CHAPTER 3

Installing Cisco 700 Series Routers

This chapter describes the procedure for installing the Cisco 700 series router and contains the following sections:

- Making Network Connections
- Connecting to a Console
- Connecting the Power Supply
- Connecting an ISDN Telephone
- Connecting an Analog Telephone Device

You will need the following to install a Cisco 700 series router:

- Access to ISDN through a network termination 1 (NT1) device. (The Cisco 752, Cisco 753, Cisco 762 and Cisco 766 each have a built-in NT1.)
- One interface cable for the 10BaseT Ethernet port and one for the ISDN BRI WAN port (both provided).
- One console cable for the console port (provided).

The Cisco 700 series routers can be placed on any flat, secure surface. They are designed to operate without requiring cooling fans or special equipment closets or racks.

Making Network Connections

This section describes how to connect your router to the LAN network and the WAN network.

Table 3-1 lists the installation procedure step that you should being with, based on your LAN connection type.

Table 3-1 First Installation Step Based on LAN Connection Type

Cisco 750 series router to 10Base2 Ethernet	Step 1
Cisco 760 series router to 10Base5 Ethernet	Step 3
Any Cisco 700 series router to 10Base T Ethernet	Step 5

Step 1 10Base2 Ethernet LAN (Cisco 750 series only)—Connect a 10Base2 coaxial cable (not provided) to the 10Base2 port on the router (labeled 10BASE2 on the Cisco 751 and labeled 10B2 on the Cisco 752 and Cisco 753).

Note Use a terminator and a T-connector (neither provided) to connect the coaxial cable to the router.

Step 2 Connect the other end of the 10Base2 coaxial cable to your PC and proceed to Step 7.

Note In order to use the 10Base2 connector, the router must be configured to operate as a node. This is the default setting for the router.

Step 3 10Base5 Ethernet LAN (Cisco 760 series only)—Connect an Ethernet drop cable or an AUI cable (not provided) to the port on the rear of the router labeled AUI.

Step 4 Connect the other end of the Ethernet transition cable to an Ethernet transceiver and proceed to Step 7.

Step 5 10BaseT Ethernet LAN—Connect the provided 10BaseT Ethernet cable (RJ-45-to-RJ-45) to the 10BaseT port. (See Figure 3-2 and Figure 3-3.)

Table 3-2 lists the 10BaseT port label for each hardware model.

Table 3-2 10BaseT Port Labels

Model	Label
Cisco 751	10BASET
Cisco 752 and Cisco 753	10BT
Cisco 760 series, all models	10BaseT

Step 6 Connect the other end of the Ethernet cable to an Ethernet concentrator as shown in Figure 3-2. If you have configured your Cisco 750 series or Cisco 760 series router in hub mode, connect the other end of the Ethernet cable to your PC Ethernet network interface card (NIC), as shown in Figure 3-3.

Note The Cisco 700 series routers are configured, by default, as Ethernet nodes. If you are connecting the router directly to a PC with an Ethernet network interface card (NIC), the router must be reconfigured to operate as an Ethernet hub. For the Cisco 760 series routers, this is done by setting the switch labeled HUB/NODE on the rear panel, shown in Figure 3-1. For the Cisco 750 series routers, you must move a set of jumpers that are inside the chassis. For instructions on moving the jumpers, refer to the appendix "Configuring Cisco 750 Series Routers to Operate as an Ethernet Hub."

Note Configuring the router as a hub disables the 10Base2 port on the router.

Figure 3-1 illustrates the HUB/NODE switch, located on the rear panel of the Cisco 760 series routers.

Figure 3-1 HUB/NODE Switch (Cisco 766 Shown)

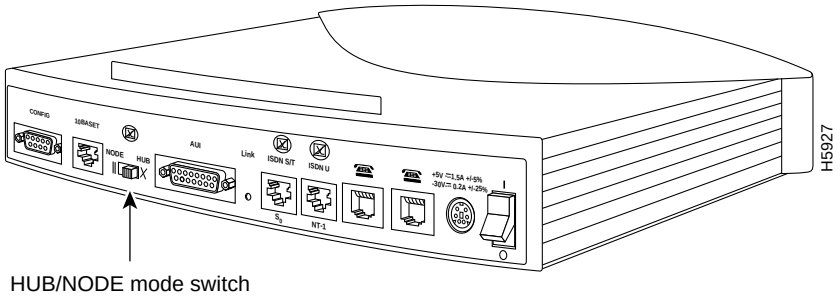


Figure 3-2 10BaseT to Ethernet Concentrator Connection (Cisco 766 Shown)

