

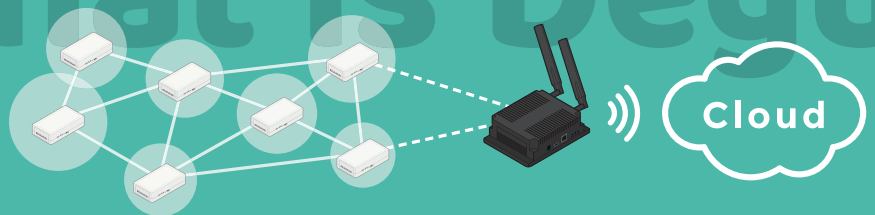
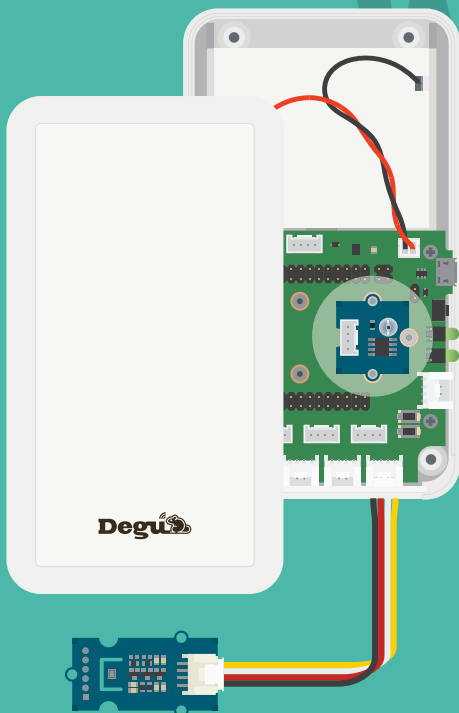
Open Source Sensor Project

Deguu

open-degu.com



What is Deguu?



Deguu is a platform that makes it possible to design mesh networking ready IoT systems with a DIY approach. By using the available PoC kits which allow sensors and actuators to be selected as required, together with the design and development information made available as open source, it's possible to create communicating Deguu sensors with a DIY approach.

Dedicated Kits with Flexible Sensor Selection



Cloud Friendly IoT Sensors with Python Preprocessing

- ✓ **Configure Preprocessing with MicroPython**
The logic for preprocessing captured sensing data can be set directly on the Deguu sensor using the MicroPython implementation of Python.
- ✓ **Communicate with Cloud Data Hubs in JSON**
Sensing data can be sent to and received from data hubs on cloud platforms in JSON. As communication is in this cloud friendly message format, the flow from data acquisition to cloud application development can be established smoothly.



Using Dedicated Kits and Design Information to Create IoT Sensors with a DIY Approach

- ✓ **Dedicated Kits with Flexible Sensor Selection**
Deguu sensor hardware can be evaluated easily with dedicated kits. The Deguu sensor main unit - the "Deguu Base Unit" - supports installing and connecting Grove modules. This allows for the addition of functionality required for the intended use by selecting from more than 200 available Seeed sensors and actuators that support the Grove system.

Note: These are modules which support the "Grove System" connector standard supported by Seeed. There is a lineup of over 200 types of sensors, actuators and connectors.

Support various functions



Vibrations



Light



People

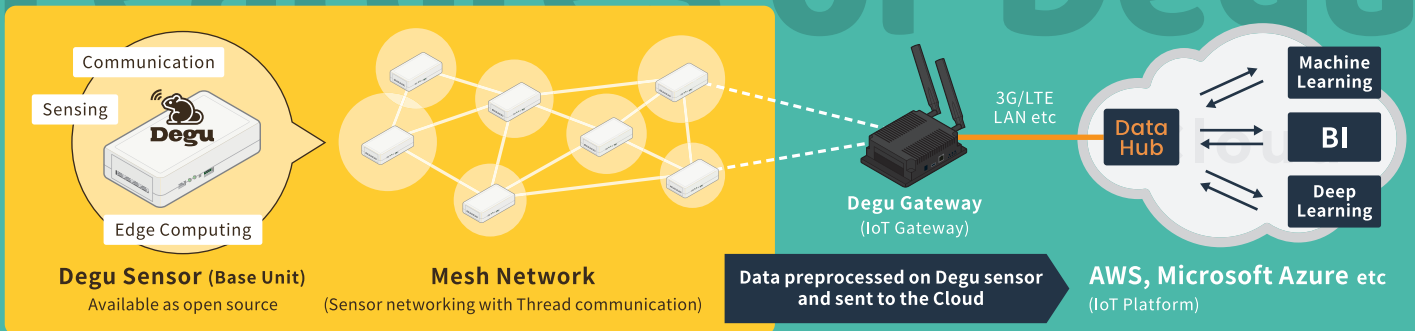


Switches

- ✓ **Open Source Design Information**

Basic design information such as circuit diagrams, parts lists and source code for the Deguu sensors is available as open source on GitHub.

