Cisco RF Gateway 10 Remote Provisioning Utility User Guide

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Preface

This section discusses the objectives, audience, conventions, and organization of the *Cisco RF Gateway 10 Remote Provisioning Utility User Guide* and provides general information about Cisco IOS software documentation.

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM, a member of the Cisco Connection Family, is updated monthly. Therefore, it might be more up to date than printed documentation. To order additional copies of the Documentation CD-ROM, contact your local sales representative or call customer service. The CD-ROM package is available as a single package or as an annual subscription.

Revision History

Document Version	Date	Change Summary
OL-30052-01	March 04, 2014	This is the first version of this document.

Objectives

This user guide provides the necessary information to install, operate, and maintain the Cisco RF Gateway 10 Remote Provisioning Utility (RPU-10) application.

Audience

This document is intended primarily for users who have experience working with Cisco RF Gateway-10 or similar equipment. The user should have appropriate background and knowledge to complete the procedures described in this document.

Organization

This guide includes the following chapters.

Chapter 1		Overview of the Cisco RPU-10 application.
Chapter 2		Steps to install and operate the Cisco RPU-10 application.

Conventions

This document uses the following conventions:

Convention	Indication
bold font	Commands and keywords and user-entered text appear in **bold** font.
italic font	Document titles, new or emphasized terms, and arguments for which you supply values are in *italic* font.
[ ]	Elements in square brackets are optional.
{x | y | z }	Required alternative keywords are grouped in braces and separated by vertical bars.
[x | y | z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
courier font	Terminal sessions and information the system displays appear in courier font.
< >	Nonprinting characters such as passwords are in angle brackets.
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

Note Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the manual.

Tip Means *the following information will help you solve a problem*. The tips information might not be troubleshooting or even an action, but could be useful information, similar to a Timesaver.

Caution Means *reader be careful*. In this situation, you might perform an action that could result in equipment damage or loss of data.

Timesaver Means *the described action saves time*. You can save time by performing the action described in the paragraph.

Warning IMPORTANT SAFETY INSTRUCTIONS

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device.

SAVE THESE INSTRUCTIONS

Warning **Statements using this symbol are provided for additional information and to comply with regulatory and customer requirements.**

Related Documentation

Related Topic	Document Title
Release Notes	Release Notes for Cisco RF Gateway 10 Remote Provisioning Utility
Command Reference	Cisco RF Gateway 10 Command Reference
Hardware Installation	Cisco RF Gateway 10 Hardware Installation Guide
	Cisco RF Gateway 10 DS-384 Line Card Hardware Installation Guide
	Cisco RF Gateway 10 DS-48 Line Card Hardware Installation Guide
Software Configuration	Cisco RF Gateway 10 Software Feature and Configuration Guide
	Configuring the Cisco RFGW-10 DS-384 Line Card
	Configuring the Cisco RFGW-10 DS-48 Line Cards

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation* at: http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html.

Subscribe to *What's New in Cisco Product Documentation*, which lists all new and revised Cisco technical documentation, as an RSS feed and deliver content directly to your desktop using a reader application. The RSS feeds are a free service.

CHAPTER **1**

Overview

The Cisco RF Gateway 10 Remote Provisioning Utility (RPU-10) is a Windows-based tool that simplifies the initial provisioning of multiple RF Gateway 10 units in an operator's system.

Cisco RPU-10 is used for mass provisioning of the Cisco DS-48 and Cisco DS-384 line cards on Cisco RF Gateway 10. This provisioning involves setting up a large number of configuration parameters. The configuration parameters are usually listed in an Microsoft Excel sheet. Cisco RPU-10 application takes the configuration data from Microsoft Excel sheet, generates the equivalent commands for Cisco RF Gateway 10, and sends it to Cisco RF Gateway 10 using Telnet. Reboot is not required after provisioning.

Cisco RPU-10 can be used for new and previously configured Cisco RF Gateway 10 units. The Cisco RPU-10 mass provisioning utility performs these functions:

- Read Microsoft Excel data to identify the Cisco RF Gateway 10 involved and prepare configuration data.
- Generate the configuration in the CLI format for Cisco RF Gateway 10 based on the configurations in the Microsoft Excel sheet.
- Send the configuration to the Cisco RF Gateway 10 using Telnet.
- Verify the provisioning activity (download a new running configuration and compare with configurations generated based on the Microsoft Excel sheet).

