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Impish(21.10)

Tested Platform: QEMU/KVM (qemu-system-x86_64)

- Environment
 - This virtual platform does not have any modem
 - Kernel is the default in the release
 - ModemManager suite is updated from Impish
- Test and Log

```
ubuntu@ubuntu-Standard-PC-i440FX-PIIX-1996:~$ uname -ar  
Linux ubuntu-Standard-PC-i440FX-PIIX-1996 5.11.0-20-generic #21+21.10.1-Ubuntu SMP Wed Jun 9  
15:08:14 UTC 2021 x86_64 x86_64 x86_64 GNU/Linux
```

```
ubuntu@ubuntu-Standard-PC-i440FX-PIIX-1996:~$ lsb_release -a  
Distributor ID: Ubuntu  
Description: Ubuntu Impish Indri (development branch)  
Release:21.10  
Codename: impish
```

```
ubuntu@ubuntu-Standard-PC-i440FX-PIIX-1996:~$ mmcli -V  
mmcli 1.16.6  
Copyright (2011 - 2021) Aleksander Morgado  
License GPLv2+: GNU GPL version 2 or later <http://gnu.org/licenses/gpl-2.0.html>  
This is free software: you are free to change and redistribute it.
```

There is NO WARRANTY, to the extent permitted by law.

```
ubuntu@ubuntu-Standard-PC-i440FX-PIIX-1996:~$ qmicli -V
```

```
qmicli 1.28.6
```

```
Copyright (C) 2012-2021 Aleksander Morgado
```

```
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```

```
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```

```
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```

```
ubuntu@ubuntu-Standard-PC-i440FX-PIIX-1996:~$ sudo systemctl status
```

```
ModemManager.service
```

```
● ModemManager.service - Modem Manager
```

```
Loaded: loaded (/lib/systemd/system/ModemManager.service; enabled; vendor preset: enabled)
```

```
Active: active (running) since Thu 2021-07-01 04:23:38 CST; 8min ago
```

```
Main PID: 556 (ModemManager)
```

```
Tasks: 3 (limit: 1107)
```

```
Memory: 1.8M
```

```
CGroup: /system.slice/ModemManager.service
```

```
└─556 /usr/sbin/ModemManager
```

```
┌ 01 04:23:37 ubuntu-Standard-PC-i440FX-PIIX-1996 systemd[1]: Starting Modem Manager...
```

```
┌ 01 04:23:38 ubuntu-Standard-PC-i440FX-PIIX-1996 ModemManager[556]: <info> ModemManager (version 1.16.6) starting in system bus...
```

```
┌ 01 04:23:38 ubuntu-Standard-PC-i440FX-PIIX-1996 systemd[1]: Started Modem Manager.
```

```
┌ 01 04:23:41 ubuntu-Standard-PC-i440FX-PIIX-1996 ModemManager[556]: <info> [base-manager] couldn't check support for device '/sys/devices/pci0000:00/0000:00:03.0': not supported by any plugin
```

```
ubuntu@ubuntu-Standard-PC-i440FX-PIIX-1996:~$ mmcli --list-modems
```

```
No modems were found
```

- Result: **Pass**
 - The Modemmanager.service was active(**running**), the packages are working.
 - There are no physical modems so that no modem was detected and listed.

Tested Platform: Lenovo ThinkEdge SE30(11ND)

- Environment
 - This platform includes the Quectel modem EM160R_GL
 - The default kernel is replaced with 5.11.0-1004-intel
 - ModemManager suite is updated from Impish
- Test and Log

```
ubuntu@ubuntu-ThinkEdge:~$ uname -ar
```

```
Linux ubuntu-ThinkEdge 5.11.0-1004-intel #4 SMP Wed Jun 16 01:46:13 CST 2021 x86_64 x86_64 x86_64 GNU/Linux
```

```
ubuntu@ubuntu-ThinkEdge:~$ lsb_release -a
```

```
No LSB modules are available.
```

```
Distributor ID: Ubuntu
```

```
Description: Ubuntu Impish Indri (development branch)
```

Release:21.10
Codename: impish

ubuntu@ubuntu-ThinkEdge:~\$ **mmcli** -V

mmcli 1.16.6

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ubuntu@ubuntu-ThinkEdge:~\$ **qmicli** -V

qmicli 1.28.6

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ubuntu@ubuntu-ThinkEdge:~\$ **sudo systemctl** status ModemManager.service

* ModemManager.service - Modem Manager

Loaded: loaded (/lib/systemd/system/ModemManager.service; enabled; vendor preset: enabled)

Active: active (**running**) since Wed 2021-06-30 16:58:56 CST; 57min ago

Main PID: 583 (ModemManager)

Tasks: 5 (limit: 9048)

Memory: 10.4M

CGroup: /system.slice/ModemManager.service

├─583 /usr/sbin/ModemManager

└─686 /usr/libexec/mbim-proxy

ubuntu@ubuntu-ThinkEdge:~\$ **mmcli** --list-modems

/org/freedesktop/ModemManager1/Modem/0 [generic] MBIM [1EAC:1002]

ubuntu@ubuntu-ThinkEdge:~\$ **mmcli** --modem 0

```
-----
General |           path: /org/freedesktop/ModemManager1/Modem/0
        |           device id: 61915ff177d47776c31ee03f7dc93a03a9f95790
-----
Hardware |           manufacturer: generic
        |           model: MBIM [1EAC:1002]
        |           firmware revision: EM160RGLAPR02A07M4G
        |           carrier config: ROW_Commercial
        |           carrier config revision: 08010809
        |           h/w revision: EM160R_GL
        |           supported: gsm-umts, lte
        |           current: gsm-umts, lte
        |           equipment id: 864292050076577
-----
System |           device: /sys/devices/pci0000:00/0000:00:1c.0/0000:2d:00.0
        |           drivers: mhi_net, mhi-pci-generic
        |           plugin: generic
        |           primary port: wwan0p2MBIM
        |           ports: mhi_mbim0 (net), wwan0p2MBIM (mbim), wwan0p3AT (at)
-----
Status |           unlock retries: sim-pin2 (3)
        |           state: disabled
        |           power state: low
        |           signal quality: 0% (cached)
-----
Modes |           supported: allowed: 3g; preferred: none
        |           allowed: 4g; preferred: none
```

```
|
|         allowed: 3g, 4g; preferred: 4g
|         allowed: 3g, 4g; preferred: 3g
|         current: allowed: 2g, 3g, 4g; preferred: 4g
-----
Bands |         supported: utran-1, utran-3, utran-4, utran-6, utran-5, utran-8,
|         utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5, eutran-7,
|         eutran-8, eutran-12, eutran-13, eutran-14, eutran-17, eutran-18,
|         eutran-19, eutran-20, eutran-25, eutran-26, eutran-28, eutran-29,
|         eutran-30, eutran-32, eutran-38, eutran-39, eutran-40, eutran-41,
|         eutran-42, eutran-43, eutran-46, eutran-48, eutran-66, utran-19
|         current: utran-1, utran-3, utran-4, utran-6, utran-5, utran-8,
|         utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5, eutran-7,
|         eutran-8, eutran-12, eutran-13, eutran-14, eutran-18, eutran-19,
|         eutran-20, eutran-25, eutran-26, eutran-28, eutran-29, eutran-30,
|         eutran-32, eutran-38, eutran-39, eutran-40, eutran-41, eutran-42,
|         eutran-43, eutran-46, eutran-48, eutran-66, utran-19
-----
IP   |         supported: ipv4, ipv6, ipv4v6
-----
3GPP |         imei: 864292050076577
|         enabled locks: fixed-dialing
-----
3GPP EPS | ue mode of operation: csps-2
|         initial bearer ip type: ipv4v6
-----
SIM  |         primary sim path: /org/freedesktop/ModemManager1/SIM/0

