

Introduction

Matter 1.0 is here!

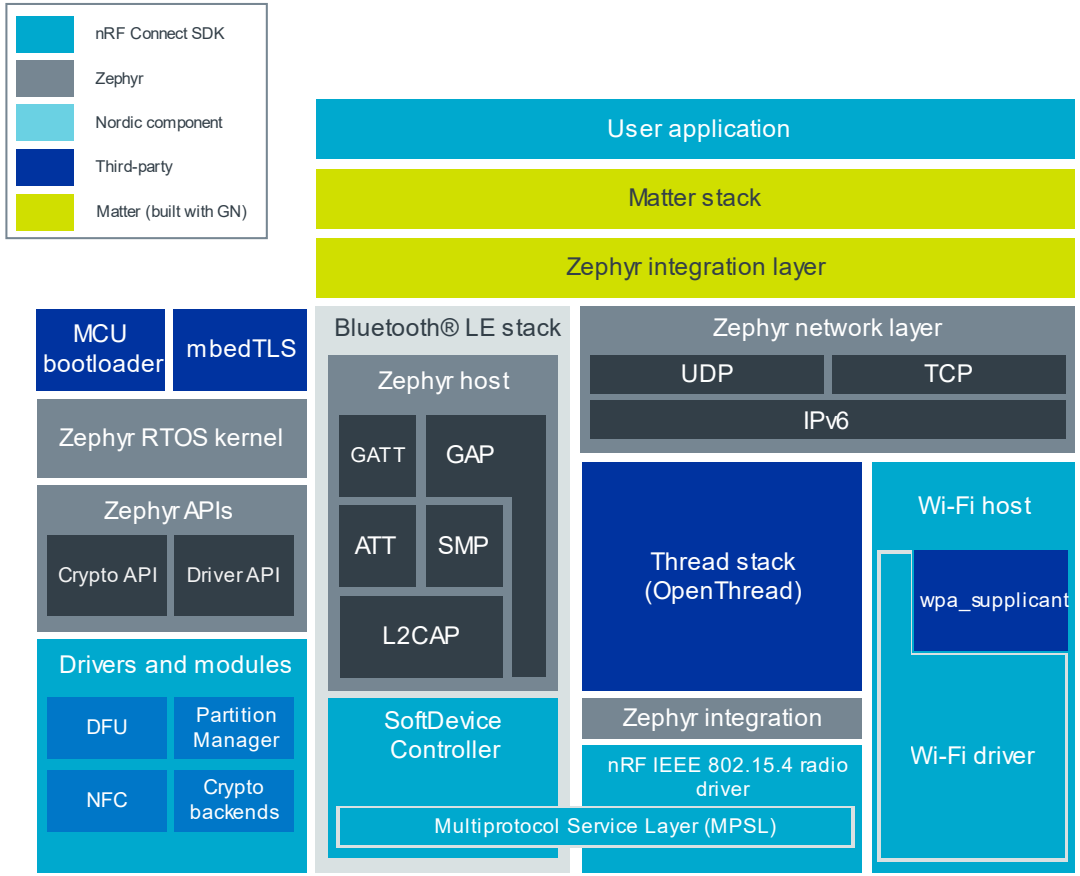
- Open source reference implementation which conforms to the Matter 1.0 specification
- https://github.com/project-chip/connectedhomeip/releases/tag/v1.0.0
- https://csa-iot.org/all-solutions/matter/

matter



Support for Matter in nRF Connect SDK

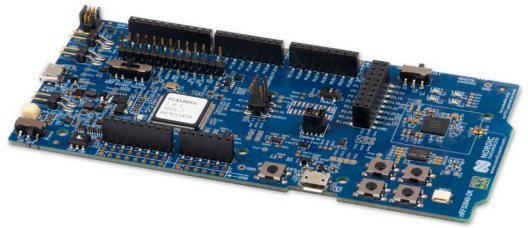
- Matter is deployed in nRF Connect SDK as a one of the submodule repositories (dedicated Matter fork)
- Powered by Zephyr OS
- Certified support for Thread 1.3 and Bluetooth Low Energy stacks
- Matter sample apps included
- Release 1.0.0 already supported in nRF Connect SDK v.2.1.1!
- Nordic Weather Station has sucessfully passed the Matter Specification Validation Event!
- https://developer.nordicsemi.com/nRF_Connect_SDK/doc/2.1.1/nrf/ug_matter.html



Development tools

- Hardware Development Kits (based on nRF52, nRF53 and nRF70 families)
- nRF Connect for VS Studio
- J-Link GDB debugging tool
- Nordic Power Profiler Kit II
- nRF Thread Topology Monitor
- nRF Sniffer for 802.15.4 and Bluetooth LE
- Pre-compiled Matter controllers for Linux and Android
- Matter specific tools:

https://developer.nordicsemi.com/nRF_Connect_SDK/doc/2.1.1/nrf/ug_matter_gs_tools.html#id11