The following figure shows the components of Cisco RPU-10.

Figure 1-1 Cisco RPU-10 Components
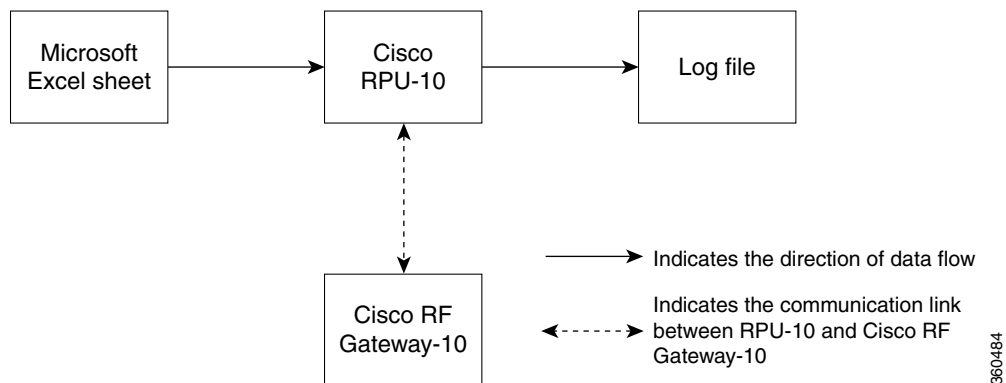
Input Microsoft Excel Sheet

The input Microsoft Excel sheet contains the configuration parameters for provisioning multiple Cisco DS-48 and Cisco DS-384 line cards on the Cisco RF Gateway 10. You may download it from the Cisco RPU-10 installation media.

The input Microsoft Excel sheet contains these worksheets:

- **Rf-profile**—Contains the values for RF profile input parameters.
- **Freq-profile**—Contains the values for frequency profile input parameters.
- **Ports (global)**—Contains the values for port configuration inputs parameters.
- **LC** *<1-10>* (**slot** *<3-12>*)—Contain the values for channel configuration input parameters on each line card.
- **Guidelines**—Contains additional information about parameters in all worksheets of the input Microsoft Excel sheet.

Guidelines

- The input Microsoft Excel sheet must be named in the format *Config_ip_address_of_RFGW10.xlsx* to ensure that the Cisco RPU-10 application identifies and retrieves the IP address of Cisco RF Gateway-10 from this file name.

    Note   The file name of the input Microsoft Excel sheet is case sensitive.

- The IP address of the Cisco RF Gateway 10 can be changed.
- Do not modify the name of the worksheets in the Microsoft Excel sheet.
- Do not modify the row headings in any worksheet.
- Choose one of the available values for the cells with a drop-down list. Do not enter the values manually.
- Do not add blank rows between the existing data in the Microsoft Excel sheet. The Cisco RPU-10 does not import data after a blank row.
- To add or update the values of parameters in the worksheets, see the **Guidelines** worksheet in the input Microsoft Excel sheet. For more information on the parameters, see *Cisco RF Gateway 10 Command Reference*.

Installation and General Operation

This chapter describes how to install and operate the Cisco RPU-10 application.

Contents

How to Install Cisco RPU-10

Prerequisites

- Order the Cisco RPU-10 installation media. The product identifier (PID) for ordering the Cisco RPU-10 application is RFGW-10-RPU. To order, contact your local sales representative or call customer service.
- Microsoft Windows 7 must be installed on the system.
- The Cisco RPU-10 system must be connected to the network so that it can communicate with Cisco RF Gateway 10.
- Microsoft Excel must be installed in the Cisco RPU-10 system.

Installing Cisco RPU-10

Complete these steps to install the Cisco RPU-10 application:

Step 1 Insert the Cisco RPU-10 installation media.

Step 2 Open the Cisco RPU-10 installer file, read the license agreement carefully and click **I agree** radio button and **Next** to proceed with the installation.

