
GETTING STARTED GUIDE

INTEGRATING TEKTELIC STORK DEVICE WITH AWS IoT CORE DEVICE LOCATION SERVICE

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1 Introduction

The purpose of this document is to present a Getting Started Guide for integrating the TEKTELIC STORK device with AWS IoT Core Device location service.

2 Pre-Requisites

- » TEKTELIC STORK device
- » LoRaWAN gateway: A gateway that can run LoRa Basic Station.
- » Access to an AWS account with a region that supports AWS IoT Core for LoRaWAN (Screenshots included in this document are using the us-west-2 region). While not strictly required, to simplify creating and configuring the required AWS resources, it is recommended to use a user (IAM user or federated identity) with administrative privileges on the AWS account.

3 About AWS Device Location

Refer to the AWS online documentation for information about [AWS IoT Core Device Location](#) and how it works.

4 Overview

The TEKTELIC STORK is ideal for tracking vehicles, equipment, and other assets in any indoor or outdoor environment, and while the asset is in transit. Versatile mounting options allow STORK to be attached to pallets and equipment to easily. STORK provides location positioning via Low Power GNSS, BLE and Wi-Fi Scanning while utilizing LoRaWAN® for long-range connectivity, low power consumption, and extended battery life.

STORK is an ideal device for Equipment yards, warehouses and storage facilities, manufacturing facilities and for assets in-transit such as shipped pallets, containers and other mobile equipment.

5 Hardware Details

5.1 Datasheet

The STORK datasheet can be on TEKTELIC's website accessed [here](#).

5.2 Standard Kit Contents

The STORK is shipped with the following contents

- STORK Sensor

- C-Cell Battery

- Mounting Bracket

5.3 User Provided Items

LoRaWAN Gateway (see section 7 for instructions on connecting LoRaWAN Gateway to AWS IoT Core for LoRaWAN)

Established Wi-Fi and/or Bluetooth Network

6 Setup AWS

If you don't have an AWS account, refer to the instructions in the guide [here](#). The relevant sections are [Sign up for an AWS account](#) and [Create an administrative user](#).

If you have an AWS account and administrative user already set up, proceed with the steps below

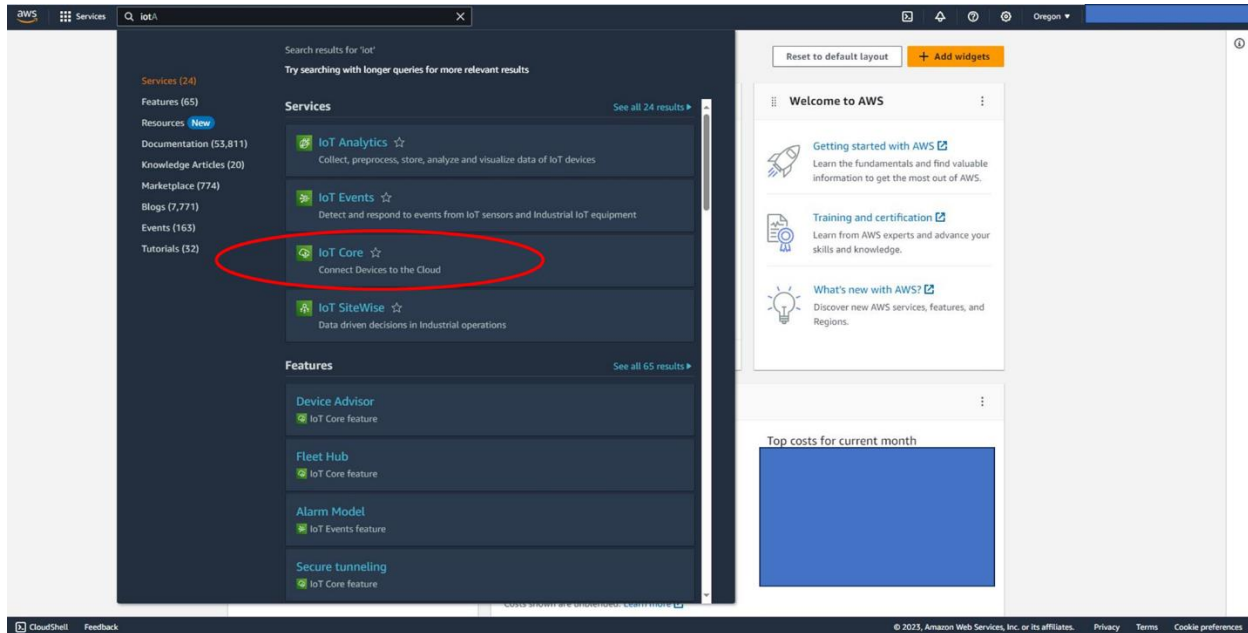
7 Onboard the LoRaWAN gateway to AWS IoT Core for LoRaWAN

