



Release Notes for Cisco MWR 1941-DC Mobile Wireless Edge Router for Cisco IOS Release 12.2(15)MC1b

February 19, 2004

Cisco IOS Release 12.2(15)MC1b

OL-13984-08

These release notes are for the Cisco MWR 1941-DC Mobile Wireless Edge Router for Cisco IOS Release 12.2(15)MC1b.

These release notes are updated as needed to describe new features, memory requirements, hardware support, software platform deferrals, and changes to the microcode and related documents.

For a list of the software caveats that apply to Cisco IOS Release 12.2(15)MC1b, see the [“Caveats in Cisco IOS Release 12.2\(15\)MC1b” section on page 7](#). To review the release notes for Cisco IOS Release 12.2, go to www.cisco.com and click **Technical Documentation**. Select **Release 12.2** from the Cisco IOS Software drop-down menu. Then click **Cisco IOS Release Notes > Cisco IOS Release 12.2**.

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Corporate Headquarters:

Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

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Introduction

With Cisco IOS Release 12.2(15)MC1a and later, the MWR 1941-DC router can be used to extend a mobile operator's DCN to the cell site, providing the ability to remotely manage radio and cell site equipment remotely from the operations center.

A cell site DCN solution minimizes the need to dispatch technicians for every problem that might occur at the cell site by providing the ability to perform the following types of maintenance tasks remotely:

- troubleshooting
- diagnosis
- repairs
- control
- upgrades
- routine maintenance of the cell site devices

Additionally, the MWR 1941-DC router cell site DCN implementation provides IP connectivity to the cell site, enabling the use of IP-related applications that provide operation support (for example, web camera for site surveillance, IP telephone for voice connectivity, and LAN extension to the cell site to provide remote access to network applications, data, and access to the Internet and/or intranet).

Cisco network modules and WAN interface cards used with the MWR 1941-DC router provide a variety of connectivity options at the cell site.

System Configuration Requirements

When being implemented in an Cell Site DCN solution, the Cisco MWR 1941-DC router requires the following system configuration:

- Cisco IOS Release 12.2(15) MC1a or later software be installed.
- Support of the NM-2FE2W-V2 requires Cisco IOS Release 12.2(15)MC1b or later.
- Network Time Protocol (NTP)

Network Time Protocol must be configured. The Cisco MWR 1941-DC router uses NTP to maintain a clocking source for the proper time stamping of system messages and log files.

- Redundancy—Standalone Mode

The MWR 1941-DC router must be configured to operate in standalone mode. The standalone option must be configured from redundancy mode.

To manually set the relays to open or closed, do the following starting in global configuration mode:

Step 1. Enter redundancy mode.

```
Router(config)# redundancy
```

Step 2. Enter the y-cable mode.

```
Router(config-r)# mode y-cable
```

Step 3. Specify that the router is to be used as a stand-alone device. This command closes the relays.

```
Router(config-r-y)# standalone
```

Step 4. Exit y-mode configuration mode.

```
Router(config-r-y)# exit
```

To verify the status of the relays on an MWR 1941-DC router, use the **show controllers** command.

Memory Recommendations

Table 1 Memory Recommendations for the Cisco IOS Release 12.2(15)MC1b

Platform	Software Image	Flash Memory Recommended	DRAM Memory Recommended	Runs From
Cisco MWR 1941-DC Mobile Wireless Edge Router	mwr1900-is-mz	64 MB Flash	128 MB DRAM	RAM



Note

When running Cisco IOS Release 12.2(15)MC1a or later, we recommend that the smart-init feature be enabled.

The smart-init feature is an extension to the existing memory split program of the Cisco IOS software running on your router that computes iomem size by looking at the network modules installed in the system and uses this iomem for carrying out the memory split.

Setting the memory size using the **memory-size iomen** command disables the smart-init feature. If smart-init is disabled and the iomem is increased to 20% or more, the tftpboot operation using the mwr1900-is-mz image will fail. If this situation should occur, copy a new image to slot0 and boot from slot0.

Determining the Software Version

To determine the image and version of Cisco IOS software running on your Cisco MWR 1941-DC router, log in to the Cisco MWR 1941-DC and enter the **show version EXEC** command:

```
router> show version
Cisco Internetwork Operating System Software
IOS (tm) 1900 Software (MWR1900-IS-MZ), Version 12.2(15)MC1a,EARLY DEPLOYMENT RELEASE
SOFTWARE (fc1)
```

Upgrading to a New Software Release

For general information about upgrading to a new software release, refer to Software Installation and Upgrade Procedures located at the following URL:

http://www.cisco.com/warp/public/130/upgrade_index.shtml

Upgrading to a New ROM Monitor Version

The Cisco MWR 1941-DC router ROM Monitor (ROMMON) consists of two modules:

- A resident module that is not changed during the upgrade procedure.
- An upgradable module that is updated during the upgrade procedure. This is the only module that you will download from Cisco.com.


