


```
IPv4 Address: 192.168.8.109
Dhcp OK
[17.999][LK-0313] MQTT user calls aiot_mqtt_connect api, connect
[17.999][LK-0317] SFW_K_1&a1X3jdyVayF
[17.999][LK-0318] 988FDf6E4D0cC6D726D63867DA18EDCFDB9E1B8DF A9A41D4B9AA6689F98E6127
unknown option
      unknown option
      establish tcp connection with server(host='a1X3jdyVayF.iot-as-mqtt.cn-shanghai.aliyuncs.com', port=[443])
Hello world1.
success to establish tcp, fd=0
[18.222][LK-0313] MQTT connect success in 264 ms
AIOT_MQTT_EVT_CONNECT
[18.222][LK-0309] pub: /ota/device/inform/a1X3jdyVayF/SFW_K_1
[LK-030A] > 7B 22 69 64 22 3A 31 2C 20 22 70 61 72 61 6D 73 | {"id":1, "params
[LK-030A] > 22 3A 7B 22 76 65 72 73 69 6F 6E 22 3A 22 31 2E |   {"version": "1.
[LK-030A] > 30 2E 30 22 7D 7D |   0.0"}
Hello world2.
Hello world1.
```

在上传升级包的时候，由于选择了需要进行升级包验证，所以在云端接收到当前版本信息后，需要再进行验证操作。回到控制台点击验证按键，填写需要被升级的版本号，并选择当前升级的设备。

验证升级包

待升级版本号

1.0.0 X

* 待验证设备

SFW_K_1 X

设备升级超时时间 (分钟) ?

请输入超时时间 (分钟)

