



Cisco uBR10012 Universal Broadband Router Fan Assembly Module

This document includes procedures for installing and removing the fan assembly module that is shipped with the Cisco uBR10012 universal broadband router. This document also includes technical specifications and troubleshooting information.

Document Revision History

Date	Revision	Change Summary
03/24/2011	OL-5093-02	Added information about the UBR10012-FAN-PLUS= fan assembly module.
10/21/2003	OL-5093-01	Moved document to online only, updated the information and format. The printed document is obsolete.
08/31/2001	78-11491-01	Original publication.

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Objective

The purpose of this document is to provide installation, removal, and troubleshooting information for the fan assembly module installed in the Cisco uBR10012 universal broadband router.

Audience

This document is intended for field service engineers who are familiar with Cisco products and headend cable installation procedures.

**Warning**

Only trained and qualified personnel should be allowed to install, replace, or service this equipment. Statement 1030.

Overview

The Cisco uBR10012 chassis uses a fan assembly module containing fans to supply cooling air to the chassis. The fan assembly connects to the chassis through a blind mate connector that plugs into the cable assembly and then into the chassis backplane. The fan assembly modules are identified by their product part numbers. The fan assembly modules supported on the Cisco uBR10012 chassis are:

- Fan Assembly Module (UBR10-FAN-ASSY=)
- Fan Assembly Module (UBR10012-FAN-PLUS=)

**Note**

The output of the **show inventory** command does not display the serial numbers for the fan assembly modules (UBR10-FAN-ASSY and UBR10012-FAN-PLUS). Visually inspect the serial number labels printed on the fan assembly modules to locate the serial number.

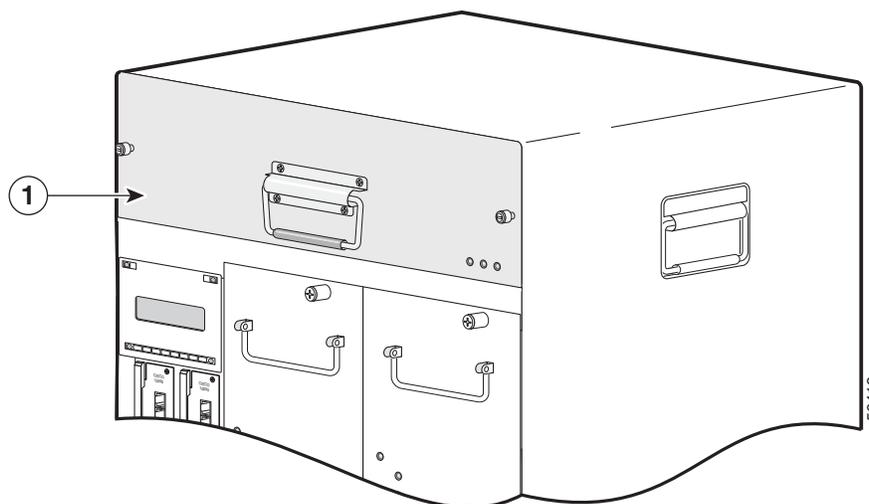
Fan Assembly Module (UBR10-FAN-ASSY=)

This fan assembly module as shown in [Figure 1](#) has four internal fans that draw cooling air into the front of the chassis and directs it across the internal components. The air is exhausted through the openings at the rear of the chassis. The fan assembly module works at two speeds:

- Low speed (with a clean air filter)
- High speed (with a clean air filter)

The temperature of the fan module at the module air outlet determines the operating speed. Three LEDs indicate the status of the fan assembly.

Figure 1 Fan Assembly Module (UBR10-FAN-ASSY=)



1	Fan assembly module	—
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Table 1 lists the LEDs on the fan assembly module.

Table 1 Fan Assembly LEDs and Their Function

LED	Status	Description
FAN OK	Green	This indicates that system is functioning normally; all fans are operating.
SINGLE FAN FAIL	Yellow	This indicates that one of the fans in the fan module has failed. The fan module can still provide enough cooling to safely operate the Cisco uBR10012 router chassis, but it might begin operating the fans in its high-speed mode to do so. Replace the fan assembly module as soon as possible.
MULTI FAN FAIL	Yellow	This indicates that two or more fans in the module have failed, and that the module is no longer able to consistently cool the Cisco uBR10012 router chassis. To prevent overheating of the chassis and possible damage to the line cards and other modules, replace the fan assembly module immediately.

Four alarms (System OK, FAN-MISSING, PARTIAL-FAN Failure, and TOTAL-FAN Failure) are used for monitoring the fan module.