$ sudo snap install --devmode --dangerous dpr-wwan_1.0-wwan-test_amd64.snap

$ sudo mmcli --modem 0 --enable
successfully enabled the modem

$ mmcli --modem 0
-----
General |         path: /org/freedesktop/ModemManager1/Modem/0
|         device id: 61915ff177d47776c31ee03f7dc93a03a9f95790
-----
Hardware |         manufacturer: generic
|         model: MBIM [1EAC:1002]
|         firmware revision: EM160RGLAPR02A07M4G
|         carrier config: ROW_Commercial
|         carrier config revision: 08010809
|         h/w revision: EM160R_GL
|         supported: gsm-umts, lte
|         current: gsm-umts, lte
|         equipment id: 864292050076577
-----
System |         device: /sys/devices/pci0000:00/0000:00:1c.0/0000:2d:00.0
|         drivers: mhi_net, mhi-pci-generic
|         plugin: generic
|         primary port: wwan0p2MBIM
|         ports: mhi_mbim0 (net), wwan0p2MBIM (mbim), wwan0p3AT (at)
-----
Status |         unlock retries: sim-pin2 (3)
|         state: registered
|         power state: on
|         access tech: lte
|         signal quality: 35% (recent)
-----
Modes |         supported: allowed: 3g; preferred: none
```

```

|         allowed: 4g; preferred: none
|         allowed: 3g, 4g; preferred: 4g
|         allowed: 3g, 4g; preferred: 3g
|         current: allowed: 2g, 3g, 4g; preferred: 4g
-----
Bands |         supported: utran-1, utran-3, utran-4, utran-6, utran-5, utran-8,
|         utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5, eutran-7,
|         eutran-8, eutran-12, eutran-13, eutran-14, eutran-17, eutran-18,
|         eutran-19, eutran-20, eutran-25, eutran-26, eutran-28, eutran-29,
|         eutran-30, eutran-32, eutran-38, eutran-39, eutran-40, eutran-41,
|         eutran-42, eutran-43, eutran-46, eutran-48, eutran-66, utran-19
|         current: utran-1, utran-3, utran-4, utran-6, utran-5, utran-8,
|         utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5, eutran-7,
|         eutran-8, eutran-12, eutran-13, eutran-14, eutran-18, eutran-19,
|         eutran-20, eutran-25, eutran-26, eutran-28, eutran-29, eutran-30,
|         eutran-32, eutran-38, eutran-39, eutran-40, eutran-41, eutran-42,
|         eutran-43, eutran-46, eutran-48, eutran-66, utran-19
-----
IP   |         supported: ipv4, ipv6, ipv4v6
-----
3GPP |         imei: 864292050076577
|         enabled locks: fixed-dialing
|         operator id: 46692
|         operator name: Chunghwa Telecom
|         registration: home
-----
3GPP EPS | ue mode of operation: csps-2
|         initial bearer path: /org/freedesktop/ModemManager1/Bearer/0
|         initial bearer ip type: ipv4v6
-----
SIM  |         primary sim path: /org/freedesktop/ModemManager1/SIM/0

```

- Result: **Pass**
 - The Modemmanager.service was active(**running**), the packages are working.
 - The modem was detected and listed.
 - After the FCC unlock app was executed, the modem can be enabled successfully.

Tested Platform: Lenovo ThinkEdge SE30(11NE)

- Environment
 - This platform includes the Foxconn modem T99W175
 - The default kernel is replaced with 5.11.0-1004-intel
 - ModemManager suite is updated from Impish
- Test and Log

```

ubuntu@ubuntu-ThinkEdge-SE30:~$ uname -ar
Linux ubuntu-ThinkEdge-SE30 5.11.0-1004-intel #4 SMP Wed Jun 16 01:46:13 CST 2021 x86_64
x86_64 x86_64 GNU/Linux

ubuntu@ubuntu-ThinkEdge-SE30:~$ lsb_release -a
No LSB modules are available.

```

Distributor ID: Ubuntu
Description: Ubuntu Impish Indri (development branch)
Release: 21.10
Codename: impish

```
ubuntu@ubuntu-ThinkEdge-SE30:~$ mmcli -V
```

```
mmcli 1.16.6
```

```
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```

```
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```

```
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```

```
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```

```
ubuntu@ubuntu-ThinkEdge-SE30:~$ qmicli -V
```

```
qmicli 1.28.6
```

```
Copyright (C) 2012-2021 Aleksander Morgado
```

```
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```

```
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```

```
There is NO WARRANTY, to the extent permitted by law.
```

```
ubuntu@ubuntu-ThinkEdge-SE30:~$ sudo systemctl status ModemManager.service
```

```
* ModemManager.service - Modem Manager
```

```
Loaded: loaded (/lib/systemd/system/ModemManager.service; enabled; vendor preset: enabled)
```

```
Active: active (running) since Thu 2021-07-01 13:53:48 CST; 1min 44s ago
```

```
Main PID: 609 (ModemManager)
```

```
Tasks: 5 (limit: 9035)
```

```
Memory: 9.9M
```

```
CGroup: /system.slice/ModemManager.service
```

```
└─609 /usr/sbin/ModemManager
```

```
└─974 /usr/libexec/mbim-proxy
```

```
Jul 01 13:53:51 ubuntu-ThinkEdge-SE30 ModemManager[609]: [/dev/wwan0p2MBIM] Allocating new client ID...
```

```
Jul 01 13:53:51 ubuntu-ThinkEdge-SE30 ModemManager[609]: [/dev/wwan0p2MBIM] Registered 'pdc' (version 1.0) client with ID '1'
```

```
Jul 01 13:53:52 ubuntu-ThinkEdge-SE30 ModemManager[609]: <info> [modem0] QMI-based capability and mode switching support enabled
```

```
Jul 01 13:53:52 ubuntu-ThinkEdge-SE30 ModemManager[609]: <warn> [modem0] couldn't query SIM slots: Couldn't peek client for service 'uim'
```

```
Jul 01 13:53:52 ubuntu-ThinkEdge-SE30 ModemManager[609]: <info> [modem0] state changed (unknown -> locked)
```

```
Jul 01 13:53:52 ubuntu-ThinkEdge-SE30 ModemManager[609]: <warn> [modem0/sim0] couldn't load operator identifier: PinRequired
```

```
Jul 01 13:53:52 ubuntu-ThinkEdge-SE30 ModemManager[609]: <warn> [modem0/sim0] couldn't load operator name: PinRequired
```

```
Jul 01 13:53:52 ubuntu-ThinkEdge-SE30 ModemManager[609]: <warn> [modem0/sim0] couldn't load list of emergency numbers: No AT port available to run command
```

```
Jul 01 13:53:52 ubuntu-ThinkEdge-SE30 ModemManager[609]: <warn> [modem0] couldn't setup carrier config: unknown IMSI
```

```
Jul 01 13:53:52 ubuntu-ThinkEdge-SE30 ModemManager[609]: <warn> [modem0] couldn't open ports during Modem SIM hot swap enabling: Couldn't get primary port
```

```
ubuntu@ubuntu-ThinkEdge-SE30:~$ mmcli --list-modems
```

```
/org/freedesktop/ModemManager1/Modem/0 [foxconn] MBIM [105B:E0AB]
```

```
ubuntu@ubuntu-ThinkEdge-SE30:~$ mmcli --modem 0
```

```
-----  
General | path: /org/freedesktop/ModemManager1/Modem/0  
| device id: 9171ec7924fa412a0fc0ac8e1752b05c603735aa  
-----
```

