



Release Notes for Cisco MWR 1941-DC Mobile Wireless Edge Router for Cisco IOS Release 12.2(15)MC1c

May 3, 2005

Cisco IOS Release 12.2(15)MC1c

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These release notes are for the Cisco MWR 1941-DC Mobile Wireless Edge Router for Cisco IOS Release 12.2(15)MC1c.

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)MC1c, see the [“Caveats in Cisco IOS Release 12.2\(15\)MC1c” 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**.

Contents

This document contains the following sections:

- [Introduction, page 2](#)
- [System Configuration Requirements, page 2](#)
- [New and Changed Information, page 5](#)
- [Limitations, Restrictions, and Important Notes, page 6](#)
- [Open Caveats, page 7](#)
- [Troubleshooting, page 8](#)
- [Documentation Updates, page 8](#)



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- [Related Documentation, page 8](#)
- [Obtaining Documentation, page 9](#)
- [Documentation Feedback, page 10](#)
- [Cisco Product Security Overview, page 10](#)
- [Obtaining Technical Assistance, page 11](#)
- [Obtaining Additional Publications and Information, page 13](#)

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/en/US/products/hw/routers/ps4062/tsd_products_support_series_home.html

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)MC1c.

New Features in the Cisco IOS Release 12.2(15)MC1c Software

There are no new hardware or software features.

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)MC1c

The following sections list and describe the open caveats for the Cisco MWR 1941-DC router running Cisco IOS Release 12.2(15)MC1c. 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)MC1c. 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 DVD.



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 are no known caveats in Cisco IOS Release 12.2(15)MC1c.

Resolved Caveats

The following caveats have been resolved in Cisco IOS Release 12.2(15)MC1c.

- CSCea84028

Description: NAT functionality does not work on skyhawk2 routed port. The **show ip nat translation** command does not show anything.

Workaround: There is no workaround.

- CSCee25832

Description: When the FastEthernet (FE0/1) interface cabling is disconnected on the active router in a redundant pair, the routers may attempt, but not complete swapping roles resulting in the VWIC interface WAN connection relays being left open. This results in a loss of WAN connectivity for both routers. Recovery requires a hard reset of the routers.

This condition occurs when two routers are connected and configured for active/standby Hot Standby Redundancy Protocol (HSRP) and have either the VWIC-2MFT-T1-DIR or the VWIC-2MFT-E1-DIR cards connected in a Y-cable WAN configuration.

Workaround: There is no workaround.

- CSCsa89543

Description: The ATM-AIM module is not recognized by the **mwr1900-is-mz** software.

Workaround: There is no workaround.

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/en/US/products/hw/routers/ps4062/tsd_products_support_series_home.html

- 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/en/US/products/hw/routers/ps4062/tsd_products_support_series_home.html

On Cisco.com at:

Technical Support & Documentation>Routers>Cisco MWR 1900 Mobile Wireless Routers

**Note**

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

Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation at this URL:

<http://www.cisco.com/univercd/home/home.htm>

You can access the Cisco website at this URL:

<http://www.cisco.com>

You can access international Cisco websites at this URL:

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

Documentation DVD

Cisco documentation and additional literature are available in a Documentation DVD package, which may have shipped with your product. The Documentation DVD is updated regularly and may be more current than printed documentation. The Documentation DVD package is available as a single unit.

Registered Cisco.com users (Cisco direct customers) can order a Cisco Documentation DVD (product number DOC-DOCDVD=) from the Ordering tool or Cisco Marketplace.

Cisco Ordering tool:

<http://www.cisco.com/en/US/partner/ordering/>

Cisco Marketplace:

<http://www.cisco.com/go/marketplace/>

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpk/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Ordering tool:
<http://www.cisco.com/en/US/partner/ordering/>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 1 800 553-NETS (6387).

Documentation Feedback

You can send comments about technical documentation to bug-doc@cisco.com.

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

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

We appreciate your comments.

Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

From this site, you can perform these tasks:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories and notices for Cisco products is available at this URL:

<http://www.cisco.com/go/psirt>

If you prefer to see advisories and notices as they are updated in real time, you can access a Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed from this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you might have identified a vulnerability in a Cisco product, contact PSIRT:

- Emergencies—security-alert@cisco.com
- Nonemergencies—psirt@cisco.com



Tip

We encourage you to use Pretty Good Privacy (PGP) or a compatible product to encrypt any sensitive information that you send to Cisco. PSIRT can work from encrypted information that is compatible with PGP versions 2.x through 8.x.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one that has the most recent creation date in this public key server list:

<http://pgp.mit.edu:11371/pks/lookup?search=psirt%40cisco.com&op=index&exact=on>

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532

Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, Cisco Technical Support provides 24-hour-a-day, award-winning technical assistance. The Cisco Technical Support Website on Cisco.com features extensive online support resources. In addition, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not hold a valid Cisco service contract, contact your reseller.

Cisco Technical Support Website

The Cisco Technical Support Website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, 365 days a year, at this URL:

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

Access to all tools on the Cisco Technical Support Website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

<http://tools.cisco.com/RPF/register/register.do>



Note

Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support Website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID

or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco TAC engineer. The TAC Service Request Tool is located at this URL:

<http://www.cisco.com/techsupport/servicerequest>

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco TAC engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)

EMEA: +32 2 704 55 55

USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/techsupport/contacts>

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—Your network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

<http://www.cisco.com/go/marketplace/>

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

<http://www.ciscopress.com>

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

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

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

<http://www.cisco.com/go/iqmagazine>

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

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

- World-class networking training is available from Cisco. You can view current offerings at this URL:

<http://www.cisco.com/en/US/learning/index.htm>

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

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