



Release Notes for Cisco MWR 1941-DC-A Mobile Wireless Edge Router for Cisco IOS Release 12.4(4)MR

January 5, 2008

Cisco IOS Release 12.4(4)MR

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These release notes are for the Cisco MWR 1941-DC-A Mobile Wireless Edge Router for Cisco IOS Release 12.4(4)MR. Cisco IOS Release 12.4(4)MR is required to deploy the Cisco MWR 1941-DC-A router in a RAN Optimization solution.

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 12.4(4)MR, see the [“Caveats in Cisco IOS Release 12.4\(4\)MR” section on page 5](#). To review the release notes for Cisco IOS Release 12.4, go to www.cisco.com and click **Technical Support and Documentation**. Select **Cisco IOS Software**. Then, click **Cisco IOS Software Release 12.4 Mainline** from the Cisco IOS Software list menu. Next, under the **General** menu item, click **Release Notes > Cross-Platform Release Notes for Cisco IOS Release 12.4, Part V:Caveats**.

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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 12.4(2)MR, the Cisco MWR 1941-DC-A router can be used in a Cisco Radio Access Network (RAN) Optimization (RAN-O) environment. The Cisco RAN-O feature provides Global System for Mobile Communication (GSM) Abis Optimization over IP and Universal Mobile Telecommunication System (UMTS) Iub Optimization over IP. This feature enables bandwidth efficient transport of GSM and UMTS traffic between the Base Transceiver Station (BTS) and the Base Station Controller (BSC) in GSM RANs and between Node B and Radio Network Controllers (RNC) in UMTS RANs. This results in significant reductions in operating expenditures to the mobile wireless operator and enables new revenue generating services for the future.

System Configuration Requirements

When being implemented in an RAN-O solution, the Cisco MWR 1941-DC-A router requires the minimum following system configuration:

- Cisco IOS 12.4(2)MR software be installed.
- Redundancy—Standalone Mode

The MWR 1941-DC-A 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-A router, use the **show controllers** command.

Memory Recommendations

Table 1 Memory Recommendations for the Cisco IOS Release 12.4(4)MR

Platform	Software Image	Flash Memory Recommended	DRAM Memory Recommended	Runs From
Cisco MWR 1941-DC-A Mobile Wireless Edge Router	mwr1941-ipran-mz	128 MB Flash	256 MB DRAM	RAM

Determining the Software Version

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

```
router> show version
Cisco Internetwork Operating System Software
IOS (tm) 1900 Software (MWR1941-IPRAN-MZ), Version 12.4(4)MR, EARLY DEPLOYMENT
RELEASE SOFTWARE (fcl)
```

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/tsd_products_support_category_home.html

New and Changed Information

The following sections list the new hardware and software features supported by the Cisco MWR 1941-DC-A router for Cisco IOS Release 12.4(4)MR software.

New Features in the Cisco IOS Release 12.4(4)MR Software

The following new features are implemented in Cisco IOS 12.4(4)MR and later releases:

- Inverse Multiplexing for ATM (IMA)
- Permanent Virtual Circuit (PVC) Routing
- UMTS QoS

Inverse Multiplexing for ATM (IMA)

A new feature, Inverse Multiplexing for ATM (IMA) interface as a shorthaul has been implemented in Cisco IOS Release 12.4(4)MR. With this feature, you can now configure existing UMTS commands on IMA interfaces. No new commands are added for this new feature. Only previously existing Cisco IOS commands have been added for this feature (see [Appendix A, “Cisco MWR 1941-DC-A Router RAN-O Command Reference”](#) of the *Cisco MWR 1941-DC-A Mobile Wireless Router Software Configuration Guide* for detailed command information).

PVC Routing

PVC Routing allows you to off load PVC traffic from a physical ATM shorthaul to an alternate backhaul. For each alternate backhaul, you will need to create a logical shorthaul by creating an ATM sub-interface. Traffic from the PVCs configured under this logical shorthaul will go through the corresponding alternate backhaul. Three new commands are added using the Sub-interface Configuration mode for this new feature: **atm umts**, **umts local**, and **umts remote** (see [Appendix A, “Cisco MWR 1941-DC-A Router RAN-O Command Reference”](#) of the *Cisco MWR 1941-DC-A Mobile Wireless Router Software Configuration Guide* for detailed command information).

UMTS QoS

Three new commands are added using the Interface Configuration mode for this new feature: **umts-iub set dscp**, **umts-iub set peering dscp**, and **gsm-abis set dscp** and one new ATM-VC Interface Configuration command: **umts-iub set dscp** (see [Appendix A, “Cisco MWR 1941-DC-A Router RAN-O Command Reference”](#) of the *Cisco MWR 1941-DC-A Mobile Wireless Router Software Configuration Guide* for detailed command information). These new commands allow you to perform the following:

- UMTS Shorthaul Interface
 - Set the default description value to tag the backhaul packet including peering and data generated from the shorthaul in a UMTS Iub configuration.
 - Set the description value in the UMTS Iub configuration such that it overwrites the default value defined previously. It is also used to tag the peering backhaul packet.
- PVC of a UMTS Shorthaul Interface
 - Set the description value in the UMTS Iub configuration such that it overwrites the default value defined previously. It is also used to tag the backhaul packet generated from traffic from the PVC.
- GSM Shorthaul Interface
 - Set the description value in such a way as to tag all the backhaul packets generated from the shorthaul in the GSM Abis interface.