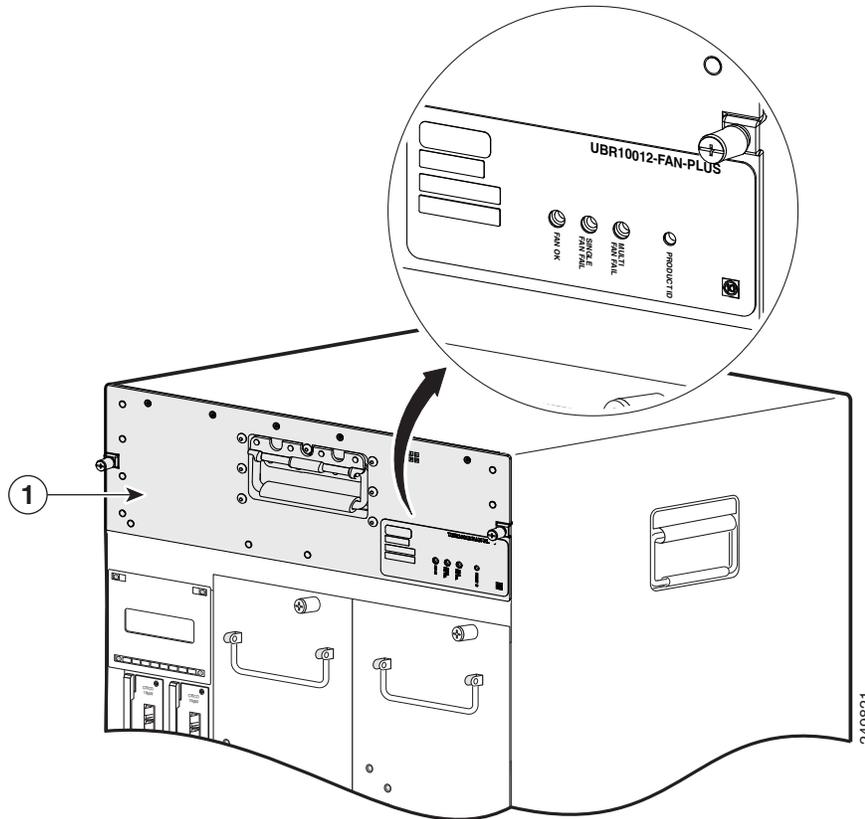
Fan Assembly Module (UBR10012-FAN-PLUS=)

This fan assembly as shown in Figure 2 has nine internal fans that draw cooling air into the front of the chassis and directs it across the internal components. This fan assembly module provides:

- Increased cooling capability
- Higher redundancy in case of a failure

- Repositioned thermal sensor that detects the ambient temperature of the cable plant or facility and adjusts the variable fan speeds to maintain the temperature

Figure 2 Fan Assembly Module (UBR10012-FAN-PLUS=)



1	Fan assembly module	
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This fan assembly module works at four variable speed levels (0, 1, 2, and 3). The operating speed of the fan is determined by the temperature of the facility. A thermistor, mounted on the fan assembly module, is placed in front of the vent holes on the front panel. It measures the ambient air temperature on the outside of the fan module. The threshold temperatures and speed levels are set internally and the fan assembly controller monitors the thermistor and controls the speed of the fan. When powered on, the fans operate at a speed according to the ambient average air temperature of the facility at the appropriate speed level.



Note

Each speed level is based on a certain system pressure drop. As the system pressure changes, the air flow rate also changes.

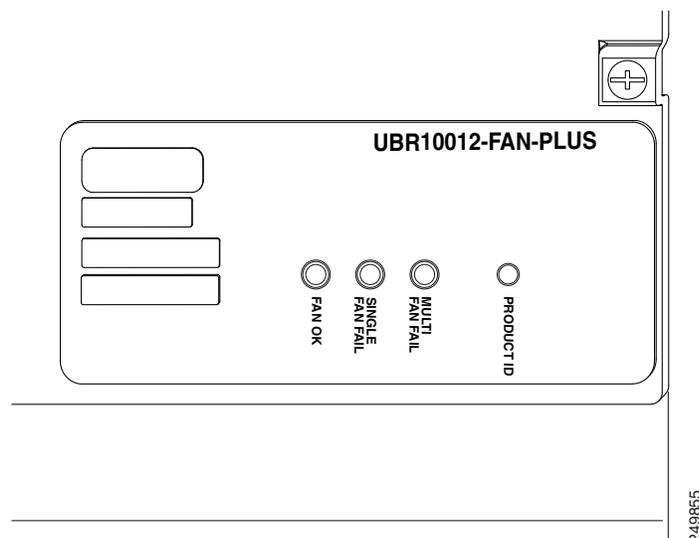


Note

On startup, it may take up to 30 seconds for the fans to stabilize at the appropriate speed.

Three LEDs indicate the status of the fan assembly. [Table 1](#) lists the LEDs on the front panel of the fan assembly module. In addition, there is a PRODUCT ID LED/switch on the front panel of the fan assembly module (see [Figure 3](#)).

Figure 3 Front Panel of the Fan Assembly Module (UBR10012-FAN-PLUS)



[Table 2](#) lists the default activation status of the PRODUCT ID LED/switch when it is shipped.

Table 2 PRODUCT ID LED/Switch Default Activation Status

Ordered Equipment	PRODUCT ID LED/Switch Status
Fan module (spare)	Activated
Fan module and Cisco uBR10012 chassis running unsupported Cisco IOS Release	Not activated
Fan module and Cisco uBR10012 chassis running supported Cisco IOS Release ¹	Activated

1. For information on Cisco IOS Releases that support the PRODUCT ID LED/switch feature, see the [Cisco uBR10012 Router Release Notes for Cisco IOS Release 12.2\(33\)SCE](#).