The gateway commissioning process can be found here: [Onboard your gateways to AWS IoT Core for LoRaWAN - AWS IoT Core \(amazon.com\)](#)

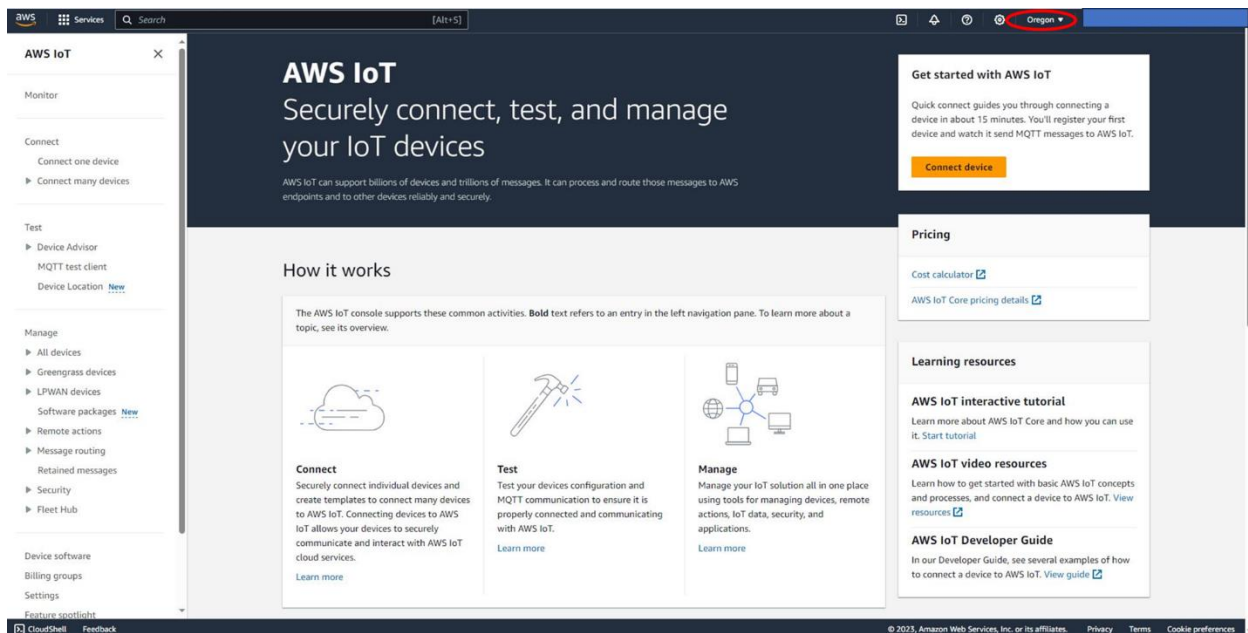
8 Provision the Device on AWS IoT Core

This section documents the steps required to onboard the tracker on AWS IoT Core for LoRaWAN, including creating service profile, device profile, device, and destination.