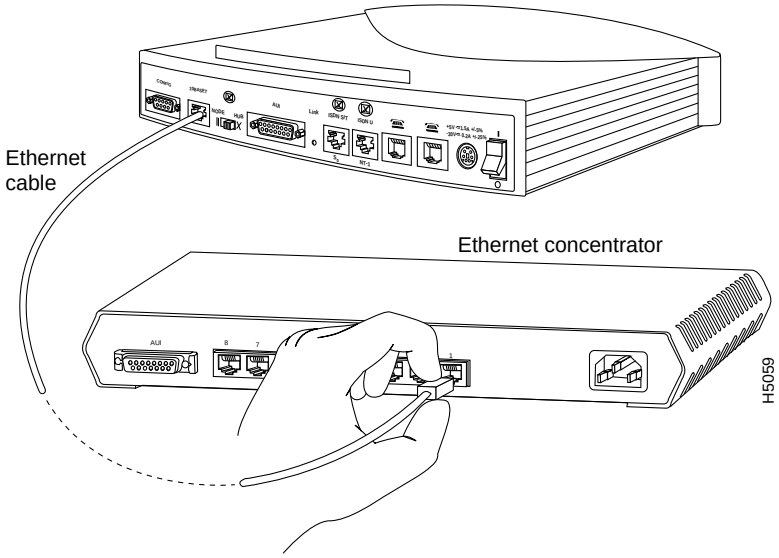
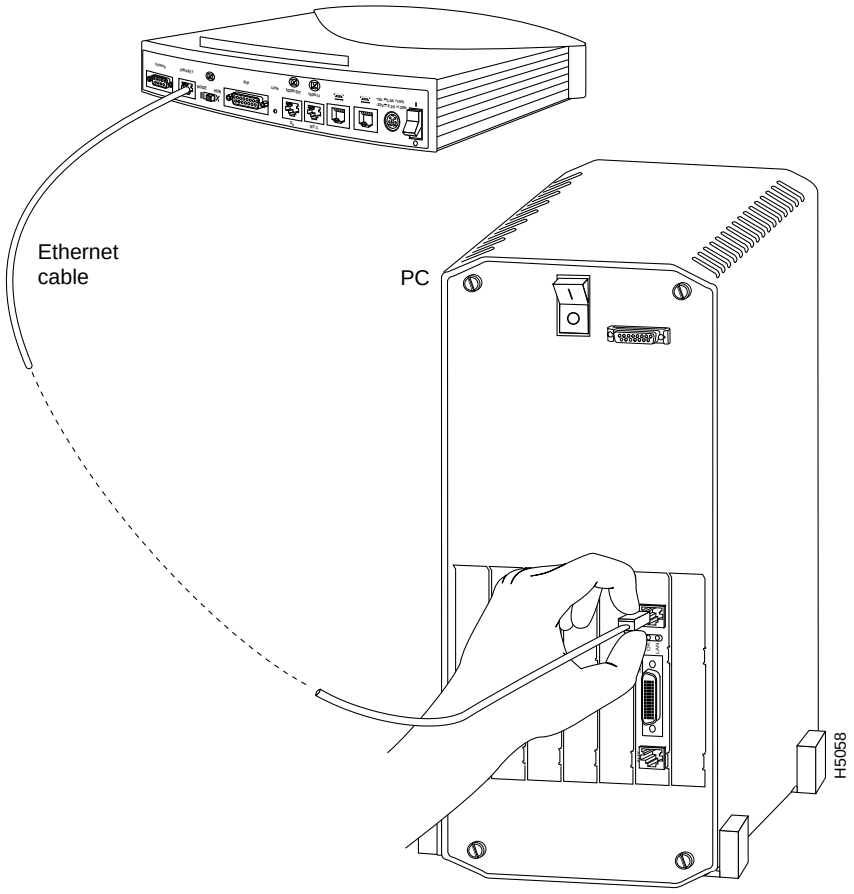


Figure 3-3 10BaseT Cable to PC NIC Connection (Cisco 766 Shown)



Warning Network hazardous voltages are present in the BRI cable. If you detach the BRI cable, detach the end away from the router first to avoid possible electric shock. Network hazardous voltages also are present on the system card in the area of the BRI port (RJ-45 connector), regardless of when power is turned OFF. (To see translated versions of this warning, refer to the appendix "Translated Safety Warnings.")