Step 3 The Cisco RPU-10 setup wizard appears. Click **Next** to start the installation.

Step 4 Choose the folder where the software must be installed and click **Next**.

Step 5 Click **Next** to confirm the installation.

Step 6 After the Cisco RPU-10 application is successfully installed, click **Close** to exit.

How to Import Provisioning Parameters

Complete these to import the provisioning parameters:

1. Configuring Cisco RPU-10 Repository Location (Phase 1 Step 1a), page 2-2
2. Importing Configuration Microsoft Excel Sheet (Phase 1 Step 1b), page 2-3
3. Configuring Cisco RF Gateway 10 Credentials (Phase 1 Step 1c), page 2-4

Prerequisites

- The Cisco RPU-10 system must be connected to the network so that it can communicate with Cisco RF Gateway 10.
- CPU utilization must be less than 60%.
- The number of Telnet (or vty) connections configured in the Cisco RF Gateway 10 must be equal to or more than number of line cards selected.

Note Ensure that the vty connections are not being used by other users. If the vty connections are being used by other users, set the numerical value of vty connections using this combination: <the number of users using the connection + the number of line cards selected + 1>.

Restrictions

- Cisco RPU-10 can configure one Cisco RF Gateway 10 at a time.
- Cisco RPU-10 does not clean up the existing configuration.
- Cisco RPU-10 cannot be used to edit the existing configuration.
- If the configuration data is in CSV format, import the CSV data into Microsoft Excel sheet and use it as the input Microsoft Excel sheet.

Configuring Cisco RPU-10 Repository Location (Phase 1 Step 1a)

This step configures the disk file location where the Cisco RPU-10 maintains all the files created and referenced by Cisco RPU-10. All the target files like log file, line card configuration file, suppressed configuration file, the response Microsoft Excel sheet generated in phase 2b and phase 2d, configuration file, and the Microsoft Excel sheet containing the status of the response received are saved in this location.

Note The name of repository folder created by Cisco RPU-10 is in the format *ip_address_of_RFGW10_HH-MM*.

Complete these steps to configure the repository location:

Step 1   Click **Select Repository**.

Step 2   Click **Select** to specify the path for repository location.

Step 3   Click **OK**.

After the repository location is set, the status of *Configure RPU O/P Repository* is changed from **Not Ready** to **Ready**.

Importing Configuration Microsoft Excel Sheet (Phase 1 Step 1b)

This step imports the configuration from the input Microsoft Excel sheet to the selected line cards in the selected Cisco RF Gateway 10.

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Note   The input Microsoft Excel sheet must be named in the format *Config_ip_address_of_RFGW10.xlsx* to ensure that the Cisco RPU-10 application can retrieve the IP address of Cisco RF Gateway 10 from this file name. The file name of the input Microsoft Excel sheet is case sensitive.

RPU10 retrieves this information from the Microsoft Excel sheet:

- IP address of the Cisco RF Gateway 10 unit that requires provisioning.
- RF profile settings for individual Cisco RF Gateway 10 unit. One Microsoft Excel sheet contains configuration data for a single unit.
- Some global parameters, like frequency profile and RF profile.

You can also view the import status and data for line cards after importing the configuration.

Complete these steps to import the configuration Microsoft Excel sheet:

Step 1   Click **1b) Import Configuration Excel File -Not Ready**.

Step 2   Click **Browse** and **Select Path** to specify the path where the configuration Microsoft Excel sheet is stored.

Step 3   Click **OK**.

Step 4   Select the Microsoft Excel sheet from the *List of Input Files* and click **Select Design Spreadsheet**.

Step 5   Check the check box for the required line cards and click **Import**.

The import status is displayed. After the data is imported, Cisco RPU-10 displays the *RFGW Data Imported Successfully* message.

Step 6   (Optional) After the configuration data is successfully imported, click **Graphical View** to view the graphical data. Click **Exit** to exit the graphical view. For more information on graphical view, see Graphical View, page 2-8.

After the configuration is imported from Microsoft Excel sheet, the status of *Import Configuration Excel File* is changed from **Not Ready** to **Ready**.