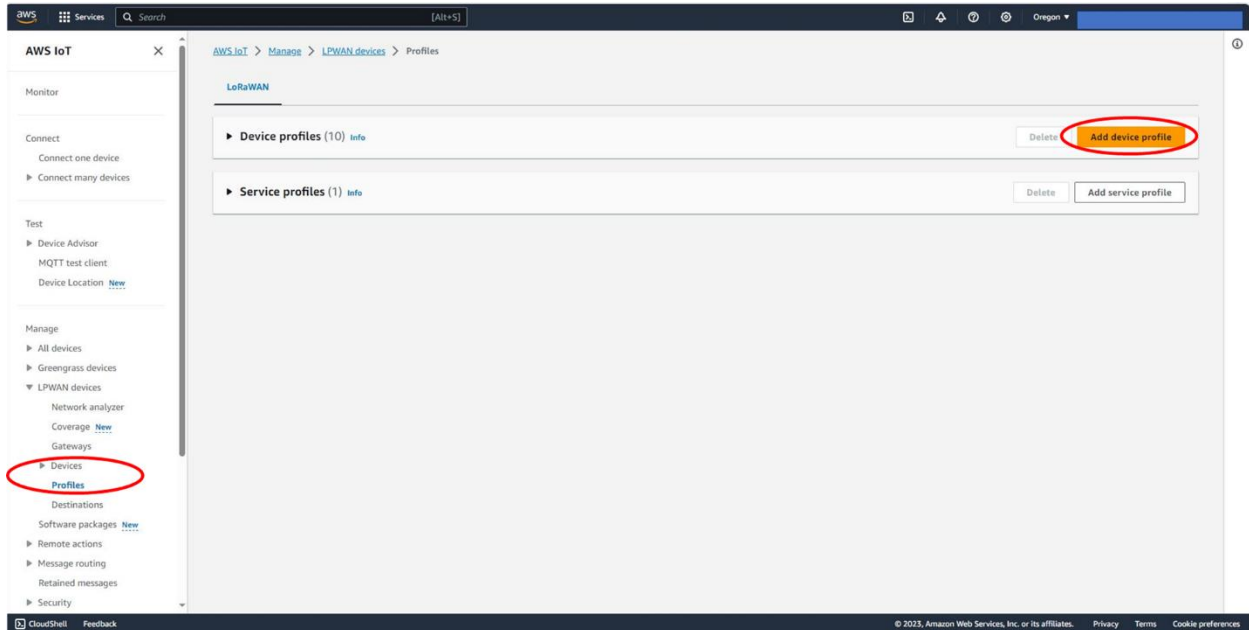
1. On the AWS Console, navigate to the search box and search for IoT core.



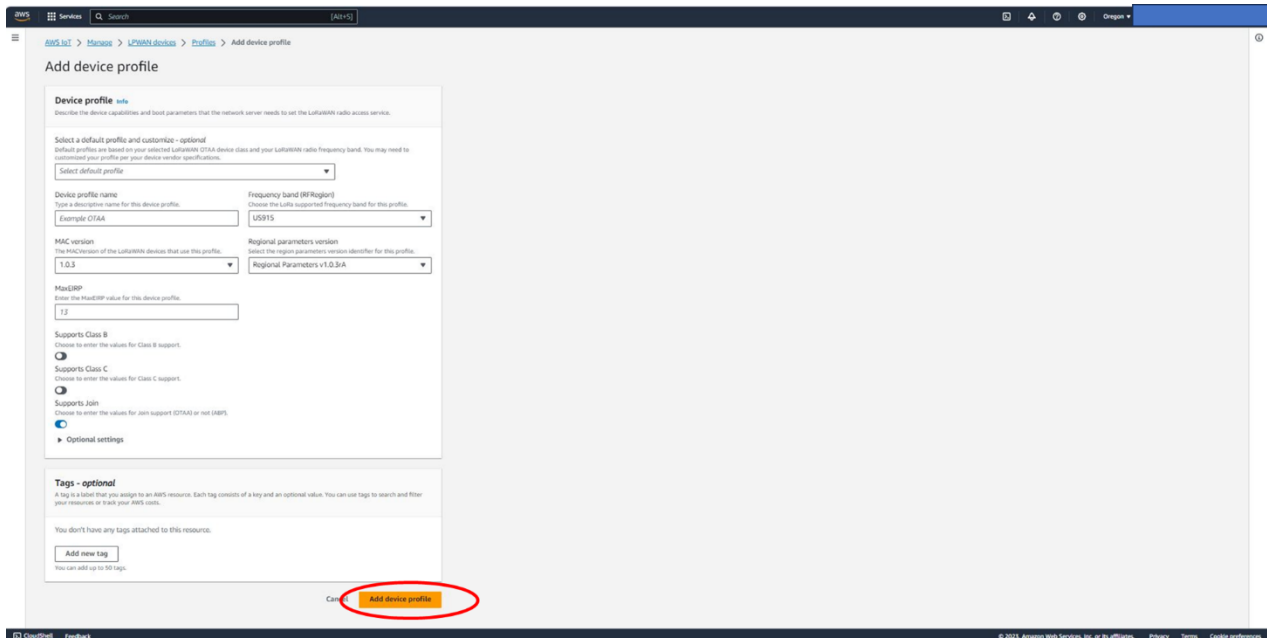
2. Please also confirm that AWS IoT core is available upon your selection of region, this guide used Oregon (us-west-2).