If the PRODUCT ID LED/switch is illuminated (green), the Cisco IOS software identifies the fan assembly module as UBR10012-FAN-PLUS only if you are running a supporting Cisco IOS release on the chassis. If the PRODUCT ID LED/switch is illuminated (green) but a non-supporting release is running on the chassis, the software reports the default UBR10-FAN-ASSY product part number and a FAN-MISSING alarm may be randomly raised. To clear the alarm, see [“Troubleshooting the Fan Assembly” section on page 17](#).



Tip

Use a small object, such as a paper clip, to press the PRODUCT ID LED/switch inside the cavity on the front panel of the fan assembly module.

Four alarms (System OK, FAN-MISSING, PARTIAL-FAN Failure, and TOTAL-FAN Failure) are used for monitoring the fan module.

[Table 3](#) summarizes the specifications of both the fan assembly modules.

Table 3 *Specifications of the Fan Assembly Modules*

Component	UBR10012-FAN-PLUS=	UBR10-FAN-ASSY=
Power Consumption (Max)	224 W	185 W
Fans	9	4
Operating Speed Levels	4	2
LEDs	3	3
PRODUCT ID LED/switch	Yes	No
Weight	22 lbs (10 kg)	30 lbs (3.16 kg)
Label on Front Panel	Blue	White

Preparing to Unpack the Fan Assembly Module

This section presents the following topics:

- [Safety Guidelines, page 6](#)
- [Electrical Equipment Guidelines, page 6](#)
- [Preventing Electrostatic Discharge Damage, page 7](#)
- [Technical Specifications, page 7](#)
- [Unpacking and Preparing the Fan Assembly Module, page 8](#)

Safety Guidelines

Follow the safety guidelines provided here, when working with any equipment that connects to electrical power.



Warning

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. To see translations of the warnings that appear in this publication, refer to the translated safety warnings that accompanied this device. Statement 1071

Electrical Equipment Guidelines

Follow these basic guidelines when working with any electrical equipment:

- Before beginning any procedures requiring access to the chassis interior, locate the emergency power-off switch for the room where you are working.
- Disconnect all power and external cables before moving a chassis.
- Do not work alone when potentially hazardous conditions exist.
- Never assume that power has been disconnected from a circuit; always check.
- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.

- Carefully examine your work area for possible hazards such as moist floors, ungrounded power extension cables, and missing safety grounds.

Preventing Electrostatic Discharge Damage

Electrostatic discharge (ESD) damage, which occurs when electronic cards or components are improperly handled, can result in complete or intermittent failures. The AC-input power shelf and its AC power modules contain a printed circuit card that is fixed in a metal carrier. Electromagnetic interference (EMI) shielding and connectors are integral components of the carrier. Although the metal carrier helps to protect the cards from ESD, use an antistatic strap each time you handle the modules.

Following are guidelines for preventing ESD damage:

- Always use an ESD-preventive wrist or ankle strap and ensure that it makes good skin contact. Before removing a card from the chassis, connect the equipment end of the strap to a bare metal, unpainted surface on the chassis, or rack-mount.
- Handle components by the carrier edges only; avoid touching the card components or any connector pins.
- When removing a module, place it on an antistatic surface or in a static-shielding bag. If the module is to be returned to the factory, immediately place it in a static-shielding bag.
- Avoid contact between the modules and clothing. The wrist strap protects the card from ESD voltages on the body only; ESD voltages on clothing can still cause damage.



Caution

For safety, periodically check the resistance value of the anti-static strap. The measurement should be between 1 and 10 megohms (Mohm).

Technical Specifications

Table 4 lists the specifications for the UBR10-FAN-ASSY= fan assembly module.

Table 4 **Technical Specifications (UBR10-FAN-ASSY=)**

Description	Specifications
Product number (fan assembly)	UBR10-FAN-ASSY=
Product number (cable)	UBR10-FAN-CAB=
Dimensions	<ul style="list-style-type: none"> • Height: 5.85 in. (14.9 cm) • Width: 17 in. (43.2 cm) • Depth: 20 in. (50.8 cm)
Weight	30 lbs (13.6 kg)
Power consumption	185 W max
Temperature range	<ul style="list-style-type: none"> • Operating: 41° to 104° F (5° to 40° C) • Storage: -40° to 158° F (-40° to 70° C)

Table 4 **Technical Specifications (continued)(UBR10-FAN-ASSY=)**

Description	Specifications
Relative humidity	<ul style="list-style-type: none"> Operating: 5% to 85% Storage: 5% to 95%
Operating altitude	-197 to 13,123 ft (-60 to 4000 m)

Table 5 lists the specifications for the UBR10012-FAN-PLUS= fan assembly module.

Table 5 **Technical Specifications (Cisco UBR10012-FAN-PLUS=)**

Description	Specifications
Product number (fan assembly)	UBR10012-FAN-PLUS=
Product number (cable)	UBR10-FAN-CAB=
Dimensions	<ul style="list-style-type: none"> Height: 5.85 in. (14.9 cm) Width: 17 in. (43.2 cm) Depth: 20 in. (50.8 cm)
Weight	22 lbs (10 kg)
Power consumption	224 W max (4 amps, not to exceed 6 amps at startup)
Acoustic	Sound Power (dB [re 1E-12] watts) < 78 dB up to 80.6° F (27° C)
Temperature range	<ul style="list-style-type: none"> Operating: 41° to 104° F (5° to 40° C) Storage: -40° to 158° F (-40° to 70° C)
Relative humidity	<ul style="list-style-type: none"> Operating: 5% to 85% Storage: 5% to 95%
Operating altitude	-197 to 13,123 ft (-60 to 4000 m)

Unpacking and Preparing the Fan Assembly Module

Prerequisites

No prerequisites exist for this task.