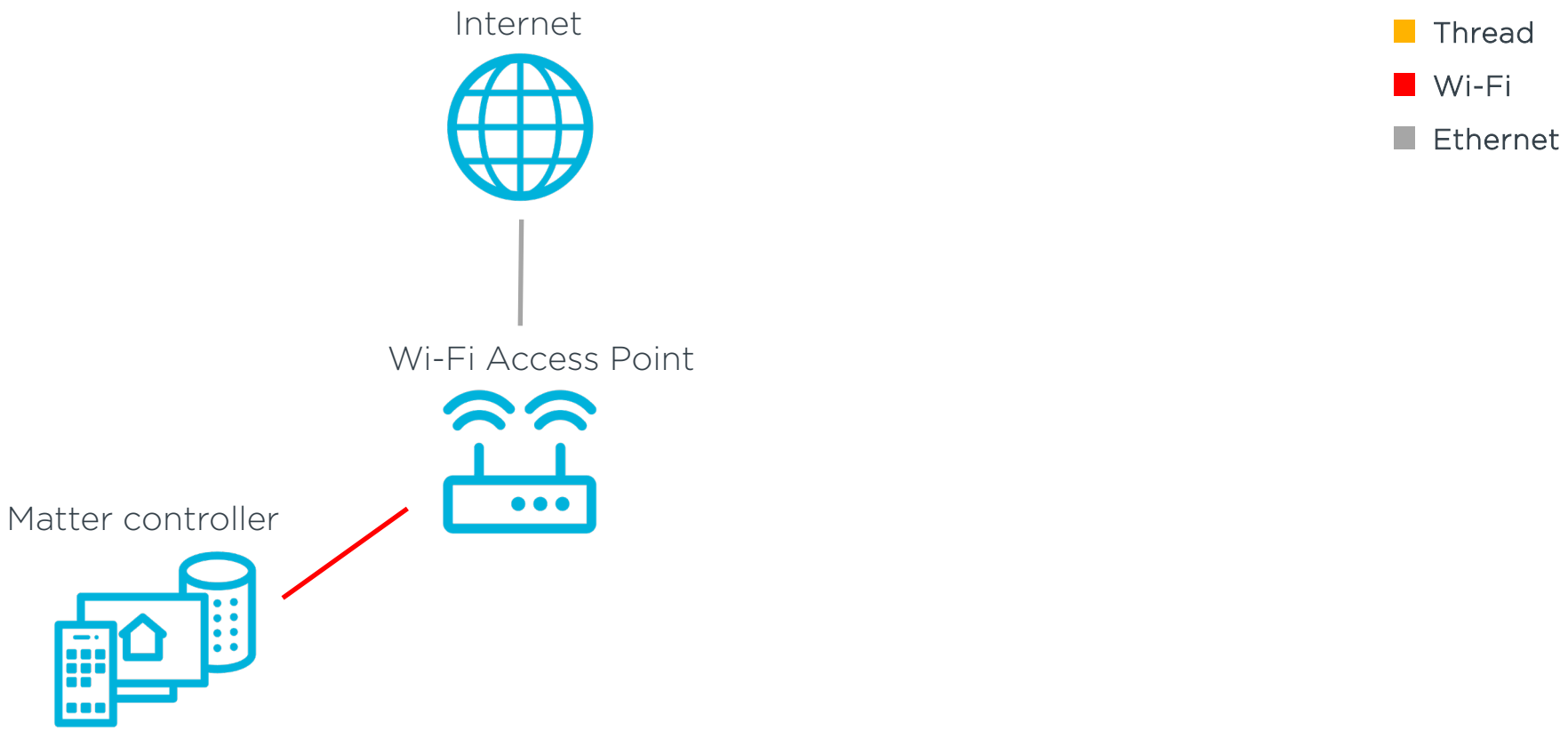
Matter in nRF Connect SDK

Matter over Thread and Wi-Fi

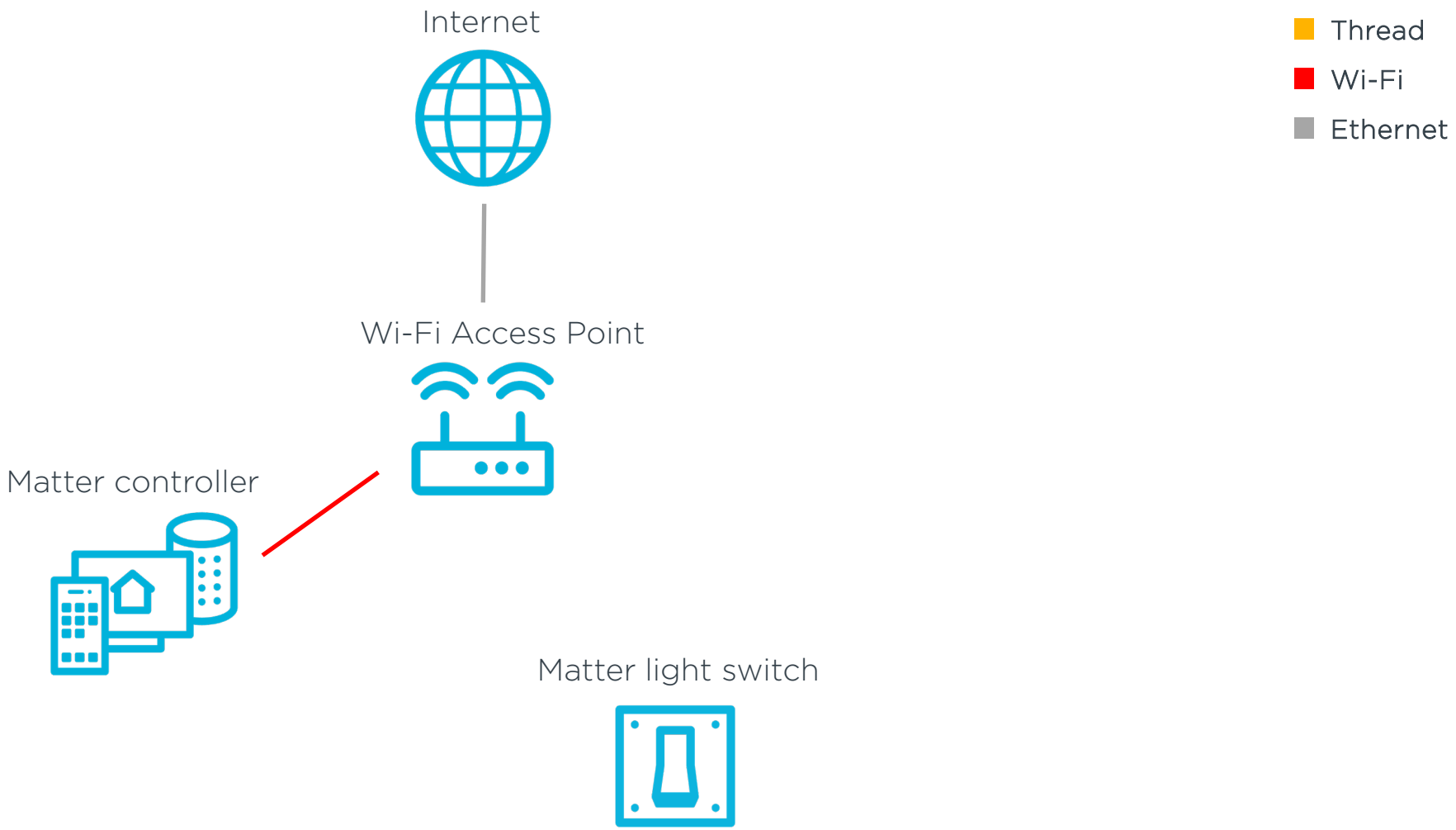
Matter network topology

Thread
Wi-Fi
Ethernet

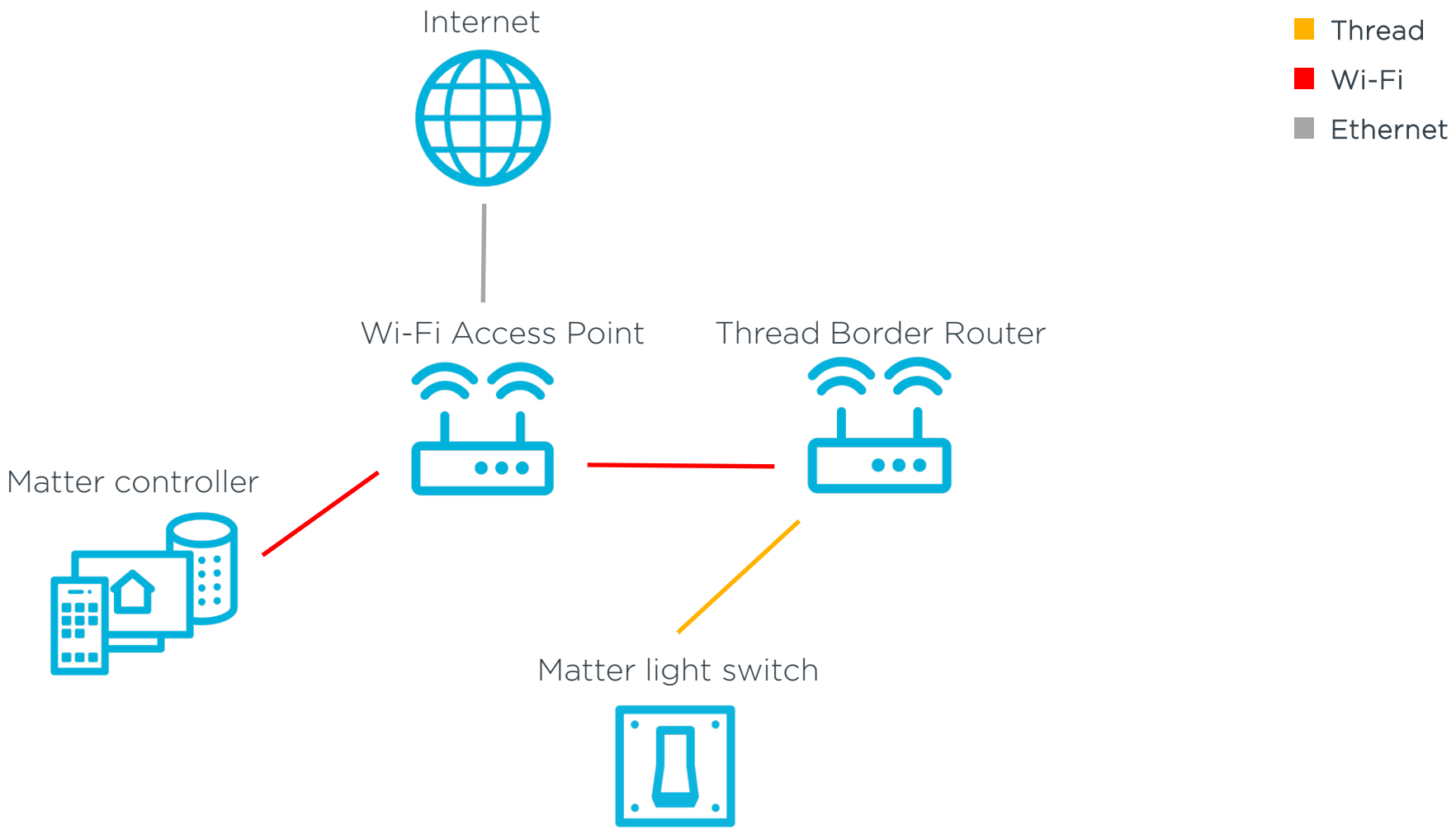
Matter network topology



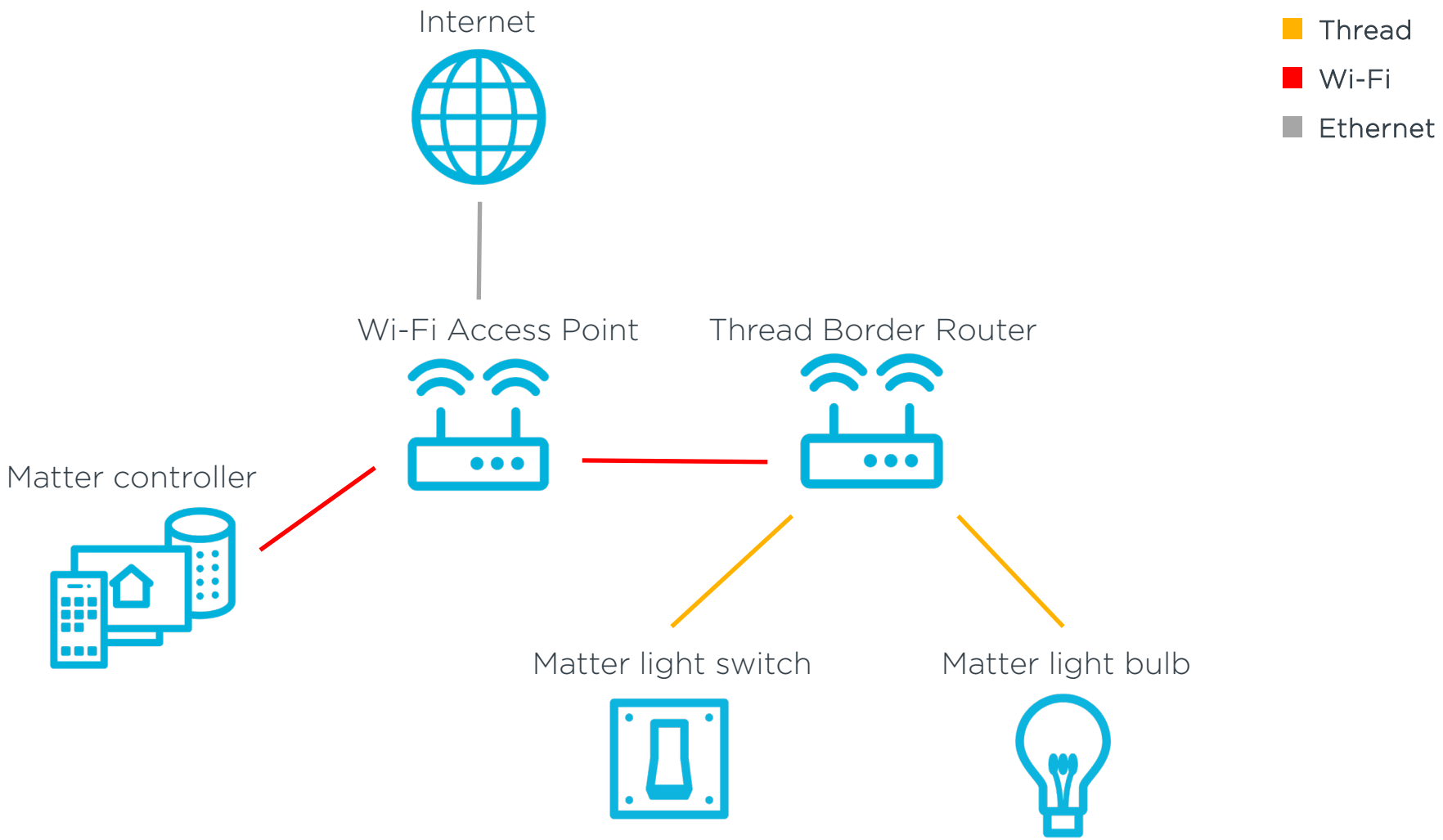
Matter network topology