> **Note** If you update the input Microsoft Excel sheet, save and re-import the data from the updated Microsoft Excel sheet.

Configuring Cisco RF Gateway 10 Credentials (Phase 1 Step 1c)

This step configures the credentials for Cisco RF Gateway 10 to retrieve the existing running configuration, and send the new configurations.

Complete these steps to configure the credentials:

Step 1 Click **1c) Configure RFGW10 Credentials -Not Ready**.

Step 2 Enter the *Telnet User Name*, *Telnet User Pwd*, and *Telnet Enable Pwd* and click **Done**.

> **Note** If you do not need a username and password, leave the fields blank and click **Done**.

After the credentials are configured, the status of *Configure RFGW10 Credentials* is changed from **Not Ready** to **Ready**.

How to Create Databases and Program Cisco RF Gateway 10

After importing the provisioning data, you can create databases and program the Cisco RF Gateway 10 devices. Complete these to program Cisco RF Gateway 10:

1. Creating Configuration File (Phase 2 Step 2a), page 2-4
2. Validating Mode Status (Phase 2 Step 2b), page 2-5
3. Verifying Configuration Data (Phase 2 Step 2c), page 2-7
4. Programming Cisco RF Gateway 10 with the Configuration Data (Phase 2 Step 2d), page 2-7

Creating Configuration File (Phase 2 Step 2a)

This step generates a configuration file for the imported Microsoft Excel data. This configuration file contains the Cisco IOS commands to program Cisco RF Gateway 10.

> **Note** The generated configuration file is saved into the repository folder created by Cisco RPU-10.

Complete these steps to create the configuration file:

Step 1 Click **2a) Created Config File**.

Step 2 Click **Create Config**.

After the configuration file is created, Cisco RPU-10 displays the *Config File Created Successfully* message.

Validating Mode Status (Phase 2 Step 2b)

This step contains these five stages:

Fetching Running Configuration

At this stage, the Cisco RPU-10 checks the redundancy type of all the selected cards. If any mismatch is detected in setting the card redundancy type in Microsoft Excel sheet, Cisco RPU-10 displays a dialog box for the invalid card type set for a card. The invalid card configurations are ignored for further processing.

Restrictions

- Cisco RPU-10 checks the physical existence of the line card and ignores the non-existing line card configurations for further processing.
- Cisco RPU-10 checks the card type for all the selected line cards. If there is a mismatch, it displays the *INVALID CARD TYPE SET IN EXCEL FOR: LC<1-10>* message and that line card configurations are ignored for further processing.
- RPU10 checks the redundancy type of all the selected line cards. If there is a mismatch, it displays the *INVALID REDUNDANCY TYPE SET IN EXCEL FOR: LC<1-10>* message and that line card configurations are ignored for further processing.

Complete these steps to retrieve the running configuration:

Step 1   Click **2b) Mode Status validation**.

Step 2   Click **Fetch Running Config**.

The running configuration retrieval status is displayed. The retrieved running configurations are saved in a file named *runn_config.txt*. After the running configuration is retrieved successfully, Cisco RPU-10 displays the *Running Configurations fetched successfully* message.

Validating Max-carriers

At this stage, the Cisco RPU-10 validates the max-carriers value in the Cisco RPU-10 configurations with the existing configurations. If the max-carriers value for any port is different, the Cisco RPU-10 displays the port details in grid view.

Note   If the max-carriers value is different from the existing number in a port, the Cisco RPU-10 application may display the RF power value change warning while applying the configurations to the Cisco RF Gateway 10.

Validating Mode Status

At this stage, the Cisco RPU-10 lists the line card channels with mismatched modes.

Complete these steps to validate mode status:

Step 1   Choose the line card from the drop-down list and click **View**. Cisco RPU-10 displays the mode mismatch information.

Step 2   Check the check box for the required channels and click **Apply Rules**.

Note   The selected channels are reset before proceeding with the configurations. The channels that are not selected are removed from the Cisco RPU-10 configurations.

After the rules are applied, Cisco RPU-10 displays the *Rules are applied for LC<1-10> successfully* message.