Required Tools and Equipment

- Fan assembly module (UBR10-FAN-ASSY= or UBR10012-FAN-PLUS=)
- ESD-preventive wrist strap

Steps

To unpack the fan assembly module:

-
- Step 1** Open the shipping carton by cutting the packing tape along the flaps on the top of the box.

- Step 2** Lift off the top layer of packaging to expose the module.
- Step 3** Remove the fan assembly module from the box.
- Step 4** Retain the packaging and the carton to return the module to the factory if it is found defective. For more information, see the [“Obtaining Documentation and Submitting a Service Request”](#) section on page 19.

What to do next

After performing this step, install the Fan assembly modules, see [“Install the Fan Assembly Module”](#) section on page 9.

Installing the Fan Assembly Modules in the Chassis

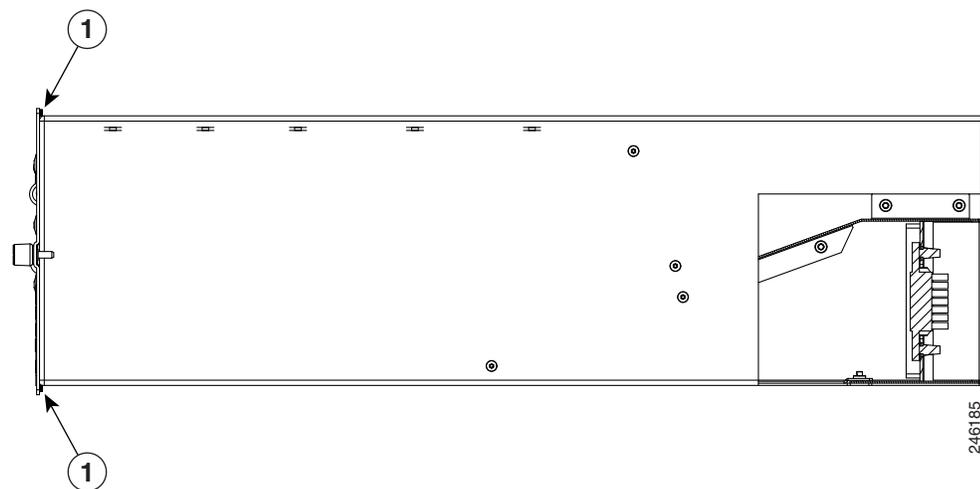
This procedure is applicable to both the fan assembly modules (UBR10-FAN-ASSY= and UBR10012-FAN-PLUS=).

Install the Fan Assembly Module

Prerequisites

- If you are installing the fan module (UBR10012-FAN-PLUS=, Spare) in an existing Cisco uBR10012 router chassis, ensure that the PRODUCT ID LED/switch activation status is in accordance with the Cisco IOS Release running on the chassis (see [Table 2](#) for details).
- The UBR10012-FAN-PLUS= fan assembly module is pre-installed with EMI gaskets (see [Figure 4](#)). If you are installing the fan module (UBR10012-FAN-PLUS=, Spare) in an existing Cisco uBR10012 router chassis, ensure that the EMI gaskets on the Cisco uBR10012 router chassis (if present) are removed before mounting the fan assembly module.

Figure 4 EMI Gasket Location on UBR10012-FAN-PLUS= Fan Assembly Module



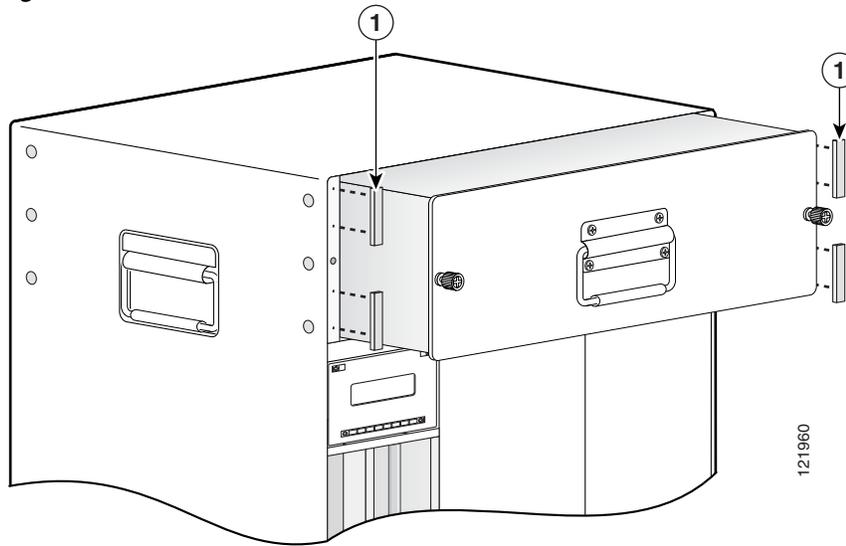
1	EMI gaskets across the top and bottom flanges of the fan assembly module	
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Caution

Do not remove the required EMI gaskets on the UBR10012-FAN-PLUS= fan assembly module (see [Figure 4](#)).