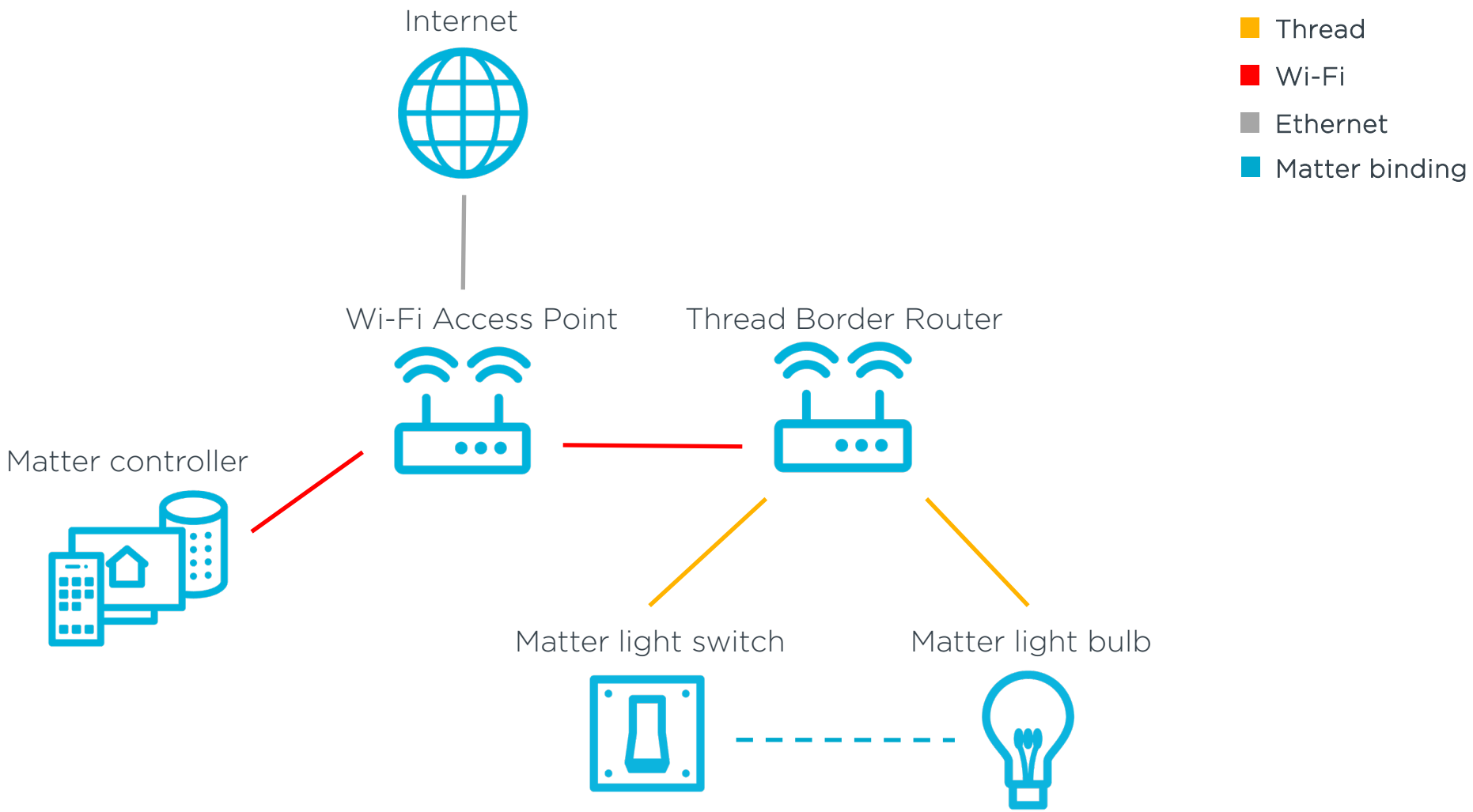
Matter network topology



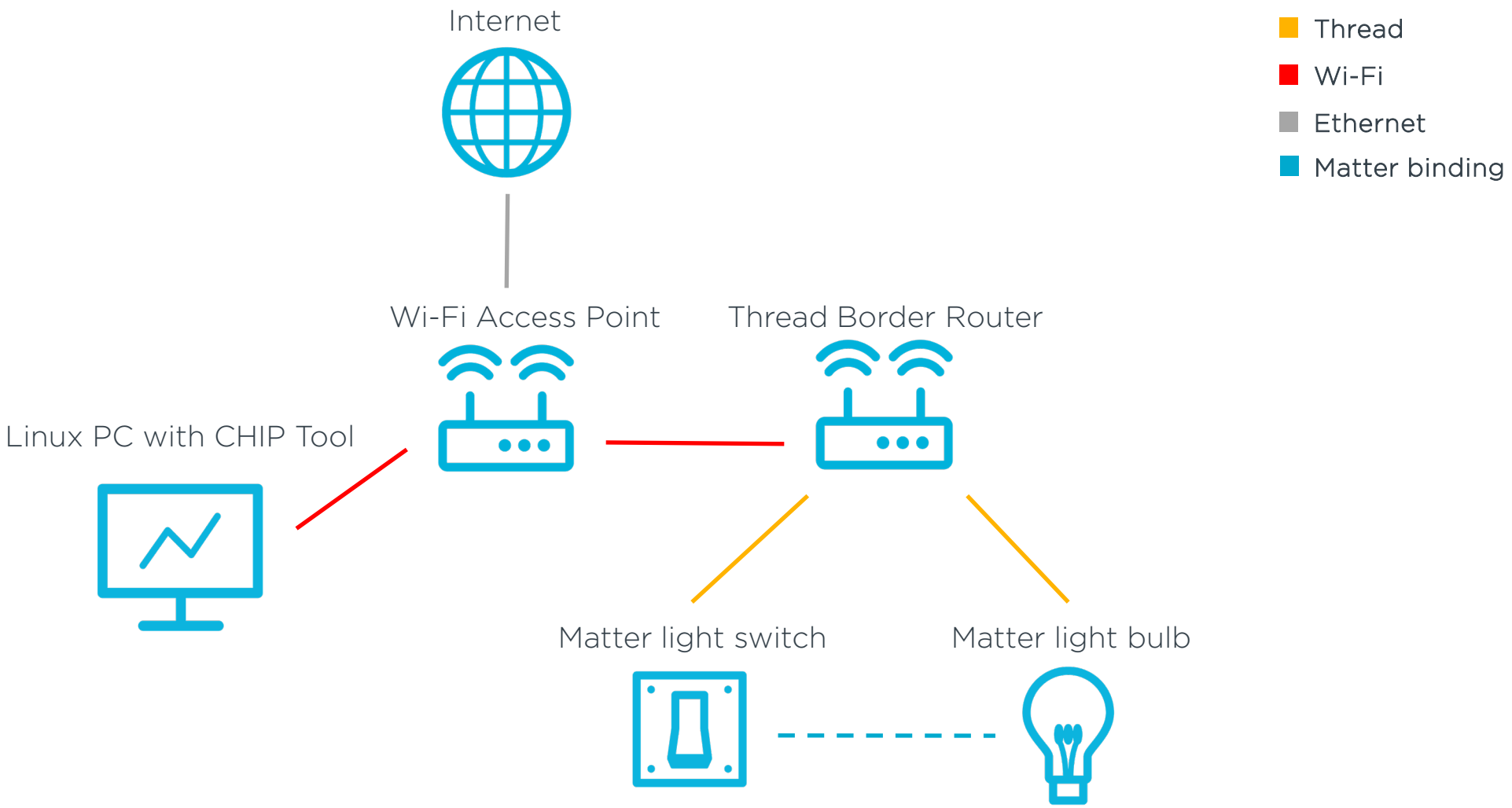
Matter network topology



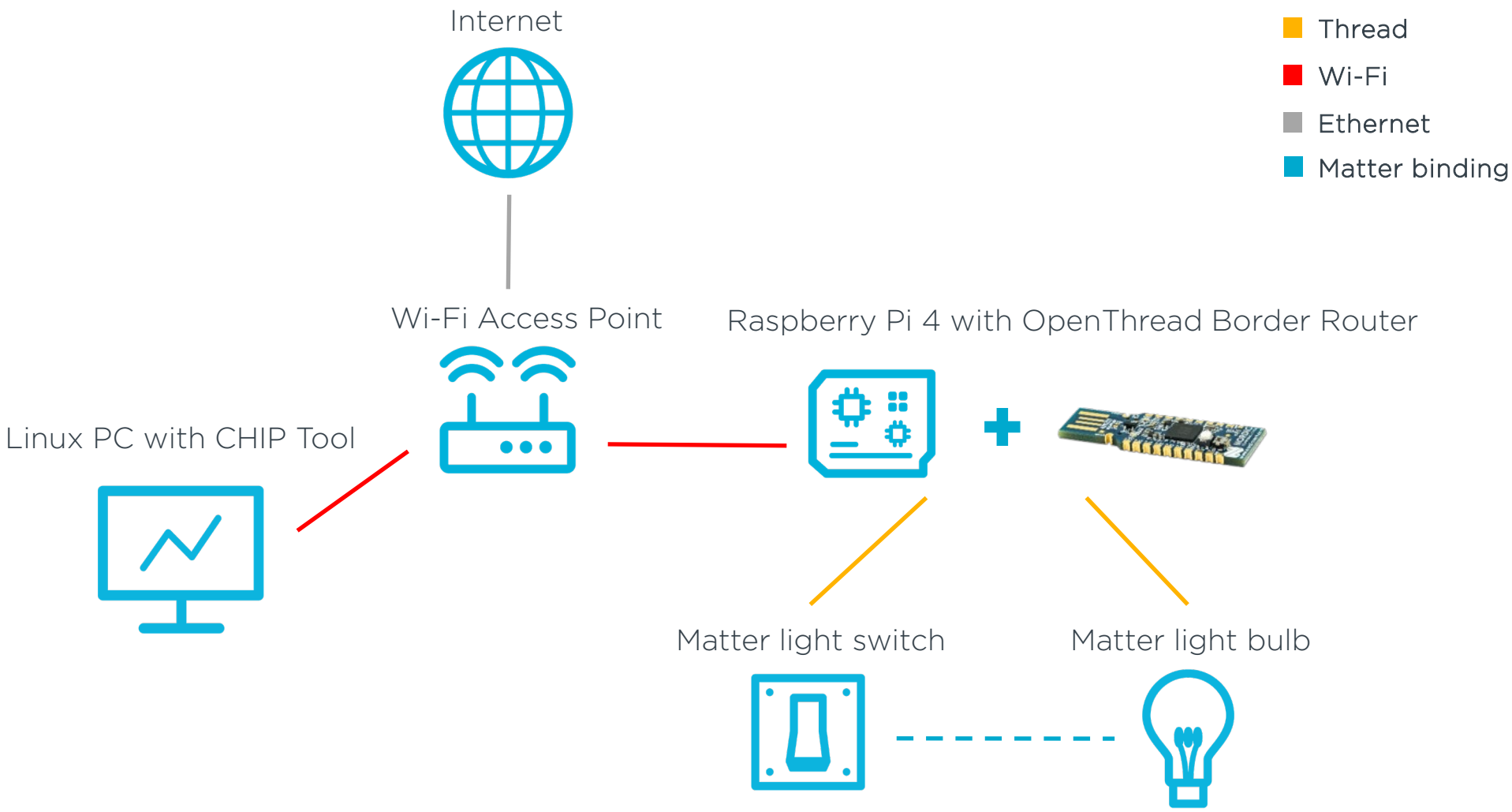
Matter network topology



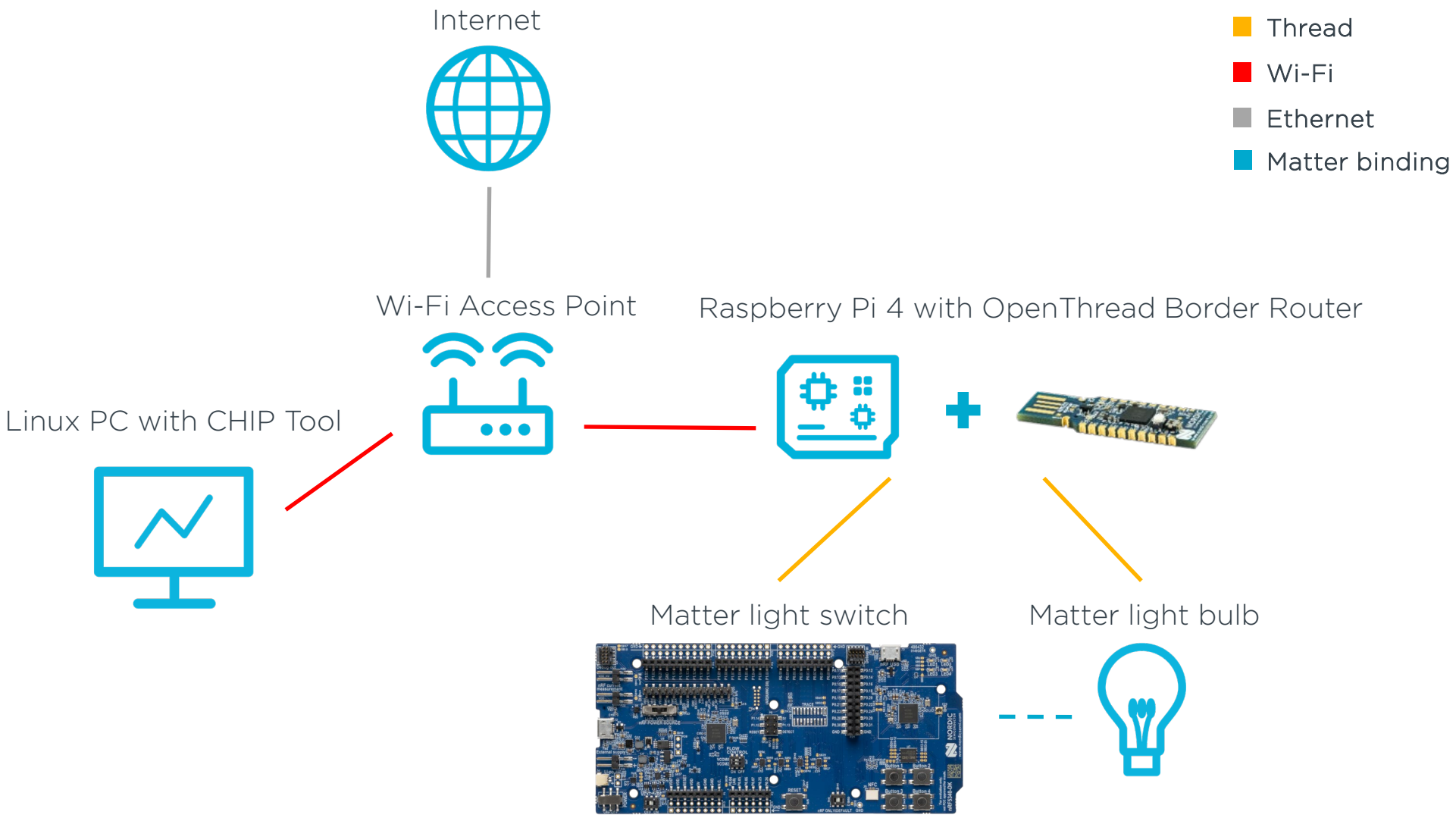
Matter network topology



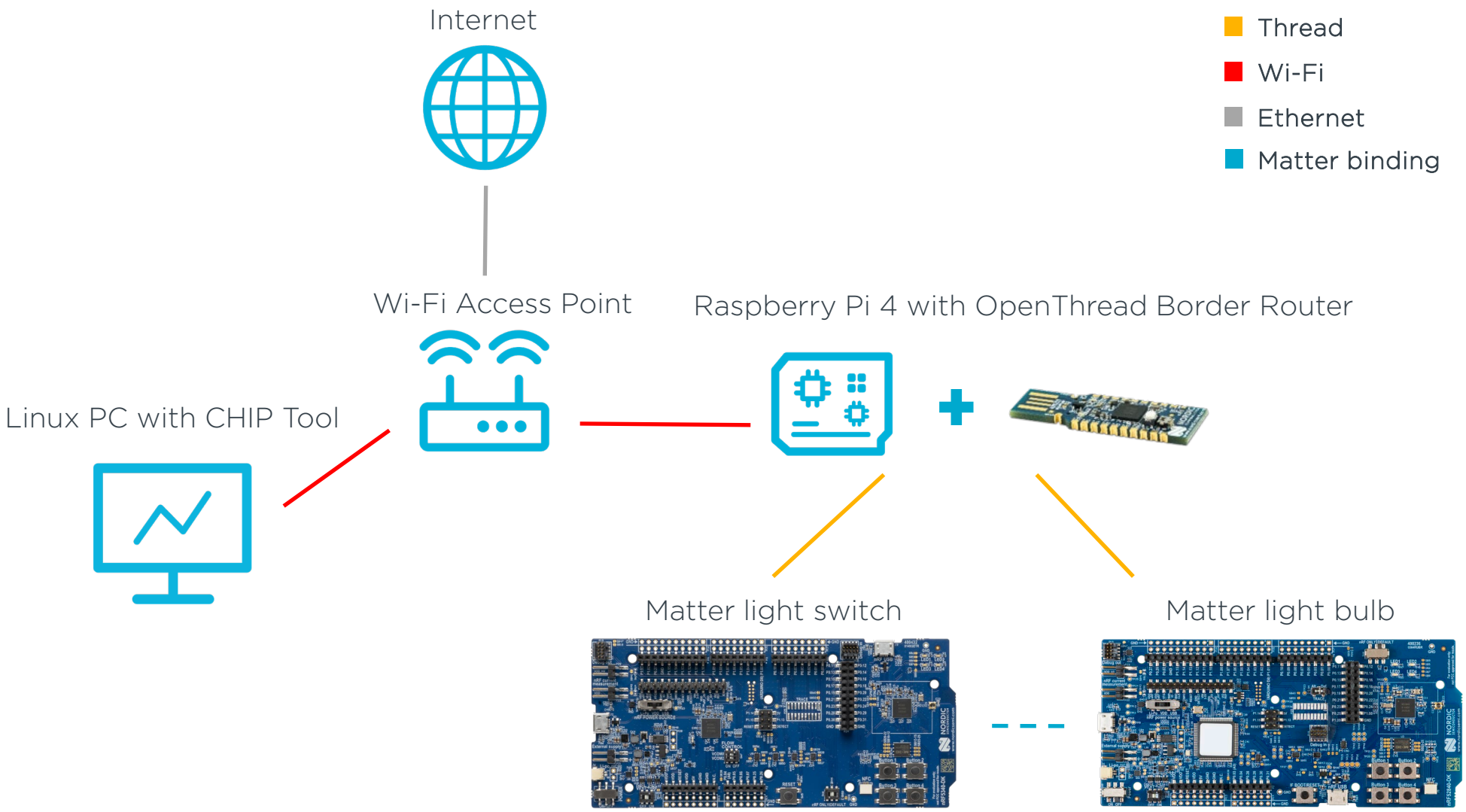
Matter network topology