Note   The drop-down list provides a list of the existing line cards. Apply the rules for all the line cards individually to proceed further.

Validating Frequency Clash

At this stage, the Cisco RPU-10 handles the frequency clashes in these ways:

- When you assign the same frequency to multiple channels within a port, and click **Apply Rules**, Cisco RPU-10 checks for clashes and retains only one channel configuration. The remaining clashing channel configurations are removed from the Cisco RPU-10 configurations. The clashing frequency status is also displayed on the second grid view.

- Cisco RPU-10 checks all channels, which have a clash within the existing configuration, and issues the **no cable downstream frequency** command to the clashing interface.

Validating Global Profile

At this stage, if the existing configuration has global parameters like RF-profile and frequency-profile with identical IDs, the Cisco RPU-10 removes these parameters from the configuration.

Verifying Configuration Data (Phase 2 Step 2c)

This step displays the configuration created by Cisco RPU-10 and allows manual checking of the configurations.

Complete these steps to verify the configuration data:

Step 1   Click **2c) Verify Config Data**.

Step 2   Choose the required configuration from the drop-down list to display the commands for the data imported from Microsoft Excel sheet.

Step 3   Verify the configuration. If the configurations are correct, click **Confirm Configurations** to confirm the configurations.

After the configurations are confirmed, the Cisco RPU-10 displays the *Configurations confirmed by the user* message.

Programming Cisco RF Gateway 10 with the Configuration Data (Phase 2 Step 2d)

This step sends the configuration data to the Cisco RF Gateway 10 using Telnet.

Note   Take a backup of the current running configuration before programming Cisco RF Gateway 10 with configuration data.

Complete these steps to program the Cisco RF Gateway 10:

Step 1   Click **Program RFGW10 with Config data**.

Note   Ensure that the number of Telnet connections configured in the Cisco RF Gateway 10 are more than or equal to the number of line cards selected for programming.

Step 2   Click **Yes** to proceed.

Step 3   Click **Program RFGW10** to start the programming.

Note   When the Cisco RPU-10 programs the Cisco RF Gateway 10, do not apply any CLI configurations manually in the Cisco RF Gateway 10.

During programming, the status of commands on one line card is displayed.

Note   At a time, you can view the status of a single line card. Choose the line card using the drop-down list and click **View** to view the status of a particular line card.

Step 4   (Optional) To stop the programming when it is in progress, click **Stop**.

Step 5   After programming, click **Compare Configurations** to download the running configurations and compare it with the Cisco RPU-10 configuration.

This step creates the response status Microsoft Excel sheet and stores the status of the command configurations.

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Note   **Compare Configurations** is enabled only after all the selected line cards are programmed successfully.

Step 6   Click **View Response Status** to open the Microsoft Excel sheet which contains the status of each command.

Graphical View

Graphical view is a graphical representation of the Cisco RF Gateway 10. The Cisco RF Gateway 10 has 10 line cards with 12 ports in each line card. This color convention is used for the line cards:

- White—Indicates that the ports are not selected.
- Yellow—Indicates that the ports are available.
- Green—Indicates that the data export is successful.
- Red—Indicates that the data export failed.
- Grey—Indicates that the line card is not available.

If the imported card type is Cisco DS-384, it is indicated in the graphical view using the appropriate colors for only 8 ports. If the imported card type is Cisco DS-48, it is indicated in the graphical view using the appropriate colors for 12 ports.

The **Graphical View** option is available in the following phases during the provisioning:

- After importing the configurations in phase **1b) Import Configuration Excel File**
- In phase **2d) Program RFGW10 with Config data**

After importing the data from the Microsoft Excel sheet, the color of the selected line cards is yellow until the running configurations are retrieved in phase 2b. If the selected line card is physically non-existent, the color of the line cards change to grey.

After comparing the configurations in phase 2d, if all the configurations are programmed successfully for port, the port color changes to green. If any configuration fails, the port color changes to red.

Click each port to display a grid view containing the data imported from the Microsoft Excel sheet for that port in the line card.

Viewing Logs

To view the log files, click **View Log**. The text file containing the logs opens.