Note

Before performing this procedure, you must download the new ROMMON image from Cisco.com. The download procedure is the same as downloading Cisco IOS software images.


Note

In the event of a power outage, the ROM monitor download will not be successful.


Note

Command output is similar to the following.

To upgrade the ROMMON version on your Cisco MWR 1941-DC router, complete these steps from EXEC mode:

Step 1 Copy the new ROMMON image from a TFTP server to slot0.

Step 2 Verify that the new image has been copied:

```
Router#dir slot0:
Directory of slot0:/
 3 -rw- 871 Mar 01 1993 00:05:02 MWR1900-3-default.cfg
 4 -rw- 610704 Mar 01 1993 00:10:30 MWR1900_RM2.srec.122-8r.MC3
```

- Step 3** Upgrade the current configuration by entering the **upgrade rom-monitor** command as shown in the following example:

```
Router# upgrade rom-monitor file slot0:MWR1900_RM2.srec.122-8r.MC3
This command will reload the router. Continue? [yes/no]:y
```

- Step 4** Press **Enter** to continue. The router begins downloading the ROMMON image. The router automatically reboots.

```
ROMMON image upgrade in progress
Erasing boot flash
eeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeee
Programming boot flash pppp

Now Reloading
System Bootstrap, Version 12.2(20010915:181836) DEVELOPMENT SOFTWARE
Copyright (c) 1994-2001 by cisco Systems, Inc.

Running new upgrade for first time

System Bootstrap, Version 12.2(8r)MC3, RELEASE SOFTWARE (fc1)
TAC Support:http://www.cisco.com/tac
Copyright (c) 2002 by cisco Systems, Inc.
mwr1900 processor with 131072 Kbytes of main memory
Main memory is configured to 64 bit mode with parity disabled

Upgrade ROMMON initialized
rommon 1 >
```

New and Changed Information

The following sections list the new hardware and software features supported by the Cisco MWR 1941-DC router for Cisco IOS Release 12.2(15)MC1b.

New Features in the Cisco IOS Release 12.2(15)MC1b Software

The following new software features are supported by the Cisco MWR 1941-DC router for Cisco IOS Release 12.2(15)MC1b:

- 2-Fast Ethernet 2-WAN Card Slot network module—NM-2FE2W-V2(=)

New Features in the Cisco IOS Release 12.2(15)MC1a Software

The following new software features are supported by the Cisco MWR 1941-DC router for Cisco IOS Release 12.2(15)MC1a:

Voice/WAN Interface Cards (VWICs)

- 2-port T1/Fractional T1 Drop and Insert Multiflex Trunk Interface Card: VWIC-2MFT-T1-DIR(=)
- 2-port E1/Fractional E1 Drop and Insert Multiflex Trunk Interface Card: VWIC-2MFT-E1-DIR(=)
- 2-port Asynchronous/Synchronous WAN Interface Card: WIC-2A/S(=)
- 2-Slot WAN: NM-2W(=)

Cisco Network Modules

- Alarm Interface Card—NM-AIC-64(=)
- 16-port Ethernet Switch—NM-16ESW(=)



Note When using the NM-16ESW with the MWR 1941-DC router, shielded cables are required and IP phone inline power is not supported.

- Asynchronous
 - 16-port Asynchronous Serial—NM-16A(=)
 - 4-port Asynchronous/Synchronous Serial: NM-4A/S(=)
 - 8-port Asynchronous/Synchronous Serial: NM-8A/S(=)
- 1-port T3/E3: NM-1T3/E3(=)

Limitations, Restrictions, and Important Notes



Caution

The Cisco MWR 1941-DC router does not support online insertion and removal (OIR) of WAN interface cards. Any attempt to perform OIR on a card in a powered up router might cause damage to the card.



Caution

The Cisco MWR 1941-DC router does not support online insertion and removal (OIR) of network modules. Any attempt to perform OIR on a card in a powered up router might cause damage to the card.



