



Cisco RF Gateway 1 Software Release Notes, Release 2.02.19

Overview

Introduction

Software Release 2.02.19 contains improvements in GbE port-pair operation in regards to redundancy and recovery. It also provides a new loop-through feature per port-pair for GbE traffic only. Release 2.02.19 includes IGMP implementation enhancements resulting in efficient IGMP message handling.

Purpose

The purpose of this document is to notify RF Gateway 1 users of the enhancements included in the current release, and inform users of any special upgrade procedures needed for using Release 2.02.19.

Audience

This document is intended for system engineers or managers responsible for operating and/or maintaining this product.

Related Publications

Refer to the following documents for additional information regarding hardware and software.

- *Cisco RF Gateway 1 Configuration Guide*, part number 4025112
- *Cisco RF Gateway 1 System Guide*, part number 4024958

Safe Operation for Software Controlling Optical Transmission Equipment

If this document discusses software, the software described is used to monitor and/or control ours and other vendors' electrical and optical equipment designed to transmit video, voice, or data signals. Certain safety precautions should be observed when operating equipment of this nature.

For equipment specific safety requirements, refer to the appropriate section of the equipment documentation.

For safe operation of this software, refer to the following warnings.

 **WARNINGS:**

- Ensure that all optical connections are complete or terminated before using this equipment to remotely control a laser device. An optical or laser device can pose a hazard to remotely located personnel when operated without their knowledge.
- Allow only personnel trained in laser safety to operate this software. Otherwise, injuries to personnel may occur.
- Restrict access of this software to authorized personnel only.
- Install this software in equipment that is located in a restricted access area.

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GbE Loop Through

Software Release 2.02.19 includes GbE loop-through capability while operating in *Dual Port Pairs* mode. The user can operate the RF Gateway 1 in two additional GbE data port modes. Refer to Chapter 3, *General Configuration and Monitoring* of the *Cisco RF Gateway 1 Configuration Guide*, part number 4025112 for details. The user can navigate to the *System/IP Network* page to access the two new modes called *Dual Port Pairs - Promiscuous Loop Through* and *Dual Port Pairs - Non Promiscuous Loop Through*. While operating in *Dual Port Pairs - Non Promiscuous Loop Through* mode, packets destined for the active GbE port MAC address (for example, unicast traffic) are forwarded to the RF Gateway 1 packet processor for normal processing. All other multicast or broadcast traffic is sent to the backup port for loop-through. Conversely, while operating in *Dual Port Pairs - Promiscuous Loop Through* mode, all traffic (including unicast, multicast, or broadcast packets) are looped through to the backup port. In this mode, the traffic that needs to be processed by the RF Gateway 1 will still be processed.

GbE Input Ports				
GbE Data Port Mode	Dual Port Pairs - Promiscuous LoopThrough			
Port Configuration	Port 1	Port 2	Port 3	Port 4
MAC Address	00:50:4b:11:2cae	00:50:4b:11:2caf	00:50:4b:11:2cb0	00:50:4b:11:2cb1
IP Address	10.1.1.165	10.1.1.166	10.1.1.167	10.1.1.168
Subnet Mask	255.255.255.0	255.255.255.0	255.255.255.0	255.255.255.0
Negotiation Mode	On	On	On	On
Port Pair Configuration	Port Pair 1		Port Pair 2	
Video/Data IP	10.1.2.165		10.1.2.169	
Redundancy Mode	Manual		Manual	
Primary Port	1		3	
Current Active Port	1		3	
Redundancy Configuration				
Detection Mode	Ethernet Link		Ethernet Link	
LOS Timeout (s)	1		1	
Revert To Primary	Enabled		Enabled	
Revert Check Time (s)	2		2	
<input type="button" value="Apply"/> <input type="button" value="Reset"/>				

GbE Loop Through

While operating in GbE Loop Through modes, monitoring capabilities are provided to view Receive/Transmit bitrates indicating flow of traffic across GbE ports belonging to a Dual Port Pair. The user can navigate to the *Monitor/Main* page and view statistics as shown below.

