

What you can do with Arduino Cloud

Develop from anywhere

- No code**
Ready-to-use templates that can be deployed with one click on the hardware
- Low-code**
Automatically generated sketches
- Full Arduino Experience**
(Online Editor)
Develop applications either offline with the Arduino IDE2 or online with the Cloud Editor
- Store Your Sketches Online**
Keep your code online and use it in your favourite Arduino development environment

Program & Deploy

- Cable**
Traditional USB programming
- Over-the-air (OTA) Updates**
Deploy your firmware wirelessly to your devices
- Mass Scale & Automation**
Perform mass-scale or automated updates using the command line with the Arduino Cloud CLI

Monitor & Control

- Custom Dashboards**
User-friendly dashboard creation based on drag and drop widgets
- Insightful Widgets**
Interact with the devices and get real-time and historical data through a wide widget catalog
- Mobile App**
Dashboards accessible from anywhere at any time from your mobile phone

Glossary

Application API: Create and manage IoT resources like dashboards, devices, Things, and variables, along with the retrieval and handling of historical data.

Arduino IoT Cloud: The section inside the Arduino Cloud dedicated to monitor and control your devices.

Arduino Cloud API: Application programming interface to access Arduino Cloud functions via HTTP requests.

Arduino Cloud API clients: Libraries programmed in different languages to access the Arduino Cloud API.

Arduino Create Agent: it is a desktop application that allows users to connect your boards (connected physically to the PC) to the Arduino Cloud platform.

Cloud Editor: The online editor of the Arduino Cloud accessible using your browser.

Dashboard: Visual user interface for interacting with the boards over the Cloud. They can be customized using drag and drop widgets to visualize and control the devices.

Device: The abstraction that handles the information necessary to connect to a physical device.

Device API: Send and receive variables data.

IoT Cloud Remote App: Mobile app to control and monitor Arduino Cloud devices from a smartphone or tablet. The app is available for iOS and Android devices.

Kit: A product that contains several components. Typically a microcontroller board plus sensors, buttons, etc.

Over-the-air (OTA) Update: A software update that is delivered to a device wirelessly.

Physical Board: A physical microcontroller board that can be connected to Arduino Cloud.

Sketch: A program or code written in the Arduino programming language specifically designed to be run on an Arduino or ESP-based microcontroller. They consist of a set of instructions that tell the board what actions to perform and how to interact with external components, sensors and devices.

Template: Self-contained ready-to-use project that includes the definition of the device, the Thing (variables and code) and the dashboard and can be deployed with 1-click on a physical board.

Thing: Virtual representations of the application running on a device. They include the code (sketch), the variables that will be stored in the Cloud and network configuration.

Triggers: Events that can trigger an action based on a condition configured in the Cloud.

Variable (property): A variable/property in Arduino Cloud is a piece of data that is associated with a Thing. Things can have many variables/properties, such as temperature, humidity, light level, or the state of a switch.

Webhooks: A feature that allows users to integrate the Arduino Cloud projects with external services and applications by sending HTTP requests.

Widget: A small, self-contained graphical user interface (GUI) element that provides specific functionality to visualize and control your devices. There are a variety of different widgets available, including charts, gauges, buttons, switches and more. They are associated to one or more variables.

Supported hardware

Direct

Create devices that can be monitored and controlled directly from Arduino cloud

Within Arduino development environments



Cloud Applications can be developed using the Arduino Cloud Editor or Arduino IDE 2.

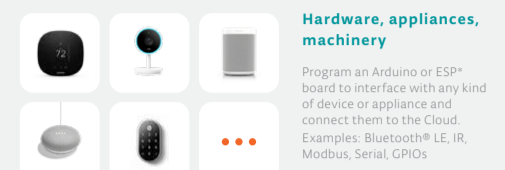
Outside Arduino development environments



Use your favourite programming environment and language to connect your devices to the Cloud

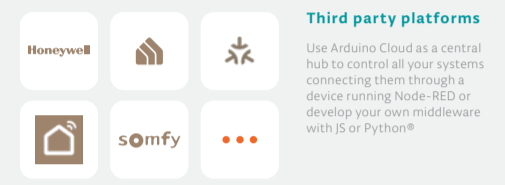
Indirect

Connect almost anything to the cloud indirectly, by leveraging the direct devices as a middleware



Hardware, appliances, machinery

Program an Arduino or ESP* board to interface with any kind of device or appliance and connect them to the Cloud. Examples: Bluetooth® LE, IR, Modbus, Serial, GPIOs