Caution

Removing the compact flash from the Cisco MWR 1941-DC router during a read/write operation might corrupt the contents of the compact flash, rendering it useless. To recover from an accidental removal of or corruption to the compact flash, a maintenance spare with the appropriate bootable Cisco IOS software image might be needed.

Using the 1-port T3/E3: NM-1T3/E3(=)

When using the 1-port T3/E3 network module in your MWR 1941-DC router configuration, note that E3 mode is not supported with Cisco IOS Release 12.2(15)MC1a. E3 mode is supported with Cisco IOS Release 12.2(15)MC1b and later.

Also, when used with the MWR 1941-DC router, the NM-1T3/E3 supports line rate throughput for traffic with packet sizes of 1500 bytes. For traffic with smaller packet sizes, degradation in throughput will be seen.

Upgrading the VWIC-2MFT-T1-DIR Microcode

When upgrading the image on your Cisco MWR 1941-DC router, power cycle the router or perform a microcode reload on the VWIC-2MFT-T1-DIR to ensure that the firmware for the VWIC-2MFT-T1-DIR is updated during the upgrade.

Caveats in Cisco IOS Release 12.2(15)MC1b

The following sections list and describe the open caveats for the Cisco MWR 1941-DC router running Cisco IOS Release 12.2(15)MC1b. Only severity 1 through 3 caveats are included.

Caveats describe unexpected behavior in Cisco IOS software releases. Severity 1 caveats are the most serious caveats, severity 2 caveats are less serious, and severity 3 caveats are the least serious of these three severity levels.

Caveats in Cisco IOS Releases 12.2 and 12.2 T are also in Cisco IOS Release 12.2(15)MC1b. For information on caveats in Cisco IOS Release 12.2, see *Caveats for Cisco IOS Release 12.2*. For information on caveats in Cisco IOS Release 12.2 T, see *Caveats for Cisco IOS Release 12.2 T*. These two documents list severity 1 and 2 caveats and are located on CCO and the Documentation CD-ROM.



Note

If you have an account with Cisco.com, you can use Bug Navigator II to find caveats of any severity for any release. To reach Bug Navigator II, Login to Cisco.com and click **Software Center: Cisco IOS Software: Cisco Bugtool Navigator II**. Another option is to go directly to <http://www.cisco.com/support/bugtools>.

Open Caveats

There following caveats are open in Cisco IOS Release 12.2(15)MC1b.

- CSCec36877

Description: Inadvertent use of the **no connect** global configuration command before connecting two TDM groups configured in the T1 controller causes a condition in which the TDM group configuration cannot be deleted.

Workaround: Re-establish the connection and then disconnect it.

- CSCec36897

Description: CEF not switching packets for HDLC encapsulation after Frame Relay encapsulation.

Workaround: Reload the router.

- CSCec66602

Description: Output queue drops are seen at less than line rate on the NM-1T3/E3.

Workaround: The NM-1T3/E3 supports line rate throughput for traffic with packet sizes of 1500 bytes. For traffic with smaller packet sizes, degradation in throughput will be seen. Therefore, for traffic with packet sizes smaller than 1500 bytes, reduce the traffic rate until output queue drops are not seen any more.

- CSCec76082

Description: A **copy ftp slot0:** fails after issuing **copy ftp://usr:pw@server//file slot0:**.

Workaround: Use the **copy ftp://usr:pw@server//file** syntax.

- CSCed00476

Description: Repeatedly configuring and deconfiguring T1 controllers on the VWIC-2MFT-T1-DIR on a Cisco 3725 or Cisco MWR 1941-DC router causes a processor memory leak.

Workaround: Do not repeatedly configure and deconfigure T1 controllers.

- CSCed05440
Description: When issuing script generated commands on the NM-AIC-64, the command strings are corrupted.
Workaround: Manually configure the NM-AIC-64.
- CSCed24945
Description: An output drop and output queue wedge occurs when output traffic converges on the motherboard FastEthernet interface. This affects the NM-2FE2W-V2.
Workaround: There is currently no known workaround.
- CSCed27369
Description: During the bootup of a new image or bootup after power loss, there is a small percentage of risk (~3%) that an illegal memory access with crash back to ROMMON might occur.
Workaround: Issue the **boot** command again.

Resolved Caveats

The following caveats have been resolved in Cisco IOS Release 12.2(15)MC1b.

- CSCec16168
Description: Serial encapsulation options are not available when serial type is changed from asynchronous serial to synchronous serial.
- CSCec40029
Description: Configuring and deconfiguring channel-group of T1 controllers many times causes a memory leak to occur.