GBE-LOOPTHRU					Login	Reboot	Save	Refresh	Help	CISCO
Summary	Monitor	Alarms	QAMS	Maps	System		11:28:57			
Main										
<ul style="list-style-type: none"> Device Information Input Inventory Output Data DTI Resource Utilization 										
Input Port Statistics										
		GbE 1	GbE 2	GbE 3	GbE 4					
Primary Port	Yes	No	Yes	No						
Active Port	Yes	No	Yes	No						
Link	Yes	No	No	No						
UDP or L2TPv3 Packets	Yes	No	No	No						
MPEG Content	No	No	No	No						
Receive Bitrate	53311452 bps	0 bps	0 bps	0 bps						
Transmit Bitrate	307 bps	53311830 bps	0 bps	0 bps						
CRC Error Rate (/ 5 mins)	0	0	0	0						
Received	Bytes	950.9 M	0	0	0					
	Unicast Packets	183.65 K	0	0	0					
	Multicast Packets	514.52 K	0	0	0					
	Discarded Packets	0	0	0	0					
	Error Packets	0	0	0	0					
Transmit	Unknown Proto Packets	0	0	0	0					
	Bytes	5.5 K	950.9 M	0	0					
	Unicast Packets	71	183.65 K	0	0					
	Discarded Packets	0	0	0	0					
	Error Packets	0	0	0	0					

Miscellaneous Improvements

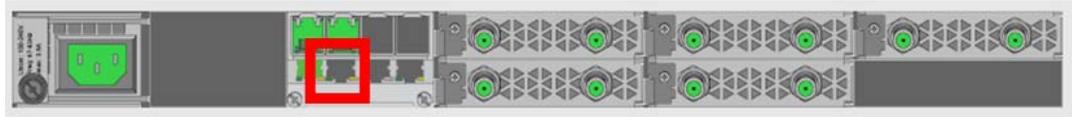
The following miscellaneous improvements have been made in release 2.02.19.

- **IGMP Report Bundling** - This release of the RF Gateway 1 now bundles up to 120 IGMP Group records into one IP packet upstream. The previous code would only send a maximum of 2 group records into a packet. This bundling drastically reduces the number of upstream IP packets in response to an IGMP General Query, or in the case of a network outage causing many input streams to fail simultaneously.
- **Dual Port Pair operation** - In prior releases, when rebooting an RF Gateway 1 servicing only multicast traffic, the primary GbE port would often end up as the inactive port (when it should have been the active). This behavior occurred only when the detection mode of "Ethernet Link & UDP or L2TPv3 packets" was selected. In this release, the RF Gateway 1 will always complete the reboot with the primary GbE port as the active port (assuming the port is properly connected and configured to pass traffic).
- **Non-Revertive Port operation** - This release changes the operation of GbE port switching on the RF Gateway 1 when it is configured in Dual Port Pair mode with Revert to Primary disabled and detection mode set to "Ethernet Link & UDP or L2TPv3 packets." Now the RF Gateway 1 will always switch from primary to backup and also from backup to primary when the active port loses UDP traffic and the backup port has link.
- **Revert Check Time** - This release extends the maximum Revert Check Time to 300 seconds (previous max was 30s). This change was made to allow the Revert Check Time to be longer than the standard IGMP/multicast aging time, so that the RF Gateway 1 would stay on the backup port after a failover event.

Known Issues

The following list identifies known limitations planned to be resolved as part of an upcoming GA release.

- The RF Gateway 1 Web interface is not fully tested with IE-8 and FireFox-3.5 or newer. The RF Gateway 1 web management interface is tested with IE-6 or FireFox-2.0.0.14 and above. Use of Java 1.6.x is also recommended.
- The Summary page displays the unit rear panel with Conditional Access (CA) port enabled/ disabled as green/grey. The CA port indication represents the on/off setting and does not represent actual link status.



- The database Restore feature in 2.02.19 requires disabling trap settings (in the restore from database file prior to release 2.01.09) before starting the restore procedure. This can be done before starting a restore configuration in 2.02.19. The procedure is needed to allow compatibility with the enhanced SNMP version 1 and 2 trap support in 2.02.19.
- SNMP community strings are provided in 2.02.19 to support SNMP v1 and v2 traps. Prior to release 2.01.09, there was a single community string applicable to all five trap receivers configurable for the operator. In release 2.02.11 and beyond, in addition to supporting SNMPv1 and v2 traps, each of the five trap receivers has a separate configurable trap community string. This may cause a possible loss of SNMP trap community strings during an upgrade or downgrade procedure. An operator should carefully verify their trap community strings when upgrading to 2.02.11 or later releases or downgrading from 2.02.11 or later releases, if they are being used.
- An upgrade to 2.02.19 from pre-2.01.09 automatically enables insertion of the Network PID into the PAT. If this is an issue in the user's system, it may be disabled on the *System/System Configuration* page.