```

Hardware |      manufacturer: foxconn
          |      model: MBIM [105B:E0AB]
          |      firmware revision: T99W175.F0.0.0.5.5.GC.004
          |      066
          |      carrier config: GCF
          |      carrier config revision: 0A000804
          |      h/w revision: Qualcomm Snapdragon X55 5G
          |      supported: gsm-umts, lte, 5gnr
          |      current: gsm-umts, lte, 5gnr
          |      equipment id: 352264110046477
-----
System |      device: /sys/devices/pci0000:00/0000:00:1c.0/0000:2d:00.0
          |      drivers: mhi_net, mhi-pci-generic
          |      plugin: foxconn
          |      primary port: wwan0p2MBIM
          |      ports: mhi_mbim0 (net), wwan0p2MBIM (mbim)
-----
Status |      unlock retries: sim-pin2 (3)
          |      state: disabled
          |      power state: low
          |      signal quality: 0% (cached)
-----
Modes |      supported: allowed: 3g; preferred: none
          |      allowed: 4g; preferred: none
          |      allowed: 3g, 4g; preferred: 4g
          |      allowed: 3g, 4g; preferred: 3g
          |      allowed: 5g; preferred: none
          |      allowed: 3g, 5g; preferred: 5g
          |      allowed: 3g, 5g; preferred: 3g
          |      allowed: 4g, 5g; preferred: 5g
          |      allowed: 4g, 5g; preferred: 4g
          |      allowed: 3g, 4g, 5g; preferred: 5g
          |      allowed: 3g, 4g, 5g; preferred: 4g
          |      allowed: 3g, 4g, 5g; preferred: 3g
          |      current: allowed: 3g, 4g, 5g; preferred: 4g
-----
Bands |      supported: utran-1, utran-3, utran-4, utran-6, utran-5, utran-8,
          |      utran-9, utran-2, utran-1, utran-2, utran-3, utran-4, utran-5,
          |      utran-7, utran-8, utran-12, utran-13, utran-14, utran-17,
          |      utran-18, utran-19, utran-20, utran-25, utran-26, utran-28,
          |      utran-29, utran-30, utran-32, utran-34, utran-38, utran-39,
          |      utran-40, utran-41, utran-42, utran-46, utran-48, utran-66,
          |      utran-71, utran-19
          |      current: utran-1, utran-4, utran-6, utran-5, utran-8, utran-9,
          |      utran-2, utran-1, utran-2, utran-3, utran-4, utran-5, utran-7,
          |      utran-8, utran-12, utran-13, utran-14, utran-17, utran-18,
          |      utran-19, utran-20, utran-25, utran-26, utran-28, utran-29,
          |      utran-30, utran-32, utran-34, utran-38, utran-39, utran-40,
          |      utran-41, utran-42, utran-46, utran-48, utran-66, utran-71,
          |      utran-19
-----
IP |      supported: ipv4, ipv6, ipv4v6
-----
3GPP |      imei: 352264110046477
          |      enabled locks: fixed-dialing
-----
3GPP EPS | initial bearer ip type: ipv4v6
-----
SIM |      primary sim path: /org/freedesktop/ModemManager1/SIM/0

```

```
ubuntu@ubuntu-ThinkEdge-SE30:~$ sudo mmcli --modem 0 --enable
```

successfully enabled the modem

ubuntu@ubuntu-ThinkEdge-SE30:~\$ mmcli --modem 0

```
-----
General |           path: /org/freedesktop/ModemManager1/Modem/0
        |           device id: 9171ec7924fa412a0fc0ac8e1752b05c603735aa
-----
Hardware |           manufacturer: foxconn
        |           model: MBIM [105B:E0AB]
        |           firmware revision: T99W175.F0.0.0.5.5.GC.004
        |           066
        |           carrier config: GCF
        |           carrier config revision: 0A000804
        |           h/w revision: Qualcomm Snapdragon X55 5G
        |           supported: gsm-umts, lte, 5gnr
        |           current: gsm-umts, lte, 5gnr
        |           equipment id: 352264110046477
-----
System |           device: /sys/devices/pci0000:00/0000:00:1c.0/0000:2d:00.0
        |           drivers: mhi_net, mhi-pci-generic
        |           plugin: foxconn
        |           primary port: wwan0p2MBIM
        |           ports: mhi_mbim0 (net), wwan0p2MBIM (mbim)
-----
Status |           unlock retries: sim-pin2 (3)
        |           state: registered
        |           power state: on
        |           access tech: lte
        |           signal quality: 22% (recent)
-----
Modes |           supported: allowed: 3g; preferred: none
        |           allowed: 4g; preferred: none
        |           allowed: 3g, 4g; preferred: 4g
        |           allowed: 3g, 4g; preferred: 3g
        |           allowed: 5g; preferred: none
        |           allowed: 3g, 5g; preferred: 5g
        |           allowed: 3g, 5g; preferred: 3g
        |           allowed: 4g, 5g; preferred: 5g
        |           allowed: 4g, 5g; preferred: 4g
        |           allowed: 3g, 4g, 5g; preferred: 5g
        |           allowed: 3g, 4g, 5g; preferred: 4g
        |           allowed: 3g, 4g, 5g; preferred: 3g
        |           current: allowed: 3g, 4g, 5g; preferred: 4g
-----
Bands |           supported: utran-1, utran-3, utran-4, utran-6, utran-5, utran-8,
        |           utran-9, utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5,
        |           eutran-7, eutran-8, eutran-12, eutran-13, eutran-14, eutran-17,
        |           eutran-18, eutran-19, eutran-20, eutran-25, eutran-26, eutran-28,
        |           eutran-29, eutran-30, eutran-32, eutran-34, eutran-38, eutran-39,
        |           eutran-40, eutran-41, eutran-42, eutran-46, eutran-48, eutran-66,
        |           eutran-71, utran-19
        |           current: utran-1, utran-4, utran-6, utran-5, utran-8, utran-9,
        |           utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5, eutran-7,
        |           eutran-8, eutran-12, eutran-13, eutran-14, eutran-17, eutran-18,
        |           eutran-19, eutran-20, eutran-25, eutran-26, eutran-28, eutran-29,
        |           eutran-30, eutran-32, eutran-34, eutran-38, eutran-39, eutran-40,
        |           eutran-41, eutran-42, eutran-46, eutran-48, eutran-66, eutran-71,
        |           utran-19
-----
IP |           supported: ipv4, ipv6, ipv4v6
-----
```



```
3GPP | imei: 352264110046477
      | enabled locks: fixed-dialing
      | operator id: 46692
      | operator name: Chunghwa Telecom
      | registration: home
-----
3GPP EPS | initial bearer path: /org/freedesktop/ModemManager1/Bearer/0
          | initial bearer ip type: ipv4v6
-----
SIM | primary sim path: /org/freedesktop/ModemManager1/SIM/0
```

- Result: **Pass**
 - The Modemmanager.service was active(**running**), the packages are working.
 - The modem was detected and listed.
 - After the FCC unlock app was executed, the modem can be enabled successfully.

Hirsute(21.04)

Tested Platform: QEMU/KVM (qemu-system-x86_64)

- Environment
 - This virtual platform does not have any modem
 - Kernel is the default in the release
 - ModemManager suite is updated from Impish
- Test and Log

```
ubuntu@ubuntu-Standard-PC-i440FX-PIIX-1996:~$ uname -ar
Linux ubuntu-Standard-PC-i440FX-PIIX-1996 5.11.0-20-generic #21+21.10.1-Ubuntu SMP Wed Jun 9
15:08:14 UTC 2021 x86_64 x86_64 x86_64 GNU/Linux

ubuntu@ubuntu-Standard-PC-i440FX-PIIX-1996:~$ lsb_release -a
Distributor ID: Ubuntu
Description: Ubuntu Impish Indri (development branch)
Release:21.10
Codename: impish

ubuntu@ubuntu-Standard-PC-i440FX-PIIX-1996:~$ mmcli -V
mmcli 1.16.6
Copyright (2011 - 2021) Aleksander Morgado
License GPLv2+: GNU GPL version 2 or later <http://gnu.org/licenses/gpl-2.0.html>
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.

ubuntu@ubuntu-Standard-PC-i440FX-PIIX-1996:~$ qmicli -V
qmicli 1.28.6
Copyright (C) 2012-2021 Aleksander Morgado
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```

```

ubuntu@ubuntu-Standard-PC-i440FX-PIIX-1996:~$ sudo systemctl status
ModemManager.service
● ModemManager.service - Modem Manager
   Loaded: loaded (/lib/systemd/system/ModemManager.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2021-07-01 04:23:38 CST; 8min ago
 Main PID: 556 (ModemManager)
   Tasks: 3 (limit: 1107)
  Memory: 1.8M
   CGroup: /system.slice/ModemManager.service
           └─556 /usr/sbin/ModemManager

  7 01 04:23:37 ubuntu-Standard-PC-i440FX-PIIX-1996 systemd[1]: Starting Modem Manager...
  7 01 04:23:38 ubuntu-Standard-PC-i440FX-PIIX-1996 ModemManager[556]: <info> ModemManager
(version 1.16.6) starting in system bus...
  7 01 04:23:38 ubuntu-Standard-PC-i440FX-PIIX-1996 systemd[1]: Started Modem Manager.
  7 01 04:23:41 ubuntu-Standard-PC-i440FX-PIIX-1996 ModemManager[556]: <info> [base-manager]
couldn't check support for device '/sys/devices/pci0000:00/0000:00:03.0': not supported by any plugin

ubuntu@ubuntu-Standard-PC-i440FX-PIIX-1996:~$ mmcli --list-modems
No modems were found

```

- Result: **Pass**
 - The Modemmanager.service was active(**running**), the packages are working.
 - There are no physical modems so that no modem was detected and listed.