Step 7 Connect the provided ISDN BRI cable to the ISDN port on the rear panel of the router. Table 3-3 lists the ISDN port label for each router model. Table 3-4 indicates which type of ISDN BRI cable you should use depending on router model and ISDN connection type.

Table 3-3 ISDN BRI Port Labels

Model	Label
Cisco 751	LINE
Cisco 752, Cisco 753, Cisco 762, and Cisco 766	ISDN U
Cisco 761 and Cisco 765	ISDN S/T

Table 3-4 ISDN BRI Cables

Model	Interface	Cable
Cisco 750 Series	ISDN U	Use RJ-11-to-RJ-11
Cisco 760 Series	ISDN U	Use RJ-11-to-RJ-45
Cisco 750 Series and Cisco 760 Series	ISDN S/T	From ISDN wall jack to the NT1—Use either RJ-11-to-RJ-11 or RJ-45-to-RJ-45 From NT1 to router's ISDN interface—Use RJ-45-to-RJ-45

Step 8 If you are using a Cisco 751, Cisco 761, or Cisco 765, connect the other end of the ISDN cable to the ISDN line through the NT-1, as shown in Figure 3-4.

If you are using a Cisco 752, Cisco 753, Cisco 762, or Cisco 766, connect the other end of the ISDN cable directly to the ISDN line wall jack, as shown in Figure 3-5.

Figure 3-4 ISDN BRI Cable to NT-1 Connection (Cisco 765 Shown)