The EMI gaskets present on the Cisco uBR10012 router chassis are used with the UBR10-FAN-ASSY= fan assembly module (see [Figure 5](#)). For information about installing EMI gaskets, see [Installing EMI Gaskets and RF Absorber Material on the Cisco uBR10012 Universal Broadband Router](#).

Figure 5 EMI Gasket Location on the Cisco uBR10012 Router



1	EMI gaskets on either side on the fan assembly on the Cisco uBR10012 router chassis.	
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Required Tools and Equipment

- Flat-head screw driver
- Fan assembly module (UBR10-FAN-ASSY= or UBR10012-FAN-PLUS=)

Steps

To install a fan assembly module into the Cisco uBR10012 router:

-
- Step 1** Remove the front cover by pulling the cover towards you.
- Step 2** If you are installing the fan module (UBR10012-FAN-PLUS=), ensure that the Cisco IOS Release running on the Cisco uBR10012 router supports the PRODUCT ID LED/switch feature.

Step 3 Using both hands, align the fan assembly module in the chassis, and push it back firmly. Make sure that the connectors on the fan assembly securely connect to the backplane.

Step 4 Tighten the captive screws on each side of the fan assembly module.



Note To tighten the captive screws on the fan assembly modules, the installation torque used should be 8 in-lbs.

Step 5 Check if the fans start working and ensure that air is blowing from the fans.

Step 6 Verify that the FAN OK LED is illuminated (green). If the FAN OK LED is not illuminated or if the fan failure (SINGLE FAN FAIL or MULTI FAN FAIL) LEDs are illuminated (yellow), try reseating the fan assembly module, see [“Troubleshooting the Fan Assembly” section on page 17](#).

Step 7 If you are running a Cisco IOS Release that supports the PRODCUT ID LED/switch feature on the fan module (UBR10012-FAN-PLUS=), verify that the PRODUCT ID LED/switch illuminates (green).



Note If you are using the fan module (UBR10012-FAN-PLUS=), and running a Cisco IOS Release that does not support the PRODUCT ID LED feature, ensure that the PRODUCT ID LED/switch is not illuminated. For information on Cisco IOS Releases that support the PRODUCT ID LED/switch feature, see [Cisco uBR10012 Router Release Notes for Cisco IOS Release 12.2\(33\)SCE](#). If you are using a supported Cisco IOS release, the software may not identify the fan assembly as UBR10012-FAN-PLUS. If this occurs, ensure that the PRODUCT ID LED/switch is illuminated and then either reload the software, or physically remove the fan assembly module for at least 1 minute and then reinsert it. For more information, see [“Troubleshooting the Fan Assembly” section on page 17](#).

Step 8 Replace the front cover.

- a. Slide the cover onto the four corner posts of the chassis.
- b. Push down so that the posts are seated in the grooves above the cover holes.

Removing and Replacing the Fan Assembly Module



Caution

Do not run the Cisco uBR10012 chassis without a working fan assembly module for more than three minutes. To prevent the possibility of the system overheating, be sure that the replacement fan assembly module is out of its box and packaging, so it is ready to install as soon as the defective module is removed.



Caution

The total service window for removal and replacement of the fan assembly module is three minutes before possible system shutdown. Ensure that you complete the replacement procedure within this time limit.



Note

The fan assembly module supports hot-swapping and can be replaced without interrupting system operation.

This section represents the following topics:

- [Removing the Fan Assembly Module, page 12](#)
- [Removing the Fan Assembly Cable, page 14](#)
- [Replacing the Fan Assembly Cable, page 16](#)

Removing the Fan Assembly Module

This procedure is applicable to both fan assembly modules (UBR10-FAN-ASSY= and UBR10012-FAN-PLUS=).



Note

The fan assembly module does not need to be replaced when it is operating normally. If a failure (SINGLE FAN FAIL or MULTI FAN FAIL) LED illuminates (yellow), use the following procedure to remove and reinsert the fan assembly module to test the connection. If the failure (SINGLE FAN FAIL or MULTI FAN FAIL) LED still illuminates (yellow) after removing and reinserting the module, use the following procedure to replace the fan assembly module.

Prerequisites

- Ensure that the PRODUCT ID LED/switch on the UBR10012-FAN-PLUS= fan assembly module is illuminated or not illuminated before removing and replacing the fan assembly module. [Table 2](#) provides information on the PRODUCT ID LED/switch activation status and compatibility with the Cisco IOS Release.

Required Tools and Equipment

- Flat-head screwdriver
- Replacement fan assembly module (UBR10-FAN-ASSY= or UBR10012-FAN-PLUS=)