Tested Platform: Lenovo ThinkEdge SE30(11ND)

- Environment
 - This platform includes the Quectel modem EM160R_GL
 - The default kernel is replaced with 5.11.0-1004-intel
 - ModemManager suite is updated from Impish
- Test and Log

```

ubuntu@ubuntu-ThinkEdge:~$ uname -ar
Linux ubuntu-ThinkEdge 5.11.0-1004-intel #4 SMP Wed Jun 16 01:46:13 CST 2021 x86_64 x86_64
x86_64 GNU/Linux

ubuntu@ubuntu-ThinkEdge:~$ lsb_release -a
No LSB modules are available.
Distributor ID: Ubuntu
Description: Ubuntu 21.04
Release:21.04
Codename: hirsute

ubuntu@ubuntu-ThinkEdge:~$ mmcli -V
mmcli 1.16.6
Copyright (2011 - 2021) Aleksander Morgado
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```

There is NO WARRANTY, to the extent permitted by law.

```
ubuntu@ubuntu-ThinkEdge:~$ qmicli -V
```

```
qmicli 1.28.6
```

```
Copyright (C) 2012-2021 Aleksander Morgado
```

```
License GPLv2+: GNU GPL version 2 or later <http://gnu.org/licenses/gpl-2.0.html>
```

```
This is free software: you are free to change and redistribute it.
```

```
There is NO WARRANTY, to the extent permitted by law.
```

```
ubuntu@ubuntu-ThinkEdge:~$ sudo systemctl status ModemManager.service
```

```
* ModemManager.service - Modem Manager
```

```
Loaded: loaded (/lib/systemd/system/ModemManager.service; enabled; vendor preset: enabled)
```

```
Active: active (running) since Thu 2021-07-01 10:27:49 CST; 3min 56s ago
```

```
Main PID: 571 (ModemManager)
```

```
Tasks: 5 (limit: 9029)
```

```
Memory: 10.3M
```

```
CGroup: /system.slice/ModemManager.service
```

```
└─571 /usr/sbin/ModemManager
```

```
└─698 /usr/libexec/mbim-proxy
```

```
Jul 01 10:27:52 ubuntu-ThinkEdge ModemManager[571]: [/dev/wwan0p2MBIM] Registered 'pdc' (version 1.0) client with ID '1'
```

```
Jul 01 10:27:52 ubuntu-ThinkEdge ModemManager[571]: <info> [modem0] QMI-based capability and mode switching support enabled
```

```
Jul 01 10:27:52 ubuntu-ThinkEdge ModemManager[571]: <warn> [modem0] couldn't query SIM slots: Couldn't peek client for service 'uim'
```

```
Jul 01 10:27:52 ubuntu-ThinkEdge ModemManager[571]: <warn> [modem0/sim0] couldn't load list of emergency numbers: Failed to parse CRSM query result '+CRSM: 148,8, ""'
```

```
Jul 01 10:27:52 ubuntu-ThinkEdge ModemManager[571]: <info> [modem0] state changed (unknown -> disabled)
```

```
Jul 01 10:27:52 ubuntu-ThinkEdge ModemManager[571]: <info> [modem0] state changed (disabled -> enabling)
```

```
Jul 01 10:27:52 ubuntu-ThinkEdge ModemManager[571]: <warn> [modem0] Busy
```

```
Jul 01 10:27:52 ubuntu-ThinkEdge ModemManager[571]: <warn> [modem0] Busy
```

```
Jul 01 10:27:52 ubuntu-ThinkEdge ModemManager[571]: <warn> [modem0] couldn't enable interface: 'Invalid transition'
```

```
Jul 01 10:27:52 ubuntu-ThinkEdge ModemManager[571]: <info> [modem0] state changed (enabling -> disabled)
```

```
ubuntu@ubuntu-ThinkEdge:~$ mmcli --list-modems
```

```
/org/freedesktop/ModemManager1/Modem/0 [generic] MBIM [1EAC:1002]
```

```
ubuntu@ubuntu-ThinkEdge:~$ mmcli --modem 0
```

```
-----
General |           path: /org/freedesktop/ModemManager1/Modem/0
        |           device id: 61915ff177d47776c31ee03f7dc93a03a9f95790
-----
Hardware |           manufacturer: generic
        |           model: MBIM [1EAC:1002]
        |           firmware revision: EM160RGLAPR02A07M4G
        |           carrier config: ROW_Commercial
        |           carrier config revision: 08010809
        |           h/w revision: EM160R_GL
        |           supported: gsm-umts, lte
        |           current: gsm-umts, lte
        |           equipment id: 864292050076577
-----
System  |           device: /sys/devices/pci0000:00/0000:00:1c.0/0000:2d:00.0
        |           drivers: mhi_net, mhi-pci-generic
```

```
| plugin: generic
| primary port: wwanOp2MBIM
| ports: mhi_mbim0 (net), wwanOp2MBIM (mbim), wwanOp3AT (at)
```

```
-----
Status | unlock retries: sim-pin2 (3)
| state: disabled
| power state: low
| signal quality: 0% (cached)
```

```
-----
Modes | supported: allowed: 3g; preferred: none
| allowed: 4g; preferred: none
| allowed: 3g, 4g; preferred: 4g
| allowed: 3g, 4g; preferred: 3g
| current: allowed: 2g, 3g, 4g; preferred: 4g
```

```
-----
Bands | supported: utran-1, utran-3, utran-4, utran-6, utran-5, utran-8,
| utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5, eutran-7,
| eutran-8, eutran-12, eutran-13, eutran-14, eutran-17, eutran-18,
| eutran-19, eutran-20, eutran-25, eutran-26, eutran-28, eutran-29,
| eutran-30, eutran-32, eutran-38, eutran-39, eutran-40, eutran-41,
| eutran-42, eutran-43, eutran-46, eutran-48, eutran-66, utran-19
| current: utran-1, utran-3, utran-4, utran-6, utran-5, utran-8,
| utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5, eutran-7,
| eutran-8, eutran-12, eutran-13, eutran-14, eutran-18, eutran-19,
| eutran-20, eutran-25, eutran-26, eutran-28, eutran-29, eutran-30,
| eutran-32, eutran-38, eutran-39, eutran-40, eutran-41, eutran-42,
| eutran-43, eutran-46, eutran-48, eutran-66, utran-19
```

```
-----
IP | supported: ipv4, ipv6, ipv4v6
```

```
-----
3GPP | imei: 864292050076577
| enabled locks: fixed-dialing
```

```
-----
3GPP EPS | ue mode of operation: csps-2
| initial bearer ip type: ipv4v6
```

```
-----
SIM | primary sim path: /org/freedesktop/ModemManager1/SIM/0
```

```
ubuntu@ubuntu-ThinkEdge:~$ sudo snap install --devmode --dangerous
dpr-wwan_1.0-wwan-test_amd64.snap
```

```
ubuntu@ubuntu-ThinkEdge:~$ sudo mmcli --modem 0 --enable
successfully enabled the modem
```

```
ubuntu@ubuntu-ThinkEdge:~$ mmcli --modem 0
```

```
-----
General | path: /org/freedesktop/ModemManager1/Modem/0
| device id: 61915ff177d47776c31ee03f7dc93a03a9f95790
```

```
-----
Hardware | manufacturer: generic
| model: MBIM [1EAC:1002]
| firmware revision: EM160RGLAPR02A07M4G
| carrier config: ROW_Commercial
| carrier config revision: 08010809
| h/w revision: EM160R_GL
| supported: gsm-umts, lte
| current: gsm-umts, lte
| equipment id: 864292050076577
```

