Release Notes for Cisco ONS 15454 RAN Service Module for Cisco IOS Release 12.2(29)SM2

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Cisco Release 12.2(29)SM2

These release notes are for the Cisco ONS 15454 RAN Service Module for Cisco IOS Release 12.2(29)SM2. 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(29)SM2, see the "Caveats in Cisco IOS Release 12.2(29)SM2" section on page 5. To review the release notes for Cisco IOS Release 12.2, go to www.cisco.com and click **Documentation** in the **Support** menu. Then click on **Cisco IOS Software**, and select **Cisco IOS Software Releases 12.2 Mainline** from the **Cisco IOS Software Release 12.2 Family** menu item. Next, under the **General Information** menu item, click **Release Notes > Cross-Platform Release Notes for Cisco IOS Release 12.2, Part 5:Caveats**. Alternately, you can click **Part 6**, **Part 7**, or **Part 8** for these Caveats. Parts 5 through 8 include Caveats from Cisco IOS Release 12.2(1) through 12.2(37).

The latest version of the release notes for 12.2(29)SM2 can be found at the following URL:

http://www.cisco.com/en/US/products/sw/iosswrel/ps5012/prod_release_notes_list.html

Contents

This document contains the following sections:

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Introduction

Cisco IOS 12.2(29)SM introduces support for GSM and UMTS Radio Access Network (RAN) Optimization for mobile wireless service providers for the RAN Service Module (ONS-RAN-SVC) on a Cisco ONS 15454 platform. Cisco IOS 12.2(29)SM provides GSM and UMTS RAN Optimization (RAN-O) technology that can extend an IP network to every base station site in the mobile network with a shared backhaul transport, plus optimization to reduce bandwidth requirements.

In RAN Optimization (RAN-O), the Cisco MWR 1941-DC-A router extends IP connectivity to the cell site and the BTS/Node B. The router provides bandwidth-efficient IP transport of GSM and UMTS voice and data bearer traffic, as well as maintenance, control, and signaling traffic, over the leased line backhaul network between the BTS/Node B and leased line termination and the Cisco ONS 15454 aggregation node via compression (cRTP/cUDP) and packet multiplexing (Multilink PPP).

Residing in a Cisco ONS 15454, the Cisco RAN Service Module provides aggregation for traffic originating from multiple MWR cell site routers. The RAN Service Module transmits and receives short haul DS0 level data steams (for GSM applications) and shorthaul VC-4 level data streams (for UMTS applications) through ONS 15454 cross-connect cards. DS0 level channel cards connect both the long haul to the remote cell site and the short haul to GSM BSC. Clear channel VC-4 level interface cards are used on the Cisco ONS 15454 to provide the interface from the UMTS RNC to the ONS RAN Service Module.

The Cisco RAN Service Module consists of four independent IOS processors. Each Cisco RAN Service Module has four 10/100/1000 Gigabit Ethernet (RJ-45) ports with one port connected to each IOS processor. The Cisco RAN Service Module is also equipped with four VC-4 level Packet over SONET (POS) interfaces and four VC-4 level ATM interfaces and up 80 DS0 level backplane interfaces for shorthaul and up to 40 DS0 level backplane interfaces for backhaul applications. One IOS processor is dedicated as a service processor while the remaining three IOS processors are dedicated as traffic processors. The Cisco ONS RAN Service Module also includes two RJ-45 ports, one used as a DCE console (labeled Console) and the other used as a debug port (covered with a tab plate).

The Cisco ONS 15454 shelf assembly has 17 card slots that are numbered sequentially from left to right. Slots 1 – 4 and 14 – 17 are multispeed slots. Slots 5, 6, 12 and 13 are high-speed slots. Slots 7 and 11 are dedicated to TCC-I cards. Slots 8 and 10 are dedicated to cross-connect (XC10G) cards. Slot 9 is dedicated to the AIC card. The Cisco ONS RAN Service Module can be installed in Slots 1 thru 6 or 12 thru 17 depending on the application and line card configuration.

System Requirements

Cisco IOS 12.2(29)SM2 is a specific technology early deployment release (STED) for the Cisco ONS 15454 RAN Service Module, which runs on its own software image.