Features of Degu

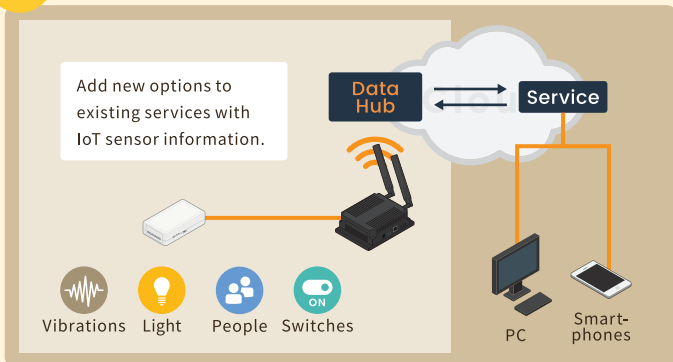


Sensing	Sensors and actuators suited to the intended use can be selected and added from the Grove module lineup.
Communication	With communication modules supporting the Thread® wireless IP communication standard, Degu sensors support “mesh networking” where the sensors communicate with each other in a mesh. With this, it's possible to create a low power, resilient and scalable sensor network.
Edge Computing	The configuration and preprocessing of sensing data, such as data thresholds and sensing intervals, can be configured directly on the Degu sensors using the MicroPython implementation of Python. As data is uploaded to the cloud after the preprocessing, this allows data collection to be done efficiently.
Security	With the A71CH Plug & Trust secure element from NXP, encryption keys for uses such as unit authentication are stored securely.

Let's Accelerate IoT

for Cloud Service Vendors

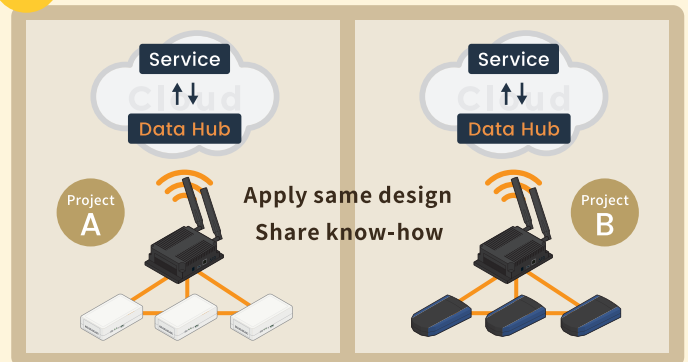
Use Case



How about adding an IoT option to your cloud service?
Using Degu, you could add value through new services such as starting a service that performs situational monitoring and data collection by just connecting a gateway and sensors.

for System Integrators

Use Case



It's possible to develop and mass produce IoT devices suited to individual projects. By taking the Degu scheme and utilizing it as a platform on individual projects, it'll be possible to then apply acquired knowhow to effectively offer further proposals for other IoT systems.

Optional Services

Degu Mass Production Design Service

This is a mass production design service for Degu sensors. Boards are redesigned based on the results of your evaluation work. Small cases are also supported.

Contact: CoreStaff Co.,Ltd.

Toppan Secure Activate Service

This service enables secure communication to IoT devices and the cloud through management of the network transfer and factory writing of encryption keys and certificates.

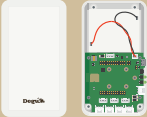
Contact: Toppan Printing CO., LTD.

AWS IoT Development Support

This is a support service for the construction of cloud systems that use the AWS IoT collection of fully managed IoT services.

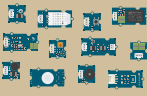
Contact: Classmethod, Inc.

What You'll Need



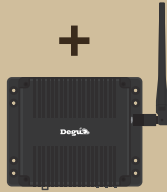
Degu Base Unit

+




Grove Modules


+




Degu Gateway

 **Degu Base Unit**

This is a base unit equipped with a microcontroller board that has Thread networking support. It runs on three AA batteries.

 **Grove Modules**

Select sensor modules for the intended use from the lineup of more than 200 types available from Seeed to connect to the Degu Base Unit. Grove sensor modules can be freely selected from those available at Seeed product sales outlets. For new users, we recommend using the Grove Starter Kit for Degu (which includes six types of modules such as a barometric pressure sensor and a three-axis accelerometer sensor) as there is MicroPython sample code available for them.