Matter network topology



Matter network topology



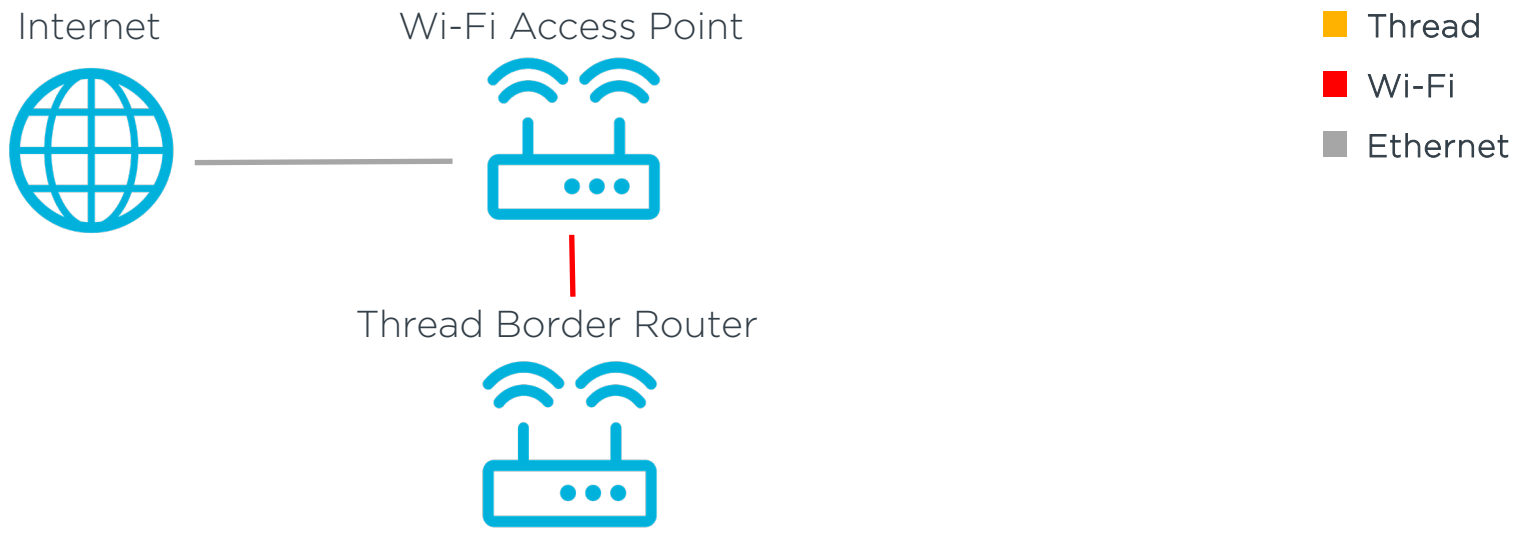
Prerequisites

- Linux PC with software installed:
  - nRF Connect SDK v2.1.1
    https://developer.nordicsemi.com/nRF_Connect_SDK/doc/2.1.1/nrf/getting_started.html
  - nRF Command-line tools
    https://www.nordicsemi.com/Products/Development-tools/nrf-command-line-tools/download
  - Visual Studio Code with nRF Connect Extension Pack for VS Code
    https://nrfconnect.github.io/vscode-nrf-connect/
- Raspberry Pi 4 running OpenThread Border Router
  https://developer.nordicsemi.com/nRF_Connect_SDK/doc/latest/nrf/ug_thread_tools.html#installing-otbr-manually-raspberry-pi