Steps



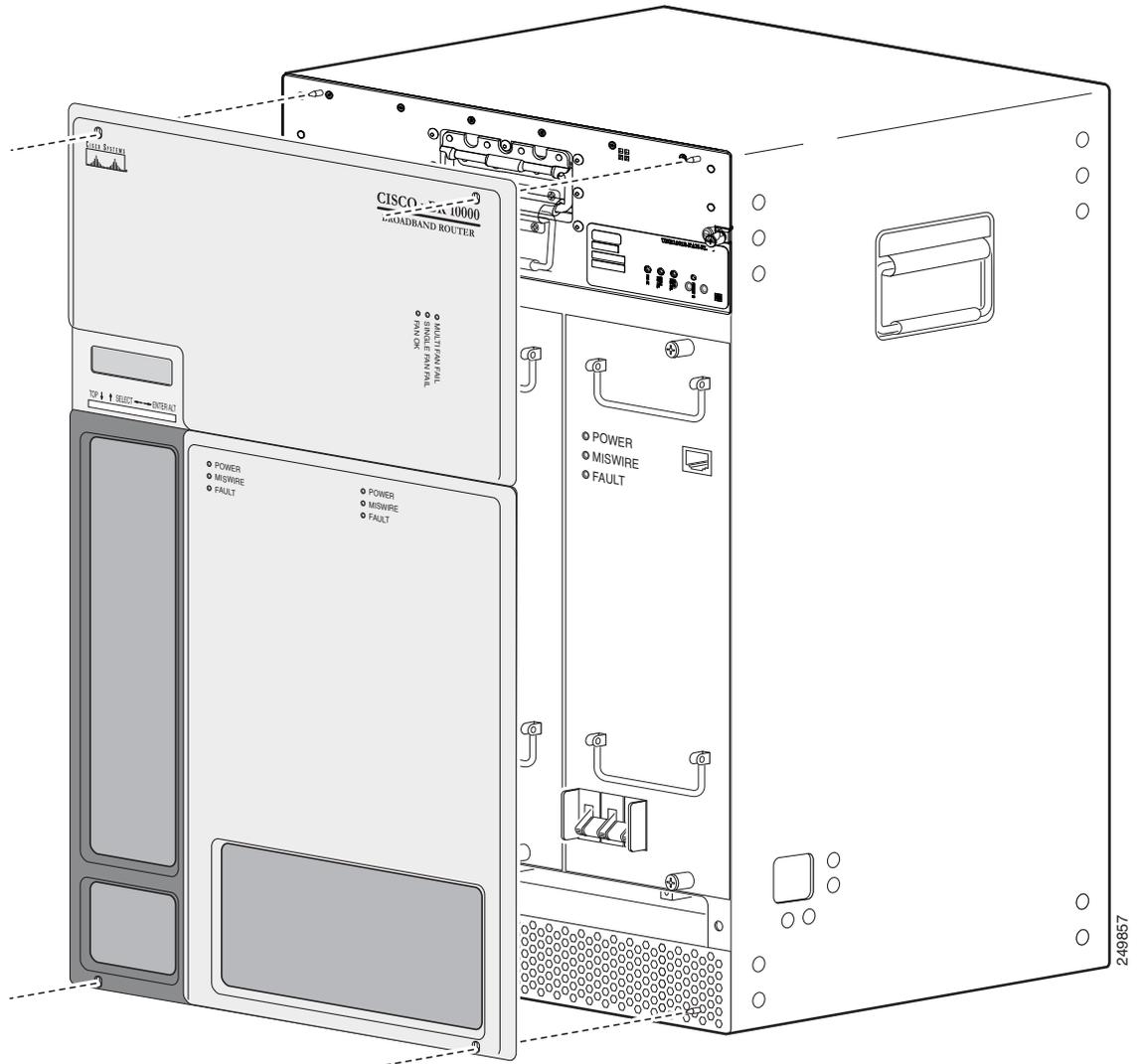
Note

In this section, the UBR10012-FAN-PLUS= fan assembly module is depicted in the illustrations [Figure 6](#) and [Figure 7](#).

To remove the fan assembly module from the Cisco uBR10012 router:

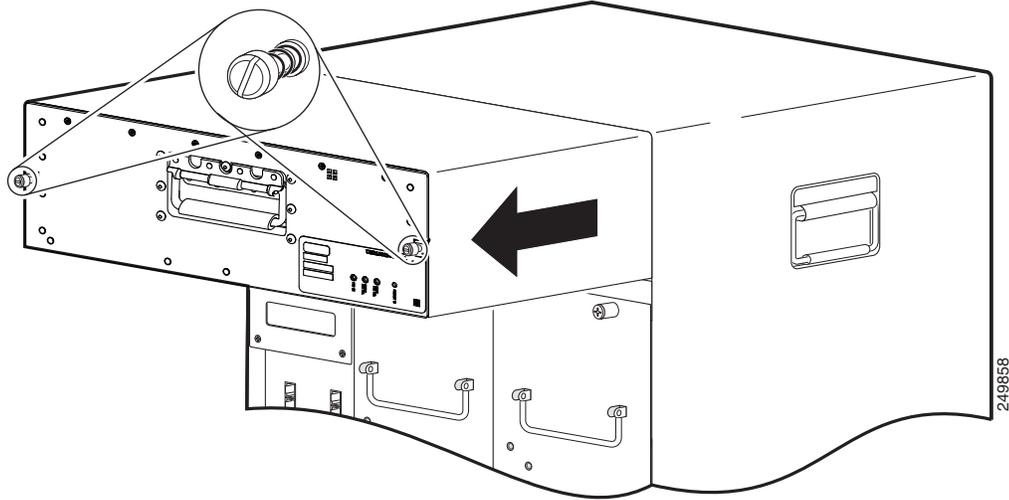
- Step 1** Remove the front cover by lifting it up slightly, and then pulling it towards you (see [Figure 6](#)).

