

# Configure Dual SIM Feature and SIM Failover

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## Introduction

This document describes the concept and configuration of dual Subscriber Identity Module (SIM) on 4G WAN fixed routers and modules. It also discusses the failover scenarios between two SIM cards and provides Embedded Event Manager (EEM) script for manual SIM failover.

## Prerequisites

### Requirements

Cisco recommends that you have knowledge of these topics:

- LTE Technology
- Configuration of LTE Technology on a Cisco Router

### Components Used

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

- Cisco 4G fixed Routers
- Modules which supports dual SIM feature

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, make sure that you understand the potential impact of any command.

## Configure

### Dual SIM Configuration

Step 1. Create APN profiles for the SIM:

This is an example of APN configuration on a Cisco Router:

```
Router#cellular 0/0/0 lte profile create 1 apn.com pap test 12345
```

You can create one more APN profile for the second SIM in the same, as mentioned in this example:

```
Router#cellular 0/0/0 lte profile create 2 test.com
```

Step 2. Apply the configured profile number to the SIM and its slot number which uses these configurations:

```
router# configure terminal
router(config)# controller Cellular 0
router(config-controller)# lte sim data-profile 1 attach-profile 1 slot 0
```

```
router(config-controller)# lte sim data-profile 2 attach-profile 2 slot 1
```

Step 3. SIM slot 0 is the primary and slot 1 is the backup by default . In order to configure slot 1 as the primary, use these configurations:

```
router# configure terminal
router(config)# controller Cellular 0
router(config-controller)#lte sim primary slot 1
```

## EEM Script for SIM failover

The dual SIM feature provides a failover mechanism in case the active SIM loses connectivity to the network. When primary SIM loses connectivity, it switches to the secondary SIM. However, it does not switch back to the primary, once the primary SIM regains the connectivity to network. Moreover, it switches back to the primary only when secondary SIM loses connectivity to the network.

In certain situations like loss of signal/service, failover mechanism might not trigger properly. In such cases, you can use an EEM script which could track parameters like RSSI value, network status etc. and perform SIM failover upon reaching a specified threshold value. This is an example for an EEM script, to perform SIM failover.

```
event manager applet SIM-FALLBACK
event snmp oid 1.3.6.1.4.1.9.9.661.1.3.2.1.4.14 get-type exact entry-op le entry-val "2" poll-
interval 120
action 1.0 cli command "enable"
action 1.1 cli command "clear interface cellular 0"
action 1.2 cli command "cellular 0 gsm sim activate slot 1"
action 1.3 cli command "end"
action 1.4 cli command "clear ip route *"
```

## Verify

Use this section in order to confirm that your configuration works properly.

These commands display the active profile on the Cellular modem:

```
router# show cellular 0 profile
```

```
Profile Information
```

```
=====
```

```
Profile 1 = INACTIVE
```

```
-----
```

```
PDP Type = IPv4
```

```
Access Point Name (APN) = test.com
```

```
Profile 2 = ACTIVE* **
```

```
-----
```

```
PDP Type = IPv4
```

```
PDP address = 10.1.1.1
```

```
Access Point Name (APN) = test.cisco.com
```

```
Primary DNS address = 192.168.100.10
```

```
Secondary DNS address = 192.168.100.19
```

```
* - Default profile
```

```
** - LTE attach profile
```

```
Configured default profile for active SIM 1 is profile 2.
```

**These commands can be used to display the status of a SIM:**

```
router#show cellular 0 security
```

```
Card Holder Verification (CHV1) = Disabled
```

```
SIM Status = OK
```

```
SIM User Operation Required = None
```

```
Number of CHV1 Retries remaining = 255
```

**These commands displays dual SIM status:**

```
router# show controller cellular 0
```

```
Interface Cellular0
```

```
4G WWAN Modem - Global Multimode LTE/DC-HSPA+/HSPA+/HSPA/UMTS/EDGE/GPRS
```

```
Cellular modem configuration
```

```
=====
```

```
Modem is recognized as valid
```

```
manufacture id: 0x00001199 product id: 0x000068A2
```

```
Power status: Active
```

```
Sierra Wireless Direct IP MC7710 modem
```

```
.
```

```
<snip>
```

```
.
```

```
Cellular Dual SIM details:
```

```
-----
```

```
SIM 0 is present
```

```
SIM 1 is present
```

```
SIM 0 is active SIM
```

## Troubleshoot

There is currently no specific troubleshooting information available for this configuration.

## Related Information

- [4G LTE software configuration](#)
- [Technical Support & Documentation - Cisco Systems](#)