确定 取消

选择好之后会看到串口显示升级包信息，可以看到 OTA 目标版本为 1.4.0，大小信息也会显示。

```

Hello world!.
[21.888][LK-0309] pub: /ota/device/upgrade/a1X3jdyVAyF/SFW_K_1

[LK-030A] < 7B 22 63 6F 64 65 22 3A 22 31 30 30 30 22 2C 22 | {"code":"1000", "
[LK-030A] < 64 61 74 61 22 3A 7B 22 73 69 7A 65 22 3A 32 37 | data":{"size":27
[LK-030A] < 32 36 30 30 2C 22 64 69 67 65 73 74 53 69 67 6E | 2600,"digestSign
[LK-030A] < 22 3A 22 45 34 45 4F 72 42 6D 4C 37 77 55 46 6B | ":"E4E0rBmL7wUfK
[LK-030A] < 41 78 39 66 6E 57 67 62 39 35 33 30 67 2F 37 51 | Ax9fnWgb9530g/7Q
[LK-030A] < 64 48 78 4F 6C 51 31 32 6C 4C 63 7A 6E 46 45 4F | dHx0L012lLcZnFE0
[LK-030A] < 46 4C 62 58 5A 66 42 4F 58 76 76 30 55 77 63 6A | FLbXZfB0Xvv0Uwcj
[LK-030A] < 73 7A 65 75 56 6B 66 72 77 38 30 38 62 6B 76 43 | szeuVkfRw808bkvC
[LK-030A] < 38 33 57 71 52 4A 58 6C 2F 6D 67 6A 73 50 36 54 | 83WqRJXl/mgjsP6T
[LK-030A] < 45 33 62 6A 41 51 7A 50 32 7A 2F 2F 45 52 67 36 | E3bjAQzP2z//ERg6
[LK-030A] < 31 56 6B 4B 7A 37 6B 70 75 44 58 48 6D 59 50 66 | 1VkJz7kpuDXHmYPf
[LK-030A] < 35 37 6B 6A 49 32 54 53 42 65 6A 51 77 50 71 6E | 57kjI2TSBejQwPqn
[LK-030A] < 58 2F 2F 44 59 53 56 2B 76 49 78 63 37 6D 6E 32 | X//DYSV+vIxc7mn2
[LK-030A] < 71 57 73 35 6A 43 49 69 6B 37 41 42 72 33 31 58 | qWs5jCIik7ABr3lX
[LK-030A] < 7A 5A 34 67 48 36 55 77 53 69 2B 53 50 62 72 56 | zZ4gH6UwSi+SPbrV
[LK-030A] < 6A 32 48 4E 6C 49 31 6C 4F 43 4B 4C 37 59 57 55 | j2HNlI1l0CKL7YWU
[LK-030A] < 61 65 38 76 51 58 61 43 62 56 50 73 72 2F 4F 79 | ae8vQXaCbVPsr/Oy
[LK-030A] < 50 64 68 5A 4B 51 52 62 39 4A 62 78 54 38 72 61 | PdhZKQRb9JbxT8ra
[LK-030A] < 4F 55 43 64 52 37 37 68 57 39 65 45 6D 6B 50 47 | OUCdR77hW9eEmkPG
[LK-030A] < 68 2F 6A 50 57 37 39 45 50 30 6F 6D 53 38 33 4B | h/jPW79EP0omS83K
[LK-030A] < 49 4A 54 71 34 56 6D 45 6B 4E 44 72 5A 49 69 4D | IJTq4VmEkNdrZiIM
[LK-030A] < 71 74 68 4A 45 79 38 54 59 71 72 46 79 59 46 5A | qthJEy8TYqrFyFZ
[LK-030A] < 64 6E 77 79 63 48 50 4E 53 64 41 4E 37 37 71 4D | dnwycHPNSdAN77qM
[LK-030A] < 6B 66 5A 52 66 4F 4E 49 4E 66 6C 55 39 78 6A 33 | kfZRfONINflU9xj3
[LK-030A] < 68 39 79 6A 36 2B 63 79 77 3D 3D Hello world!.
22 2C 22 73 69 | h9yj6+cYW==" , "si
[LK-030A] < 67 6E 22 3A 22 35 32 61 35 63 30 32 61 65 37 61 | gn":"52a5c02ae7a
[LK-030A] < 66 63 64 64 63 35 33 62 38 63 66 36 34 62 61 34 | fcdde53b8cf64ba4
[LK-030A] < 36 31 34 34 64 22 2C 22 76 65 72 73 69 6F 6E 22 | 6144d", "version"
[LK-030A] < 3A 22 31 2E 34 2E 30 22 2C 22 75 72 6C 22 3A 22 | : "1.4.0", "url": "
[LK-030A] < 68 74 74 70 73 3A 2F 2F 69 6F 74 78 2D 6F 74 61 | https://iotx-ota
[LK-030A] < 2E 6F 73 73 2D 63 6E 2D 73 68 61 6E 67 68 61 69 | .oss-cn-shanghai
[LK-030A] < 2E 61 6C 69 79 75 6E 63 73 2E 63 6F 6D 2F 6F 74 | .aliyuncs.com/ot
[LK-030A] < 61 2F 66 66 35 64 39 30 33 32 33 34 37 39 33 31 | a/ff5d9032347931
[LK-030A] < 39 37 65 61 37 63 31 62 66 64 61 36 37 31 38 64 | 97ea7c1bfda6718d
[LK-030A] < 30 39 2F 63 6B 6F 6D 61 33 6D 35 71 30 30 30 30 | 09/ckoma3m5q0000
[LK-030A] < 33 61 38 65 34 65 35 30 77 38 38 6B 2E 62 69 6E | 3a8e4e50w88k.bin

[LK-030A] < 61 74 75 72 65 3D 59 64 59 69 6C 75 6F 77 4E 58 | ature=YdYiluowNX
[LK-030A] < 25 32 42 70 6C 61 77 52 59 66 64 4C 4B 4A 70 47 | %2BplawRYfdLKJpG
[LK-030A] < 74 5A 59 25 33 44 22 2C 22 73 69 67 6E 4D 65 74 | tZY%3D", "signMet
[LK-030A] < 68 6F 64 22 3A 22 4D 64 35 22 2C 22 6D 64 35 22 | hod": "Md5", "md5"
[LK-030A] < 3A 22 35 32 61 35 63 30 32 61 65 37 61 66 63 64 | : "52a5c02ae7afcd
[LK-030A] < 64 63 35 33 62 38 63 66 36 34 62 61 34 36 31 34 | dc53b8cf64ba4614
[LK-030A] < 34 64 22 7D 2C 22 69 64 22 3A 31 36 32 30 38 37 | 4d"), "id": "162087
[LK-030A] < 35 37 33 35 37 30 38 2C 22 6D 65 73 73 61 67 65 | 5735708, "message
[LK-030A] < 22 3A 22 73 75 63 63 65 73 73 22 7D | ": "success"}

OTA target firmware version: 1.4.0, size: 272600 Bytes
unknown option
establish tcp connection with server(host='iotx-ota.oss-cn-shanghai.aliyuncs.com', port=[80])
success to establish tcp, fd=1
[22.222][LK-040B] > GET /ota/ff5d903234793197ea7c1bfda6718d09/ckoma3m5q00003a8e4
LTAI4G1TuWwSirnbAzUHfL3e&Signature
[22.333][LK-040B] > Host: iotx-ota.oss-cn-shanghai.aliyuncs.com
[22.333][LK-040B] > Accept: text/html, application/xhtml+xml, application/xml;q=0.9, */*;q=0.8
[22.333][LK-040B] > Range: bytes=0-
[22.333][LK-040B] > Content-Length: 0
[22.333][LK-040B] >
[22.333][LK-0309] pub: /ota/device/progress/a1X3jdyVAyF/SFW_K_1

[LK-030A] > 7B 22 69 64 22 3A 32 2C 20 22 70 61 72 61 6D 73 | {"id":2, "params
[LK-030A] > 22 3A 7B 22 73 74 65 70 22 3A 22 30 22 2C 22 64 | "":{"step":"0", "d
[LK-030A] > 65 73 63 22 3A 22 22 7D 7D | esc":""}