Figure 6 *Removing the Front Cover*



- Step 2** Verify the status of the PRODUCT ID LED/switch on the UBR10012-FAN-PLUS= fan assembly module before removing the module from the chassis (see [Table 2](#)).
- Step 3** Loosen the captive screws on each side of the fan assembly module and pull the module out of the chassis (see [Figure 7](#)).

Figure 7 **Locations of Screws**



Step 4 Pull the fan module out of the router chassis.



Caution

The fan assembly module weighs approximately 30 pounds. Use one hand to pull the fan assembly module using its handle and position the other hand underneath the module to support it, so that it does not suddenly swing down when it clears the chassis.

What to do next

After performing this task, install the fan assembly module, see [“Install the Fan Assembly Module” section on page 9](#).

If you are removing and replacing fan assembly cable, see the [“Removing the Fan Assembly Cable” section on page 14](#), and [“Replacing the Fan Assembly Cable” section on page 16](#).

Removing the Fan Assembly Cable

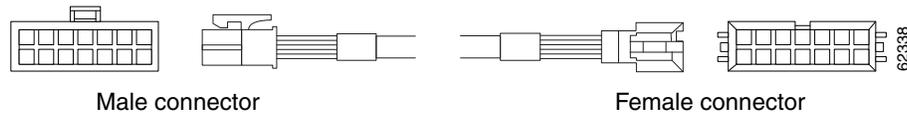
This procedure is applicable to both the fan modules (UBR10-FAN-ASSY= and UBR10012-FAN-PLUS=).

The fan assembly cable connects the fan assembly to the backplane. The cable is located inside the chassis, underneath the fan assembly. Normally, the cable is not removed when a fan assembly module is removed from the chassis (see [Figure 8](#)).



Note

The cable has different connectors on each end.

Figure 8 Fan Cable

Prerequisites

No prerequisites exist for this task.

Required Tools and Equipment

Wire cutters to cut the cable tie wraps.

Steps

To remove the fan assembly cable:

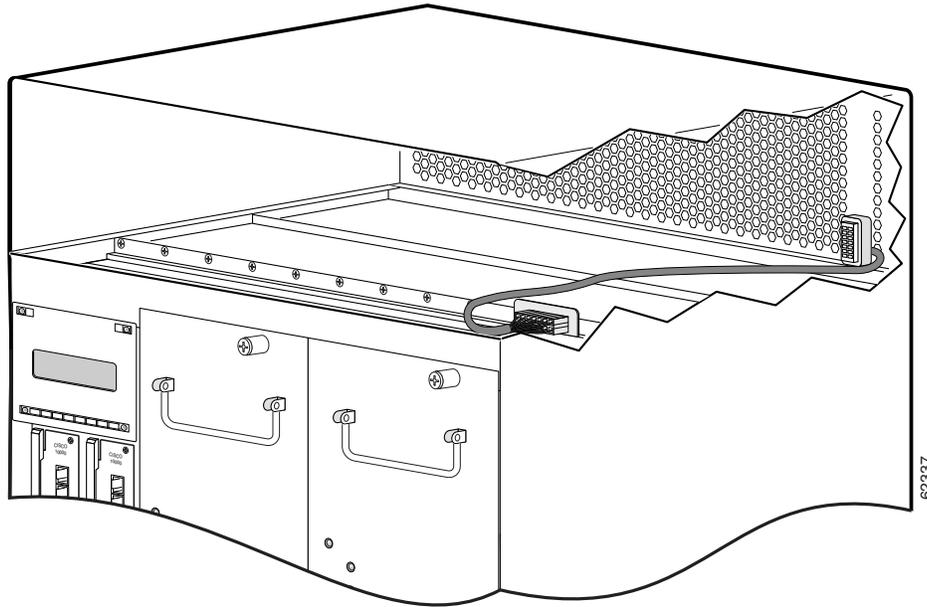
-
- Step 1** Remove the front cover by lifting it up slightly, and then pulling it towards you.
 - Step 2** Remove the fan assembly (see [“Removing the Fan Assembly Module”](#) section on page 12).
 - Step 3** Reach into the chassis and cut the tie-wrap to free the cable.



Note Ensure that you make notes of the securing points of the tie wrap before you remove them. The tie wrap securing points are required while replacing the fan cable.

- Step 4** Disconnect the cable from the rear bracket (see [Figure 9](#)).

Figure 9 Location of Fan Cable Inside the Chassis



Note

The fan assembly cable has two “U” shaped bends that allow the cable to curve back into the brackets and fit snugly on the bottom of the fan module enclosure. (See [Figure 9](#).)

Step 5 Push the tabs on the bracket open.

Step 6 Disconnect the cable from the front connector and remove the cable from the chassis.

What to do next

After performing this task, replace the fan assembly cable, see [“Replacing the Fan Assembly Cable”](#) section on page 16.

Replacing the Fan Assembly Cable

This procedure is applicable to both the fan modules (UBR10-FAN-ASSY= and UBR10012-FAN-PLUS=).

Prerequisites

Replacing a fan cable requires removing the cooling facilities of the chassis. It is not necessary to remove power from the chassis for this procedure. However, because you are shutting down the fans that cool the chassis and boards, it is important to have the new cable ready for immediate installation.

Required Tools and Equipment

Replacement fan cable (UBR10-FAN-CAB=)

Steps

Step 1 Verify which connector goes in the bracket in the back of the chassis and which connector goes into the front connector.

