Weave.
Built by Nest. For thoughtful things.

Connected home products aren't like mobile phones. Each one takes a different shape to solve a different problem. And when you look inside, you'll find the hardware capabilities of the CPU, RAM, power and radios vary just as dramatically.

To make great products that are as fast and dependable as our traditional wired homes, Nest needed a secure, reliable communications protocol that works with a wide range of hardware.

Weave in action.

Nest Guard, the powered keypad at the heart of the Nest Secure alarm system, is always on. Nest Detect, the tiny, battery-powered sensors of the system, conserve energy by only waking up when there's activity. Using Weave over a Thread network, Nest Detect sensors can talk to Nest Guard when a door or window opens or motion is detected.

Nest Guard lets the service and app know about any sensor changes with Weave over the Wi-Fi network. If the power goes out, Nest Detect can still talk to the keypad with Weave + Thread. And Nest Guard, running on its backup battery, can still talk to the service using Weave over cellular.

Product-driven design.

Weave is not a solution looking for a problem – its features are driven by requirements we identified while building our ecosystem of products. Weave's encryption protocols were designed to fit the processor and memory constraints of our thermostat and our smoke and CO alarm.

It has a compact message format and communicates only when it needs to, so security sensors can run on batteries for years. And because Weave has tiered-trust domains, sensitive operations like disarming security or unlocking the door are only accessible by the right devices.

Better together.

Weave powers Nest products, along with upcoming products like a Yale lock made in collaboration with Nest. Because they share Weave as their common language, the Yale lock and the Nest Secure alarm system work better when they're together. When you unlock your front door, the lock will automatically tell Nest Secure that it's safe to disarm, so you don't have to. The lock even inherits Nest Guard's robustness, staying fully operational even when power or the internet goes down.

Secure communications

Weave security is independent of the underlying network. Every interaction between products, apps and cloud services is secure. Application-specific keys provide tiered-trust domains between any two points of the network.

Fast and reliable

Nest designed Weave to match the dependability of traditional wired homes. Weave products can talk directly to each other without relying on the cloud, so communications are low latency and robust. Even if the internet goes down, or there is a power outage, Weave products can continue to work together.

Easy to connect

Weave makes it as easy as pointing and shooting a QR code. Behind the scenes, it securely adds the new device to the device-to-device network. Then those devices can help the new one get connected to the Internet by sharing the Wi-Fi credentials, so you don't need to enter them each time.

Always up to date

Products require bug fixes, security patches and improvements to keep up with technology, and evolve with the needs of your family. Weave automatically takes care of software updates in the background.

OpenWeave

We believe the core technologies that underpin connected home products need to be open and accessible. Alignment around common fundamentals will help products communicate with one another securely and seamlessly.

We've published some of the core components of Weave. You can inspect the code to understand the architecture, implementation and security model. And you can see it in action with Nest Secure, a real-world example of what Weave can do.

GET THE CODE (HTTP://OPENWEAVE.IO)

Thermostat
Save energy in style

Smoke + CO Alarm
The smoke alarm that thinks

Indoor Cam
See your home, 24/7

Outdoor Cam
Security, rain or shine