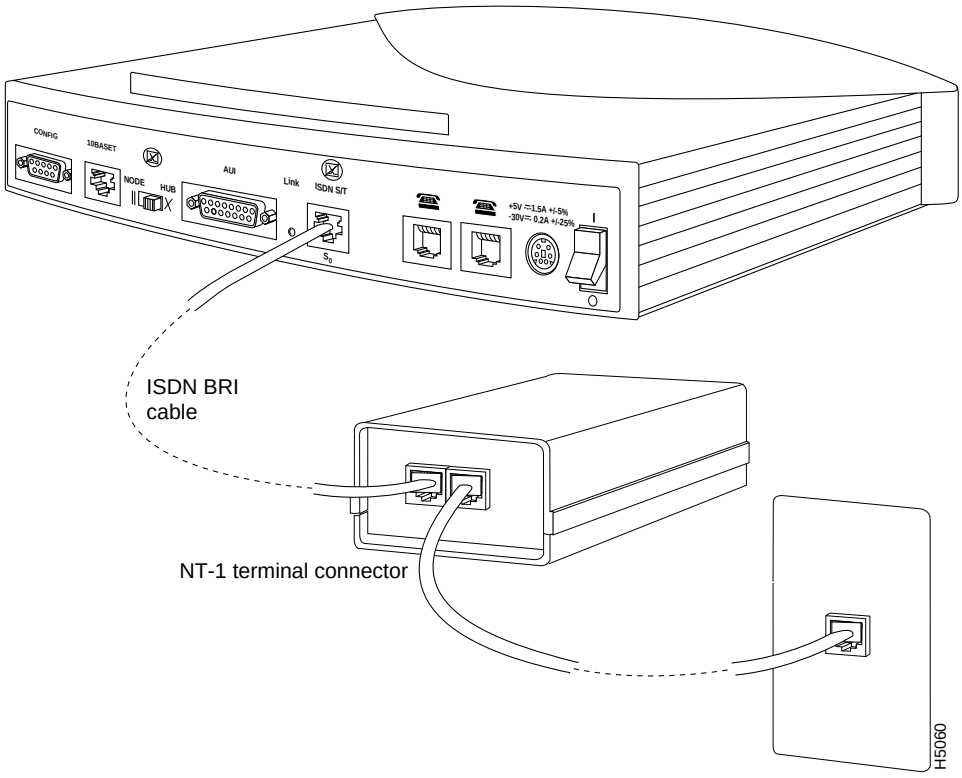
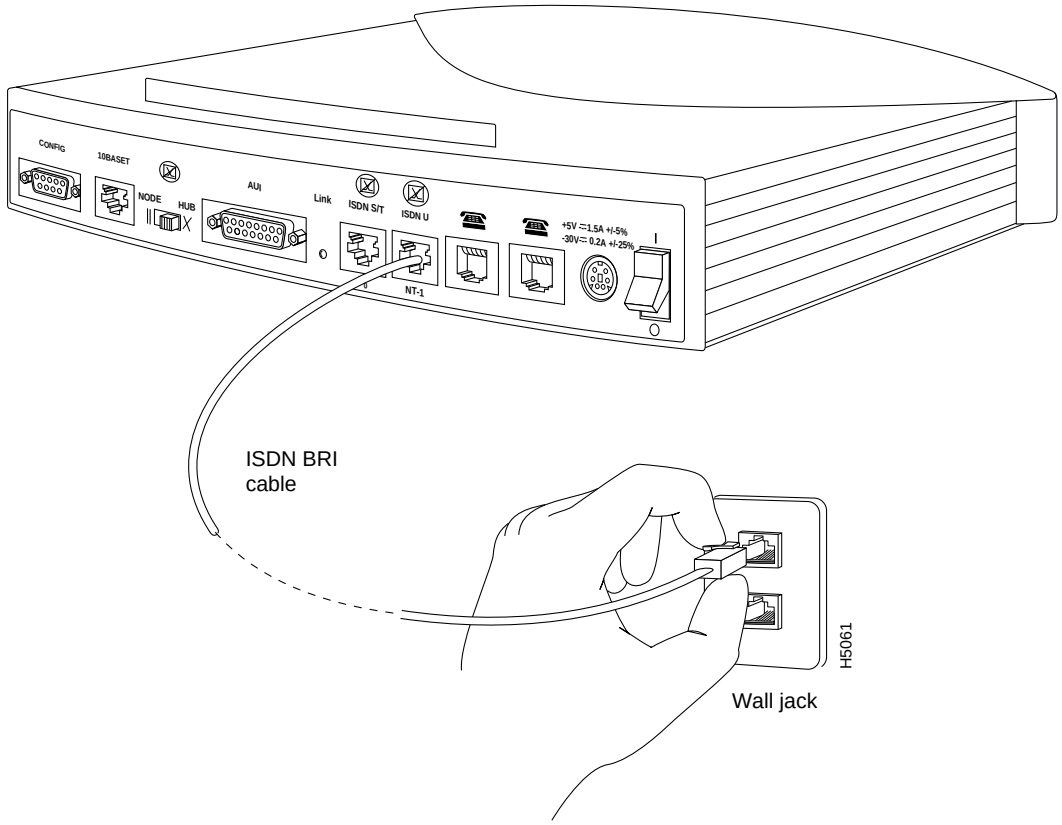


Figure 3-5 ISDN BRI Cable to ISDN BRI Wall Jack Connection (Cisco 766 Shown)