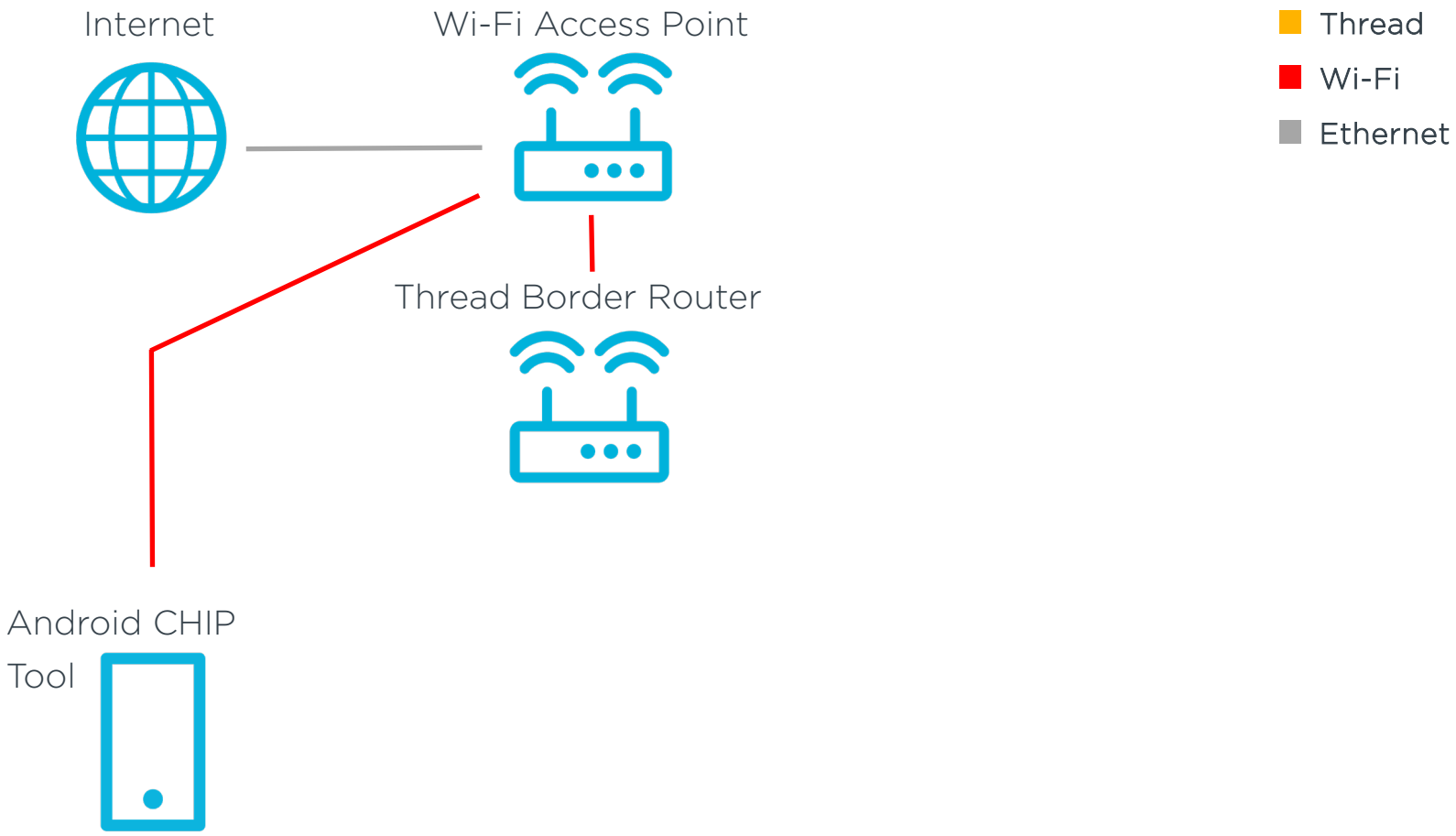
Matter in nRF Connect SDK

Matter multi-fabric scenario

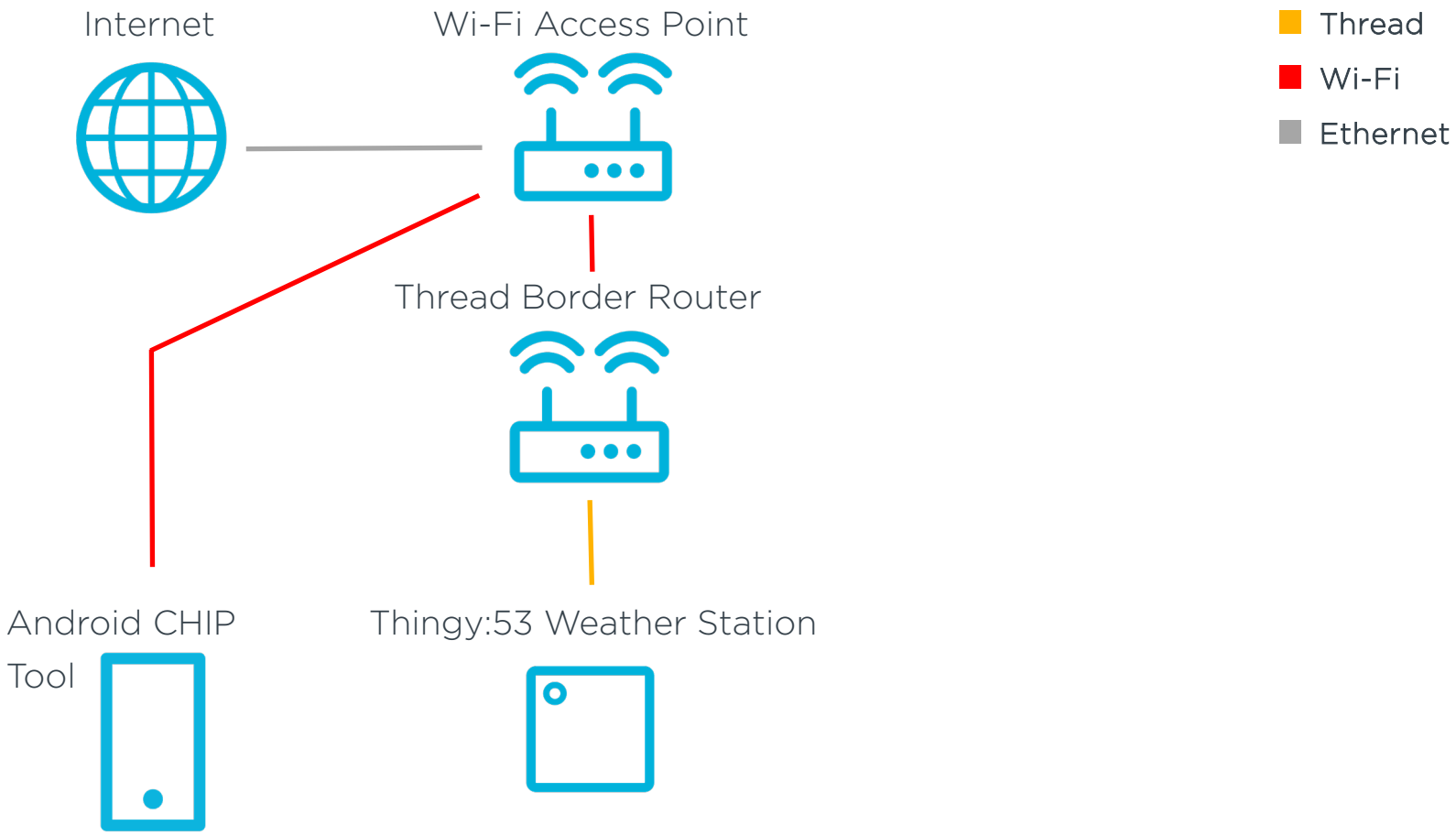
Matter multi-fabric topology



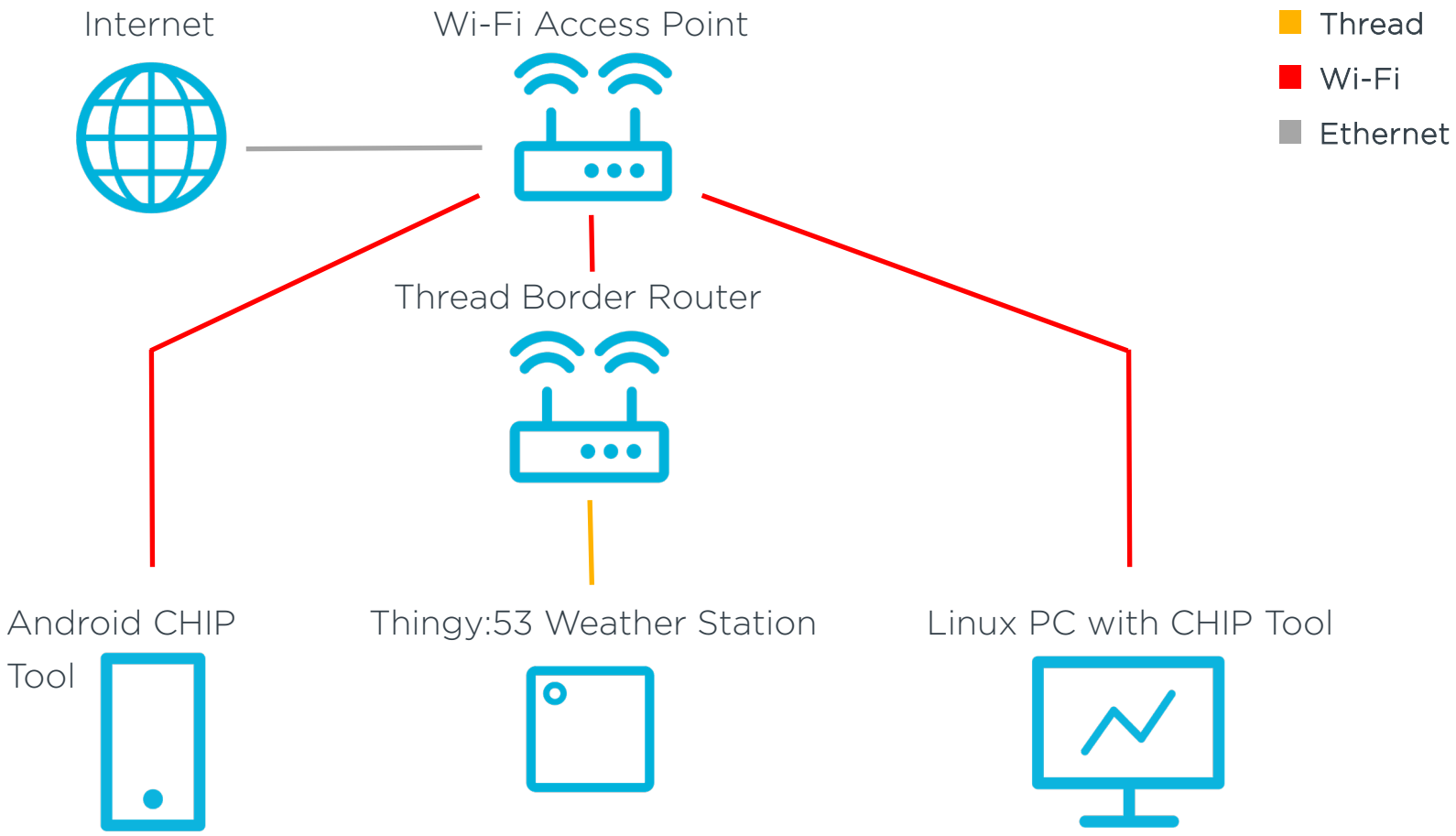
Matter multi-fabric topology



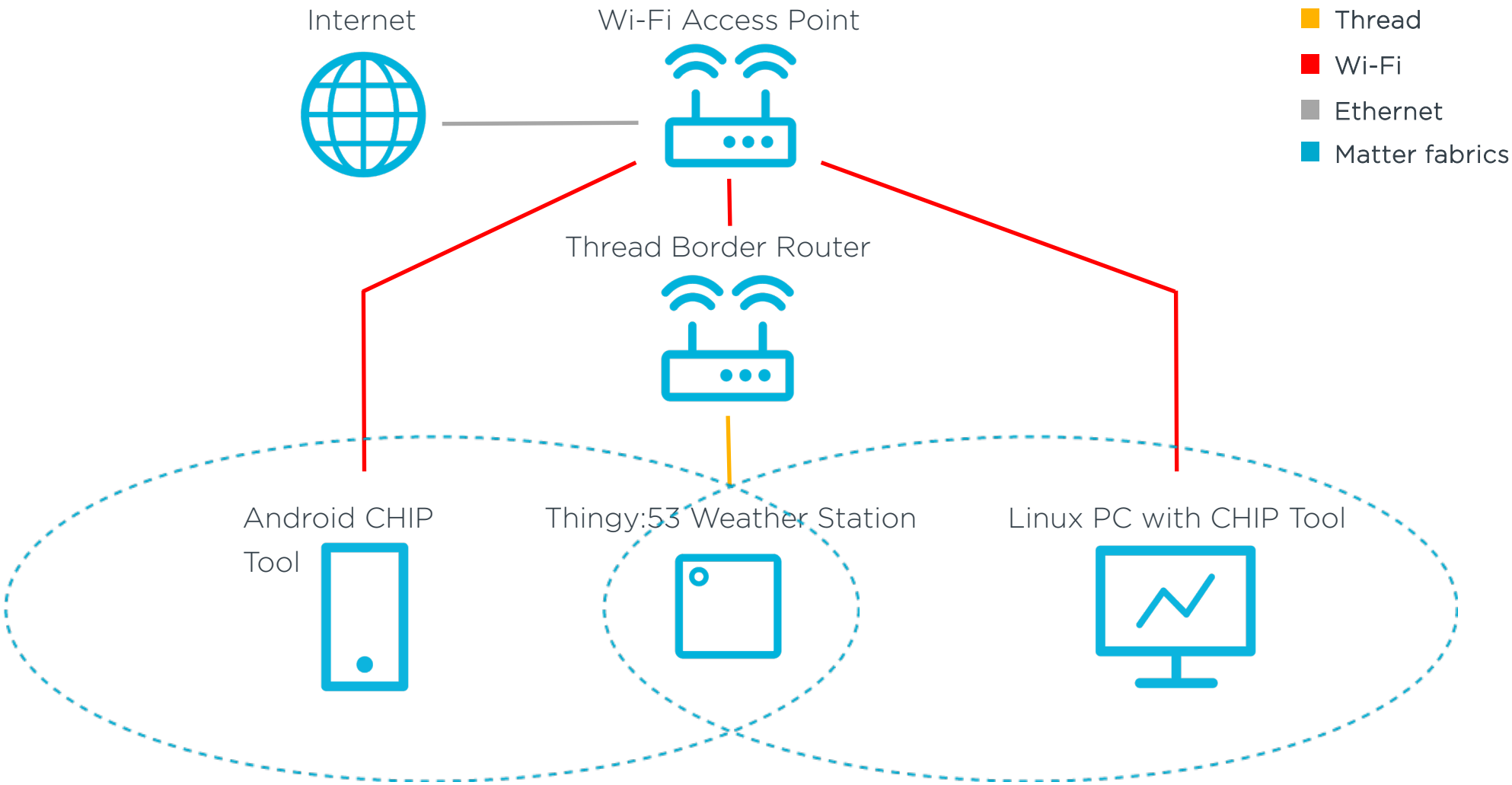
Matter multi-fabric topology



