Performing OIR of Cable Interface Line Cards on the Cisco CMTS

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The Cisco uBR7200 series and Cisco uBR10012 universal broadband routers support online insertion and removal (OIR) of cable interface line cards, but have different requirements. The following sections describe this support for each of the platforms.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the Feature Information Table at the end of this document.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to http://tools.cisco.com/ITDIT/CFN/. An account on http://www.cisco.com/ is not required.

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OIR of Cable Interface Line Cards on the Cisco uBR7200 Series Routers

Technically, the Cisco uBR7200 series universal broadband routers support true online insertion and removal (OIR), or hot swapping, of cable interface line cards only when exchanging cable interface line cards of the exact same type (for example, exchanging a Cisco uBR-MC28U card for another Cisco uBR-MC28U card). Under these conditions, no reload of the router is required.

Note   When you OIR different types of cable interface line cards (for example, a Cisco uBR-MC16U card replaced by a Cisco uBR-MC16X card, or Cisco uBR-MC16U card replaced by a Cisco uBR-MC28U card), you not only might have to reconfigure the interfaces, we recommend that you reload the router.

For detailed OIR procedure information, see the product hardware installation guide available on Cisco.com.

Performing OIR of Cable Interface Line Cards on the Cisco uBR10012 Router

To perform an OIR of cable interface line cards on the Cisco uBR10012 router, do the following steps:

Step 1   From global configuration mode, enter the **cr10k card oir-compatibility** command for the cable interface line card that you want to OIR.

Example:
```
Router(config)# cr10k card 8/0 oir-compatibility
```
This command helps preserve the configuration and performs some internal synchronization to make sure that the OIR runs successfully.

Note   The console log displays a new message appears whenever a line card type has been replaced. For example, if the MC520U-D in subslot 8/1 is replaced by an MC520S-D, the following message is displayed:

```
%UBR10K-6-COMPAT_NEW_CARD: The 5cable-mc520u-d in slot 8/1 has been replaced by a
5cable-mc520s-d
```
This message appears when an OIR operation involves two different types of MC520 line cards.

Caution   The console log message does not appear for cards other than the MC520S/U/H. It also does not appear if the OIR operation involves identical MC520 card types. For instance, it will not appear if an MC520U is replaced by another MC520U. In such cases, you not only might have to reconfigure the interfaces, we recommend that you reload the router.

Step 2   Save the configuration to ensure the transition.

Example:
```
Router# copy running-config startup-config
```

Step 3   Turn the power off to the line card using the **cable power off** command for the slot that is being replaced.

Example:
```
Router# cable power off 8/0
Line Card 8/0 is POWERED OFF
This powers off the line card gracefully.
```

Step 4   Before removing the card, verify that the proper grounding instructions have been followed for the card.

Step 5   Remove the line card.

Step 6   Replace it with the new line card in the slot.

Step 7   Enter the **cable power on** command to power up the line card.

Example:
```
Router# cable power on 8/0
```

Step 8   Enter the **show interface cable** command and verify that the card and line protocol is "up".

Example:
```
Router# show interface cable 8/0/0
Cable8/0/0 is up, line protocol is up
  Hardware is BCM3210 ASIC, address is 000a.13e8.1ca8 (bia 000a.13e8.1a60)
  Internet address is 10.1.1.3/24
  MTU 1500 bytes, BW 27000 Kbit, DLY 1000 usec, rely 255/255, load 1/255
  Encapsulation, loopback not set, keepalive not set
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 4d07h, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Queueing strategy: fifo
  Output queue 0/40, 0 drops; input queue 0/75, 0 drops
  5 minute input rate 1834000 bits/sec, 2385 packets/sec
  5 minute output rate 1982000 bits/sec, 2431 packets/sec
      24461542 packets input, 2348214388 bytes, 0 no buffer
      Received 1979 broadcasts, 0 runts, 0 giants, 0 throttles
      0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
      24854257 packets output, 2536222931 bytes, 0 underruns
      0 output errors, 0 collisions, 0 interface resets
      0 output buffer failures, 0 output buffers swapped out
```

Step 9   Enter the **show controllers cable** command and verify the hardware status.

Example:
```
Router# show controllers cable 8/0/0
Cable8/0/0 JIB hardware status:
  JIB Downstream port   Enabled
  JIB Upstream   port 0 Enabled
  JIB Upstream   port 1 Enabled
  JIB Upstream   port 2 Enabled
  JIB Upstream   port 3 Enabled
Cable8/0/0 Upconverter is Enabled Output is Enabled
  Model: 74-3153-02 Serial Number: 0WAV090200A1 CLEI Code: FFFFFFFFFF
  HW Rev:    PC2D0109 SW Rev: 203, NVRAM Rev: 021 ECI numb
```

Step 10   Verify the configuration with the **show running-configuration** command.

Example:
```
Router# show running-configuration
```