```

下面的打印信息显示下载请求已经成功发送并开始下载流程。

```

download renewal request has been sent successfully
[22.888][LK-040D] < HTTP/1.1 206 Partial Content
[22.888][LK-040D] < Server: AliyunOSS
[22.888][LK-040D] < Date: Thu, 13 May 2021 03:15:46 GMT
[22.999][LK-040D] < Content-Type: application/octet-stream
[22.999][LK-040D] < Content-Length: 272600
[22.999][LK-040D] < Connection: keep-alive
[22.999][LK-040D] < x-oss-request-id: 609C99E21B27393636E1E89F
[22.999][LK-040D] < Content-Range: bytes 0-272599/272600
[22.999][LK-040D] < Accept-Ranges: bytes
[22.999][LK-040D] < ETag: "52A5C02AE7AFCD53B8CF64BA46144D"
[22.999][LK-040D] < Last-Modified: Thu, 13 May 2021 02:34:39 GMT
[22.999][LK-040D] < x-oss-object-type: Normal
[22.999][LK-040D] < x-oss-hash-crc64ecma: 5693646425570967251
[22.999][LK-040D] < x-oss-storage-class: Standard
[22.999][LK-040D] < Content-MD5: UqXAKuevdxTuM9kukYUTQ==
[22.999][LK-040D] < x-oss-server-time: 13
[22.999][LK-040D] <
Hello world1.
Hello world2.
download 5% done, +2048 bytes
[23.666][LK-0309] pub: /ota/device/progress/a1X3jdyVAyF/SFW_K_1
[LK-030A] > 7B 22 69 64 22 3A 34 2C 20 22 70 61 72 61 6D 73 | {"id":4, "params
[LK-030A] > 22 3A 7B 22 73 74 65 70 22 3A 22 35 22 2C 22 64 | ":{"step":5,"d
[LK-030A] > 65 73 63 22 3A 22 22 7D 7D | esc":""}}
Hello world1.
Hello world2.
download 10% done, +2048 bytes
[24.444][LK-0309] pub: /ota/device/progress/a1X3jdyVAyF/SFW_K_1
[LK-030A] > 7B 22 69 64 22 3A 35 2C 20 22 70 61 72 61 6D 73 | {"id":5, "params
[LK-030A] > 22 3A 7B 22 73 74 65 70 22 3A 22 31 30 22 2C 22 | ":{"step":10,"
[LK-030A] > 64 65 73 63 22 3A 22 22 7D 7D | desc":""}}

```

下载完成后会有打印信息如下，并且开始进行系统重启，在系统重启后，会启动 slot2 中的升级包程序，可以看到当前的版本信息，并且可以在控制台看到 OTA 升级已经验证完成。

```

[39.666][LK-0901] digest matched
download 100% done, +216 bytes
[39.666][LK-0309] pub: /ota/device/progress/a1X3jdyVAyF/SFW_K_1
[LK-030A] > 7B 22 69 64 22 3A 32 33 2C 20 22 70 61 72 61 6D | {"id":23, "param
[LK-030A] > 73 22 3A 7B 22 73 74 65 70 22 3A 22 31 30 30 22 | s":{"step":100"
[LK-030A] > 2C 22 64 65 73 63 22 3A 22 22 7D 7D | ,"desc":""}}
write update type = 0x4
write magic number offset = 0xffff0
Down finished all.SystemReset Now...hello sbl.
Bootloader Version 0.0.1
Remap type: test
The image now in SECONDARY_SLOT slot

```

← **sfw_1064_140** 已验证

升级包类型: 整包
 签名算法: MDS
 升级包签名: 52a5c02ae7afcddc53b8cf64ba46144d [下载](#)
 模块名称: default

目标设备总数: 1
● 目标成功数: 1
● 目标失败数: 0
● 目标取消数: 0

批次管理 | 设备列表 | 升级包信息

验证升级包 | 批量升级 | 请输入批次 ID

批次 ID	批次类型	升级策略	状态 ▼	创建时间	操作
er22N84dPVvFBFAg...	验证升级包	静态升级	● 已完成	2021/05/13 11:13:46	查看

5 总结

本文介绍了在 i.MX RT 平台上进行阿里云的 OTA 升级。虽然只是简单的版本号升级演示，但是通过本文可以知道在基于 i.MX RT 的 IOT 设备进行固件升级时，需要进行操作的地方有哪些，在针对你的设备进行功能代码升级的同时，加上上文中的 OTA 升级部分即可轻松借助阿里云物联网平台进行设备的固件升级。

6 参考

[阿里云 C Link SDK](#)

7 修订记录

版本号	日期	说明
0	2021 年 8 月 31 日	初始版本

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