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Santa Clara, CA 95054

Setting Up the Contivity 100 Unit

NORTEL
NETWORKS™

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Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to take whatever measures may be necessary to correct the interference at their own expense.

European requirements only

EN 55 022 statement

This is to certify that the Nortel Networks Contivity 100 and Nortel Networks BayStack Instant Internet 100-S are shielded against the generation of radio interference in accordance with the application of Council Directive 89/336/EEC, Article 4a. Conformity is declared by the application of EN 55 022 Class A (CISPR 22).

Warning: This is a Class A product. In a domestic environment, this product may cause radio interference, in which case, the user may be required to take appropriate measures.

Achtung: Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten, in welchen Fällen der Benutzer für entsprechende Gegenmaßnahmen verantwortlich ist.

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This digital apparatus (Contivity 100 or BayStack Instant Internet 100-S) does not exceed the Class A limits for radio-noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

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Cet appareil numérique (Contivity 100 ou BayStack Instant Internet 100-S) respecte les limites de bruits radioélectriques visant les appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique du ministère des Communications du Canada.

Canada CS-03 rules and regulations

Notice: The Industry Canada label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent the degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

Notice: For equipment using loopstart lines, please note that the Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5. The REN is located on the "FCC Rules Part 68" label located on the bracket of the module or on the back of the unit.

Canada CS-03 -- Règles et règlements

Avis: L'étiquette d'Industrie Canada identifie le matériel homologué. Cette étiquette certifie que le matériel est conforme aux normes de protection, d'exploitation et de sécurité des réseaux de télécommunications, comme le prescrivent les documents concernant les exigences techniques relatives au matériel terminal. Le Ministère n'assure toutefois pas que le matériel fonctionnera à la satisfaction de l'utilisateur.

Avant d'installer ce matériel, l'utilisateur doit s'assurer qu'il est permis de le raccorder aux installations de l'entreprise locale de télécommunication. Le matériel doit également être installé en suivant une méthode acceptée de raccordement. L'abonné ne doit pas oublier qu'il est possible que la conformité aux conditions énoncées ci-dessus n'empêche pas la dégradation du service dans certaines situations.

Les réparations de matériel homologué doivent être coordonnées par un représentant désigné par le fournisseur. L'entreprise de télécommunications peut demander à l'utilisateur de débrancher un appareil à la suite de réparations ou de modifications effectuées par l'utilisateur ou à cause de mauvais fonctionnement.

Pour sa propre protection, l'utilisateur doit s'assurer que tous les fils de mise à la terre de la source d'énergie électrique, des lignes téléphoniques et des canalisations d'eau métalliques, s'il y en a, sont raccordés ensemble. Cette précaution est particulièrement importante dans les régions rurales.

Avertissement: L'utilisateur ne doit pas tenter de faire ces raccordements lui-même; il doit avoir recours à un service d'inspection des installations électriques, ou à un électricien, selon le cas.

Avis: Veuillez prendre note que pour tout appareillage supportant des lignes de type "loopstart," l'indice d'équivalence de la sonnerie (IES) assigné à chaque dispositif terminal indique le nombre maximal de terminaux qui peuvent être raccordés à une interface. La terminaison d'une interface téléphonique peut consister en une combinaison de quelques dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas 5. Le REN figure sur l'étiquette "FCC Rules Part 68" située sur le support du module ou à l'arrière de l'unité.

Modular components used in this assembly

This product contains a base unit and possibly one or more of the following Communication and Network Connection Options Devices. Please refer to your specific product for a description of what option cards (if any) are included. Compliance Statements for all the following devices are on file and available on request.