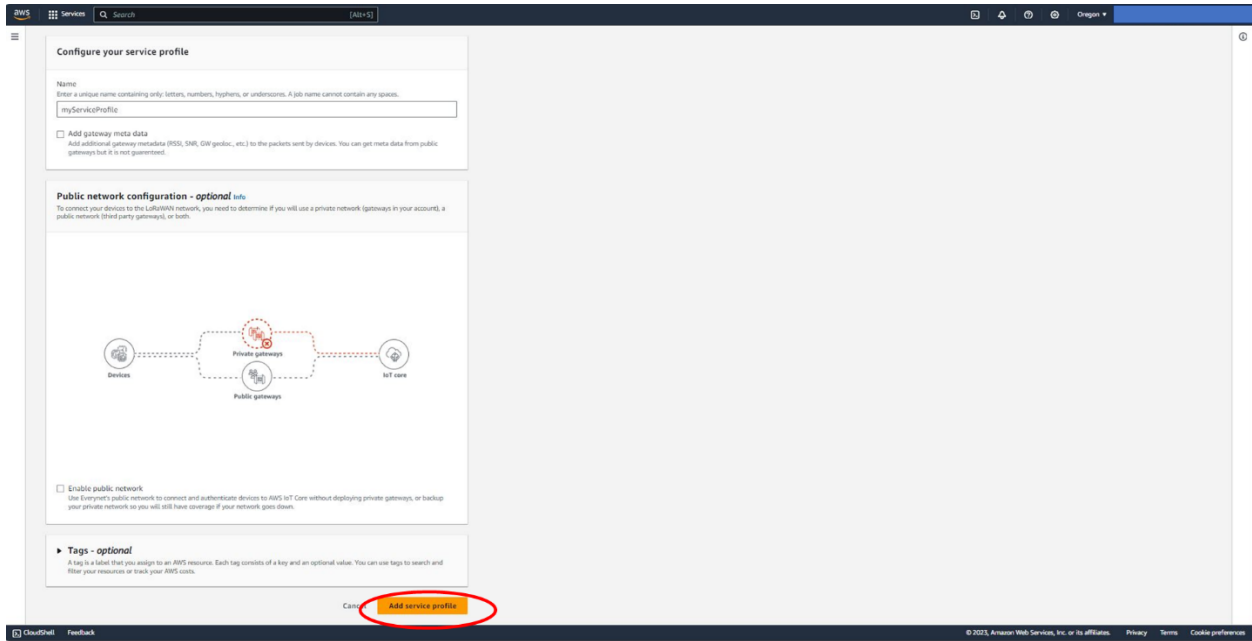
3. Navigate to the drop-down menu on the left, expand LPWAN devices, and finally select Profiles.