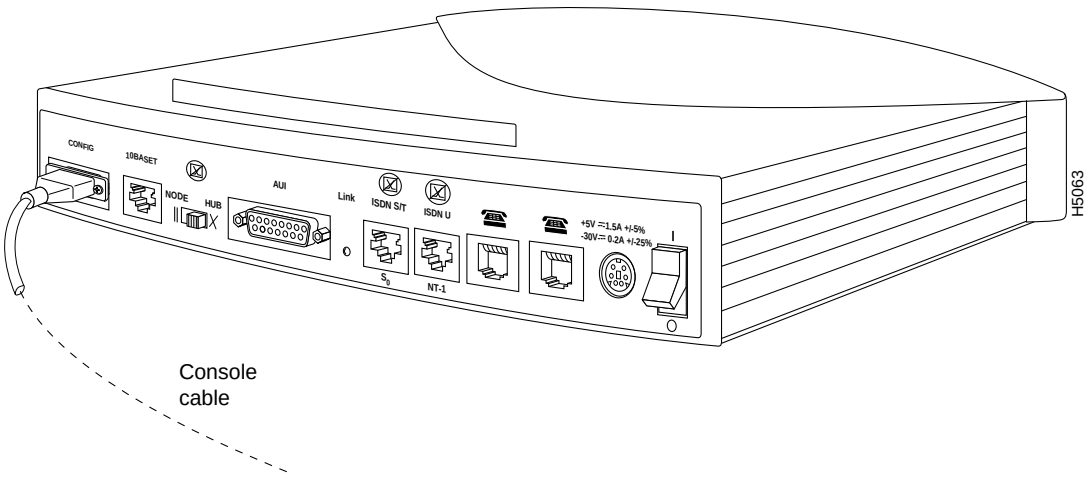


Connecting to a Console

Take the following steps to connect the Cisco 700 series router to a console:

Step 1 Connect the supplied console cable to the router console port, labeled CONFIG, as shown in Figure 3-6.

Figure 3-6 Console Cable to Router Connection (Cisco 766 Shown)



Step 2 Connect the other end of the console cable to a console terminal (an ASCII terminal or personal computer) as required for your configuration method.You might need to use the DB-9-to-DB-25 adapter included with your router.

Your console port should be configured with the following parameters: 9600 baud, 8 data bits, no parity, and one stop bit.

Connecting the Power Supply

Your Cisco 700 router ships with either a wall-mounted or desktop power supply. The wall-mounted power supply is used with the Cisco 751 and Cisco 752, and the desktop power supply is used with the Cisco 753 and all Cisco 760 series routers. This section explains how to connect both types of power supplies.

Warning The device is designed to work with TN power systems. (To see translated versions of this warning, refer to the appendix "Translated Safety Warnings.")

Connecting the Wall-Mount Power Supply

The wall-mount power supply is used with the Cisco 751 and Cisco 752. Connect the wall-mount power supply as follows:

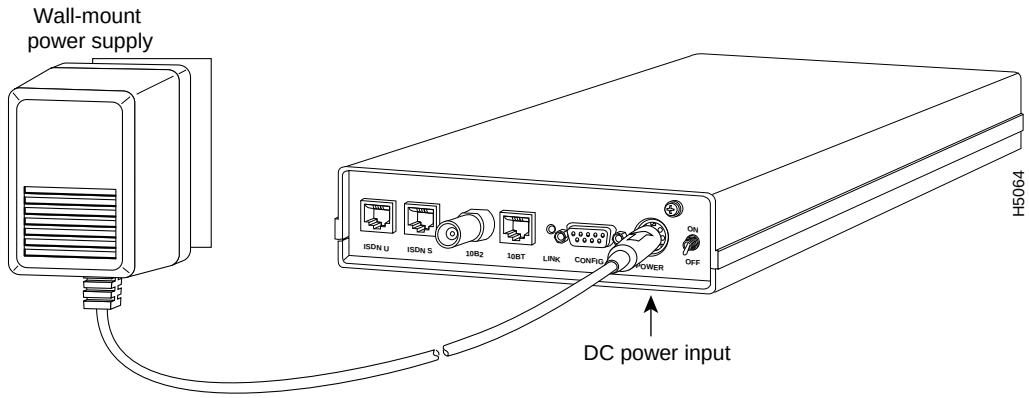
Step 1 Connect the direct current (DC) power cable from the power supply to the power connector, labeled POWER, on the rear panel of the router. (See Figure 3-7.)

Step 2 Connect the DC power supply to the power outlet. (See Figure 3-7.)

Warning This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that a fuse or circuit breaker no larger than 120 VAC, 15A U.S. (240 VAC, 10A international) is used on the phase conductors (all current-carrying conductors). (To see translated versions of this warning, refer to the appendix "Translated Safety Warnings.")

Warning This equipment is intended to be grounded. Ensure that the host is connected to earth ground during normal use. (To see translated versions of this warning, refer to the appendix "Translated Safety Warnings.")

Figure 3-7 Wall-Mount Power Supply Connection (Cisco 752 Shown)



Step 3 Turn the router on using the switch labeled ON/OFF on the rear panel of the router.

