Overview of Cisco Connected Grid Device Manager

This chapter provides an overview of the Cisco Connected Grid Device Manager (Device Manager) for Cisco 1000 Series Connected Grid Routers (CGR 1000 or router) running Cisco IOS.

This chapter includes the following sections:

- Application
- User Interface
- Tasks
- Certificates
- Work Orders
- User Accounts
- Additional Information

Application

Device Manager is a Windows-based application that field technicians can use to manage the CGR 1000 over WiFi or Ethernet.

This version of Device Manager supports Connected Grid devices that run Cisco IOS. All the features supported in the previous version of Device Manager are also supported in this version. The previous version of Device Manager that runs on CG-OS based CGR 1000 routers continues to support those routers. Both versions of Device Manager can co-exist on the same laptop. In addition, this version includes several enhancements:

- Improved user interface (UI) design
- Intuitive tooltips
- Ability to view interface and module details in Dashboard (tooltips)
- Option to view the application log
- Troubleshooting wizard
- Command history in Advanced tab

CGR 1000 routers are multi-service communications platforms designed for use in field area networks. The portfolio consists of two models–CGR 1240 and CGR 1120–both ruggedized to varying degrees for outdoor and indoor deployments. Both models are modular and support a wide-range of communications interfaces such as 2G/3G, Ethernet, and WiFi.

Device Manager connects to the CGR 1000 by using a secure Ethernet or WiFi link. (See Figure 1-1.)

Figure 1-1   Device Manager Application Within a Connected Grid Network
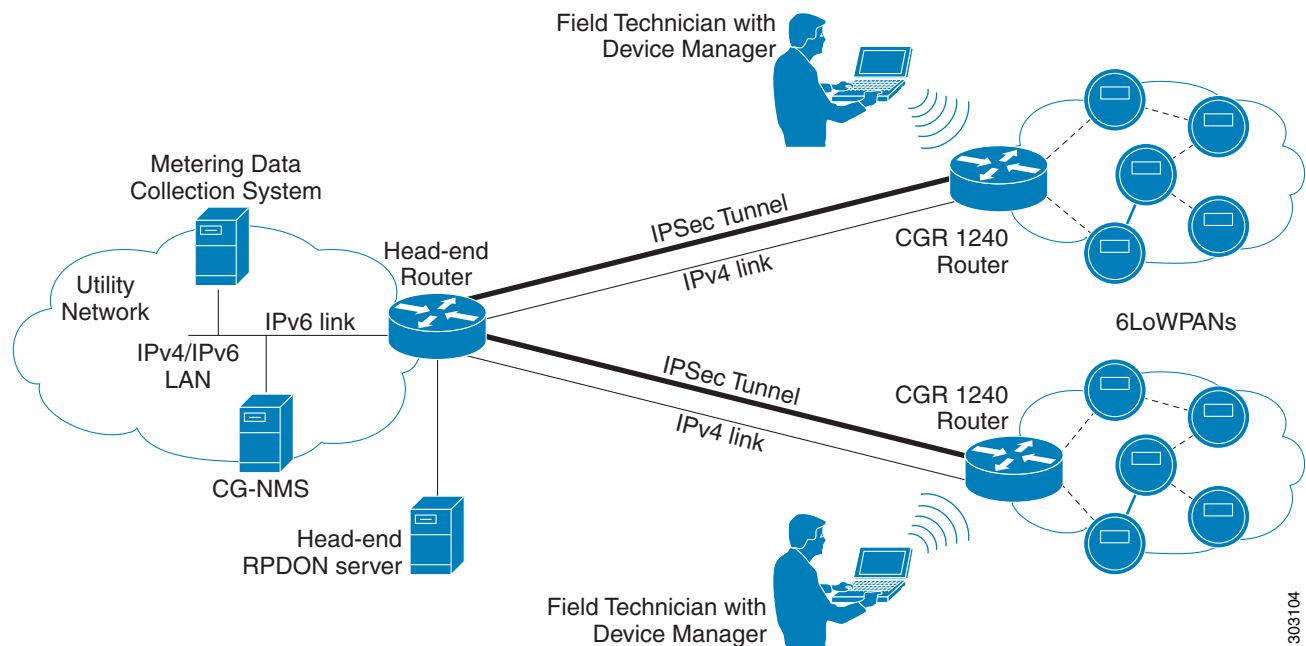
Device Manager and CG-NMS

Cisco Connected Grid Network Management System (Cisco CG-NMS) manages multiple CGR 1000 routers, whereas the Device Manager connects and manages a single CGR 1000 at a time.

