OpenThread

OpenThread released by Google is an open-source implementation of Thread® (http://threadgroup.org). Google has released OpenThread to make the networking technology used in Google Nest products more broadly available to developers, in order to accelerate the development of products for the connected home and commercial buildings.

With a narrow platform abstraction layer and a small memory footprint, OpenThread (OT) is highly portable. It supports both System-on-Chip (SoC) and Co-Processor (RCP, NCP) designs.

GET THE CODE (HTTPS://GITHUB.COM/OPENTHREAD)

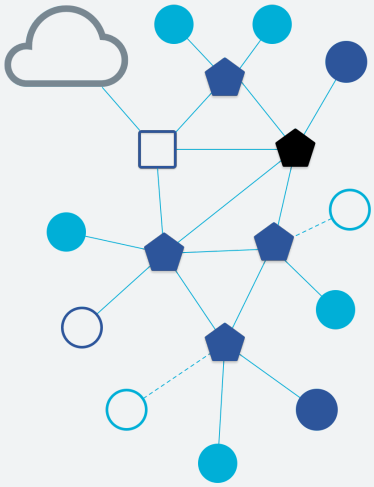
LEARN MORE (HTTPS://OPENTHREAD.IO/GUIDES)

OPENTHREAD BRAND GUIDELINES…

Thread Certified component

OpenThread implements all features defined in the Thread Specification. This specification defines an IPv6-based reliable, secure, and low-power wireless device-to-device communication protocol for home and commercial building applications.

GET THE SPECIFICATION…



Features

OpenThread implements all Thread networking layers (IPv6, 6LoWPAN, IEEE 802.15.4 with MAC security, Mesh Link Establishment, Mesh Routing) and device roles, as well as Border Router support.

APPLICATION SERVICES (/REFERENCE)

- IPv6 configuration and raw data interface
- UDP sockets
- CoAP client and server
- DHCPv6 client and server
- DNSv6 client

ENHANCED FEATURES (/GUIDES/BUILD)

- Child Supervision
- Inform Previous Parent on Reattach
- Jam Detection
- Periodic Parent Search

CO-PROCESSOR SUPPORT (/PLATFORMS/CO-PROCESSOR)

- Spinel, a general purpose Co-Processor protocol
- OT Daemon, a user-space Radio Co-Processor network interface driver/daemon
- Sniffer support via Spinel nodes

BORDER ROUTER (/GUIDES/BORDER-ROUTER)

- Bidirectional IPv6 reachability between Thread and Ethernet/Wi-Fi
- Bidirectional DNS-based service discovery between Thread and Ethernet/Wi-Fi
- Extending Thread mesh over Ethernet/Wi-Fi links

How will you use OpenThread?

If you're interested in **contributing to the ongoing development of OpenThread**, then the OpenThread GitHub repository (https://github.com/openthread/openthread) is for you. There you will find all the code, including information on how to contribute, our style guide, code of conduct, licensing, and much more.

If you want to **use OpenThread in your own products or for personal deployment**, check the options below.

Deploy a Thread network

Determine the hardware and platform design you wish to use to build and deploy your own Thread network. Add a Border Router to connect your Thread network to other network layers, such as Wi-Fi or Ethernet, or use OpenThread RTOS, a single platform solution using LwIP, FreeRTOS, and mbed TLS. And use OpenThread Commissioner to easily commission devices onto a Thread network.

Develop applications on top of a Thread network

Try out our API Codelab and use our API Reference as a guide to application development. IPv6, UDP, CoAP, ICMPv6, DNSv6...it's all there.

PLATFORMS…

BORDER ROUTER…

RTOS…

COMMISSIONER…

API CODELAB…

API REFERENCE…

Port OpenThread to a new hardware platform

Check out our Porting Guide, which walks you through all the steps necessary to port OpenThread to a new hardware platform.

PORTING GUIDE…

Get Thread Certification for your OpenThread product

OpenThread can be used for certification by the Thread Group. As a Thread reference stack, OpenThread makes certification easy.

CERTIFICATION…

News

ARCHIVE (HTTPS://OPENTHREAD.IO/RESOURCES/NEWS-ARCHIVE)

OpenThread: Bringing the Internet to low…

Bringing the internet to low-power IoT devices

Watch our session from Google I/O to get a brief overview of Thread and how developers can quickly build IoT

solutions using OpenThread.

SUPPORTED PLATFOR...

GET STARTED...

(https://openthread.io/android/build-an-android-border-router)

Android Border Router guide published

(https://openthread.io/android/build-an-android-border-router)

September 19, 2024

We've published a guide on how to build a Thread Border Router on the Android platform, using the Android Open Source Project.

(https://openthread.io/reference)

CLI Command Reference and concepts guides available

(https://openthread.io/reference)

March 12, 2024

A complete reference of all CLI commands and related usage guides are now available in the OpenThread Reference.

(https://openthread.io/reference)

Configuration variables reference published

(https://openthread.io/reference)

December 26, 2023

A complete reference of all OpenThread configuration variables, by group, has been added to the OpenThread Reference.

Who supports OpenThread?

(https://www.amazon.com/)

(https://www.aqara.com/)

(http://www.nanoleaf.me/)

What products use OpenThread?

The following products use OpenThread and support the core requirements of the Thread Specification. Products displaying the "Built on Thread" badge have been certified by the Thread Group.

Many types of devices use OpenThread, and the categorization featured in this product listing are based on common smart home device types. The functionality for devices types comes from the features that the manufacturer adds to each one.

Interested in having your product featured? See our Product Guidelines (/resources#featured_product_and_supporter_guidelines) *for more information.*

FILTER BY

Device type

SELECT ALL

- [ ] Light
- [ ] Outlet
- [ ] Switch
- [ ] Thermostat
- [ ] Sensor
- [ ] Router
- [ ] Speaker

MORE

Company

SELECT ALL

Search products

Google TV Streamer (4K)

The Google TV streamer (4k) is a compact...

eufy Smart Lock E30

Fingerprint Keyless Entry Door Lock, supports...

eufy Smart Lock C34

Keyless Entry Door Lock, supports Matter over...

- [ ] Aeotec
- [ ] Airversa
- [ ] Aqara
- [ ] Chengdu Energy Magic Cube Technology
- [ ] Eero
- [ ] eufy
- [ ] Eve

MORE

Certification

SELECT ALL

- [ ] Matter
- [ ] Built on Thread
- [ ] Built on Thread Border Router

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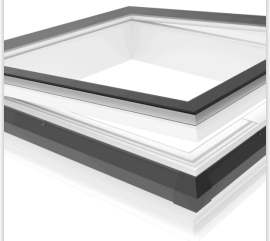
LEARN MORE (HT

Skylux Screen

Matter-certified screen for flat roof...

LEARN MORE (HT



Skylux iWindow

Matter-certified flat roof window. Control your...

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Smart Smoke Fire Alarm S1-M

Matter-certified smart smoke alarm with...

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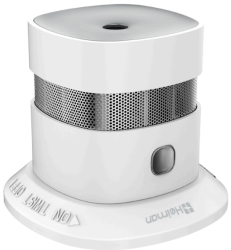

Smart Smoke Sensor HS1SA-M

Smart Carbon Monoxide Alarm C1-M

Heat Pump Optimizer X

Matter-certified smart smoke sensor with...

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Smart Matter-certified carbon...

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Controls heat pump temperature and...

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1 (#) 2 (#) 3 (#) 4 (#) 5 (#) ... 11 (#)

Start using OpenThread today (https://openthread.io/guides)

GET STARTED (HTTPS://OPENTHREAD.IO/GUIDES)