

Upgrade LTE Firmware in vEdge Nutella ISR1100 LTE Series

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Introduction

This document describes how to upgrade the Cisco LTE modem firmware on Cisco ISR1100 LTE Series (Nutella) with Viptela OS.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Cisco Software-Defined Wide Area Network (SD-WAN)

Components Used

The information in this document is based on these software and hardware versions:

- ISR1100-4GLTE version 20.3.4 and 20.6.3

- LTE WP7610 Wireless card
- Firmware version: SWI9X07Y_02.28.03.04

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

Overview

Part of the Cisco 1000 Series Integrated Services Routers (ISR), there are two models that contain a LTE Wireless Sierra module:

- WP7607 - ISR1100-4GLTEGB
- WP7610 - ISR 1100-4GLTENA

These router models are powered by Viptela OS or Cisco IOS® XE SD-WAN software.

Note: For more information about the ISR1000 Nutella LTE routers in regard to LTE SKU, LTE bands supported, LTE specifications, navigate to: [Cisco ISR1100 and ISR1100X Series Routers](#)

Procedure

Step 1. Verify the Modem Status.

The upgrade procedure requires the LTE module to be on, otherwise it fails, in order to verify the module status run: **show cellular**.

```
ISR1100-4GLTE#show cellular
```

```
Radio mode LTE
Frequency band 2
Bandwidth 10.0 MHz
Transmit channel 65535
Receive channel 1000
Received signal strength indicator, RSSI -61 dBm
Reference signal receive power, RSRP -89 dBm, Excellent
Reference signal receive quality, RSRQ -6 dB, Excellent
Signal-to-noise ratio, SNR 22.2 dB, Excellent
```

```
Modem model number : WP7610
Firmware version : SWI9X07Y_02.28.03.04
Firmware date : 2019/06/05 10:14:36
Package : 02.28.03.04_VERIZON_002.075_000
Hardware version : 1.0
Modem status : Online
Modem temperature : 44 deg C
International mobile subscriber identity (IMSI) : 311480732371624
International mobile equipment identity (IMEI) : 356307100342145
Integrated circuit card ID (ICCID) : 89148000007617490780
Mobile subscriber ISDN (MSISDN) : UNAVAILABLE
Electronic serial number (ESN) : 0
```

Modem status : Online

```
SIM status : Ready
Activation status : Not applicable
Radio mode : LTE
Signal strength : Excellent
Network status : Searching
Last seen error : Device has no service
```

Step 2. Power the LTE Module On.

Note: If the module status is off, power it on.

```
ISR1100-4GLTE# request cellular power on
```

Step 3. Shutdown the Cellular0 Interface.

Access the configuration mode and shutdown the cellular0 interface in VPN 0.

```
ISR1100-4GLTE# configuration terminal
Entering configuration mode terminal
ISR1100-4GLTE(config)# vpn 0
ISR1100-4GLTE(config-vpn-0)# interface cellular0
ISR1100-4GLTE(config-interface-cellular0)# shutdown
ISR1100-4GLTE(config-interface-cellular0)# commit
```

Step 4. Download the the Firmware Version.

The LTE firmware version depends on the LTE Wireless Card and Carrier. Verify the LTE model with **show cellular** command.

Note: Navigate to the Download Software Center in the section [LTE Wireless WAN Interfaces](#) to explore the options.

Step 5. Transfer the Firmware Version to ISR1100 LTE Router.

Use SCP or FTP to transfer the Firmware File to the user home directory.

Step 6. Upgrade the LTE firmware

The LTE firmware process depends on the version of the router:

- For version 20.3.x or older, follow step 6.a
- For version 20.4.x or later, follow step 6.b

6.a Upgrade the firmware in 20.3.X and older.

Enable internal command which is hidden from the regular exec mode in Comamnd Line Interface (CLI).

```
ISR1100-4GLTE# unhide viptela_internal
Password: *****
```

Note: Use this password to get access: 5mok!ngk!!!\$ Navigate to: [Internal Troubleshooting Commands for Cisco SD-WAN](#)

Note: In 19.2.3, 20.1.2, 20.3.1 and 20.3.2, **unhide viptela_internal** command is no longer used, instead use **unhide full** command. The password is the same.

Execute the request internal upgrade command with the absolute path to the firmware file.

```
ISR1100-4GLTE# request internal modem upgrade path
/home/admin/WP76xx_02.37.06.00_VERIZON_002.107_000.spk
```

Note: In this example the firmware file is located in /home/admin directory.

Note: No reboot of the router is required for the firmware upgrade to take effect.

6.b. Upgrade the firmware in 20.4.X and later.

Note: **Unhide viptela_internal** is removed from 20.4 onwards and substituted by **request support** command.

Execute the request support upgrade command with the absolute path to the firmware file.

```
ISR1100-4GLTE# request support modem upgrade path
/home/admin/WP76xx_02.37.06.00_VERIZON_002.107_000.spk
```

Note: In this example the firmware file is located in /home/admin directory.

Note: No reboot of the router is required for the firmware upgrade to take effect.

Step 7. Confirm the upgrade.

In order to verify the new Firmware and Package run the **show cellular** command.

```
ISR1100-4GLTE# show cellular
Modem model number : WP7610
Firmware version : SWI9X07Y_02.37.06.00
Firmware date : 2020/06/02 00:54:15
Package : 02.37.06.00_VERIZON_002.107_000
Hardware version : 1.0
Modem status : Low Power Mode
Modem temperature : 43 deg C
International mobile subscriber identity (IMSI) : 311480XXX371624
International mobile equipment identity (IMEI) : 356307XXX342145
Integrated circuit card ID (ICCID) : 89148XXXX7617490780
Mobile subscriber ISDN (MSISDN) : UNAVAILABLE
Electronic serial number (ESN) : 0
```

Troubleshoot Commands

Show commands

Use the **show** command on the CLI in order to display the cellular information.

```
show cellular modem
show cellular network
show cellular profiles
show cellular radio
show cellular sessions
show cellular status
show interface errors cellular0
show interface | tab
show interface cellular0
show cellular
show internal cellular status >>>> it requires to unhide internal command
```

Clear statistics

In order to verify the statistics of the cellular interface run the **show interface detail statistics interface cellular0**.

```
clear cellular statistics interface cellular0
clear cellular errors interface cellular0
```

Debug commands

Enable debugs on the CLI in order to display additional information.

```
debug cellular events
debug cellular config
debug cellular api
debug cellular misc
```

Note: Once the debugs are enabled, access **vshell** in order to verify the content of **/var/log/tmplog/vdebug**.

Reset interface

```
request interface-reset vpn 0 interface cellular0
request internal modem reset
```

20.4 onwards cellular commands

```
request support cellular at
request support modem dmlog filter-name
request support modem dmlog log-action
request support modem reset
request support modem restore-profile
```