 **Degu Gateway (Development Set)**

This is a dedicated Degu Gateway that relays Degu sensor data to the Internet. Taking the role of the Thread border router, it can connect each node (Degu sensor) on the sensor network to the external network. Initial configuration of the Degu Gateway requires a serial conversion cable. We recommend purchasing the Development Set which includes all required items.

Development PC and Required Account

An Internet Connected Network Environment

You'll need to use an environment where your development PC and Degu Gateway can connect to the Internet.

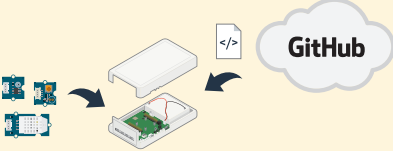
A IoT Platform Account

When using Degu, it's assumed that you can log in to the management console of your cloud platform (AWS, Microsoft Azure etc).


Starting with Degu in 3 Easy Steps

STEP 1

Choose sensor and program MicroPython code

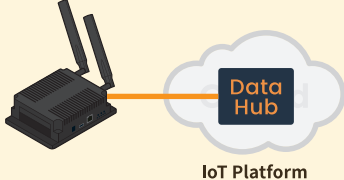


Choose a Grove module appropriate for the intended use and connect it to the Degu Base Unit. The MicroPython sample code is available from the Degu project on GitHub.

 github.com/open-degu

STEP 2

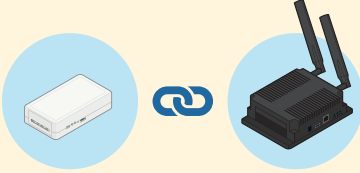
Link Degu Gateway with Cloud



Do the initial setup of the Degu Gateway's settings (one time only). First, connect the development PC and Degu Gateway and configure the Degu Gateway's network settings. Then log in to the management console (AWS, Microsoft Azure etc) and link the Degu Gateway with the data hub.

STEP 3

Pair Sensor with Degu Gateway



Configure the Degu Gateway's wireless LAN access point settings and then pair the Degu sensor (the child) with the Degu Gateway (the parent). This child to parent pairing can be done easily by scanning the QR code on the Degu Base Unit with a smartphone.



Degu Lineup

<p>Degu Base Unit</p> <p>Base Unit with Grove Module Connections</p>  <p>Connect Grove modules to form Degu sensors. Thread communication and edge computing functionality are included.</p>	<p>Grove Starter Kit for Degu</p> <p>Modules for Adding Sensor and Actuator Functionality</p>  <p>A starter kit that includes several types of Grove modules and cables is available. Grove modules can also be purchased individually.</p>	<p>Degu Gateway</p> <p>IoT Gateway for Sending Degu Node Data to the Cloud</p>  <p>A gateway with Thread networking support just for Degu, it's ready for immediate use after just configuring its internet connection settings.</p> <p>More info at: open-degu.com</p>
<p>Degu Sensor Starter Pack</p>		
<p>Degu IoT Total Pack</p>		



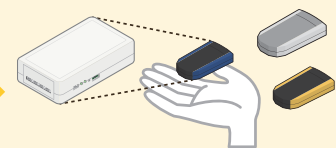
Degu Mass Production Design Service

Use the “Degu Mass Production Design Service” when you want to easily mass produce prototyped IoT devices. We can look after everything from redesigning the board to fit a case of your selection through to mass production. Design and production is done by Seeed via CoreStaff.

✔ We can look after the redesign and mass production of the configuration you create with Degu sensors.

- Selection of Grove modules ... mounted internally, cables connected etc
- Selection of power source ... battery / AC adapter selected, connector forms etc
- Selection of case
- Specification of connector layout
- Specification of image data to write ... your code written to the Degu sensor units

Redesigned into a smaller size!

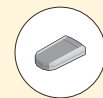


✔ MOQ - 100 units

✔ Price - Initial setup cost from 1.2 million JPY

✔ A unique shared fee approach is used to allow mass production with an affordable initial setup cost

Once we have delivered an order to a customer, we then package that design as an end product and sell that via CoreStaff's online shop. By taking a design and then making it open and sharing it, we're aiming to expand the lineup of easy to use Degu sensors and help grow IoT overall. Allowing this resale gives the customer the benefit of a more affordable initial setup cost. For those not wishing to allow the resale of the design, there is the optional service of purchasing the design data.



Same design added to lineup for sale



CoreStaff Co.,Ltd.
www.corestaff.co.jp

STORES

CoreStaff Co.,Ltd. (CoreStaff ONLINE)

Purchase locations: open-degu.com/products.html#purchase