Matter multi-fabric topology



Matter multi-fabric topology

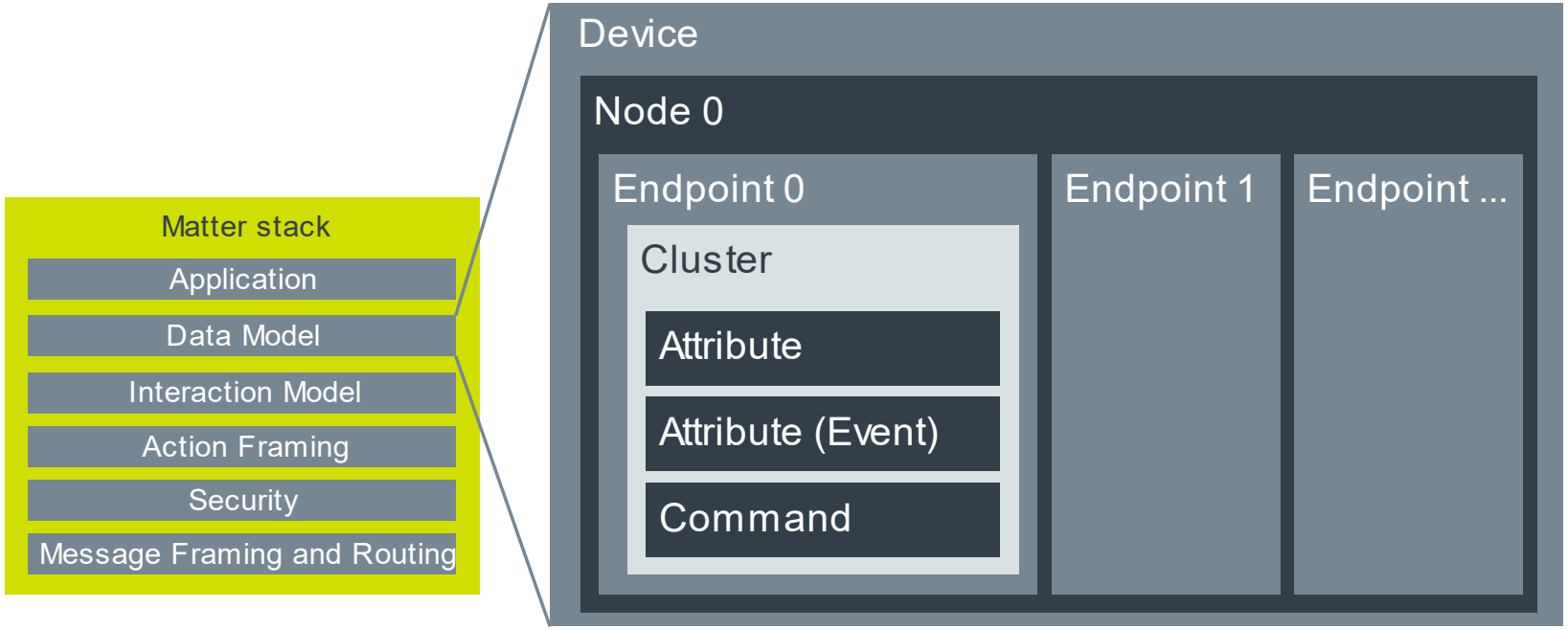


Matter in nRF Connect SDK

Creating Matter accessory

Configuring data model

- Understanding Matter data and interaction model

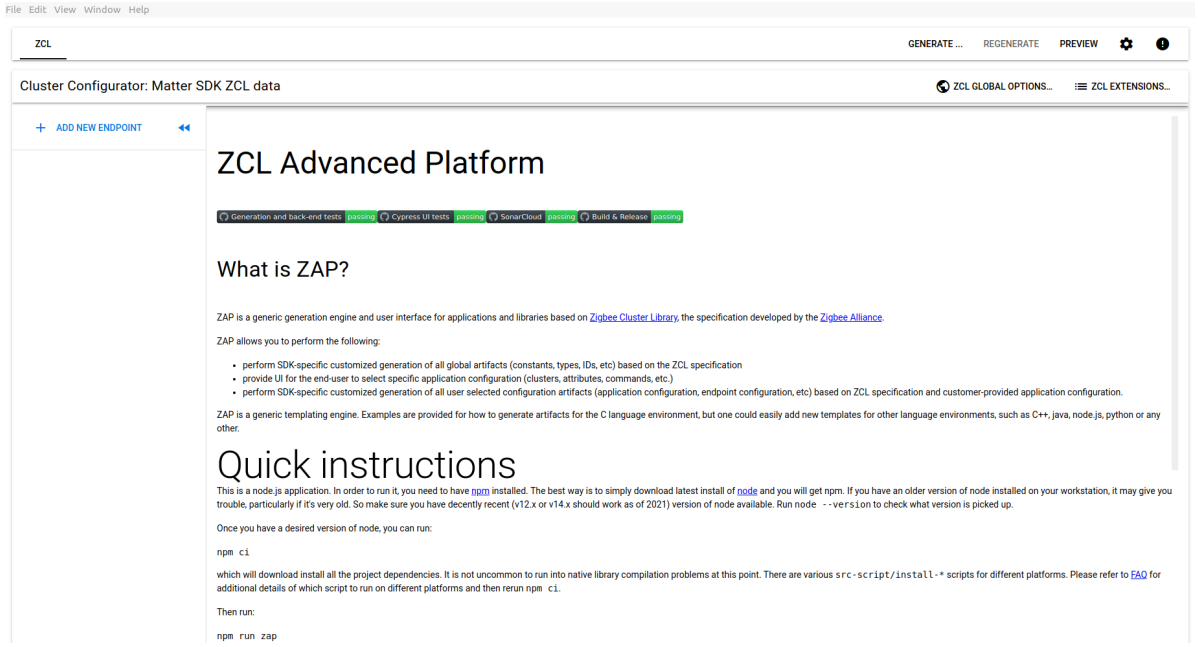


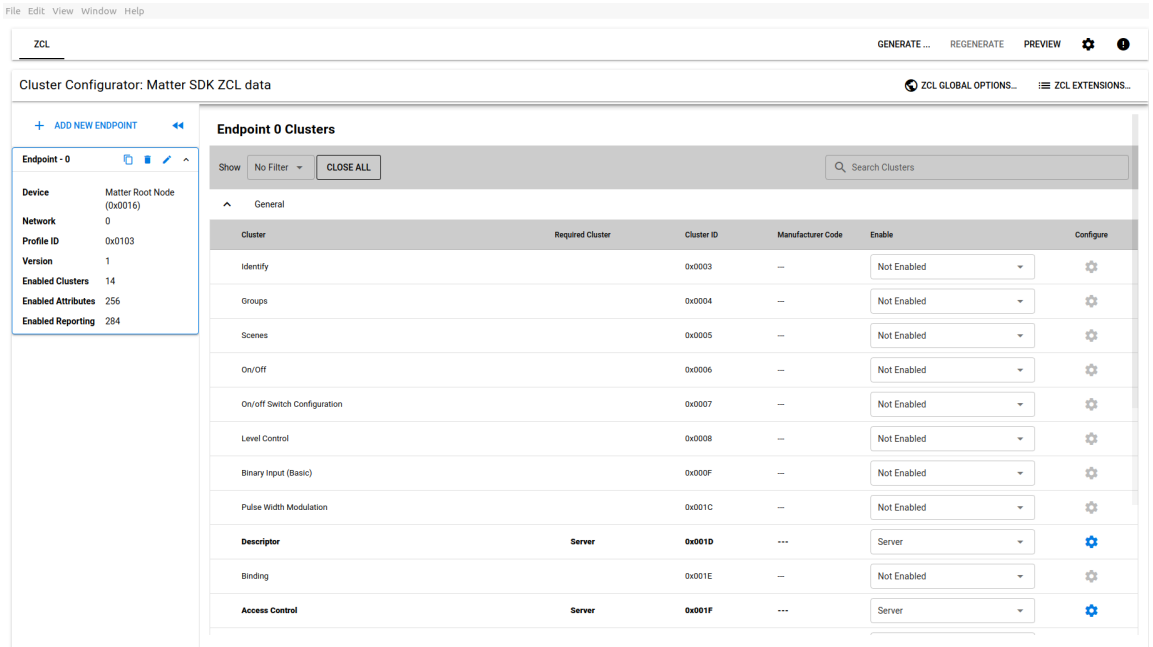