Memory Recommendations

Table 1 Memory Recommendations for the Cisco ONS 15454 RAN Service Module

Platform	Software Image	Flash Memory Recommended	DRAM Memory Recommended	Runs From
Cisco ONS 15454 RAN Service Module	ransvc-ipran-mz	N/A	N/A	RAM

Determining the Software Version

To determine the version of Cisco IOS software running on your Cisco ONS 15454 RAN Service Module, log in to the Cisco ONS 15454 and enter the **show version** EXEC command:

```
ons1-rn-sm14#show version
    Cisco IOS Software, ONS RAN-Series Software (RANSVC-I-M), Experimental Version

   ROM: System Bootstrap, Version 0.23(20061028:061451) [m1-rn-sm_nightly 106],
DEVELOPMENT SOFTWARE

ons1-rn-sm14 uptime is 8 hours, 10 minutes System returned to ROM by reload at 13:04:37
PST Thu Feb 17 2000 System restarted at 13:07:37 PST Thu Feb 17 2000 System image file is
"tftp://127.0.0.101/S_I.BIN"

Cisco RAN SM processor (revision 31) with 237450K/32768K bytes of memory.
Processor board ID CTR100700XB
SB-1A CPU at 900Mhz, Implementation 1041, Rev 0.0

Last reset from User Reload
4 Gigabit Ethernet interfaces
19 Serial interfaces
4 ATM interfaces
57344K bytes of processor board Boot flash (Read/Write) 8192K bytes of processor board
System flash (Read/Write)

Configuration register is 0x0002
```

To determine the ROMMON version, log in to the Cisco ONS 15454 and enter the **show rom-monitor** EXEC command:

```
ons1-rn-sm14#show rom-monitor
ReadOnly ROMMON version:

System Bootstrap, Version 0.17(20060615:061212) [m1-rn-sm_nightly 323], DEVELOPMENT
SOFTWARE Copyright (c) 1994-1999 by cisco Systems, Inc.

ReadOnly ROMMON ONS 15454 version: 0.17
Upgrade ROMMON version:

System Bootstrap, Version 0.23(20061028:061451) [m1-rn-sm_nightly 106], DEVELOPMENT
SOFTWARE Copyright (c) 1994-1999 by cisco Systems, Inc.

Upgrade ROMMON ONS 15454 version: 0.23
Currently running ROMMON from Upgrade region ROMMON from Upgrade region is selected for
next boot
```

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/cisco/web/psa/default.html?mode=prod

New and Changed Information

The following sections list the new hardware and software features supported by the Cisco ONS 15454 RAN service module.

New Features in the Cisco IOS Release 12.2(29)SM2 Software

There are no new features supported by the Cisco ONS 15454 RAN service module for Cisco IOS Release 12.2(29)SM2.

New Features in the Cisco IOS Release 12.2(29)SM1 Software

The following support features are provided by Cisco IOS Release 12.2(29)SM1:

- Support for 1:N protection
- Support for SNMP versions 1 and 2c
- Support for standard ONS MIBS and IOS MIBS
- Support for the CISCO-IP-RAN-Backhaul_MIb
- Support for GSM and UMTS RAN Optimization

New Features in the Cisco IOS Release 12.2(29)SM Software

There are no new features supported by the Cisco ONS 15454 RAN service module for Cisco IOS Release 12.2(29)SM.

Limitations, Restrictions, and Important Notes

Unsupported Cisco IOS Software Features

The Cisco ONS RAN Service Module requires a special version of Cisco IOS software. Not all Cisco IOS software features can be used as the core routing is handled by the network processor. The following standard Cisco IOS software features are not supported:

- MPLS
- Frame Relay (FR)

Note To manage the Cisco RAN Service Module with network management software, an IP address must be configured on the GigE port associated with the service CPU of the RAN Service Module so that this IP address can be reached by the network management server.

Caveats in Cisco IOS Release 12.2(29)SM2

The following sections list and describe the open and closed caveats for the Cisco ONS 15454 running Cisco IOS Release 12.2(29)SM2. 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.

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 12.2S, see *Caveats for Cisco IOS Release 12.2S*. 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 the Bug Toolkit to find caveats of any severity for any release. To reach the Bug Toolkit, log in to Cisco.com and click **Cisco Documentation > Tools & Resources > Bug Toolkit.** Another option is to go directly to: http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl.

Open Caveats

This section documents possible unexpected behavior by Cisco IOS Release 12.2(29)MR2 and describes only severity 1 and 2 caveats and selected severity 3 caveats.

- CSCJ-82675

  Description: Applying "loopback payload" in an ATM interface configuration mode could result in a message similar to the following appearing on the router console port: SBFIFO-1-BAD_PAK_LEN

  Workaround: Do not use the loopback configuration on ATM interfaces.