FCC Part 68 compliance statement

This equipment complies with Part 68 of FCC Rules. All direct connections to telephone network lines must be made using standard plugs and jacks compliant with FCC Part 68. Please note the following:

1. You are required to request service from the telephone company before you connect the unit to a network. When you request service, you must provide the telephone company with the following data:
 - When you request ISDN "U" Interface Service, you must provide the telephone company with
 - The Facility Interface Code: 02IS5
 - The Service Order Code(s) (SOC): 6.0F
 - The required Universal Service Order Code (USOC) jack: RJ49C
 - When you request ISDN "S/T" Interface Service, you must provide the telephone company with
 - The Service Order Code(s) (SOC): 6.0N
 - The make, model number, and FCC Registration number of the NT1
2. Your telephone company may make changes to its facilities, equipment, operations, or procedures that could affect the proper functioning of your equipment. The telephone company will notify you in advance of such changes to give you an opportunity to maintain uninterrupted telephone service.
3. If the unit causes harm to the telephone network, the telephone company may temporarily discontinue your service. If possible, they will notify you in advance, but if advance notice is not practical, you will be notified as soon as possible and will be informed of your right to file a complaint with the FCC.
4. If you experience trouble with the unit, please contact the Nortel Networks Technical Solutions Center in your area for service or repairs. Repairs should be performed only by service personnel authorized by Nortel Networks.

United States	1-(800) 4NORTEL or (800) 466-7835
Valbonne, France	33-4-92-96-69-68
Sydney, Australia	61-2-9927-8800
Tokyo, Japan	81-3-5740-1700

5. You are required to notify the telephone company when you disconnect the unit from the network.

UL listing/C-UL listing

This information technology equipment is UL-Listed and C-UL-Listed for the uses described in this and accompanying documents.



Warning: To avoid bodily injury from hazardous electrical shock, never open the Contivity 100 unit. There are no user-serviceable components inside.

Connecting a Contivity unit to the network

Important safety information

To avoid contact with electrical current:

- Never install electrical wiring during an electrical storm
- Never install telephone jacks in wet locations unless that jack is specifically designed for wet locations
- Use caution when installing or modifying telephone lines
- Use a screwdriver and other tools with insulated handles
- You and those around you should wear safety glasses or goggles
- Do not place telephone wiring or connections in any conduit, outlet or junction box containing electrical wiring

Warning: Do not work on your telephone wiring if you wear a pacemaker. Telephone lines carry electrical current.

Installation of inside wire may bring you close to electrical wire, conduit, terminals and other electrical facilities. Extreme caution must be used to avoid electrical shock from such facilities. You must avoid contact with all such facilities.

- Telephone wiring must be at least 6 feet from bare power wiring or lightning rods and associated wires, and at least 6 inches from other wire (antenna wires, doorbell wires, wires from transformers to neon signs), steam or hot water pipes, and heating ducts.
- Before working with existing inside wiring, check all electrical outlets for a square telephone dial light transformer and unplug it from the electrical outlet. Failure to unplug all telephone transformers can cause electrical shock.
- Do not place a jack where it would allow a person to use the telephone while in a bathtub, shower, swimming pool, or similar hazardous location.
- Protectors and grounding wire placed by the service provider must not be connected to, removed, or modified by the customer.

Specific information related to different types of communication connections

Connecting a Contivity unit containing an analog modem

It is not necessary to notify the telephone company before installing the modem. However, the telephone company may request the telephone number(s) to which the unit is connected and the related FCC information including the FCC Part 68 registration number and the ringer equivalence number.

Be sure that the telephone line you are connecting the modem to is a standard analog line and not a digital (PBX), party, or coin telephone line. If the modem is malfunctioning, it may affect the telephone lines. In this case, disconnect the modem until the source of the difficulty is traced.

Connecting a Contivity unit containing an ISDN card with NT1

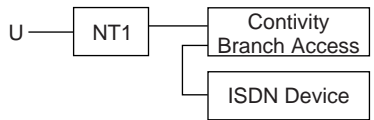
When connecting this version of the product to the network, avoid contact with the Telecommunications lead wire. Telephone wiring can carry dangerous voltage from electrical faults or lightning.

This version of the product is equipped with one standard 8-pin modular jack, labeled ISDN, for connection to the ISDN network and one standard 6-pin modular jack, labeled PHONE, for connection to an analog telephone device. If you need to add wiring to your facility, refer to the National ISDN Users Forum document NIUF 433-94 ISDN Wiring and Powering Guidelines (Residence and Small Business).

Connecting a Contivity unit containing an ISDN card without NT1

This version of the product is equipped with one standard 8-pin modular jack, labeled ISDN, for connection to the NT1 and one standard 6-pin modular jack, labeled PHONE, for connection to an analog telephone device.