The Device Manager can operate in Connected Grid field deployments operating with or without CG-NMS.

- When operating with CG-NMS, a Device Manager user can retrieve work orders from the system as well as perform all supported tasks on the main page (see Figure 1-2) except as limited by the privilege level that the administrator configures on the router for that user.

- When operating without CG-NMS, the Device Manager user does not have access to work orders; however, the user can perform all supported tasks on the main page except as limited by the user's privilege level.

User Interface

When you first start Device Manager, it displays the Device Manager opening page with a list of work orders, if any are available. From this page, you can connect to the CGR 1000 either with or without a work order. (See Connecting to the CGR 1000, page 3-3.)

After connecting to the router, Device Manager displays the Dashboard. On the left-hand side of the dashboard, you can view the router and any installed Connected Grid Modules. LEDs indicate the current state of the router and modules. You can also view the status of Ethernet Ports and modules while hovering over them.

On the right-hand side of the dashboard, you can view a graph of CPU and memory utilization. For the CGR 1240, you can view battery information.

At the top of the screen, a mini-dashboard provides additional details on the router as detailed in Table 1-1.

For an overview of all the tasks that you can perform with the Device Manager, refer to Table 1-2.

Figure 1-2 shows the common page elements and controls for the Device Manager pages.

Figure 1-2   *Device Manager Common Page Elements and Controls*

1	Mini-dashboard	**8**	Refresh button
2	Disconnect from device	**9**	CG-DM application log file
3	Menu tabs	**10**	Troubleshooting wizard
4	Power status (CGR 1240 only)	**11**	Battery information
5	Door status (CGR 1240 only)	**12**	Graph of CPU and memory utilization
6	Device temperature	**13**	View of device
7	Battery Information (CGR 1240 only)	**14**	Refresh button

Tip   Point to an active LED or module in the front or rear view of the device to display a tooltip. Items on the mini-dashboard also have tooltips.

The mini-dashboard (see Figure 1-2) appears at the top of every Device Manager page, and provides the information listed in Table 1-1.

Table 1-1   Mini-dashboard information

Field	Description
Name	Name of the router
Version	Cisco IOS version
Hypervisor Version	Hypervisor version
Model	Model number of the device
Serial	Serial number of the device
IP Address	Device IP address.
Connection	Connection method—Ethernet, WiFi, or Auto Detect.
Device User	User logged in to device.
Power status	AC ON or AC OFF (CGR 1240 only)
Temperature	Temperature of the router
Door	Displays whether door to router is open or not (CGR 1240 only).
Battery	Displays status of the optional Battery Backup Unit (BBU) when installed. (CGR 1240 only).
Storage	Amount of used and total space on the SD Flash Memory Module (hover the cursor over the Storage icon to view the amount of free space).
Up Time	Length of time that the device has been up.
Last Login	Time that the user last logged in to Device Manager.
Work Order	Work order number, work order name, and time remaining (shown if connected to the router using a work order).

■ **Tasks**

Tasks

Device Manager displays the main page (see Figure 1-2) after securely connecting to the CGR 1000. From the Menu tabs on the main page, you can perform the following tasks as determined by your privilege level. (See User Accounts for more information about user accounts and privilege levels.) Table 1-2 lists all the tasks that a user with privilege level 15 (default privileged EXEC mode) can perform with Device Manager and provides an example of when to perform each task.