Resolved Caveats

All the caveats listed in this section are resolved in Cisco IOS Release 12.4(4)MR1. This section describes only severity 1 and 2 caveats and select severity 3 caveats.

- CSCsj59405

  Description: 802.1q is not supported on RANSVC.

Caveats in Cisco IOS Release 12.2(29)SM1

The following sections list and describe the open and closed caveats for the Cisco ONS 15454 running Cisco IOS Release 12.2(29)SM1. 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.

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 12.2S, see *Caveats for Cisco IOS Release 12.2S*. 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 the Bug Toolkit to find caveats of any severity for any release. To reach the Bug Toolkit, log in to Cisco.com and click **Cisco Documentation > Tools & Resources > Bug Toolkit.** Another option is to go directly to: http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl.

Open Caveats

There are no open caveats in Cisco Release 12.2(29)SM1.

Resolved Caveats

All the caveats listed in this section are resolved in Cisco IOS Release 12.2(29)SM1. This section describes only severity 1 and 2 caveats and select severity 3 caveats.

- CSCsg13738:

  Description: Need the ability to create ACLs on the service CPU that get applied to the traffic CPUs.

  Workaround: Added ACL support to SKYLA traffic CPUs.

- CSCsg18342:

  Description: IP over ATM does not work.

  Workaround: When IP over ATM is not working on the traffic CPUs, it is still working on the service CPU. CEF is simply not punting the traffic to the service CPU.

- CSCsg43158:

  Description: PPP and LEX encapsulations were not supported for POS on the RAN-SVC card.

  Workaround: Added check to not punt LCP and IPCP packets. Also, added code to disable the hdlc_periodic function when encap is changed. This was only done during IDB init.

- CSCsg75442:

  Description: Add support for distributed Shorthauls so backhaul and shorthaul can be on different CPUs**.**

  Workaround: When queuing enabled, do not punt to service CPU.

- CSCsh22686:

  Description: dGRE Tunneling Code cleanup from the initial dGRE commit.

  Workaround: There is still a problem with tunnel adjacencies, so a shut/no shut of the tunnel interface is required after all cpus have booted.

Caveats in Cisco IOS Release 12.2(29)SM

The following sections list and describe the open and closed caveats for the Cisco ONS 15454 running Cisco IOS Release 12.2(29)SM. 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.

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 12.2S, see *Caveats for Cisco IOS Release 12.2S*. 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 the Bug Toolkit to find caveats of any severity for any release. To reach the Bug Toolkit, log in to Cisco.com and click **Cisco Documentation > Tools & Resources > Bug Toolkit.** Another option is to go directly to: http://www.cisco.com/en/US/support/tsd_most_requested_tools.html.

Open Caveats

There are no open caveats in Cisco Release 12.2(29)SM.

Resolved Caveats

All the caveats listed in this section are resolved in Cisco IOS Release 12.2(29)SM. This section describes only severity 1 and 2 caveats and select severity 3 caveats.

- CSCsg56935:

  Description: When mixed GSM and UMTS traffic is run on an MLPPP backhaul and the UMTS traffic utilization is over 60 percent of the total MLPPP backhaul, then GSM errors are seen and GSM packets may not arrive in a timely manner. This happens for the default value of the GSM jitter (4 milliseconds) and a UMTS backhaul MTU of 450 bytes.

  Workaround: Recommended configuration changes for such deployments are as follows:

  - Increase the GSM jitter buffer to a higher value, such as from the default value of 2 to the higher value of 8.
  - Reduce the maximum transmission unit (MTU) of the UMTS backhaul to produce a side effect of a slightly higher CPU utilization.

  Either or both of the workaround configuration changes will fix the problem. A user can choose the option that best fits the particular deployment and traffic requirements.

  Commands: The following commands are available for the above workaround:

  - Router(config-if)#**gsm-abis jitter ?**

    <4-2000> transmit jitter (in milliseconds)

  - Router(config-if)#**umts-iub backhaul-mtu ?**

    <250-4440> mtu in byte

Related Documentation

Use this document with the following guides:

- *Cisco ONS 15454-SDH Documents*
  - *Cisco ONS 15454-SDH Hardware Installation Guide*
  - Cisco ONS 15454-SDH Software Configuration *Guide*
  - *Regulatory Compliance and Safety Information for the Cisco ONS 15454-SDH*
- *Cisco Network Module Guides*
  - *Cisco ONS 15454 RAN Service Module Configuration Guide*
  - *Network Modules Quick Start Guide*
  - *Cisco Network Modules Hardware Installation Guide*

Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New* in Cisco Product Documentation, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

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