Connecting the Desktop Power Supply

The desktop power supply is used with the Cisco 753 and all Cisco 760 series routers. Take the following steps to connect the desktop power supply:

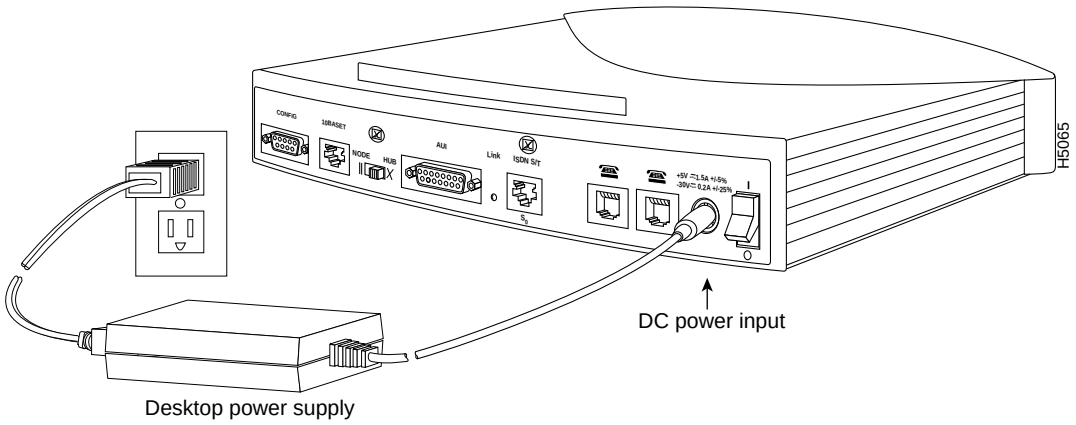
Step 1 Connect the DC power cable from the DC power supply to the power connector (labeled POWER on the Cisco 750 series routers and I / 0 on the Cisco 760 series routers) on the rear panel of the router. (See Figure 3-8.)

Step 2 Connect the female end of the DC power cable to the male receptacle on the DC power supply. (See Figure 3-8.)

Note The desktop power supply includes an alternating current (AC) power cable that has the appropriate plug for the country to which the router is shipped.

Step 3 Connect the male end of the power cable to the power outlet. (See Figure 3-8.)

Figure 3-8 Desktop Power Supply Connection (Cisco 765 Shown)



Step 4 The router can now be powered on. Turn ON the Cisco 750 series routers with the switch labeled ON/OFF on the rear panel of the router. Turn ON the Cisco 760 series routers with the switch labeled | / 0 on the rear panel of the router.

Basic installation of the Cisco 700 series router is complete. Depending on which model you are using, you can also connect an ISDN telephone (a telephone that operates over ISDN telephone lines), an analog device, such as a telephone or modem, or both to your router. For instructions on how to connect an ISDN telephone or analog device, see the following two sections, “Connecting an ISDN Telephone” and “Connecting an Analog Telephone Device.”

Connecting an ISDN Telephone

If you are using the Cisco 752, Cisco 753, Cisco 762, or Cisco 766, you can connect an ISDN telephone to the router. The ISDN telephone uses the same ISDN line that the router uses.