Table 1-2   Device Manager Tasks

Task	When to Perform Task
Use the Dashboard to check the status of router hardware, such as BBU (optional), power, and modules. (See Connecting to the CGR 1000.)	• Newly deployed CGR 1000s do not appear in the back-end system. Start the Device Manager and review the router graphic on the Dashboard. • Check the installed modules and their LEDs to verify their operation. When the LEDs are not flashing, check the installation status of the modules. • (CGR 1240 only) The door of the CGR 1240 is open. Start the Device Manager and check the status of the door (top of the main page). When the door status indicates a status of *System Casing Open*, you must physically access the CGR 1240 to verify the status of the door. After closing the door, click the Refresh icon (upper right) on the Device Manager and verify that the door status displays *System Casing Closed*.
Verify access to a device (IP address) from the CGR 1000 by using ping to check link connectivity and quality, and initiate a traceroute for an inaccessible IP address. (See Testing Connectivity.)	• Devices connected to a CGR 1000 cannot be reached. Start the Device Manager, connect to the router, and then check connectivity to the device.
Bring up or shut down a CGR 1000 interface and view details for an interface. (See Managing Interfaces.)	• When there are issues related to WiMAX connectivity, (for instance, after a storm, the WiMAX antenna may not be pointing in the right direction, which can cause RSSI/CINR values to drop), view details for the WiMAX module to help troubleshoot the issue. If the issue involves a directional antenna, you can change the direction of the antenna and watch RSSI/CINR values change accordingly.
Update the CGR 1000 configuration with a provided configuration file, and then reboot the router with the new configuration. (See Changing the Configuration.)	• When the configuration information is incorrect, update the configuration by adding a configuration file to the Device Manager and then installing the configuration file on the CGR 1000. After you install the configuration file, the router automatically reboots with the new configuration.

Table 1-2   Device Manager Tasks (continued)

Task	When to Perform Task
Upload a copy of a software image onto the CGR 1000 for immediate installation or for a deferred update of the image. (See Updating the Firmware Image.)	• A firmware image update must be uploaded and installed on the CGR 1000. Start the Device Manager, upload the new image file, and then update the router with the new image. The router automatically reboots after you update the software image.
Download and view the CGR 1000 system logs. (See Retrieving Logs.)	• You need to review the CGR 1000 system logs to troubleshoot the CGR 1000. Start the Device Manager and click the **Log** tab.
Insert and Remove Modules from the CGR 1000 by employing a wizard that guides you through the process. (See Managing Modules.)	• A WiMAX module is being added to a CGR 1240. Start the Device Manager and click the **Modules** tab.
Execute CLI commands using a console-like interface to view system information. Supported queries include verifying the system time, viewing the current router configuration, saving the current configuration, viewing the current file directory, rebooting the router, or saving the window output to a file. (See Executing Commands.)	• You need to review the CGR 1000 configuration information to troubleshoot the CGR 1000. Start the Device Manager and click the **Advanced** tab.

Certificates

You can import certificates through the Device Manager opening page. (See Importing Certificates.)

Work Orders

When you first start Device Manager, it displays the Device Manager opening page, which lists available work orders. On this page, you can view and select work orders for CGR 1000 routers and synchronize with Cisco CG-NMS to download work orders. (See Managing Work Orders.) The Device Manager only needs to be connected to CG-NMS to download and update the work orders.

User Accounts

A user's privilege level configured on the CGR 1000 also controls the authorization to perform tasks on the CGR 1000 with Device Manager. The default configuration for Cisco IOS software-based networking devices uses privilege level 1 for user EXEC mode and privilege level 15 for privileged EXEC. The commands that can be run in user EXEC mode at privilege level 1 are a subset of the commands that can be run in privileged EXEC mode at privilege 15. (See *Configuring Security with Passwords Privileges and Logins* for more information.)

The following user accounts are provisioned at the factory:

- username cgdm-viewer-t privilege 2 token
- username cgdm-admin-t privilege 15 token
- username cgdm-viewer privilege 2
- username cgdm-admin privilege 15

Table 1-3 shows the required privilege level for the listed tasks.

Table 1-3   Privilege Levels for Device Manager Tasks

Task	Privilege Level
View interfaces, run ping/traceroute, view logs, view directory contents	2
Bring up or shut down an CGR 1000 interface, upload files, add or remove modules, execute commands	15

Additional Information

You can find configuration guides and release notes for Cisco 1000 Series Connected Grid products at:

www.cisco.com/go/cgr1000-docs