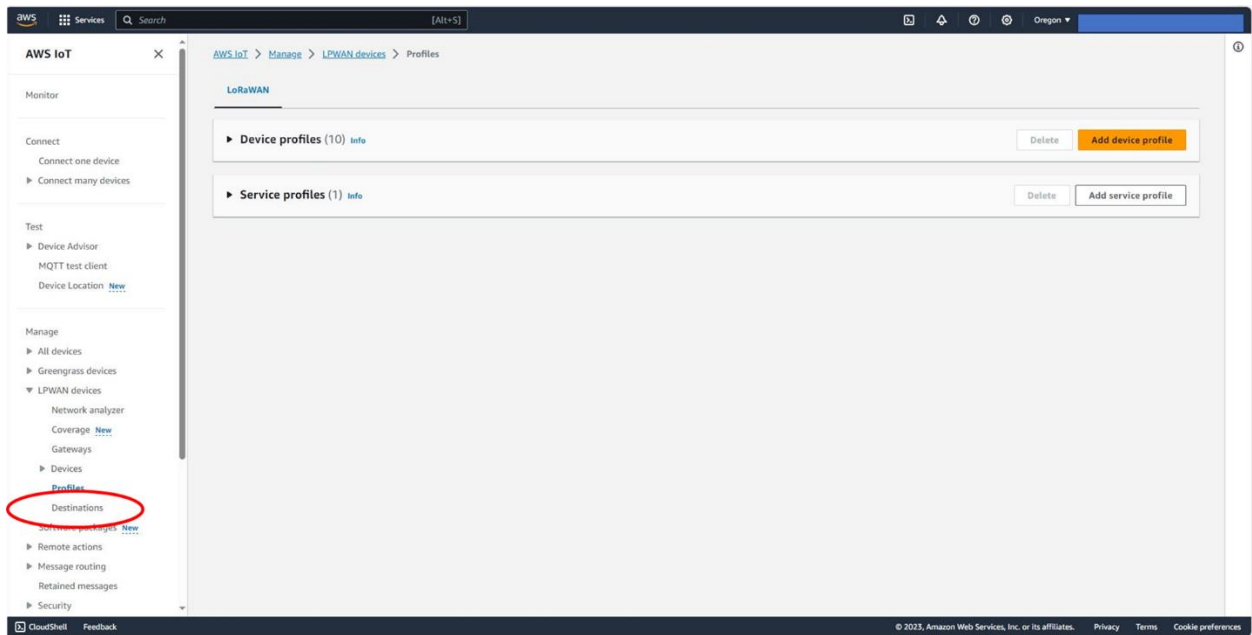
4. Choose “Add device profile” and input your device profile accordingly. Currently STORK uses LoRaWAN version 1.0.3 and regional parameter v1.0.3rA. Once finished, click on “Add device profile”.



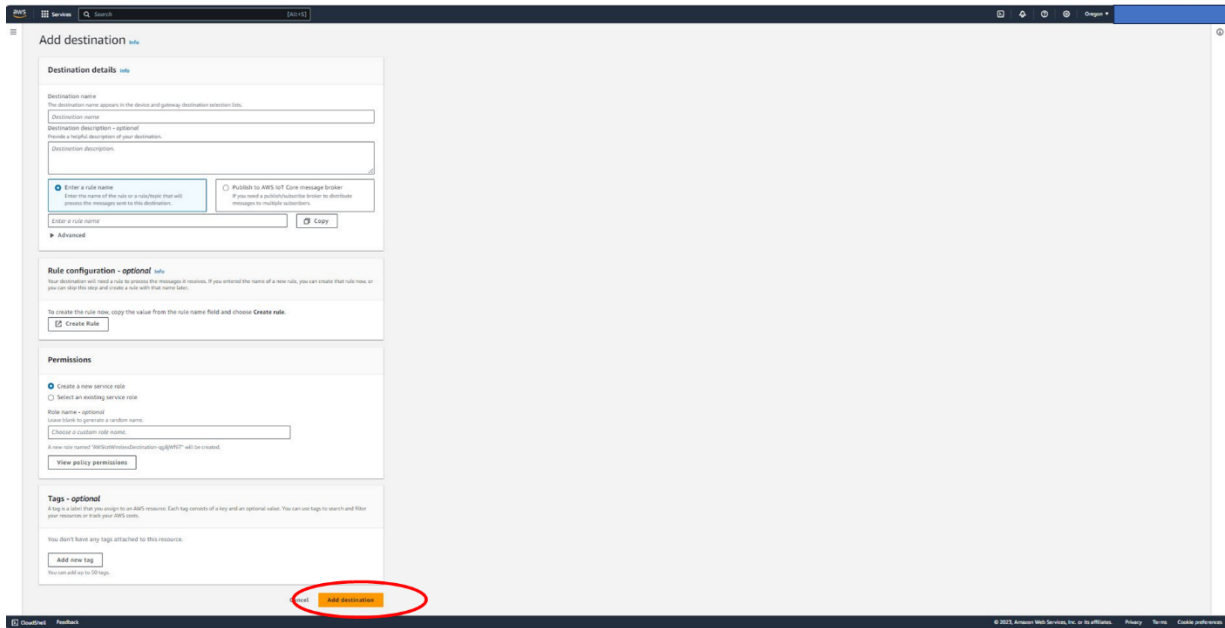
5. Choose “Add service profile” and name your profile (**myServieProfile** in this document). Once finished, click on “Add service profile”.



