[Notes]

RX Family

Notes on Performing Firmware Update Over-The-Air on AWS FreeRTOS

R20TS0875EJ0100
Rev.1.00
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Outline

The following symptoms occur when performing Firmware Update Over-The-Air (FOTA) on AWS FreeRTOS.

1. Device (thing) names and credential information are overwritten.
2. Processing of OTA fails after recovering from low power consumption mode.

1. Device (Thing) Names and Credential Information Are Overwritten

1.1 Applicable Products

(1) AWS FreeRTOS that support the RX Family

FreeRTOS V.202203.00 and earlier

FYI: RX Family AWS FreeRTOS projects

https://github.com/renesas/amazon-freertos

1.2 Applicable Devices

RX65N, RX651, RX671, and RX72N groups

1.3 Details and Conditions

If you use sample code to make an AWS OTA job to perform FOTA, names of devices (things) and credential information for connecting to AWS (both are saved in a target device's on-chip flash memory) are overwritten.

This symptom is mentioned in the following AWS documentation.

Troubleshoot OTA updates of multiple devices

https://docs.aws.amazon.com/freertos/latest/userguide/ota-troubleshooting-multi-thing.html

1.4 Workaround

Before performing FOTA on multiple devices, change sample code (such as OTA PAL) to protect thing names and credential information from being overwritten.

1.5 Schedule for Fixing the Problem

This problem will be fixed in a later version.

2. Processing of OTA Fails after Recovering from Low Power Consumption Mode

2.1 Applicable Products

(1) AWS FreeRTOS that support the RX Family

FreeRTOS V.202203.00 and earlier

FYI: RX Family AWS FreeRTOS projects:

https://github.com/renesas/amazon-freertos

2.2 Applicable Devices

RX65N, RX651, RX671, and RX72N groups

2.3 Details and Conditions

After recovering from software standby, if OTA is initialized and then performed, the flash module Firmware Integration Technology (flash memory programming driver) returns an error.

For details, refer to the Tool News below.

[Notes] RX Family Flash Module Using Firmware Integration Technology RX Driver Package (R20TS0872EJ0100)

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2.4 Workaround

Take any of the following actions.

Workaround 1:

Refer to the Tool News below and workaround.

[Notes] RX Family Flash Module Using Firmware Integration Technology RX Driver Package (R20TS0872EJ0100)

Workaround 2:

Before performing OTA or after recovering from software standby, call the flash module function "R_FLASH_Close" and then "R_FLASH_Open".

```
void sleep_post(TickType_t time)
{
    eTaskState state_demo;
    eTaskState state_cellular;

    state_demo = eTaskGetState(iot_thread_task_hdl);
    state_cellular = eTaskGetState(cellular_ctrl.recv_taskhandle);

    if ((state_demo == eSuspended) && (state_cellular == eSuspended))
    {
#if (R_DEMO_LPCMODE > R_LPC_SLEEP)
        R_FLASH_Close();
        R_FLASH_Open();
#endif

        vTaskResume(cellular_ctrl.recv_taskhandle);
        PORT2.PODR.BIT.B2 = 0;
        vTaskResume(iot_thread_task_hdl);

        rdemo_led_set(2, 1);    // LED2 OFF
    }
}
```

Workaround 2

Workaround 3:

Use a version of the flash module in which the symptom is fixed.

2.5 Schedule for Fixing the Problem

This problem will be fixed in a later version.

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Sep.16.22	-	First edition issued

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