```

System |           device: /sys/devices/pci0000:00/0000:00:1c.0/0000:2d:00.0
      |           drivers: mhi_net, mhi-pci-generic
      |           plugin: generic
      |           primary port: wwan0p2MBIM
      |           ports: mhi_mbim0 (net), wwan0p2MBIM (mbim), wwan0p3AT (at)
-----
Status |           unlock retries: sim-pin2 (3)
      |           state: registered
      |           power state: on
      |           access tech: lte
      |           signal quality: 61% (recent)
-----
Modes  |           supported: allowed: 3g; preferred: none
      |           allowed: 4g; preferred: none
      |           allowed: 3g, 4g; preferred: 4g
      |           allowed: 3g, 4g; preferred: 3g
      |           current: allowed: 2g, 3g, 4g; preferred: 4g
-----
Bands  |           supported: utran-1, utran-3, utran-4, utran-6, utran-5, utran-8,
      |           utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5, eutran-7,
      |           eutran-8, eutran-12, eutran-13, eutran-14, eutran-17, eutran-18,
      |           eutran-19, eutran-20, eutran-25, eutran-26, eutran-28, eutran-29,
      |           eutran-30, eutran-32, eutran-38, eutran-39, eutran-40, eutran-41,
      |           eutran-42, eutran-43, eutran-46, eutran-48, eutran-66, utran-19
      |           current: utran-1, utran-3, utran-4, utran-6, utran-5, utran-8,
      |           utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5, eutran-7,
      |           eutran-8, eutran-12, eutran-13, eutran-14, eutran-18, eutran-19,
      |           eutran-20, eutran-25, eutran-26, eutran-28, eutran-29, eutran-30,
      |           eutran-32, eutran-38, eutran-39, eutran-40, eutran-41, eutran-42,
      |           eutran-43, eutran-46, eutran-48, eutran-66, utran-19
-----
IP     |           supported: ipv4, ipv6, ipv4v6
-----
3GPP  |           imei: 864292050076577
      |           enabled locks: fixed-dialing
      |           operator id: 46692
      |           operator name: Chunghwa Telecom
      |           registration: home
-----
3GPP EPS | ue mode of operation: csps-2
      |           initial bearer path: /org/freedesktop/ModemManager1/Bearer/0
      |           initial bearer ip type: ipv4v6
-----
SIM   |           primary sim path: /org/freedesktop/ModemManager1/SIM/0

```

- Result: **Pass**
 - The Modemmanager.service was active(**running**), the packages are working.
 - The modem was detected and listed.
 - After the FCC unlock app was executed, the modem can be enabled successfully.

Tested Platform: Lenovo ThinkEdge SE30(11NE)

- Environment
 - This platform includes the Foxconn modem T99W175

- The default kernel is replaced with 5.11.0-1004-intel
 - ModemManager suite is updated from Impish
- Test and Log

```

ubuntu@ubuntu-ThinkEdge-SE30:~$ uname -ar
Linux ubuntu-ThinkEdge-SE30 5.11.0-1004-intel #4 SMP Wed Jun 16 01:46:13 CST 2021 x86_64
x86_64 x86_64 GNU/Linux

ubuntu@ubuntu-ThinkEdge-SE30:~$ lsb_release -a
No LSB modules are available.
Distributor ID: Ubuntu
Description: Ubuntu 21.04
Release: 21.04
Codename: hirsute

ubuntu@ubuntu-ThinkEdge-SE30:~$ mmcli -V
mmcli 1.16.6
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ubuntu@ubuntu-ThinkEdge-SE30:~$ qmicli -V
qmicli 1.28.6
Copyright (C) 2012-2021 Aleksander Morgado
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There is NO WARRANTY, to the extent permitted by law.

ubuntu@ubuntu-ThinkEdge-SE30:~$ sudo systemctl status ModemManager.service
* ModemManager.service - Modem Manager
   Loaded: loaded (/lib/systemd/system/ModemManager.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2021-07-01 14:34:44 CST; 1min 34s ago
   Main PID: 590 (ModemManager)
     Tasks: 5 (limit: 9030)
    Memory: 10.1M
   CGroup: /system.slice/ModemManager.service
           |-590 /usr/sbin/ModemManager
           `-998 /usr/libexec/mbim-proxy

Jul 01 14:34:48 ubuntu-ThinkEdge-SE30 ModemManager[590]: <warn> [modem0] couldn't open ports
during Modem SIM hot swap enabling: Couldn't get primary port
Jul 01 14:34:48 ubuntu-ThinkEdge-SE30 ModemManager[590]: <info> [modem0] state changed
(unknown -> disabled)
Jul 01 14:34:48 ubuntu-ThinkEdge-SE30 ModemManager[590]: <info> [modem0] state changed
(disabled -> enabling)
Jul 01 14:34:48 ubuntu-ThinkEdge-SE30 ModemManager[590]: <warn> [modem0] OperationNotAllowed
Jul 01 14:34:49 ubuntu-ThinkEdge-SE30 ModemManager[590]: <info> [modem0] power state updated:
on
Jul 01 14:34:49 ubuntu-ThinkEdge-SE30 ModemManager[590]: <info> [modem0] 3GPP registration state
changed (unknown -> searching)
Jul 01 14:34:49 ubuntu-ThinkEdge-SE30 ModemManager[590]: <info> [modem0] state changed
(enabling -> searching)
Jul 01 14:34:50 ubuntu-ThinkEdge-SE30 ModemManager[590]: <info> [modem0] 3GPP registration state
changed (searching -> registering)

```

Jul 01 14:34:50 ubuntu-ThinkEdge-SE30 ModemManager[590]: <info> [modem0] 3GPP registration state changed (registering -> home)
Jul 01 14:34:50 ubuntu-ThinkEdge-SE30 ModemManager[590]: <info> [modem0] state changed (searching -> registered)

ubuntu@ubuntu-ThinkEdge-SE30:~\$ mmcli --modem 0

```
-----
General |           path: /org/freedesktop/ModemManager1/Modem/0
        |           device id: 9171ec7924fa412a0fc0ac8e1752b05c603735aa
-----
Hardware |           manufacturer: foxconn
        |           model: MBIM [105B:E0AB]
        |           firmware revision: T99W175.F0.0.0.5.5.GC.004
        |           066
        |           carrier config: GCF
        |           carrier config revision: 0A000804
        |           h/w revision: Qualcomm Snapdragon X55 5G
        |           supported: gsm-umts, lte, 5gnr
        |           current: gsm-umts, lte, 5gnr
        |           equipment id: 352264110046477
-----
System |           device: /sys/devices/pci0000:00/0000:00:1c.0/0000:2d:00.0
        |           drivers: mhi_net, mhi-pci-generic
        |           plugin: foxconn
        |           primary port: wwan0p2MBIM
        |           ports: mhi_mbim0 (net), wwan0p2MBIM (mbim)
-----
Status |           unlock retries: sim-pin2 (3)
        |           state: registered
        |           power state: on
        |           access tech: lte
        |           signal quality: 19% (cached)
-----
Modes |           supported: allowed: 3g; preferred: none
        |           allowed: 4g; preferred: none
        |           allowed: 3g, 4g; preferred: 4g
        |           allowed: 3g, 4g; preferred: 3g
        |           allowed: 5g; preferred: none
        |           allowed: 3g, 5g; preferred: 5g
        |           allowed: 3g, 5g; preferred: 3g
        |           allowed: 4g, 5g; preferred: 5g
        |           allowed: 4g, 5g; preferred: 4g
        |           allowed: 3g, 4g, 5g; preferred: 5g
        |           allowed: 3g, 4g, 5g; preferred: 4g
        |           allowed: 3g, 4g, 5g; preferred: 3g
        |           current: allowed: 3g, 4g, 5g; preferred: 4g
-----
Bands |           supported: utran-1, utran-3, utran-4, utran-6, utran-5, utran-8,
        |           utran-9, utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5,
        |           eutran-7, eutran-8, eutran-12, eutran-13, eutran-14, eutran-17,
        |           eutran-18, eutran-19, eutran-20, eutran-25, eutran-26, eutran-28,
        |           eutran-29, eutran-30, eutran-32, eutran-34, eutran-38, eutran-39,
        |           eutran-40, eutran-41, eutran-42, eutran-46, eutran-48, eutran-66,
        |           eutran-71, utran-19
        |           current: utran-1, utran-4, utran-6, utran-5, utran-8, utran-9,
        |           utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5, eutran-7,
        |           eutran-8, eutran-12, eutran-13, eutran-14, eutran-17, eutran-18,
        |           eutran-19, eutran-20, eutran-25, eutran-26, eutran-28, eutran-29,
        |           eutran-30, eutran-32, eutran-34, eutran-38, eutran-39, eutran-40,
        |           eutran-41, eutran-42, eutran-46, eutran-48, eutran-66, eutran-71,
```