New Features in the Cisco IOS Release 12.4(2)MR1 Software

With Cisco IOS Release 12.4(2)MR1, the Cisco MWR 1941-DC-A router supports the following MIB:
CISCO-IP-RAN-BACKHAUL-MIB

- This MIB is compatible with Cisco Mobile Wireless Transport Manager (MWTM) 5.0 or later.

New Features in the Cisco IOS Release 12.4(2)MR Software

With Cisco IOS Release 12.4(2)MR, the Cisco MWR 1941-DC-A router supports the following Cisco network modules and interface cards:

Cisco 2-port T1/E1-RAN Interface Card (VWIC)

- Cisco 2-port T1/E1-RAN Interface Card: VWIC-2T1/E1-RAN(=)

Cisco Network Modules

- Network Module with Two WIC slots and no LAN (Ethernet/Fast Ethernet) Ports: NM-2W=

Limitations, Restrictions, and Important Notes



Caution

The Cisco MWR 1941-DC-A 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-A 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.

Hardware not Supported on the Cisco MWR 1941-DC-A Router

Use of additional VWIC cards. The only supported VWIC is the Cisco 2-port T1/E1-RAN.

Caveats in Cisco IOS Release 12.4(4)MR

The following sections list and describe the resolved and open caveats for the Cisco MWR 1941-DC-A router running Cisco IOS Release 12.4(4)MR. 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 12.4 and 12.4T are also in Cisco IOS Release 12.4(2)MR1. For information on caveats in Cisco IOS Release 12.4, see *Caveats for Cisco IOS Release 12.4*. For information on caveats in Cisco IOS Release 12.4T, see *Caveats for Cisco IOS Release 12.4T*. 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

This section documents possible unexpected behavior by Cisco IOS Release 12.4(4)MR and describes only severity 1 and 2 caveats and selected severity 3 caveats.

- CSCsc22721

Description: Corrupted memory while configuring all UMTS traffic going to best effort queue.

Workaround: Always configure UMTS traffic in the high priority queue.

Resolved Caveats

All the caveats listed in this section are resolved in Cisco IOS Release 12.4(4)MR. This section describes only severity 1 and 2 caveats and select severity 3 caveats.

- CSCsb09661

Description: When booting the Cisco MWR 1941-DC-A router, sometimes the controller on the Cisco 2-port T1/E1-RAN card will not come up. Consequently, it stays down even after a reboot.

Workaround: Disconnect the interface cables to the Cisco 2-port T1/E1-RAN card and then re-connect them.

- CSCsb62772

Description: The IMA UMTS interface is not passing any traffic when one of the links is down. This situation occurs while the IMA interface is down when there are no E1 controller alarms indicated.

Workaround: Remove link from IMA group.

Caveats in Cisco IOS Release 12.4(2)MR1

The following sections list and describe the open caveats for the Cisco MWR 1941-DC-A router running Cisco IOS Release 12.4(2)MR1. 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 12.4 and 12.4T are also in Cisco IOS Release 12.4(2)MR1. For information on caveats in Cisco IOS Release 12.4, see *Caveats for Cisco IOS Release 12.4*. For information on caveats in Cisco IOS Release 12.4T, see *Caveats for Cisco IOS Release 12.4T*. 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 open caveats in Cisco IOS Release 12.4(2)MR1.

Resolved Caveats

All the caveats listed in this section are resolved in Cisco IOS Release 12.4(2)MR1. This section describes only severity 1 and 2 caveats and select severity 3 caveats.

- CSCei61732

Cisco IOS may permit arbitrary code execution after exploitation of a heap-based buffer overflow vulnerability. Cisco has included additional integrity checks in its software, as further described below, that are intended to reduce the likelihood of arbitrary code execution.

Cisco has made free software available that includes the additional integrity checks for affected customers.

This advisory is posted at <http://www.cisco.com/warp/public/707/cisco-sa-20051102-timers.shtml>

Caveats in Cisco IOS Release 12.4(2)MR

The following sections list and describe the open caveats for the Cisco MWR 1941-DC-A router running Cisco IOS Release 12.4(2)MR. 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 12.4 and 12.4T are also in Cisco IOS Release 12.4(2)MR. For information on caveats in Cisco IOS Release 12.4, see *Caveats for Cisco IOS Release 12.4*. For information on caveats in Cisco IOS Release 12.4T, see *Caveats for Cisco IOS Release 12.4T*. 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 open caveats in Cisco IOS Release 12.4(2)MR.

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.

Documentation Updates

There are no documentation updates at this time.

Related Documentation

These documents are available for implementing the Cisco MWR 1941-DC-A Mobile Wireless Edge Router in a RAN-O and are available on Cisco.com and the Documentation DVD:

Cisco Mobile Wireless RAN-O

http://www.cisco.com/en/US/products/hw/routers/ps4062/tsd_products_support_series_home.html

- Cisco MWR 1941 Mobile Wireless Edge Router Documents
 - *Cisco MWR 1941-DC-A Mobile Wireless Edge Router Software Configuration Guide*
 - *Cisco MWR 1941-DC-A 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*
 - *Cisco 2-port T1/E1-RAN Installation Instructions*
- Release Notes

On Cisco.com at:

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

On the Documentation DVD 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.html>

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

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