



Connecting Cisco Grid Router WAN Interface Cards

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Overview

This document describes Cisco grid router WAN interface cards (GRWICs) and how to connect them to a network. It contains the following sections:

- [Supported Platforms, page 1](#)
- [8-Port Serial GRWICs, page 2](#)
- [T1/E1 Channelized PRI GRWICs, page 2](#)
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- [Installing a Cisco Grid Router WAN Interface Card, page 5](#)
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Supported Platforms

The GRWICs support the following Cisco 2000 Series Connected Grid routers:

- Cisco CGR 2010 router

For appropriate regulatory warnings associated with this product, see *Regulatory Compliance and Safety Information for Cisco Connected Grid Router 2000 Series Routers* at:

http://www.cisco.com/en/US/docs/routers/access/2000/CGR2010/hardware/installation/guide/CGR2010_HIG.html



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For an overview of Cisco GRWICs used for Cisco CGR 2010 routers, see *Cisco Connected Grid Routers 2010 Hardware Installation Guide* at:

http://www.cisco.com/en/US/docs/routers/access/2000/CGR2010/hardware/installation/guide/CGR2010_HIG.html

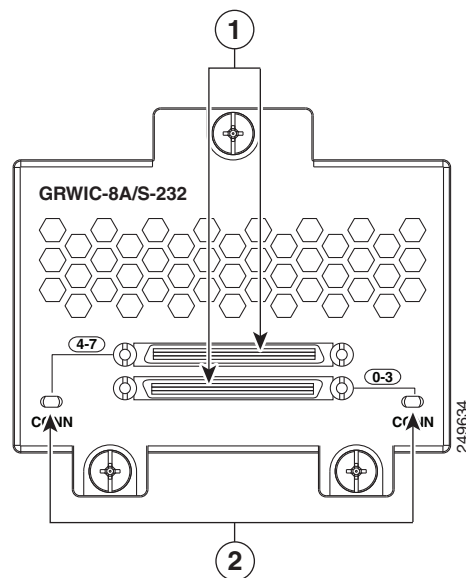
**Note**

Use Cisco Feature Navigator to find information about platform support and Cisco IOS software image support. Access Cisco Feature Navigator at <http://www.cisco.com/go/fn>. You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

8-Port Serial GRWICs

The 8-port serial GRWIC (RWIC-8A/S-232), shown in [Figure 1](#), provides an EIA-323 serial interface to the Cisco GCR 2010 router. The serial GRWIC connectors each bundles signals for 4 ports.

Figure 1 8-Port Serial Grid Router WIC Front Panel

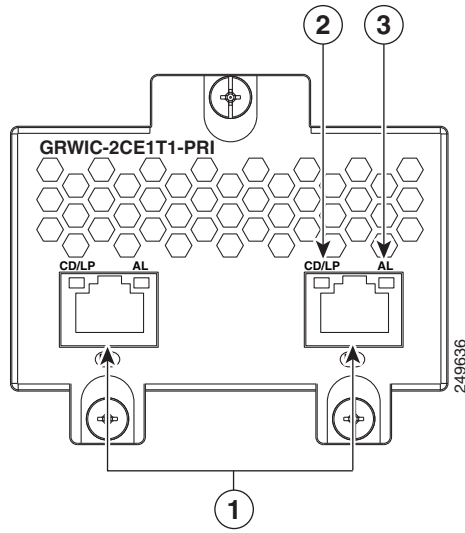


1	Serial port	2	CONN LED
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T1/E1 Channelized PRI GRWICs

The 1-port PRI T1/E1 GRWIC (GRWIC-1CE1T1-PRI) and 2-port PRI T1/E1 GRWIC (GRWIC-2CE1T1-PRI), shown in [Figure 2](#), provides data only, channelized, clear channel T1/E1 connectivity to legacy equipment and sensors to an IP network.