The ISDN card without NT1 is not intended for direct connection to the public switched network or other exposed plant networks. Always connect the product to such networks through a certified (by the local, regional or national safety agency and telecommunications authority), isolating type network terminating device (CSU, LIU, DSU, NT1, NCTE, or the like) that provides over-voltage protection.



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At the product interface point, the interface cable must be wired “straight-through” (pin 1 at one end connected to pin 1 at the other end, pin 2 to pin 2, etc.), and must have at least the middle 4 pins (pins 2, 3, 4, and 5) connected. The cables included in your package are wired in this fashion.

Your NT1 must be properly connected to your ISDN service; check with your service provider. If you need to add wiring to your facility, refer to the National ISDN Users Forum document NIUF 433-94 ISDN Wiring and Powering Guidelines (Residence and Small Business).

AVIS: L'étiquette d'Industri Canada identifie le matériel homologué. Cette étiquette certifie que le matériel est conforme à certaines normes de protection, d'exploitation et de sécurité des réseaux de télécommunications. Toutefois, le Ministère n'assure pas que le matériel fonctionnera à la satisfaction de l'utilisateur.

Avant d'installer ce matériel, l'utilisateur doit assurer qu'il soit permis de le raccorder aux installations de l'entreprise locale de télécommunications. Le matériel doit également être installé en suivant une méthode de raccordement acceptée. Dans certains cas, les fils intérieurs de l'entreprise utilisés pour un service individuel à ligne unique peuvent être prolongés au moyen d'un dispositif de raccordement homologué (cordon rallonge téléphonique interne). L'abonné ne doit pas oublier qu'il est possible que la conformité aux conditions énoncées ci-dessus n'empêchent pas la dégradation du service dans certaines situations. Actuellement, les entreprises de télécommunication ne permettent pas que l'on raccorde leur matériel à des jacks d'abonné, sauf dans les cas précis prévus par les tarifs particuliers de ces entreprises.

Les réparations de matériel homologué doivent être effectuées par un centre d'entretien canadien autorisé désigné par le fournisseur. La compagnie de télécommunications peut demander à l'utilisateur de débrancher un appareil à la suite de réparations ou de modifications effectuées par l'utilisateur, ou à cause de mauvais fonctionnement.

Pour sa propre protection, l'utilisateur doit assurer que tous les fils de mise à la terre de la source d'énergie électrique, des lignes téléphoniques et des canalisations d'eau métalliques, s'il y en a, sont raccordés ensemble. Cette précaution est particulièrement importante dans les régions rurales.

Avertissement: L'utilisateur ne doit pas tenter de faire ces raccordements lui-même; il doit avoir recours aux services d'un électricien.

L'indice de charge (IC) assigné à chaque dispositif terminal indique, pour éviter toute surcharge, le pourcentage de la charge totale qui peut être raccordée à un circuit téléphonique bouclé utilisé par ce dispositif. La termination du circuit bouclé peut être constituée de n'importe quelle combinaison de dispositifs, pourvu que la somme des indices de charge de l'ensemble des dispositifs ne dépasse pas 100.

L'indice de charge se trouve sur le modem.

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Contents

Preface	19
Before you begin	19
Acronyms	20
Related publications	21
How to get help	23
Chapter 1	
Introduction	25
Contivity 100 package	25
Available options	26
Requirements and compatibility	26
Chapter 2	
Contivity 100 unit hardware installation	27
Getting to know your Contivity 100 unit	27
Interfaces	29
Power cords	32
Setting the power voltage selector switch	34
Contivity 100 unit hardware installation	35
Mounting your Contivity 100 unit on a wall	38
Attaching the brackets to the Contivity 100 unit	39
Mounting the Contivity 100 unit on a wood wall	42
Preparing a wood wall for mounting	42
Mounting the Contivity 100 unit on a wood wall	42
Mounting the Contivity 100 unit on a drywall or cement wall	43
Preparing a drywall or a cement wall for mounting	44
Mounting the Contivity 100 unit on a drywall or cement wall	44