```
      |          utran-19
-----|-----
IP    |          supported: ipv4, ipv6, ipv4v6
-----|-----
3GPP  |          imei: 352264110046477
      |          enabled locks: fixed-dialing
      |          operator id: 46692
      |          operator name: Chunghwa Telecom
      |          registration: home
-----|-----
3GPP EPS |  initial bearer path: /org/freedesktop/ModemManager1/Bearer/0
      |  initial bearer ip type: ipv4v6
-----|-----
SIM   |          primary sim path: /org/freedesktop/ModemManager1/SIM/0
```

- Result: **Pass**
 - The Modemmanager.service was active(**running**), the packages are working.
 - The modem was detected and listed.
 - After the FCC unlock app was executed, the modem can be enabled successfully.

Focal(20.04)

Tested Platform: QEMU/KVM (qemu-system-x86_64)

- Environment
 - This virtual platform does not have any modem
 - Kernel is the default in the release
- Test and Log

```
ubuntu@ubuntu-Standard-PC-i440FX-PIIX-1996:~$ uname -ar
Linux ubuntu-Standard-PC-i440FX-PIIX-1996 5.8.0-59-generic #66~20.04.1-Ubuntu SMP Thu Jun 17
11:14:10 UTC 2021 x86_64 x86_64 x86_64 GNU/Linux

ubuntu@ubuntu-Standard-PC-i440FX-PIIX-1996:~$ lsb_release -a
No LSB modules are available.
Distributor ID: Ubuntu
Description: Ubuntu 20.04.2 LTS
Release: 20.04
Codename: focal
ubuntu@ubuntu-Standard-PC-i440FX-PIIX-1996:~$ mmcli -V
mmcli 1.16.6
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ubuntu@ubuntu-Standard-PC-i440FX-PIIX-1996:~$ qmcli -V
qmcli 1.28.6
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```


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```
ubuntu@ubuntu-Standard-PC-i440FX-PIIX-1996:~$ sudo systemctl status ModemManager.service
```

```
● ModemManager.service - Modem Manager
  Loaded: loaded (/lib/systemd/system/ModemManager.service; enabled; vendor preset: enabled)
  Active: active (running) since Thu 2021-07-01 08:50:02 CST; 3min 52s ago
  Main PID: 5604 (ModemManager)
  Tasks: 3 (limit: 1107)
  Memory: 2.2M
  CGroup: /system.slice/ModemManager.service
          └─5604 /usr/sbin/ModemManager
```

```
┌ 01 08:50:02 ubuntu-Standard-PC-i440FX-PIIX-1996 systemd[1]: Starting Modem Manager...
┌ 01 08:50:02 ubuntu-Standard-PC-i440FX-PIIX-1996 ModemManager[5604]: <info> ModemManager
(version 1.16.6) starting in system bus...
┌ 01 08:50:02 ubuntu-Standard-PC-i440FX-PIIX-1996 systemd[1]: Started Modem Manager.
┌ 01 08:50:05 ubuntu-Standard-PC-i440FX-PIIX-1996 ModemManager[5604]: <info> [base-manager]
couldn't check support for device '/sys/devices/pci0000:00/0000:00:03.0': not supported by any plugin
```

```
ubuntu@ubuntu-Standard-PC-i440FX-PIIX-1996:~$ mmcli --list-modems
No modems were found
```

- Result: **Pass**
 - The Modemmanager.service was active(**running**), the packages are working.
 - There are no physical modems so that no modem was detected and listed.

Tested Platform: Lenovo ThinkEdge SE30(11ND)

- Environment
 - This platform includes the Quectel modem EM160R_GL
 - The default kernel is replaced with 5.11.0-1004-intel
 - ModemManager suite is updated from Impish
- Test and Log

```
ubuntu@ubuntu-ThinkEdge:~$ uname -ar
Linux ubuntu-ThinkEdge 5.11.0-1004-intel #4 SMP Wed Jun 16 01:46:13 CST 2021 x86_64 x86_64
x86_64 GNU/Linux
```

```
ubuntu@ubuntu-ThinkEdge:~$ lsb_release -a
No LSB modules are available.
Distributor ID: Ubuntu
Description: Ubuntu 20.04.2 LTS
Release: 20.04
Codename: focal
```

```
ubuntu@ubuntu-ThinkEdge:~$ mmcli -V
mmcli 1.16.6
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```

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ubuntu@ubuntu-ThinkEdge:~\$ **qmicli -V**

qmicli 1.28.6

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There is NO WARRANTY, to the extent permitted by law.

ubuntu@ubuntu-ThinkEdge:~\$ **sudo systemctl status ModemManager.service**

* ModemManager.service - Modem Manager

Loaded: loaded (/lib/systemd/system/ModemManager.service; enabled; vendor preset: enabled)

Active: active (**running**) since Thu 2021-07-01 12:03:38 CST; 32min ago

Main PID: 662 (ModemManager)

Tasks: 5 (limit: 9032)

Memory: 10.1M

CGroup: /system.slice/ModemManager.service

└─662 /usr/sbin/ModemManager

└─758 /usr/libexec/mbim-proxy

Jul 01 12:03:41 ubuntu-ThinkEdge ModemManager[662]: [/dev/wwan0p2MBIM] Registered 'pdc' (version 1.0) client with ID '1'

Jul 01 12:03:41 ubuntu-ThinkEdge ModemManager[662]: <info> [modem0] QMI-based capability and mode switching support enabled

Jul 01 12:03:41 ubuntu-ThinkEdge ModemManager[662]: <warn> [modem0] couldn't query SIM slots: Couldn't peek client for service 'uim'

Jul 01 12:03:42 ubuntu-ThinkEdge ModemManager[662]: <warn> [modem0/sim0] couldn't load list of emergency numbers: Failed to parse CRSM query result '+CRSM: 148,8,'''

Jul 01 12:03:42 ubuntu-ThinkEdge ModemManager[662]: <info> [modem0] state changed (unknown -> disabled)

Jul 01 12:03:42 ubuntu-ThinkEdge ModemManager[662]: <info> [modem0] state changed (disabled -> enabling)

Jul 01 12:03:42 ubuntu-ThinkEdge ModemManager[662]: <warn> [modem0] Busy

Jul 01 12:03:42 ubuntu-ThinkEdge ModemManager[662]: <warn> [modem0] Busy

Jul 01 12:03:42 ubuntu-ThinkEdge ModemManager[662]: <warn> [modem0] couldn't enable interface: 'Invalid transition'

Jul 01 12:03:42 ubuntu-ThinkEdge ModemManager[662]: <info> [modem0] state changed (enabling -> disabled)

ubuntu@ubuntu-ThinkEdge:~\$ **mmcli --list-modems**

/org/freedesktop/ModemManager1/Modem/0 [generic] MBIM [1EAC:1002]

ubuntu@ubuntu-ThinkEdge:~\$ **mmcli --modem 0**

General | path: /org/freedesktop/ModemManager1/Modem/0
device id: 61915ff177d47776c31ee03f7dc93a03a9f95790