Licensing

After an upgrade to 2.02.19, a system license is required for the following features. Refer to Licensing in the *Cisco RF Gateway 1 Configuration Guide*, part number 4025112.

- Data streams requiring use of the DOCSIS® Timing Interface
- DVB® Encryption

Most systems delivered with 1.02.20 or later using a data part number included a license file pre-installed at the factory. For these systems, an FTP transfer is not necessary.

All systems delivered prior to 1.02.20 and some systems delivered with 01.02.20 require a license file. This can be obtained from Cisco after an upgrade to 2.02.19. Contact your account representative for details on obtaining your license files.

Note: Performing an upgrade without a license file will generate an alarm, informing the user that a license file is not present. The unit continues to function until configuration changes are made. However, performing the upgrade may impact functionality of licensed features.

For systems requiring a license upgrade, a licensing capable RF Gateway 1 provides the operator with a new tree menu, located under the *System* tab, *License Management*. It provides an FTP mechanism to transfer license files to the device. It is recommended that the operator monitor the file transfer status using feedback from the FTP server.

License Overview							
Type	Installed	Count	Usage	Expiration Date	Remaining Time	Expired	Key
DATA	Yes	1	0	00-000-0000	0	No	
DVB_SCRAMBLING	Yes	1	1	00-000-0000	0	No	

Upgrade Information

An RF Gateway 1 unit running release 1.02.20 can be upgraded directly to 2.02.19. Refer to Chapter 3, *General Configuration and Monitoring (Release Management)* of the *Cisco RF Gateway 1 Configuration Guide*, part number 4025112, for more information. The RF Gateway 1 reboots automatically at the end of the upgrade process. However, when upgrading to 2.02.19 from 1.02.09, an intermediate step of using the bridge release 1.02.19 to arrive at 1.02.20 and finally 2.02.19 must be followed. The bridge release designated as 1.02.19 has been created to provide a secure and robust upgrade path. Releases 1.02.19 (bridge) and 1.02.20 (final) have identical user features and functionality. See *Upgrade Procedure for Customers Running 1.02.09* (on page 10).



WARNING:

Upgrading to 1.02.20 or above directly from 1.02.09 must not be attempted. This may cause the RF Gateway 1 to be non-operational.

Refer to *Known Issues* (on page 6) for SNMP related upgrade, downgrade and database restore considerations.

IP Port Configuration Changes

There is a bug in 1.02.09 that causes the following IP port configuration parameters to have inverted values saved in the configuration file.

- Negotiation Mode (On/Off) - one for each port (total 4)
- Redundancy Mode (Auto/Manual) - one for each port pair (total 2)
- Revert Mode (Enable/Disable) - one for each port pair (total 2)

For details on these parameters, see Chapter 3, *General Configuration and Monitoring* of the *Cisco RF Gateway 1 Configuration Guide*, part number 4025112.

This bug has been corrected in the configuration file in 1.02.19. Upon upgrade to 1.02.19, these three parameters will appear to have changed value as seen in the *System/IP Network* page of the web GUI. As a result, the IP ports may not be configured properly for operation immediately after upgrade (after the subsequent reboot that follows activation).

See *Upgrade Procedure for Customers Running 1.02.09* (on page 10).

Upgrade Procedure for Customers Running 1.02.09



WARNING:

Upgrading to 2.02.19 directly from 1.02.09 must not be attempted. This may cause the RF Gateway 1 to become non-operational.