Chapter 3	
Seven-port autosensing Ethernet switch specifications	47
Contivity unit 10/100 Ethernet switch overview	47
Ethernet switch features	48
RJ-45 10BASE-T/100BASE-TX Ethernet ports	48
MDI/MDI-X autosensing capability	49
LEDs	49
Chapter 4	
Configuration switch settings	51
Configuration switches	51
Switch settings for normal operation	52
Switch settings for the AUX port speed	52
Switch settings for special configurations	53
Resetting your Contivity 100 unit	55
Chapter 5	
LEDs: support and diagnostic functions.	57
Interpreting Contivity 100 unit LEDs	57
LEDs 1 through 8 and Power LED at power-up sequence	58
LEDs 1 through 8 and the Power LED during operation	59
Using the seven-port autosensing Ethernet switch LEDs for troubleshooting	60
Chapter 6	
Out-of-band management support.	61
Configuring the Contivity 100 unit through a direct connection	62
Connecting the Contivity 100 unit directly to a terminal	62
Configuring terminal emulation software for a direct connection	63
Configuring the Contivity 100 unit through a dial-up connection	66
Connecting a modem to a PC	66
Configuring modem connection settings	67
Connecting a modem to the Contivity 100 unit	70
Connecting to a Contivity 100 unit	70

Appendix A	
Technical specifications	71
Physical specifications	71
Electrical specifications	71
Environmental specifications	72
Appendix B	
Adapter cable pinout diagrams	73
Remote access adapter cables	73
Null modem adapter (PC-to-PC) cable	73
Modem adapter cable	74
Index	75

Figures

Figure 1	Front panel of the Contivity 100 unit	28
Figure 2	Rear panel of the Contivity 100 unit	29
Figure 3	Components for mounting the Contivity 100 unit on a wall	39
Figure 4	Removing screws from the cover of the Contivity 100 unit	40
Figure 5	Attaching the mounting bracket to the Contivity 100 unit	41
Figure 6	Mounting the Contivity 100 unit on the wall	43
Figure 7	Configuration switches on the rear panel of the unit	51
Figure 8	Contivity 100 unit LEDs	58
Figure 9	HyperTerminal Connection Description dialog box	64
Figure 10	HyperTerminal Connect To dialog box	64
Figure 11	HyperTerminal COM1 Properties dialog box	65
Figure 12	Command prompt	66
Figure 13	HyperTerminal Connection Description dialog box	67
Figure 14	HyperTerminal Connect To dialog box	68
Figure 15	HyperTerminal COM1 Properties dialog box	69
Figure 16	Null modem adapter cable pinout diagram	74
Figure 17	Modem adapter cable pinout diagram	74

Tables

Table 1	Ethernet interfaces	30
Table 2	Communications interface cards	30
Table 3	International power cord specifications	32
Table 4	Voltage selector switch settings	34
Table 5	Switch settings for normal operation	52
Table 6	Switch settings for setting the AUX port speed to 9600 baud	52
Table 7	Switch settings for resetting the passwords	53
Table 8	Switch settings for resetting the passwords and user-defined configurations	53
Table 9	Switch settings to disable switch settings for resetting the passwords and user-defined configurations	54
Table 10	Switch settings for resetting factory default conditions	54
Table 11	LED status and appearance during operation	59
Table 12	Ethernet switch port status LEDs	60

Preface

This manual describes the Contivity* 100 unit and what you do to install the Contivity 100 unit hardware.

Before you begin



Warning: To avoid bodily injury from hazardous electrical shock, never open the Contivity 100 unit. There are no user-serviceable components inside.

Before using this manual, you need to do two things. First, write down the model number and serial number of your Contivity 100 unit. You will need this information if you call Nortel Networks* Technical Support. Model and serial numbers are located on the rear panel of your unit.

Model # _____

Example: DM1401E67

Serial # _____

Example: I500E07BF224BB

Second, you must obtain Internet access from an Internet service provider (ISP). For details, refer to *Installing the Contivity Branch Access Management Software Version 7.20*.



Note: Do not apply power to the unit until you have completed the installation steps in [Chapter 2, “Contivity 100 unit hardware installation,” on page 35](#).