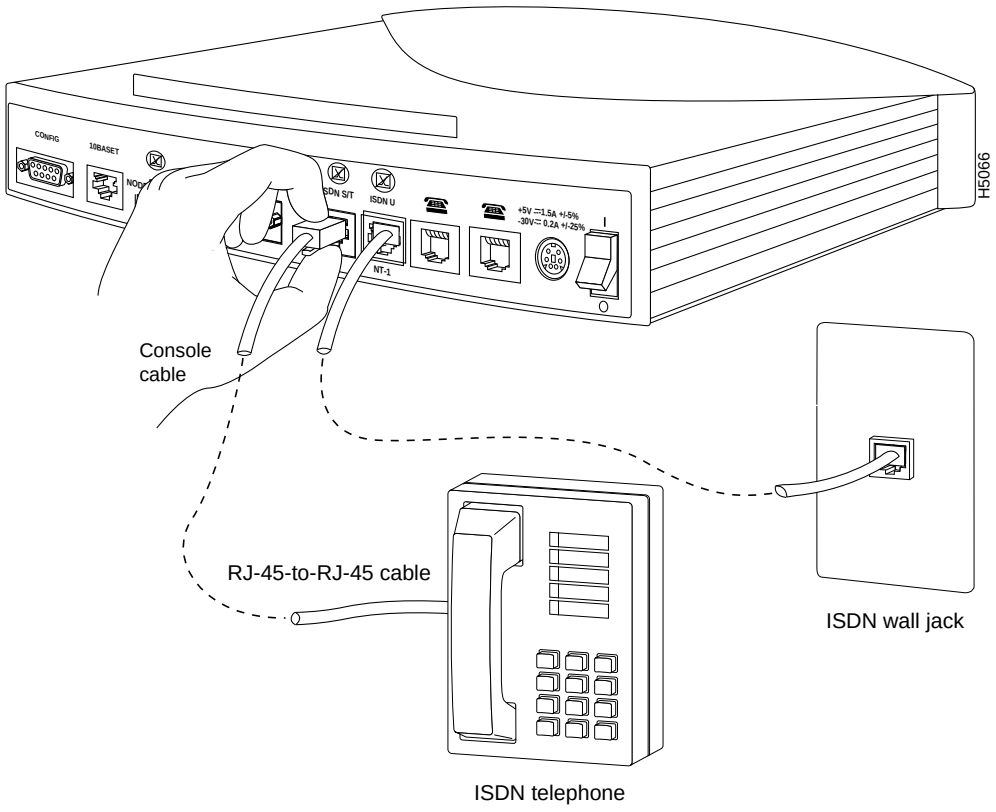
Connecting a Self-Powered ISDN Telephone

To connect the ISDN telephone to the router, connect the ISDN telephone cable (provided with the ISDN telephone) to the RJ-45 port labeled ISDN S/T on the rear panel of the router, and connect the telephone wall jack to the port labeled ISDN U, as shown in Figure 3-9.

Note If you are connecting directly to an ISDN telephone from the Cisco 752, Cisco 753, Cisco 762, or Cisco 766 (through the ISDN S/T port), you must connect to the ISDN network through the ISDN U interface port on the rear panel of the router. If you are connecting to the ISDN network through an external NT-1, the ISDN telephone will also connect through the NT-1.

You can connect an ISDN telephone to the Cisco 751, Cisco 761, or Cisco 765 through an external NT-1 connector only.

Figure 3-9 ISDN Telephone to Router Connection (Cisco 766 Shown)



Note An ISDN telephone that is not self-powered requires an external power supply. Refer to the following section “Connecting an ISDN Telephone and External Power Supply” for instructions on how to connect an ISDN telephone that uses an external power supply.

Connecting an ISDN Telephone and External Power Supply

This section describes an example procedure of how to connect the router to an ISDN telephone that requires an external power supply.

This example procedure describes how to connect an AT&T ISDN telephone (model ISDN 8510T) and an AT&T external power supply (model MSP-1) that supplies power to this telephone. Depending on the ISDN telephone model and power supply model that you use, the procedure to connect the ISDN telephone and power supply might differ slightly.

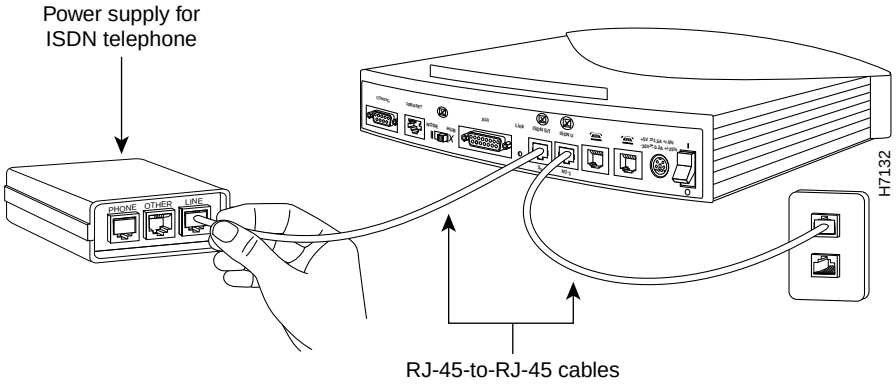
For information on ISDN U port pinouts, refer to Table D-1 in the appendix "Cabling Specifications for Cisco 700 Series Routers."