- 1 Before starting the upgrade, back up the system configuration. Refer to Chapter 3, *General Configuration and Monitoring (Configuration Backup)* of the *Cisco RF Gateway 1 Configuration Guide*, part number 4025112. Name the file appropriately to identify it as a configuration that corresponds to 1.02.09. This file will be necessary later if the user decides to revert back to 1.02.09.
- 2 Record the IP port configuration parameters by saving a screen capture of the *System/IP Network* page. See *Recording IP Port Configuration Settings* (on page 13).
- 3 Download and activate 1.02.19. Refer to Chapter 3, *General Configuration and Monitoring (Release Management)* of the *Cisco RF Gateway 1 Configuration Guide*, part number 4025112. The RF Gateway 1 reboots automatically at the end of the upgrade process.
- 4 After reboot, display the *System/IP Network* page. See *Displaying IP Port Configuration Settings* (on page 12).
- 5 Verify the IP port configuration parameters by checking them against those recorded in step 2 (prior to the upgrade as done in step 3). The Negotiation Mode, Redundancy Mode, and Revert Mode parameter values are inverted. See *Displaying IP Port Configuration Settings* (on page 12). Change the differing parameter values to match those recorded before download and activation. Be sure to click **Apply** after making your changes.
- 6 Once step 5 is completed, save the configuration which includes the IP port configuration parameters. Going forward, these values will not change.
- 7 Validate/qualify/soak release 1.02.19 in its application to establish confidence the release is operating at the same level as 1.02.09. In the very unlikely event service is impacted by 1.02.19, reverting back to 1.02.09 may be done to re-establish operations. If reverting back to 1.02.09 is necessary, the IP port configuration parameters must be swapped back and the configuration saved in step 2 restored.

- 8 After satisfactory completion of step 7, upgrade from 1.02.19 to 1.02.20. These two releases have identical performance and behavior. Release 1.02.20 includes a boot code upgrade that readily supports future roadmap features/releases without the need for subsequent two-step bridge upgrade processes.
- 9 Download and activate 2.02.19. Refer to Chapter 3, *General Configuration and Monitoring (Release Management)* of the *Cisco RF Gateway 1 Configuration Guide*, part number 4025112. The RF Gateway 1 reboots automatically at the end of the upgrade process.

IP Port Configuration Parameter Settings

The RF Gateway 1 has four physical GbE input ports that receive video and data streams from the upstream network. These ports may be used independently (in software releases 02.02.11 or later) or configured to implement input redundancy. See Chapter 3, *General Configuration and Monitoring of the Cisco RF Gateway 1 Configuration Guide*, part number 4025112 for specific details.

Displaying IP Port Configuration Settings

Follow these instructions to display the *System/IP Network* page.

- 1 Launch your web browser.
- 2 In the IP Address field, enter the RF Gateway 1 IP address.
- 3 Click **Enter**.
- 4 Click the *System/IP Network* tab and review the IP settings. See the following screen.

The screenshot displays the configuration interface for the RF Gateway 1. The top navigation bar includes tabs for Summary, Monitor, Alarms, QAMS, Maps, and System. The left sidebar lists various configuration categories, with 'IP Network' selected. The main content area is divided into two sections: '10/100 Ports' and 'GbE Input Ports'.

10/100 Ports Configuration:

	Management	Conditional Access
Port Control		Off
Address Selection Mode	Static	Static
MAC Address	00:50:4b:11:20:90	00:50:4b:11:20:90
IP Address	10.90.149.87	150.158.235.250
Subnet Mask	255.255.255.0	255.255.255.0
Default Gateway	10.90.149.1	150.158.235.254

GbE Input Ports Configuration:

	Port 1	Port 2	Port 3	Port 4
GbE Data Port Mode	Dual Port Pairs			
Port Configuration	Port 1	Port 2	Port 3	Port 4
MAC Address	00:50:4b:11:20:98	00:50:4b:11:20:9f	00:50:4b:11:20:b0	00:50:4b:11:20:b1
IP Address	76.59.99.139	150.158.233.252	76.59.99.195	150.158.234.250
Subnet Mask	255.255.255.248	255.255.255.252	255.255.255.248	255.255.255.252
Negotiation Mode	On	On	On	On
Port Pair Configuration	Port Pair 1		Port Pair 2	
Video/Data IP	76.59.99.130		76.59.99.194	
Redundancy Mode	Manual		Manual	
Primary Port	1		3	
Current Active Port	1		3	
Redundancy Configuration				
Detection Mode	Ethernet Link		Ethernet Link	
LOS Timeout (s)	1		1	
Revert To Primary	Enabled		Enabled	
Revert Check Time (s)	2		2	

Recording IP Port Configuration Settings

Follow these instructions to record IP port configuration settings.

- 1 Navigate to the *System/IP Network* page.
- 2 Click the **Alt-PrtScrn** keys to copy the IP Network parameter settings to the clipboard.
- 3 Launch Microsoft Word (or WordPad if you don't have Microsoft Word) and paste the clipboard contents to page 1.
- 4 Save the Microsoft Word document as ipsettings.doc.



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April 2010

Printed in United States of America
Part Number 7020326 Rev A