Acronyms

The following acronyms are used in this manual:

AC	Alternating Current
CEE	Certification of Electrical Equipment
CENELEC	European Committee for Electrotechnical Standardization
CLI	Command Line Interface
CSA	Canadian Standards Associates
CSU	Channel Service Unit
cUL	Underwriter Laboratories testing to Canadian standards
dBA	Decibels Audible
DIP	Dual Inline Pins
DMZ	Demilitarized Zone
DSU	Data Service Unit
FDX	Full Duplex
HAR	Harmonized
HD	Harmonized Document
HDX	Half Duplex
IEC	International Electrotechnical Commission
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
Kb/s	Kilobits Per Second
LAN	Local Area Network
LED	Light-Emitting Diode
LIU	Line Isolation Unit
MB	Megabyte
Mb/s	Megabits Per Second
MDI	Medium Dependent Interface
MDI-X	Medium Dependent Interface - Crossover
MP	Multilink Protocol
NCTE	Network Channel Terminating Equipment
NEMA	National Electrical Manufacturers Association

NIC	Network Interface Card
NIUF	National ISDN Users Forum
NOM	Norma Oficial Mexicana
NT1	Network Termination Type 1
PC	Personal Computer
POTS	Plain Old Telephone Service
PPP	Point-to-Point Protocol
PPPoE	Point-to-Point Protocol over Ethernet
STP	Shielded Twisted-Pair
TUV	Technischer Überwachungs Verein
UL	Underwriter Laboratories
URL	Uniform Resource Locator
UTP	Unshielded Twisted Pair
VAC	Voltage Alternating Current
WAN	Wide Area Network

Related publications

For more information about using Contivity Branch Access, refer to the following publications:

- *Important Notice for the Contivity Branch Access Version 7.20*
(part number 313368-A)
Provides instructions for viewing documentation and installing the Contivity Branch Access management software and third-party applications (Adobe* Acrobat Reader*, Netscape Communicator*, and AniTa Terminal Emulator*).
- *Installing the Contivity Branch Access Management Software Version 7.20*
(part number 313367-A)
Provides instructions for installing the Contivity Branch Access management software.

- *Using the Contivity Branch Access Management Software Version 7.20* (part number 313371-A)
Provides an introduction to Contivity Branch Access, instructions for administering the product, and procedures for using software features.
- *Reference for the Contivity Branch Access Command Line Interface Version 7.20* (part number 313372-A)
Provides instructions and CLI commands for remotely accessing the Contivity unit and for administering the unit using out-of-band management.
- *Contivity Branch Access Software and Documentation Version 7.20 CD* (part number 313374-A)
Provides manuals for using and installing the Contivity Branch Access management software and third-party applications. The CD contains the following documents:
 - *Installing the Contivity Branch Access Management Software Version 7.20*
 - *Setting Up the Contivity 100 Unit*
 - *Setting Up the Contivity 400 Unit*
 - *Using the Contivity Branch Access Management Software Version 7.20*
 - *Reference for the Contivity Branch Access Command Line Interface Version 7.20*

You can print selected technical manuals and release notes free, directly from the Internet. Go to the www.nortelnetworks.com/documentation URL. Find the product for which you need documentation. Then locate the specific category and model or version for your hardware or software product. Use Adobe Acrobat Reader to open the manuals and release notes, search for the sections you need, and print them on most standard printers. Go to Adobe Systems at the www.adobe.com URL to download a free copy of the Adobe Acrobat Reader.

You can purchase selected documentation sets, CDs, and technical publications through the Internet at the www1.fatbrain.com/documentation/nortel URL.

How to get help

If you purchased a service contract for your Nortel Networks product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller for assistance.

If you purchased a Nortel Networks service program, contact one of the following Nortel Networks Technical Solutions Centers:

Technical Solutions Center	Telephone
Europe, Middle East, and Africa	(33) (4) 92-966-968
North America	(800) 4NORTEL or (800) 466-7835
Asia Pacific	(61) (2) 9927-8800
China	(800) 810-5000

An Express Routing Code (ERC) is available for many Nortel Networks products and services. When you use an ERC, your call is routed to a technical support person who specializes in supporting that product or service. To locate an ERC for your product or service, go to the www.nortelnetworks.com/servsup URL. Click the Tools menu item and then click Express Routing Codes under the Other heading.

Chapter 1

Introduction

This chapter introduces your Contivity 100 unit and describes package contents, available options for your unit, and any requirements and compatibility issues.



