# Release Notes for AVR IoT AWS Sensor Node on GitHub

## What is the AVR IoT AWS Sensor Node?

AVR IoT AWS Sensor Node is a secure, Wi-Fi connected solution which demonstrates a basic IoT node. It enables developers to send and receive data between a sensor node and the AWS Cloud Platform.

## What's New

### 4.1.1 – mc3 config file added to AVR-IoT-AWS github repo

Features

- MCC can be launched in the source code project deployed in GitHub.

### 4.1.0 – AWS multi-account registration support and CLI version update

Features

• Added Server Name Indication (SNI) support for AWS multi-account registration

Improvements

• Renamed the 'cli_version_number' to 'cli_option_version_number' to indicate the purpose of the variable.

• Upgraded CLI version number to Semantic Versioning format

### 4.0.0 – Refactoring and bug fix

Improvements

• Optimized LED driver code size and created a simple interface to control the LEDs

• Optimized the frequency at which the application queries WINC module for NTP time in order to maintain the system time

• The cryptoauthlib library version updated to use 20190517 tag

Bugfix

• Resolved warnings in mqtt_service, wifi_service and time_service modules

### 3.0.0 – Refactoring and bug fix

Features

• Application specific messages can be enabled/disabled through the macro "ENABLE_DEBUG_IOT_APP_MSGS" for printing to a connected terminal. *This does not affect DEBUG settings.

Improvements

• APIs and structure in "cloud_service.h" refactored.

- API in "wifi_service.h" refactored.

Bugfix

• The Yellow and Green LED behavior bug resolved when connection loss occurred which made it appear as if the board was still transmitting.

### 2.0.2 – The wifi.cfg drag and drop experience improved

Bugfix

- UART2 Rx pin was floating when the application started, leading to the possibility of receiving garbage data by the application, on a file 'drag and drop' event. Enabled pull-up on the UART2 Rx pin to fix this issue.

### 2.0.1 – Initial release on GitHub

Features

- Initial release of firmware supporting communication with AWS IoT Core.
- Sensor data reflecting captured temperature and light values published from AVR IoT WA board to cloud using telemetry topic at a periodic (1) second interval.
- Firmware implementing use of the AWS shadow service, subscribing to a shadow topic for monitoring of a desired 'Toggle' state value.

Improvements

- Improved Cloud interface added to application features allowing for easy swap between cloud platforms.  Bugfix
- Updated interrupt priority levels to address issue of missing character intermittently during 'drag and drop' of the wifi.cfg file to the CURIOSITY drive.

## System Requirements

- MPLAB® X IDE v5.30 or later
- Compilers ○ XC8 compiler v2.10 or later ○ AVR GCC compiler v5.4.0 or later

## Hardware

- AVR-IOT WA Development Board (ATmega4808):
  https://www.microchip.com/DevelopmentTools/ProductDetails/ev15r70a
- Components:
  - ✦ ATWINC1510 WiFi™ network controller
  - ✦ ATECC608A (pre-provisioned) Cryptoauthentication™ device
  - ✦ TEMT6000 light sensor
  - ✦ MCP9808 precision temperature sensor
  - ✦ MCP73871 Li-Ion battery charger MIC35055 switching regulator
  - ✦ 2x push buttons

✦ 4x LEDs

## Known Issues
- XC8 Compiler v2.10 or later: Supported by optimization **level 1** and **level s (pro)**
  Optimization level 2(free) and optimization level 3 (pro) are not supported
- AVR GNU Toolchain 3.62v: Supported by optimization **level 1, 2 (free)** and **level s (pro)**.
  Optimization level 3 (pro) is not supported
- On regenerating code in MCC, the system module doesn't retain the set clock value and presecales
  it by a value of six. Make sure the prescaler value is 2X such that Main clock is at 10MHz.

## Documentation Support
- ATmega4808 Product Page: https://www.microchip.com/wwwproducts/en/ATMEGA4808
- ATWINC1510 Product Page: https://www.microchip.com/wwwproducts/en/ATWINC1500
- ATECC608A Product Page: https://www.microchip.com/wwwproducts/en/ATECC608A
- AVR-IoT WA Development Board: https://www.microchipdirect.com/product/EV15R70A

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