Take the following steps to connect the ISDN telephone and external power supply:

Note This procedure assumes that you have already connected your router's ISDN U port to the ISDN wall jack (as shown in Figure 3-10), as described in Step 8 in the section "Making Network Connections" earlier in this chapter.

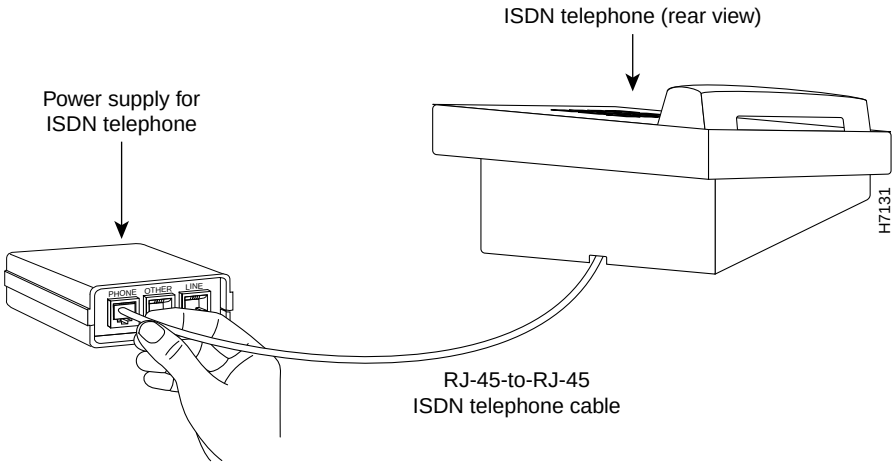
Step 1 Connect an RJ-45-to-RJ-45 cable (included) from the ISDN S/T port on the rear panel of the router to the port labeled LINE on the ISDN telephone power supply. (See Figure 3-10.)

Figure 3-10 ISDN Telephone Power Supply to Router Connection (Cisco 766 Shown)



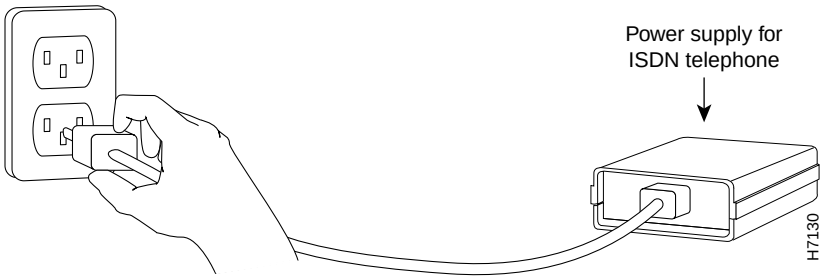
Step 2 Connect the ISDN telephone's RJ-45 cable to the port labeled LINE on the ISDN telephone power supply. (See Figure 3-11.)

Figure 3-11 ISDN Telephone to Power Supply Connection



Step 3 Connect the power supply cable to the power outlet. (See Figure 3-12.)

Figure 3-12 ISDN Telephone Power Supply to Power Outlet Connection



You can now use the ISDN telephone on the same ISDN line as the router.

Note If you are using an ISDN telephone with the same ISDN line as the Cisco 700 series routers, you must configure router termination to off. For information on how to turn router termination off, refer to the appendix "Configuring Termination for Cisco 700 Series Routers."

Connecting an Analog Telephone Device

If you are using a Cisco 753, Cisco 765, or Cisco 766, you can connect one or two analog devices, such as a telephone, fax machine, or modem, directly to the unit. The analog device is connected to basic telephone services through the ISDN line that the router uses.

Caution Connecting both an ISDN device and an analog device to the Cisco 753 or Cisco 766 can interfere with the operation of the analog device. We recommend connecting either an ISDN device or an analog device to these models, but not both.

To connect the analog device to the router, connect the telephone cable (provided with the analog device) to the RJ-11 port (labeled PHONE on the Cisco 753 and with a telephone icon on the Cisco 765 and Cisco 766) on the rear panel of the router, as shown in Figure 3-13.

Figure 3-13 Analog Telephone to Router Connection (Cisco 766 Shown)