Step 2 Bend the cable in a “U” shape at both ends, to facilitate getting the cable into the rear bracket. (See [Figure 9](#).)



Tip Use the existing cable as a template.

Step 3 Install the cable in the rear bracket.

Step 4 Make sure that the cable lays flat on the enclosure bottom so as not to restrict the movement of the fan assembly cable as it is pushed back into the chassis.

Step 5 Connect the cable with the front connector.

Step 6 Ensure that you secure the cable using the tie wrap exactly as the previous cable was secured and route the cable inside the fan assembly module.

Step 7 Slide the fan assembly module back into the chassis. The module should slide smoothly back into the chassis without interference with the cable.



Tip If the fan assembly module does not slide easily into the chassis, remove the module and check the location of the cable. The cable should lay flat along the bottom of the fan assembly enclosure.

Troubleshooting the Fan Assembly

Check the following to help isolate a problem with the cooling system:

- When you start up the system, do the fans start operating?

When the fans are operating, you should be able to hear them. You should also be able to feel air being drawn in at the bottom front and expelled at the top rear of the chassis.

1. Check for fan failure by checking the fan status LEDs and running the **show environment** command.

```
Router# show environment
```

```
Temperature normal: chassis inlet measured at 29C/84F
Temperature normal: chassis core measured at 42C/107F
Fan:                                                         OK
Power Entry Module 0 type DC status:                       OK
Power Entry Module 1 type DC status:                       OK
Router#
```

2. Ensure that no alarms are triggered on the fan assembly module.

3. Check if there is sufficient ventilation on the chassis intake and chassis exhaust.
4. Verify if the ambient temperature is within the specified range.

If the problem persists, see the [“Obtaining Documentation and Submitting a Service Request” section on page 19](#).

- Are the two LEDs —SINGLE FAN FAIL and MULTI FAN FAIL—illuminated (yellow)?

Remove the fan assembly module and reinsert it. If this does not help, examine the LED that is illuminated, see [“Table 1 Fan Assembly LEDs and Their Function” section on page 3](#). Else see, [“Obtaining Documentation and Submitting a Service Request” section on page 19](#).

- Are the following messages displayed?

These messages indicate that the system has detected a critical over-temperature condition or out-of-tolerance power inside the chassis.

Queued messages:

```
00:01:19:%ENVM-4-ENVWARN:+2.5 V measured at +2.59
00:01:19:%ENVM-4-ENVWARN:+5.15 V measured at +5.31

00:00:19:%ENVM-2-ENVCRTIT:chassis core measured at 31C/87F
00:00:19:%ENVM-2-ENVCRTIT:chassis inlet measured at 27C/80F
00:00:19:%ENVM-2-ENVCRTIT:chassis outlet 1 measured at 30C/86F
00:00:19:%ENVM-2-ENVCRTIT:chassis outlet 2 measured at 30C/86F
```

Although an over-temperature condition is unlikely at initial startup, ensure that heated exhaust air from other equipment is not entering the inlet vent of the router and that there is sufficient clearance around the sides of the chassis to allow cooling air to flow.



Note The message could also indicate a faulty component or temperature sensor. Use the **show environment** or **show environment table** command to display the internal chassis environment.

- Is the PRODUCT ID LED/switch on fan assembly module illuminated (green) and a FAN-MISSING alarm is randomly being triggered?

If you are running a Cisco IOS Release that does not support the PRODUCT ID LED/switch feature, then ensure that the PRODUCT ID LED/switch is not pressed and is not illuminated. Upgrade to a supported Cisco IOS Release on the chassis.



Note If you cannot upgrade to a supported Cisco IOS Release, then ensure that the PRODUCT ID LED/switch is not pressed and not illuminated (green).

If you are running a Cisco IOS Release that supports this feature, but the FAN-MISSING alarm is still being triggered, then follow the steps below to clear the alarm so that the software recognizes the fan module:

1. Ensure that the PRODUCT ID LED/switch is pressed and illuminated (green).
2. Remove the fan assembly module.
3. Wait for 1 minute and reinsert the fan assembly module.

If the alarm is still being triggered, and the software still does not recognize the fan, then the fan may be faulty, you may have to replace the fan module.

If none of the above solves the problem, see the [“Obtaining Documentation and Submitting a Service Request” section on page 19](#).

- If you experience trouble with the startup, and the issue is not resolved with these procedures, manually power off the router and contact a service representative for assistance and further instructions, see the “[Obtaining Documentation and Submitting a Service Request](#)” section on [page 19](#).

Related Documentation

Cisco uBR10012 Series Universal Broadband Router Quick Start Guide

http://www.cisco.com/en/US/docs/cable/cmts/ubr10012/quick/start/10kqsg_2.html

Cisco uBR10012 Universal Broadband Router Hardware Installation Guide at the following URL:

<http://www.cisco.com/univercd/cc/td/doc/product/cable/ubr10k/ubr10012/hig/index.htm>

Cisco uBR10012 Universal Broadband Router Software Configuration Guide at the following URL:

<http://www.cisco.com/univercd/cc/td/doc/product/cable/ubr10k/ubr10012/scg/index.htm>

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation* at: <http://www.cisco.com/c/en/us/td/docs/general/whatsnew/whatsnew.html>.

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