AWS IoT GreengrassV2

To learn more about AWS IoT GreengrassV2, see how it works and what's new .

Set Up Your Development Environment

Tools Installation (IDEs, Toolchains, SDKs)

- RAK7248 is based on Raspberry Pi 4 SBC. By default, the latest Raspbian OS based on Linux is used. More information and the available releases can be found here .
- RAKwireless provides ready to use image to be flashed on the SD card here .
- The main service is the LoRa packet forwarder. It can be found here .

Additional Software References

- Our FAQ page
- Our Community Forum

Set Up Your Hardware

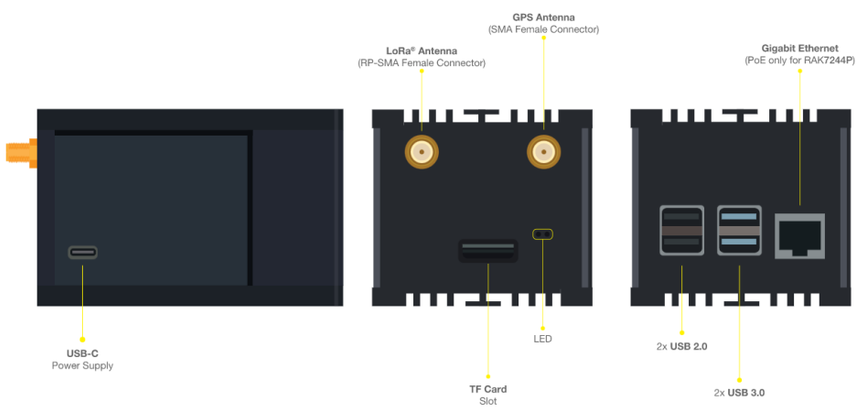

Figure 1: RAK7248 Interfaces

- A detailed description of components and interfaces can be found in the Datasheet here .
- The required power supply is a 5 V/3A USB C that is not included in the package. The device only comes with a USB cable and no adapter. There are no battery options.
- The device has only one LED indicator that flashes green when there is activity.
- The latest firmware version can be found here .
- Instructions on how to set up the new firmware can be found here .

Setup Your AWS Account and Permissions

Refer to the instructions found at the Set up your AWS Account guide. Follow the steps outlined in these sections to create your account and a user and get started:

1. Sign up for an AWS account.
2. Create a user and grant permissions.
3. Open the AWS IoT console.

Pay special attention to the Notes.

Create Resources in AWS IoT

Refer to the instructions found at the Create AWS IoT Resources guide. Follow the steps outlined in these sections to provision resources for your device:

1. Create an AWS IoT Policy.
2. Create a thing object.

Pay special attention to the Notes.

Install the AWS Command Line Interface

To install the AWS CLI on your host machine, refer to the instructions found at the Installing the AWS CLI v2 guide. Installing the CLI is needed to complete the instructions in this guide.

Once you have installed AWS CLI, configure it as per the instructions in this online guide . Set the appropriate values for Access key ID, Secret access key, and AWS Region. You can set the output format to "json" if you prefer.

Install AWS IoT Greengrass

Flash Raspberry Image to SD Card

1. Download the RAK7248-AWS-GreengrassV2 image.
2. Download the balenaEtcher software. There are options for Windows, macOS, and Linux. Clicking the **Download** button will provide you with the software directly, no installation is required.
3. Flash image to SD Card.

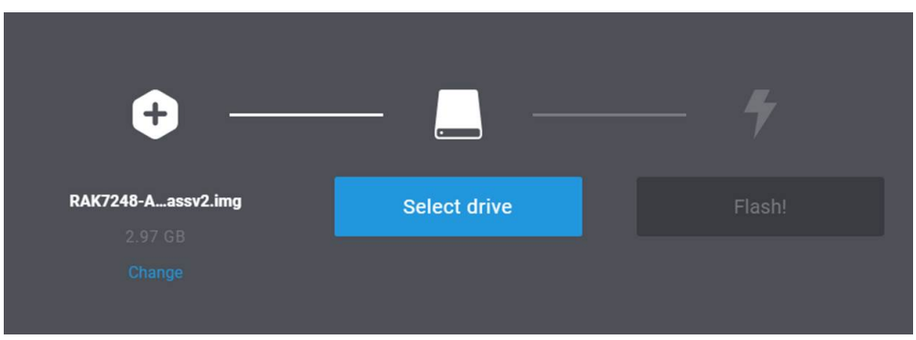

Figure 2: Flashing Raspberry Pi Image

Download the AWS IoT Greengrass Core Software

1. Greengrass has already been included in the SD card image, its directory is **~/greengrass-nucleus**.

You can also download the latest Greengrass core software and install it with commands as follows:

```sh
$ rm ~/greengrass-nucleus -rf
$ wget  https://d2s8p88vqu9w66.cloudfront.net/releases/greengrass-nucleus-latest.zip
$ unzip greengrass-nucleus-latest.zip -d  ~/greengrass-nucleus
$ rm greengrass-nucleus-latest.zip
```

2. Verify the version of the AWS IoT Greengrass Core software:

```sh
$ java -jar  ~/greengrass-nucleus/lib/Greengrass.jar --version
```

3. You will see the Greengrass version displayed - similar to: **AWS Greengrass v2.4.0**.

Provide Your Credentials

Run the following commands to provide the credentials to the AWS IoT Greengrass Core software.

```sh
export AWS_ACCESS_KEY_ID=<the access key id for your account>
```

```sh
export AWS_SECRET_ACCESS_KEY=<the secret access key for your account>
```

Run the Installer

1. Run the installer as shown below. Modify the values as per your region, install directory, and thing name.
2. Use the **--provision true** option to have the installer set up the "thing" and required policies for you. If you prefer to configure Greengrass manually, see the online guide .

```sh
sudo -E java -Droot="/greengrass/v2" -Dlog.store=FILE \

-jar ./GGCoreInstall/lib/Greengrass.jar \

--aws-region us-west-2 \

--thing-name thing-name \

--tes-role-name GreengrassV2TokenExchangeRole \

--tes-role-alias-name GreengrassCoreTokenExchangeRoleAlias \

--component-default-user ggc_user:ggc_group \

--provision true \

--setup-system-service true \

--deploy-dev-tools true
```

3. If all goes well, you will see the following output on the device console:

```
Successfully configured Nucleus with provisioned resource details!

Configured Nucleus to deploy aws.greengrass.Cli component

Successfully set up Nucleus as a system service
```

4. The local development tools (specified by the --deploy-dev-tools option) take some time to deploy. The following command can be used to check the status of this deployment:

```sh
aws greengrassv2 list-effective-deployments --core-device-thing-name thing-name
```

5. When the status is SUCCEEDED, run the following command to verify that the Greengrass CLI is installed and runs on your device. Replace /greengrass/v2 with the path to the base folder on your device as needed.

```sh
/greengrass/v2/bin/greengrass-cli help
```

Create a Hello World Component

In Greengrass v2, components can be created on the edge device and uploaded to the cloud, or vice versa.

Create the Component on Your Edge Device

Follow the instructions online under the section To create a Hello World component to create, deploy, test, update and manage a simple component on your device.

Upload the Hello World Component

Follow the instructions online at Upload your component to upload your component to the cloud, where it can be deployed to other devices as needed.

Debugging

If you experience any issues, you can check the logs located in the **/var/log/** directory.

Troubleshooting

If you are unable to ssh to the device:

1. Check that your Wi-Fi is connected to **RAKWireless_XXXX**.
2. Try ping **192.168.230.1**

Last Updated: 11/29/2021, 5:12:23 AM