



Overview of the Hardware and Software

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The Cisco Connected Grid Router 2010 (Cisco CGR 2010) router is a member of the Cisco Connected Grid Router 2000 Series family of routers. The Cisco CGR 2010 router is designed to run in the extreme and demanding power substation environment. It is an especially rugged, high-performance router that provides LAN and WAN connectivity, field replaceable parts, and feature upgrades through software licensing. The Cisco CGR 2010 router is designed to withstand hostile environments while continuing to deliver the performance, availability, and reliability to scale mission-critical needs.

Audience

The Cisco IOS software documentation set is intended primarily for users who configure and maintain Cisco networking devices (such as routers and switches) but who may not be familiar with the tasks, the relationship between tasks, or the Cisco IOS software commands necessary to perform particular tasks. The Cisco IOS software documentation set is also intended for those users experienced with Cisco IOS software who need to know about new features, new configuration options, and new software characteristics in the current Cisco IOS software release.

The Cisco Connected Grid Router 2010 router is described in the following sections.

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Note

This document is written for experienced technical workers who install, monitor, and troubleshoot routers under a service contract, or who work for an information technology (IT) department.



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New Features in this Release

New features in this release are described in [Table 1](#).

Table 1 *New Features*

Feature	Description
USB Console	Cisco Connected Grid Router 2010 provides an additional mechanism for configuring the system through a personal computer connected to a USB console. The traditional RJ-45 console port is also available.
Advanced Capability CompactFlash	<p>Cisco Connected Grid Router 2010 uses Advanced Capability CompactFlash memory to store the system image, configuration files, and some software data files. The Advanced Capability CompactFlash is capable of supporting PIO mode 6 which provides higher transfer rates.</p> <p>Note If an Advanced Capability Flash is not available, a warning message is displayed.</p>
SFP/Gigabit Ethernet Port	<p>Cisco Connected Grid Router 2010 has an SFP¹/Gigabit Ethernet port that supports a maximum of two ports of either copper or fiber connections. Media can be configured for failover redundancy when the network goes down. See the Chapter 1, “Configuring Backup Data Lines and Remote Management”.</p> <p>Only the following certified industrial-grade (i-Temp) SFPs are supported:</p> <ul style="list-style-type: none"> GLC-FE-100FX-RGD—100BASE-FX SFP module for Industrial Ethernet 100-MB ports, 1310 nm wavelength, 2 km over MMF; cable distance supported: 1.24 miles (2 km) GLC-FE-100LX-RGD—100BASE-LX SFP module for Industrial Ethernet 100-MB ports, 1310 nm wavelength, 10 km over SMF; cable distance supported: 6.2 miles (10 km) GLC-ZX-SM-RGD 1000BASE-ZX SFP transceiver module for SMF, 1550-nm wavelength, industrial Ethernet; cable distance supported: 43.4 to 62 miles (70 to 100 km) GLC-LX-SM-RGD 1000BASE-LX/LH SFP transceiver module for MMF and SMF, 1300-nm wavelength, industrial Ethernet; cable distance supported: 1804 feet (550 m) GLC-SX-MM-RGD 1000BASE-SX SFP transceiver module for MMF, 850-nm wavelength, industrial Ethernet; cable distance supported: Modal Bandwidth (MHz/km) 400—1640 feet (500 m); Modal Bandwidth 500—1804 feet (550 m) <p>The RJ-45 supports the 10BASE-T, 100BASE-TX and 1000BASE-T IEEE copper standards.</p>
New Module and Interface Card Features	<p>Cisco CGR 2010 introduces the following new vertical module and GRWICs² which are inserted in the router slots.</p> <ul style="list-style-type: none"> GRWIC-1CE1T1-PRI—1-Port T1/E1 GRWIC GRWIC-2CE1T1-PRI—2-Port T1/E1 GRWIC GRWIC-8A/S-232—8-Port A/S Serial GRWIC <p>Note See the router’s Hardware Installation Guide for a complete list of supported modules and interface cards.</p>

1. Small Form-factor Pluggable

2. Grid Router WAN Interface Cards

Features by Platform

Table 2 shows new feature support by platform.

Table 2 *New Features in this Release for the Cisco CGR 2010 Router Platform*

Features	CGR 2010
New Module and Interface Card Features	Y
SFP/Gigabit Ethernet Port	Y
Advanced Capability CompactFlash	Y
Multi-Gigabit Fabric Communication	N

Platform Description

The following sections describe the Cisco Connected Grid Router 2010.

Cisco Connected Grid Router 2010 Slots and Ports

Table 3 describes Cisco Connected Grid Router 2010 slots and ports.

Table 3 *Cisco CGR 2010 Series Models*

Router	SW GRWIC Slots	DW GRWIC Slot	CF Slots	GE/SFP ports
Cisco CGR 2010	4	2	2	2

GRWIC Form Factors and Slot Numbering

Cisco Connected Grid Router 2010 supports one of the following three GRWIC module options:

- Option 1: Four single-wide GRWIC modules
- Option 2: Two double-wide GRWIC modules
- Option 3: One double-wide and two single-wide GRWIC modules
- Option 4: Two single-wide and one double-wide GRWIC modules

Table 4 shows the form factor capability of each GRWIC slot.

Table 4 GRWICs Slot Compatibility on Cisco CGR 2010

Options	Slot 3	Slot 2	Slot 1	Slot 0
Option 1	Single-wide GRWIC	Single-wide GRWIC	Single-wide GRWIC	Single-wide GRWIC
Option 2	Double-wide GRWIC		Double-wide GRWIC	
Option 3	Double-wide GRWIC		Single-wide GRWIC	Single-wide GRWIC
Option 4	Single-wide GRWIC	Single-wide GRWIC	Double-wide GRWIC	

Common Ports

- Gigabit Ethernet RJ45/SFP— Ports available through RJ45 and SFP connectors. Connection will fail over if the secondary connection goes down.
- RS232 Aux Port— Supports modem control lines and remote administration for box-to-box redundancy applications.
- RS232 Console Port— Supports modem control lines and remote administration of the router with the proprietary cable shipped in the box.
- Type A USB 2.0— Supports USB-based flash memory sticks, security tokens, and USB-compliant devices.
- Type B USB Console Port— Supports modem control lines and remote administration of the router using a type B USB-compliant cable.

Activating the Cisco Software License

For a quick start guide to deploy and activate software for your Cisco Connected Grid Router 2010, see [Cisco IOS Software Activation](#) website. For more information about the Cisco Software Activation process, see [Cisco IOS Software Activation Conceptual Overview](#). For an e-learning presentation about Cisco license activation, see [Introduction to Cisco Software Activation](#).

Getting Started

Install the router in an appropriate location as described in the Hardware Installation Guide. Connect the router using the appropriate cables, then supply power. Perform the following steps.

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- Step 1** See the [Chapter 1, “Setup for Initial Configuration”](#) and perform the initial software configuration using Cisco Configuration Professional Express.
- Step 2** See the [Chapter 1, “Basic Router Configuration”](#) and perform the basic router configuration.
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