https://developer.nordicsemi.com/nRF_Connect_SDK/doc/2.1.1/nrf/ug_matter_overview_data_model.html

Configuring data model

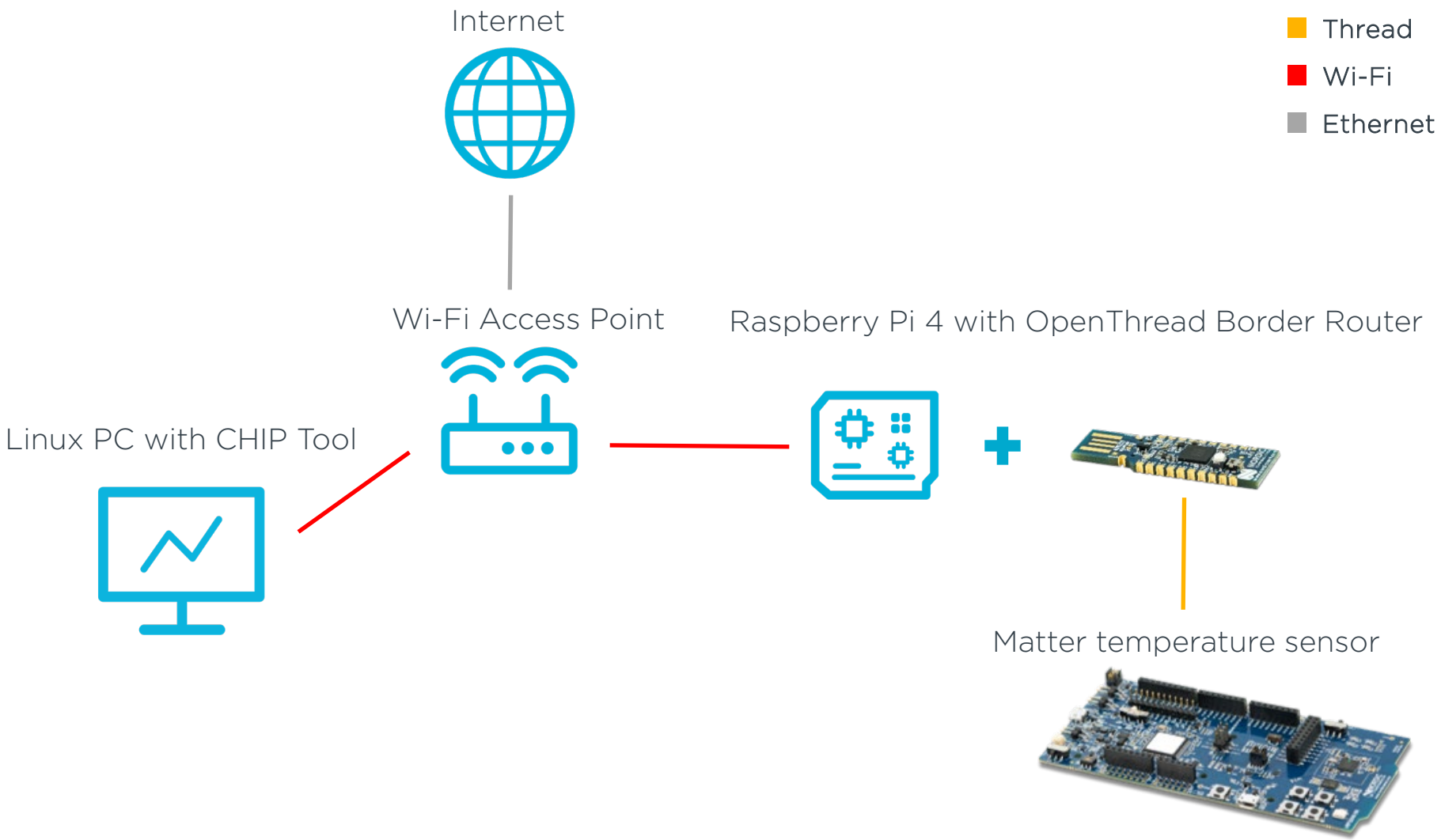
- Using ZAP Tool to configure specific clusters and attributes:

https://github.com/project-chip/zap





Network topology



Developing application logic and testing of the setup

- Coding demo