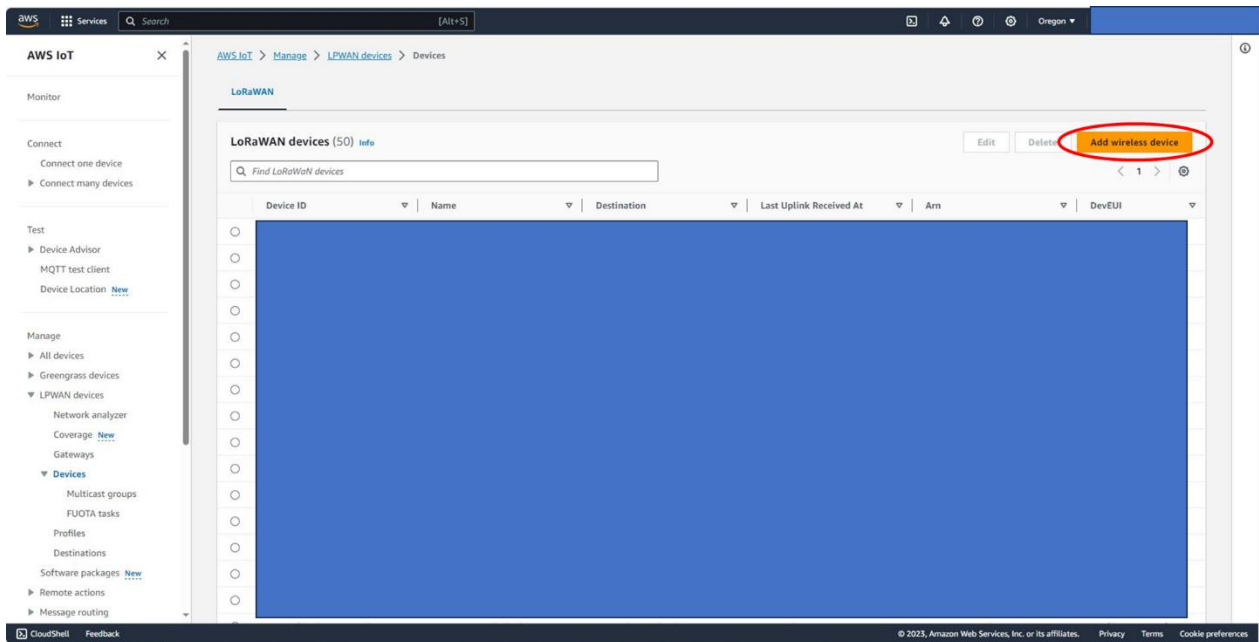
6. Navigate to the drop-down menu on the left, expand LPWAN devices, and finally select “Destinations”.