Hardware | manufacturer: generic
| model: MBIM [1EAC:1002]
| firmware revision: EM160RGLAPR02A07M4G
| carrier config: ROW_Commercial
| carrier config revision: 08010809
| h/w revision: EM160R_GL
| supported: gsm-umts, lte
| current: gsm-umts, lte
equipment id: 864292050076577

```
System | device: /sys/devices/pci0000:00/0000:00:1c.0/0000:2d:00.0
      | drivers: mhi_net, mhi-pci-generic
      | plugin: generic
      | primary port: wwan0p2MBIM
      | ports: mhi_mbim0 (net), wwan0p2MBIM (mbim), wwan0p3AT (at)
```

```
-----
Status | unlock retries: sim-pin2 (3)
      | state: disabled
      | power state: low
      | signal quality: 0% (cached)
```

```
-----
Modes  | supported: allowed: 3g; preferred: none
      | allowed: 4g; preferred: none
      | allowed: 3g, 4g; preferred: 4g
      | allowed: 3g, 4g; preferred: 3g
      | current: allowed: 2g, 3g, 4g; preferred: 4g
```

```
-----
Bands  | supported: utran-1, utran-3, utran-4, utran-6, utran-5, utran-8,
      | utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5, eutran-7,
      | eutran-8, eutran-12, eutran-13, eutran-14, eutran-17, eutran-18,
      | eutran-19, eutran-20, eutran-25, eutran-26, eutran-28, eutran-29,
      | eutran-30, eutran-32, eutran-38, eutran-39, eutran-40, eutran-41,
      | eutran-42, eutran-43, eutran-46, eutran-48, eutran-66, utran-19
      | current: utran-1, utran-3, utran-4, utran-6, utran-5, utran-8,
      | utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5, eutran-7,
      | eutran-8, eutran-12, eutran-13, eutran-14, eutran-18, eutran-19,
      | eutran-20, eutran-25, eutran-26, eutran-28, eutran-29, eutran-30,
      | eutran-32, eutran-38, eutran-39, eutran-40, eutran-41, eutran-42,
      | eutran-43, eutran-46, eutran-48, eutran-66, utran-19
```

```
-----
IP     | supported: ipv4, ipv6, ipv4v6
```

```
-----
3GPP  | imei: 864292050076577
      | enabled locks: fixed-dialing
```

```
-----
3GPP EPS | ue mode of operation: csps-2
      | initial bearer ip type: ipv4v6
```

```
-----
SIM    | primary sim path: /org/freedesktop/ModemManager1/SIM/0
```

```
ubuntu@ubuntu-ThinkEdge:~$ sudo snap install --devmode --dangerous
dpr-wwan_1.0-wwan-test_amd64.snap
```

```
ubuntu@ubuntu-ThinkEdge:~$ sudo mmcli --modem 0 --enable
successfully enabled the modem
```

```
ubuntu@ubuntu-ThinkEdge:~$ mmcli --modem 0
```

```
-----
General | path: /org/freedesktop/ModemManager1/Modem/0
      | device id: 61915ff177d47776c31ee03f7dc93a03a9f95790
```

```
-----
Hardware | manufacturer: generic
      | model: MBIM [1EAC:1002]
      | firmware revision: EM160RGLAPR02A07M4G
      | carrier config: ROW_Commercial
      | carrier config revision: 08010809
      | h/w revision: EM160R_GL
      | supported: gsm-umts, lte
      | current: gsm-umts, lte
```

```

|          equipment id: 864292050076577
-----
System |          device: /sys/devices/pci0000:00/0000:00:1c.0/0000:2d:00.0
|          drivers: mhi_net, mhi-pci-generic
|          plugin: generic
|          primary port: wwan0p2MBIM
|          ports: mhi_mbim0 (net), wwan0p2MBIM (mbim), wwan0p3AT (at)
-----
Status |          unlock retries: sim-pin2 (3)
|          state: registered
|          power state: on
|          access tech: lte
|          signal quality: 25% (recent)
-----
Modes  |          supported: allowed: 3g; preferred: none
|          allowed: 4g; preferred: none
|          allowed: 3g, 4g; preferred: 4g
|          allowed: 3g, 4g; preferred: 3g
|          current: allowed: 2g, 3g, 4g; preferred: 4g
-----
Bands  |          supported: utran-1, utran-3, utran-4, utran-6, utran-5, utran-8,
|          utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5, eutran-7,
|          eutran-8, eutran-12, eutran-13, eutran-14, eutran-17, eutran-18,
|          eutran-19, eutran-20, eutran-25, eutran-26, eutran-28, eutran-29,
|          eutran-30, eutran-32, eutran-38, eutran-39, eutran-40, eutran-41,
|          eutran-42, eutran-43, eutran-46, eutran-48, eutran-66, utran-19
|          current: utran-1, utran-3, utran-4, utran-6, utran-5, utran-8,
|          utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5, eutran-7,
|          eutran-8, eutran-12, eutran-13, eutran-14, eutran-18, eutran-19,
|          eutran-20, eutran-25, eutran-26, eutran-28, eutran-29, eutran-30,
|          eutran-32, eutran-38, eutran-39, eutran-40, eutran-41, eutran-42,
|          eutran-43, eutran-46, eutran-48, eutran-66, utran-19
-----
IP     |          supported: ipv4, ipv6, ipv4v6
-----
3GPP  |          imei: 864292050076577
|          enabled locks: fixed-dialing
|          operator id: 46692
|          operator name: Chunghwa Telecom
|          registration: home
-----
3GPP EPS | ue mode of operation: csps-2
|          initial bearer path: /org/freedesktop/ModemManager1/Bearer/0
|          initial bearer ip type: ipv4v6
-----
SIM   |          primary sim path: /org/freedesktop/ModemManager1/SIM/0

```

- Result: **Pass**
 - The Modemmanager.service was active(**running**), the packages are working.
 - The modem was detected and listed.
 - After the FCC unlock app was executed, the modem can be enabled successfully.

Tested Platform: Lenovo ThinkEdge SE30(11NE)

- Environment

- This platform includes the Foxconn modem T99W175
 - The default kernel is replaced with 5.11.0-1004-intel
 - ModemManager suite is updated from Impish
- Test and Log

```

ubuntu@ubuntu-ThinkEdge-SE30:~$ uname -ar
Linux ubuntu-ThinkEdge-SE30 5.11.0-1004-intel #4 SMP Wed Jun 16 01:46:13 CST 2021 x86_64
x86_64 x86_64 GNU/Linux

ubuntu@ubuntu-ThinkEdge-SE30:~$ lsb_release -a
No LSB modules are available.
Distributor ID: Ubuntu
Description: Ubuntu 20.04.2 LTS
Release:20.04
Codename: focal

ubuntu@ubuntu-ThinkEdge-SE30:~$ mmcli -V
mmcli 1.16.6
Copyright (2011 - 2021) Aleksander Morgado
License GPLv2+: GNU GPL version 2 or later <http://gnu.org/licenses/gpl-2.0.html>
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.

ubuntu@ubuntu-ThinkEdge-SE30:~$ qmicli -V
qmicli 1.28.6
Copyright (C) 2012-2021 Aleksander Morgado
License GPLv2+: GNU GPL version 2 or later <http://gnu.org/licenses/gpl-2.0.html>
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.

ubuntu@ubuntu-ThinkEdge-SE30:~$ sudo systemctl status ModemManager.service
* ModemManager.service - Modem Manager
  Loaded: loaded (/lib/systemd/system/ModemManager.service; enabled; vendor preset: enabled)
  Active: active (running) since Thu 2021-07-01 15:33:55 CST; 5min ago
  Main PID: 652 (ModemManager)
  Tasks: 5 (limit: 9032)
  Memory: 10.1M
  CGroup: /system.slice/ModemManager.service
          └─ 652 /usr/sbin/ModemManager
             `-1010 /usr/libexec/mbim-proxy

Jul 01 15:33:59 ubuntu-ThinkEdge-SE30 ModemManager[652]: <info> [modem0] using fallback carrier
configuration 'GCF' (version 0x0a000804, size 62708 bytes)
Jul 01 15:33:59 ubuntu-ThinkEdge-SE30 ModemManager[652]: <info> [modem0] carrier config switching
not needed: already using 'GCF'
Jul 01 15:33:59 ubuntu-ThinkEdge-SE30 ModemManager[652]: <warn> [modem0] couldn't load UE
mode of operation for EPS: No AT port available to run command
Jul 01 15:33:59 ubuntu-ThinkEdge-SE30 ModemManager[652]: <warn> [modem0] couldn't open ports
during Modem SIM hot swap enabling: Couldn't get primary port
Jul 01 15:33:59 ubuntu-ThinkEdge-SE30 ModemManager[652]: <info> [modem0] state changed
(unknown -> disabled)
Jul 01 15:33:59 ubuntu-ThinkEdge-SE30 ModemManager[652]: <info> [modem0] state changed
(disabled -> enabling)
Jul 01 15:33:59 ubuntu-ThinkEdge-SE30 ModemManager[652]: <warn> [modem0] OperationNotAllowed
Jul 01 15:34:09 ubuntu-ThinkEdge-SE30 ModemManager[652]: <warn> [modem0] Failure
Jul 01 15:34:09 ubuntu-ThinkEdge-SE30 ModemManager[652]: <warn> [modem0] couldn't enable