Figure 2 2-Port Channelized T1/E1 PRI GRWIC



1	T1 ports	2	CD/LP LED (bicolor LED)
3	Alarm LED		

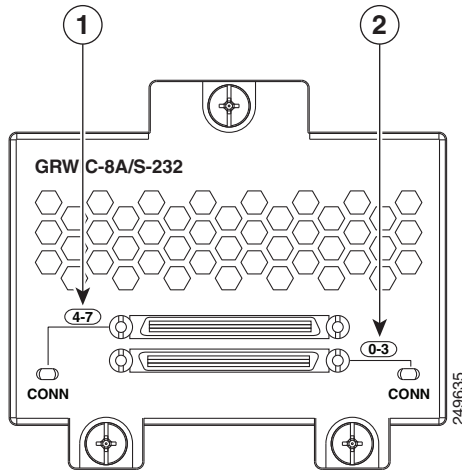
Cisco Grid Router WAN Interface Card LEDs

Figure 1 shows the serial GRWIC LEDs, and Figure 2 shows the T1/E1 GRWIC LEDs. Table 1 describes the serial GRWIC LED functions, and Table 2 shows the T1/E1 GRWIC LED functions.

8-Port Serial GRWICs LEDs

Figure 1 shows that each serial GRWIC has one LED, labeled CONN for each port group, which lights when the serial port is connected. When the port is in DTE mode, the CONN LED indicates that Data Send Ready (DSR), Data Carrier Detect (DCD), and Clear To Send (CTS) have been detected. When the port is in DCE mode, Data Terminal Ready (DTR) and Ready To Send (RTS) have been detected. There are two bi-color LEDs provided. One LED is for ports 0-3 and one LED is for ports 4-7 (see Figure 3). Table 1 describes the functions of the LEDs.

Figure 3 8-Port Serial GRWIC Bi-color LEDs



1	Bi-color LED for ports 4-7	2	Bi-color LED for ports 0-3
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Table 1 Serial GRWIC LEDs

LED status	Description
Green	Monitored port is active (has initialized without error).
Yellow	Monitored port is in loopback mode.
Off	Monitored port is not active (has failed to initialize).

T1/E1 Channelized PRI GRWICs LEDs

The T1/E1 GRWIC has 2 LEDs for each port that indicate the functionality of the T1 or E1 connection. [Figure 2](#) shows the front panel and LEDs. The LEDs are described in [Table 2](#).



Note CD/LP LEDs are bicolor LEDs with both green and yellow emitters.

Table 2 T1/E1 GRWIC LEDs

LED	Color	Description
CD/LP	Green/Yellow	Off: No carrier detected
		Green on (CD): Carrier detected
		Yellow on (LP): Port in loopback mode

Table 2 T1/E1 GRWIC LEDs

LED	Color	Description
AL	Yellow	Off: No alarms On: Port in alarm mode
EN	Green	Off: GRWIC does not pass the self-test and is not available to the router. There is a failure with either the GRWIC or the slot. On: GRWIC has passed the self-test and is available to the router. The GRWIC may be removed from router when the EN LED is off.

Installing a Cisco Grid Router WAN Interface Card

This section describes how to install GRWICs in Cisco CGR 2010 routers.

The GRWIC installs into one of four slots on the cable side view of the router.