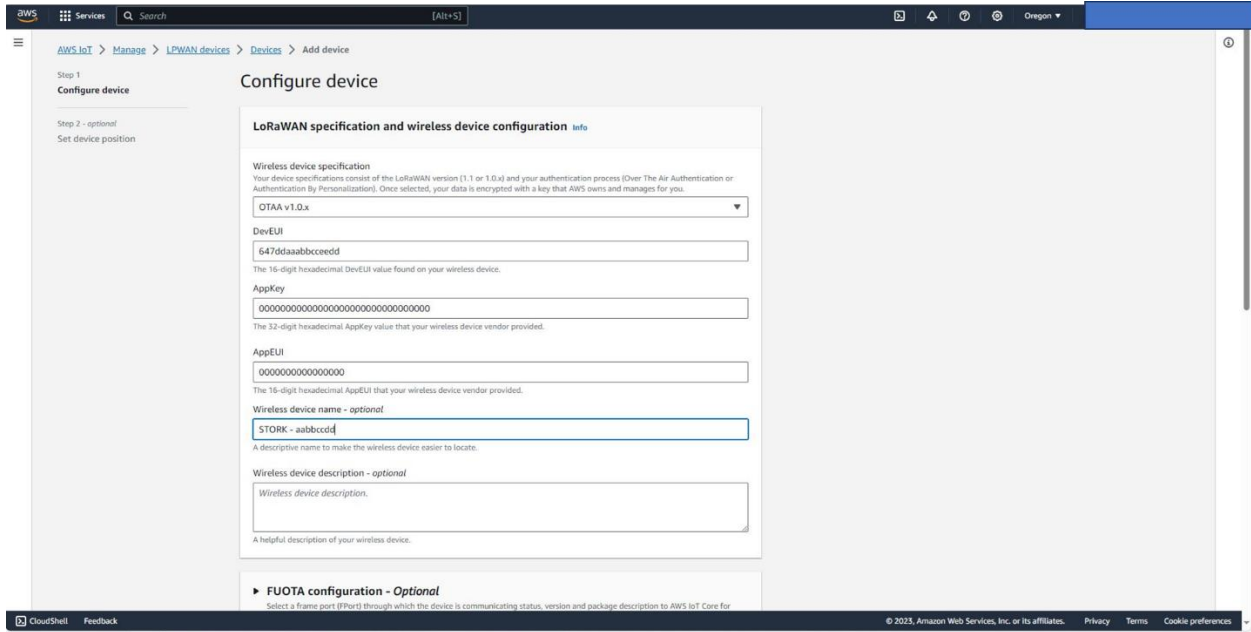
7. Choose “Add destination” and name your destination (**rawData** in this document). Please make sure that the “Enter a rule name” option is selected and give it a rule name. Also please make sure the “Create a new service role” is checked. Once finished, click on Add destination.



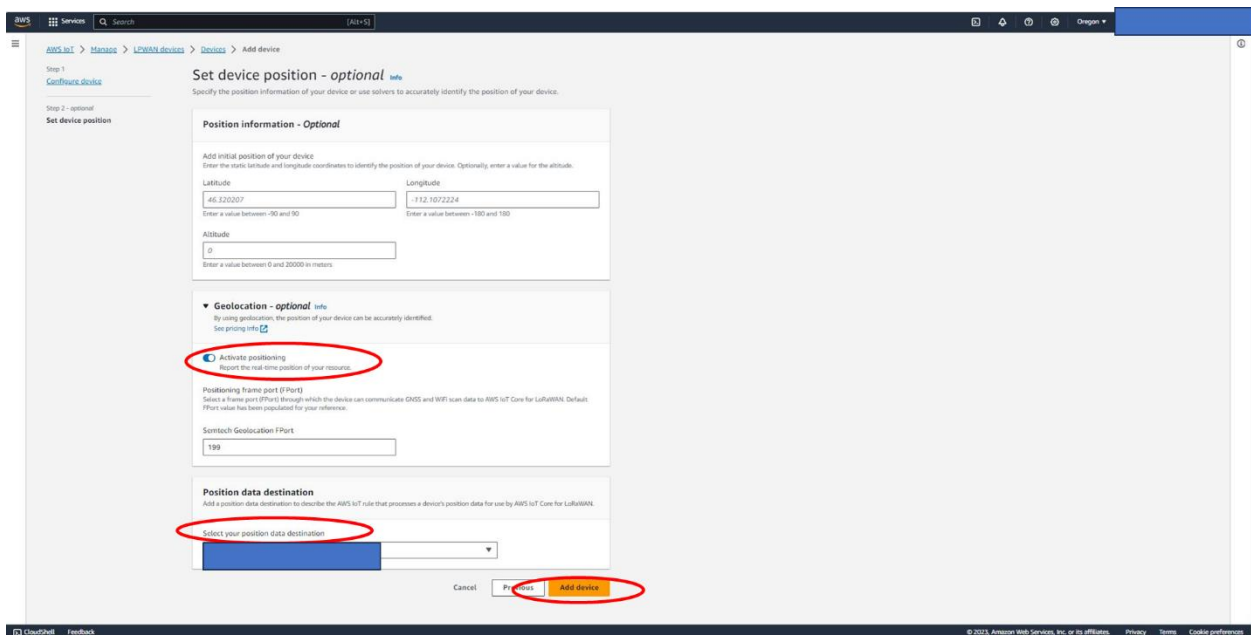
8. Please repeat step 7 to create a location data destination: Choose “Add destination” and name your destination for device location data (**locationData** in this document). Please make sure that the “Enter a rule name” option is selected and give it a rule name. Also please make sure the “Create a new service role” is checked. Once finished, click on Add destination.
9. Navigate to the drop-down menu on the left, expand LPWAN devices, select Devices, and click on Add wireless device.