Troubleshooting

Collecting Data for Router Issues

To collect data for reporting router issues, issue the following command:

- **show tech-support**—Displays general information about the router when it reports a problem.

Collecting Data for ROMmon Issues

To collect data for ROMmon issues, issue the following command while in EXEC mode:

- **showmon**— Displays currently selected ROM monitor.

Collecting Data for Router Rebooting to ROMmon

If a router reboot to ROMmon occurs, issue the **dir device ID** command where *device ID* is slot0:, and look for the router processor file (crashinfo*). Once you have located the file, you can email the file along with a description of the problem to your Cisco representative.

Documentation Updates

There are no documentation updates at this time.

Related Documentation

The following list includes documentation related to the Cisco MWR 1941-DC Mobile Wireless Edge Router. Most of these documents were not shipped with the router, but you can access them using the listed URL. You also can order printed copies by following the instructions in the “Ordering Documentation” section:

Cisco Radio Access Network Products

<http://www.cisco.com/univercd/cc/td/doc/product/wireless/ipran/index.htm>

- Cisco Mobile Wireless IP RAN Documents
- Cisco MWR 1941-DC Mobile Wireless Edge Router Documents
 - *Cisco MWR 1941-DC Mobile Wireless Edge Router Hardware Installation Guide*
 - *Cisco MWR 1941-DC Mobile Wireless Edge Router Software Configuration Guide*
 - *Regulatory Compliance and Safety Information for the Cisco MWR 1941-DC Mobile Wireless Edge Router*
 - *Cisco MWR 1941-DC Mobile Wireless Edge Router Rack Mounting Instructions*
- Cisco Network Modules Installation Guides
 - *Network Modules Quick Start Guide*
 - *Cisco Network Modules Hardware Installation Guide*
- Cisco Interface Cards Installation Guides
 - *Quick Start Guide: Interface Cards*
 - *Cisco Interface Cards Installation Guide*
 - *VWIC-2MFT-T1-DIR, VWIC-2MFT-E1-DIR Installation Instructions*
- Release Notes



Note

To be sure of obtaining the latest information, access the online documentation.

On CCO at:

<http://www.cisco.com/univercd/cc/td/doc/product/wireless/csdcn/index.htm>

On Cisco.com at:

Technical Documentation: Wireless: Mobile Wireless Products: Cisco Radio Access Network Products

On the Documentation CD-ROM at:

Cisco Product Documentation: Wireless: Mobile Wireless Products: Cisco Radio Access Network Products



Note

To be sure of obtaining the latest information, access the online documentation.

Obtaining Documentation

These sections explain how to obtain documentation from Cisco Systems.

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at this URL:

<http://www.cisco.com>

Translated documentation is available at this URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which is shipped with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

Ordering Documentation

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:
http://www.cisco.com/cgi-bin/order/order_root.pl
- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:
<http://www.cisco.com/go/subscription>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, U.S.A.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

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You can e-mail your comments to bug-doc@cisco.com.

You can submit your comments by mail by using the response card behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Document Resource Connection
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain online documentation, troubleshooting tips, and sample configurations from online tools by using the Cisco Technical Assistance Center (TAC) Web Site. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC Web Site.

Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com is a highly integrated Internet application and a powerful, easy-to-use tool that provides a broad range of features and services to help you with these tasks:

- Streamline business processes and improve productivity
- Resolve technical issues with online support
- Download and test software packages
- Order Cisco learning materials and merchandise
- Register for online skill assessment, training, and certification programs

If you want to obtain customized information and service, you can self-register on Cisco.com. To access Cisco.com, go to this URL:

<http://www.cisco.com>

Technical Assistance Center

The Cisco Technical Assistance Center (TAC) is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two levels of support are available: the Cisco TAC Web Site and the Cisco TAC Escalation Center.

Cisco TAC inquiries are categorized according to the urgency of the issue:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

The Cisco TAC resource that you choose is based on the priority of the problem and the conditions of service contracts, when applicable.

Cisco TAC Web Site

You can use the Cisco TAC Web Site to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC Web Site, go to this URL:

<http://www.cisco.com/tac>

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC Web Site. The Cisco TAC Web Site requires a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

<http://www.cisco.com/register/>

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC Web Site, you can open a case online by using the TAC Case Open tool at this URL:

<http://www.cisco.com/tac/caseopen>

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC Web Site.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. These classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled: for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). When you call the center, please have available your service agreement number and your product serial number.

This document is to be used in conjunction with the documents listed in the [“Related Documentation”](#) section.

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