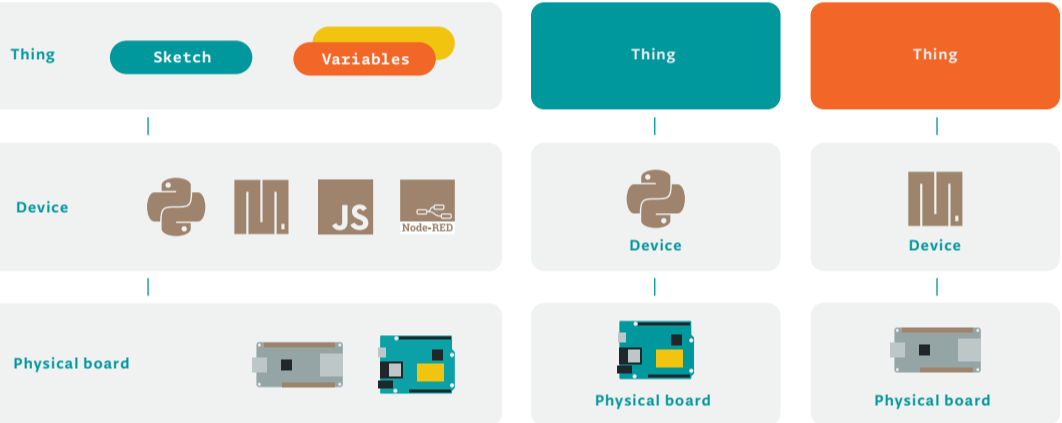


Third party platforms

Use Arduino Cloud as a central hub to control all your systems connecting them through a device running Node-RED or develop your own middleware with JS or Python®

How does it work?

Dashboard Widgets



Dashboard

- Customize your dashboard**
Customize your dashboard using drag-and-drop widgets linked to Things' variables, crafting tailor-made control panels.
- Get insightful data**
Get comprehensive view of your devices' data with widgets providing both real-time and historical data.
- Offline analysis**
Download your historical data for offline analysis.
- Share it with anyone**
Collaborate effortlessly with friends, team members, or the entire world by granting them access to dashboards

Third party platform integration



Trigger actions on third party platforms
Connect your Arduino Cloud devices to external platforms such as IFTTT, Zapier and Google Services using webhooks and unlock endless possibilities.

Seamlessly integrate your IoT devices with over 2 000 apps, enabling tasks like receiving phone notifications, automating social media updates, streaming data logging to external files, creating calendar events, or sending e-mail alerts.

IoT Remote App

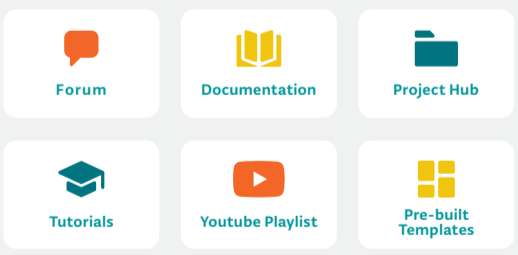


Full control in your hands
Use your dashboards on the go, and control projects from anywhere in the world, using the free IoT Cloud Remote app.

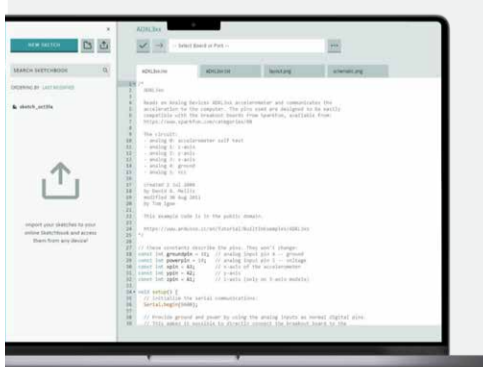
your phone as an IoT device
Use the "Phone as a device" feature to connect your phone's sensors to the Arduino Cloud and turn your mobile phone into an IoT device for your projects.



Resources



Create your devices



Within Arduino development environment

- Develop offline**
Use Arduino IDE 2 to have the traditional offline Arduino development experience. Sync your sketches with the Cloud to never lose your code.
- Develop online from anywhere**
Develop from anywhere with the Arduino Cloud Editor. Benefit from the zero-touch configuration to get focus only on your code.

Outside Arduino development environment

Application API

Create and manage IoT resources like dashboards, devices, Things and variables, along with the retrieval and handling of historical data.

Device API

This API helps you create a Cloud-compatible device by implementing the device data communication with the Cloud.

ARDUINO CLOUD

Get started for free cloud.arduino.cc