10. In Add wireless device, enter the sensor name, description, DEVEUI, APPEUI, and APPKEY. It is noteworthy that DEVEUI, APPEUI, and APPKEY will be provided by the device vendor (TEKTELIC). Afterward, please select the rawData for destination, which was created in step 7. Finally, please click on “Next”.



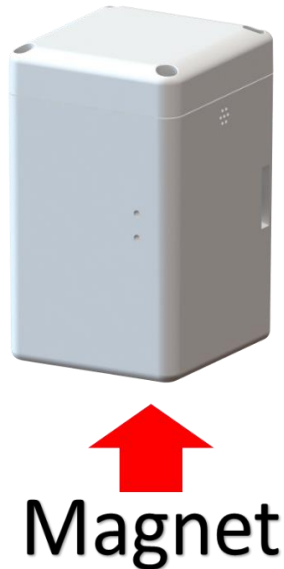
12. Check the activate positioning option, on the drop-down menu, leave Semtech Geolocation FPort as default, and select the Position data destination to locationData, which was created in step 8. Finally, please click Add device.



13. Double check if gateway is online.

14. Activate the STORK Tracker

Place the magnet close to the magnet sign on the device. The magnet must be held in place for >3 seconds and < 10 seconds. After a successful activation, LEDs should blink (after about an 8 second pause) frequently until the device is able to join the network and then the blinking will be reduced to reflect its operation (LEDs blink when ULs are sent)



15. From Devices tab, click on the STORK's device ID, the Last uplink received at time should be a recent time.

A screenshot of the AWS IoT console interface. The main content area shows the details for a LoRaWAN device named "STORK". The "Details" section includes fields for Device ID, Name (STORK), Associated thing name, Description, Destination (rawDataForDeviceLocationTest), and Last uplink received at (October 06, 2023, 13:42:14 (UTC-06:00)). The "Last uplink received at" field is circled in red. Below the details, there are tabs for Profiles, Device traffic, Position, and Tests. The "Profiles" section shows a device profile with ID 79e577ea-6ea3-4572-89fa-8397f7381980 and a service profile with ID deb7dc41-e26b-4aec-8315-39a530473c63. The left sidebar contains navigation options like Monitor, Connect, Test, Manage, and Devices. The bottom of the console shows the footer with copyright information and links for Privacy, Terms, and Cookie preferences.

16. Go to the position tab, the device geolocation should be displayed, assuming STORK has performed a GNSS and/or Wi-Fi scan successfully.

The screenshot displays the AWS IoT console interface for a LoRaWAN device. The breadcrumb navigation shows the path: AWS IoT > Manage > LPWAN devices > Devices > [Device ID]. The device name is STORK. The 'Details' section includes fields for Device ID, Name (STORK), Destination (rawDataForDeviceLocationTest), Associated thing name, and Description. The 'Position' tab is selected, showing a map of the device's location in Calgary, Alberta, Canada. The 'Position data' section provides the following information:

Position data	
Timestamp	October 06, 2023, 13:42:20 (UTC-06:00)
Latitude	51.1194
Longitude	-114.04092
Altitude	1063.33
Horizontal accuracy	31.5

The 'Last position received' timestamp, 'October 06, 2023, 13:42:14 (UTC-06:00)', is circled in red in the original image. The 'Positioning configuration details' section shows the 'Position data destination' as [redacted].