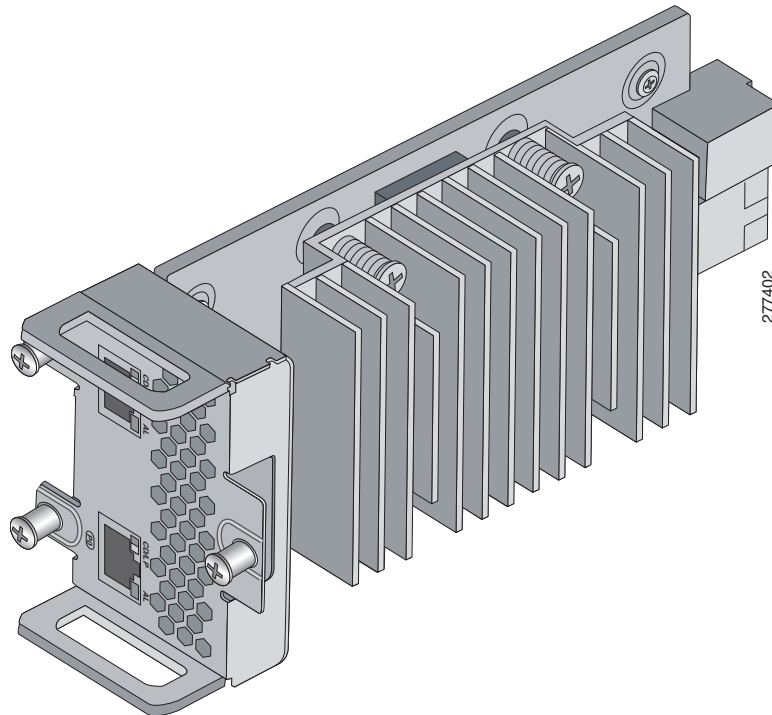
Note

You can install 4 single-wide GRWICs in the Cisco CGR 2010 router slots at any one time. Although double-wide GRWICs are not supported at this time, future versions of the Cisco CGR 2010 router will also support double-wide GRWIC configurations.

Follow these steps to install a GRWIC in a Cisco CGR 2010 router:

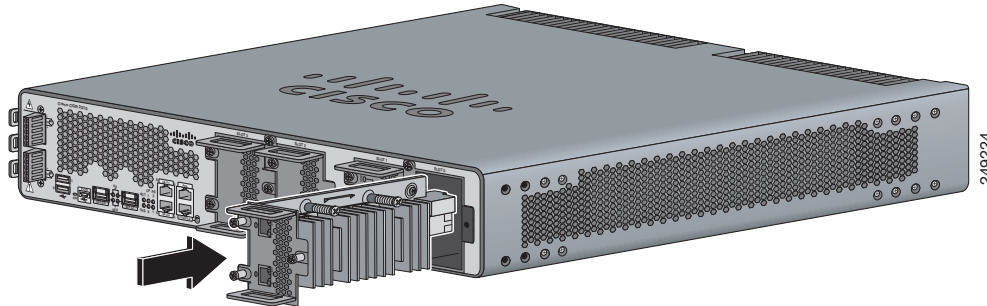
- Step 1** Stand the GRWIC on end to install into the router slot. See [Figure 4](#).

Figure 4 GRWIC Positioning to Install into the GCR 2010 Router



Step 2 Slide the GRWIC into the router slot. See [Figure 5](#).

Figure 5 Proper Installation of a GRWIC



Step 3 Tighten the three captive screws on the front of the interface card.



Caution

For T1/E1 interfaces, shielded cables are required to meet EN55022, Cispur 22, and EN300-386 compliance.

Prerequisites for Connecting Cisco Grid Router WAN Interface Cards

Before connecting an GRWIC to the network, ensure that the GRWIC is installed in the router and you have the proper cables for connecting the GRWIC to the network.

Cables

After you install the GRWIC, use the appropriate serial or T1/E1 cable to connect the GRWIC's serial or T1/E1 port to one of the following types of equipment:

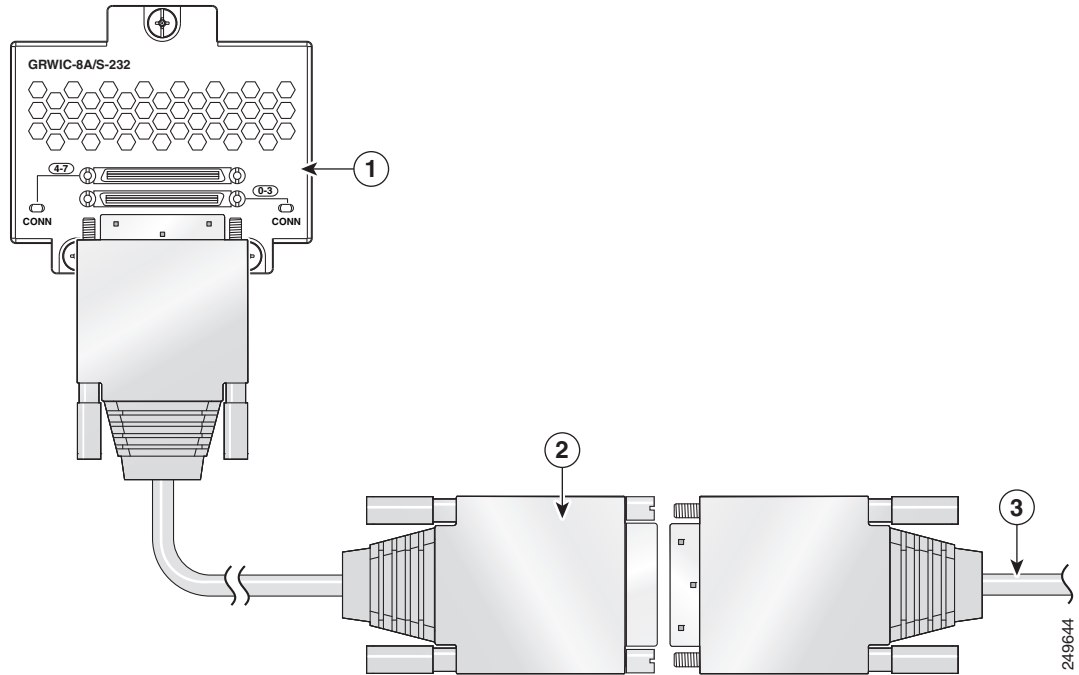
- For serial, a synchronous modem, DSU or CSU, or other DCE, if connecting to a digital WAN line
- For T1/E1, use a straight-through RJ-48C-to-RJ-48C cable to connect a T1/FT1 DSU/CSU HWIC to a network.

Connecting Serial GRWICs to a Network

To connect the serial GRWIC to the network, follow these steps:

Step 1 Connect the serial cable to the connector on the card faceplate. See [Figure 6](#).

Figure 6 Connecting the Serial GRWIC Interface



1	Serial interface	2	Female serial cable
3	Male serial cable		

Step 2 Connect the female end of the serial cable to the male end of the other serial connector for back-to-back connectivity. (See [Figure 6](#).)

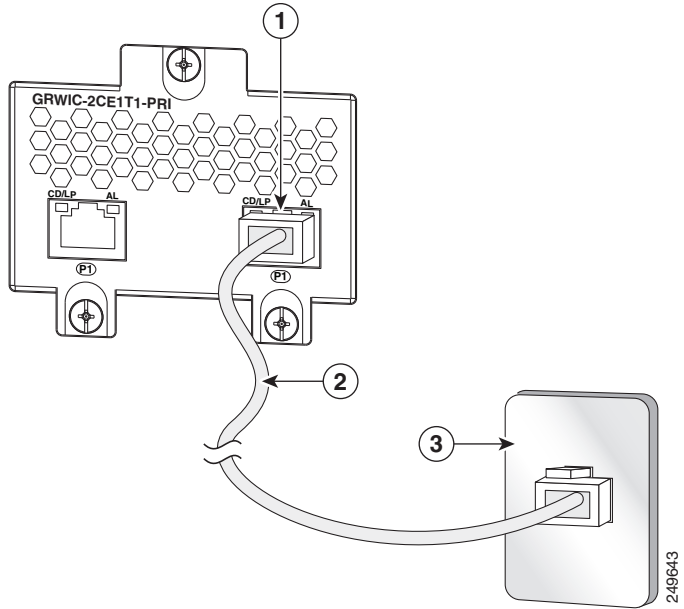
Step 3 Connect the other end of the cable to the DTE or DCE.

Connecting T1/E1 GRWICs to a Network

To connect the T1/E1 GRWIC to the network, follow these steps:

Step 1 Connect one end of the cable to the T1 port on the T1/E1 GRWIC (See [Figure 7](#).)

Figure 7 Connecting the T1/E1 GRWIC to a T1 Wall Jack



1	T1 port	2	Straight-through cable
3	T1 wall jack		

Step 2 Connect the other end of the cable to the T1 wall jack, as shown in [Figure 7](#).

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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