```

interface: 'Invalid transition'
Jul 01 15:34:09 ubuntu-ThinkEdge-SE30 ModemManager[652]: <info> [modem0] state changed
(enabling -> disabled)

ubuntu@ubuntu-ThinkEdge-SE30:~\$ mmcli --modem 0

```
-----  
General |           path: /org/freedesktop/ModemManager1/Modem/0  
        |           device id: 9171ec7924fa412a0fc0ac8e1752b05c603735aa  
-----  
Hardware |           manufacturer: foxconn  
        |           model: MBIM [105B:E0AB]  
        |           firmware revision: T99W175.F0.0.0.5.5.GC.004  
        |           066  
        |           carrier config: GCF  
        |           carrier config revision: 0A000804  
        |           h/w revision: Qualcomm Snapdragon X55 5G  
        |           supported: gsm-umts, lte, 5gnr  
        |           current: gsm-umts, lte, 5gnr  
        |           equipment id: 352264110046477  
-----  
System  |           device: /sys/devices/pci0000:00/0000:00:1c.0/0000:2d:00.0  
        |           drivers: mhi_net, mhi-pci-generic  
        |           plugin: foxconn  
        |           primary port: wwan0p2MBIM  
        |           ports: mhi_mbim0 (net), wwan0p2MBIM (mbim)  
-----  
Status  |           unlock retries: sim-pin2 (3)  
        |           state: disabled  
        |           power state: low  
        |           signal quality: 0% (cached)  
-----  
Modes   |           supported: allowed: 3g; preferred: none  
        |           allowed: 4g; preferred: none  
        |           allowed: 3g, 4g; preferred: 4g  
        |           allowed: 3g, 4g; preferred: 3g  
        |           allowed: 5g; preferred: none  
        |           allowed: 3g, 5g; preferred: 5g  
        |           allowed: 3g, 5g; preferred: 3g  
        |           allowed: 4g, 5g; preferred: 5g  
        |           allowed: 4g, 5g; preferred: 4g  
        |           allowed: 3g, 4g, 5g; preferred: 5g  
        |           allowed: 3g, 4g, 5g; preferred: 4g  
        |           allowed: 3g, 4g, 5g; preferred: 3g  
        |           current: allowed: 3g, 4g, 5g; preferred: 4g  
-----  
Bands   |           supported: utran-1, utran-3, utran-4, utran-6, utran-5, utran-8,  
        |           utran-9, utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5,  
        |           eutran-7, eutran-8, eutran-12, eutran-13, eutran-14, eutran-17,  
        |           eutran-18, eutran-19, eutran-20, eutran-25, eutran-26, eutran-28,  
        |           eutran-29, eutran-30, eutran-32, eutran-34, eutran-38, eutran-39,  
        |           eutran-40, eutran-41, eutran-42, eutran-46, eutran-48, eutran-66,  
        |           eutran-71, utran-19  
        |           current: utran-1, utran-4, utran-6, utran-5, utran-8, utran-9,  
        |           utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5, eutran-7,  
        |           eutran-8, eutran-12, eutran-13, eutran-14, eutran-17, eutran-18,  
        |           eutran-19, eutran-20, eutran-25, eutran-26, eutran-28, eutran-29,  
        |           eutran-30, eutran-32, eutran-34, eutran-38, eutran-39, eutran-40,  
        |           eutran-41, eutran-42, eutran-46, eutran-48, eutran-66, eutran-71,  
        |           utran-19  
-----
```

```
IP | supported: ipv4, ipv6, ipv4v6
-----
3GPP | imei: 352264110046477
      | enabled locks: fixed-dialing
-----
3GPP EPS | initial bearer ip type: ipv4v6
-----
SIM | primary sim path: /org/freedesktop/ModemManager1/SIM/0
```

```
ubuntu@ubuntu-ThinkEdge-SE30:~$ sudo mmcli --modem 0 --enable
successfully enabled the modem
```

```
ubuntu@ubuntu-ThinkEdge-SE30:~$ mmcli --modem 0
```

```
-----
General | path: /org/freedesktop/ModemManager1/Modem/0
          | device id: 9171ec7924fa412a0fc0ac8e1752b05c603735aa
-----
Hardware | manufacturer: foxconn
          | model: MBIM [105B:E0AB]
          | firmware revision: T99W175.F0.0.0.5.5.GC.004
          | 066
          | carrier config: GCF
          | carrier config revision: 0A000804
          | h/w revision: Qualcomm Snapdragon X55 5G
          | supported: gsm-umts, lte, 5gnr
          | current: gsm-umts, lte, 5gnr
          | equipment id: 352264110046477
-----
System | device: /sys/devices/pci0000:00/0000:00:1c.0/0000:2d:00.0
        | drivers: mhi_net, mhi-pci-generic
        | plugin: foxconn
        | primary port: wwan0p2MBIM
        | ports: mhi_mbim0 (net), wwan0p2MBIM (mbim)
-----
Status | unlock retries: sim-pin2 (3)
        | state: registered
        | power state: on
        | access tech: lte
        | signal quality: 25% (recent)
-----
Modes | supported: allowed: 3g; preferred: none
        | allowed: 4g; preferred: none
        | allowed: 3g, 4g; preferred: 4g
        | allowed: 3g, 4g; preferred: 3g
        | allowed: 5g; preferred: none
        | allowed: 3g, 5g; preferred: 5g
        | allowed: 3g, 5g; preferred: 3g
        | allowed: 4g, 5g; preferred: 5g
        | allowed: 4g, 5g; preferred: 4g
        | allowed: 3g, 4g, 5g; preferred: 5g
        | allowed: 3g, 4g, 5g; preferred: 4g
        | allowed: 3g, 4g, 5g; preferred: 3g
        | current: allowed: 3g, 4g, 5g; preferred: 4g
-----
Bands | supported: utran-1, utran-3, utran-4, utran-6, utran-5, utran-8,
        | utran-9, utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5,
        | eutran-7, eutran-8, eutran-12, eutran-13, eutran-14, eutran-17,
        | eutran-18, eutran-19, eutran-20, eutran-25, eutran-26, eutran-28,
        | eutran-29, eutran-30, eutran-32, eutran-34, eutran-38, eutran-39,
        | eutran-40, eutran-41, eutran-42, eutran-46, eutran-48, eutran-66,
```

```
      |          eutran-71, utran-19
      |          current: utran-1, utran-4, utran-6, utran-5, utran-8, utran-9,
      |          utran-2, eutran-1, eutran-2, eutran-3, eutran-4, eutran-5, eutran-7,
      |          eutran-8, eutran-12, eutran-13, eutran-14, eutran-17, eutran-18,
      |          eutran-19, eutran-20, eutran-25, eutran-26, eutran-28, eutran-29,
      |          eutran-30, eutran-32, eutran-34, eutran-38, eutran-39, eutran-40,
      |          eutran-41, eutran-42, eutran-46, eutran-48, eutran-66, eutran-71,
      |          utran-19
-----
IP    |          supported: ipv4, ipv6, ipv4v6
-----
3GPP  |          imei: 352264110046477
      |          enabled locks: fixed-dialing
      |          operator id: 46692
      |          operator name: Chunghwa Telecom
      |          registration: home
-----
3GPP EPS |          initial bearer path: /org/freedesktop/ModemManager1/Bearer/0
      |          |          initial bearer ip type: ipv4v6
-----
SIM   |          primary sim path: /org/freedesktop/ModemManager1/SIM/0
```

- Result: **Pass**
 - The Modemmanager.service was active(**running**), the packages are working.
 - The modem was detected and listed.
 - After the FCC unlock app was executed, the modem can be enabled successfully.