Caution: Before you install your unit, make sure that the power voltage selector switch setting matches your power voltage. For details, refer to [“Setting the power voltage selector switch” on page 34](#).



Warning: To avoid bodily injury from hazardous electrical shock, never open the Contivity 100 unit. There are no user-serviceable components inside.

Contivity 100 package

The Contivity 100 package contains:

- Contivity 100 unit
- *Important Notice for the Contivity Branch Access Version 7.20* (part number 313368-A)
- *Installing the Contivity Branch Access Management Software Version 7.20* (part number 313367-A)
- *Contivity Branch Access Software and Documentation Version 7.20 CD* (part number 313374-A)

For contents, see [“Related publications” on page 21](#).

- Depending on the type of connection you ordered, your Contivity 100 package contains one or more of the following connector cables:
 - RJ-11 cable (phone cord) for a dial-up connection
 - ISDN cable for an Integrated Service Digital Network (ISDN) connection

- RJ-45 straight-through cable (gray) for a 10BASE-T or 100BASE-T Ethernet* connection
- RJ-45 crossover cable (red) for a 10BASE-T or 100BASE-T Ethernet connection

Available options

The Contivity 100 unit is shipped with a seven-port autosensing, autonegotiating 10/100 Ethernet switch on the front of the unit, a full-duplex/half-duplex autonegotiating 10/100 megabits per second (Mb/s) Ethernet connection on the rear of the unit, and one of the following:

- A third Ethernet connection
- Internal single- or dual-analog modem
- Internal ISDN 128K card (with or without NT1) with a Plain Old Telephone Service (POTS) connection

Requirements and compatibility

Your Contivity 100 unit supports the following Internet connection types:

- Dial-up Point-to-Point Protocol (PPP) connection with optional Multilink Protocol (MP) at up to two times V.90
- ISDN connection using synchronous PPP and optional Multilink Protocol (MP) at up to 128 kilobits per second (Kb/s)
- Point-to-Point Protocol over Ethernet (PPPoE) connection using an external Ethernet device to connect to an access concentrator



Note: The speed of dial-up connections can vary internationally. Consult your local distributor for specifications.

Chapter 2

Contivity 100 unit hardware installation

This chapter helps you get to know your Contivity 100 unit, and provides instructions for connecting your unit to your LAN and WAN according to the type of connection you are using, and for mounting your unit on a wall.

Before you install your Contivity 100 unit hardware, make sure that you are familiar with the physical and environmental specifications of the unit. For more information, refer to [Appendix A, “Technical specifications,”](#) on page 71.



Caution: Before you install your unit, make sure that the power voltage selector switch setting matches your power voltage. For more information, see [“Setting the power voltage selector switch”](#) on page 34.



Warning: To avoid bodily injury from hazardous electrical shock, never open the Contivity 100 unit. There are no user-serviceable components inside.

Getting to know your Contivity 100 unit

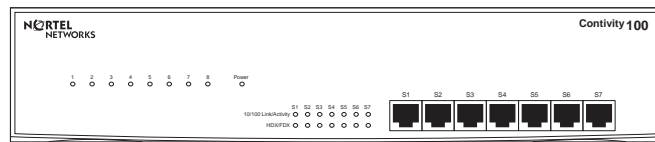
The front panel of your Contivity 100 unit has the following indicators and connections:

- Nine LEDs (labeled 1–8 and Power) indicate various active or error conditions for your unit. For details, refer to [Chapter 5, “LEDs: support and diagnostic functions,”](#) on page 57.

- A seven-port autosensing, autonegotiating Ethernet switch provides a means for connecting to your network and enables you to eliminate an extra Ethernet switch or hub on your LAN. Each port adapts to the correct network speed (10 Mb/s or 100 Mb/s), the duplex mode of the connected device, and the correct MDI status of the cable. For details, refer to [Chapter 3, “Seven-port autosensing Ethernet switch specifications,”](#) on page 47.
- Seven 10/100 Link/Activity LEDs (labeled S1–S7) display port status for the Ethernet switch. For details, refer to [Chapter 5, “LEDs: support and diagnostic functions,”](#) on page 57.
- Seven FDX LEDs (labeled S1–S7) display port mode status for the Ethernet switch. For details, refer to [Chapter 5, “LEDs: support and diagnostic functions,”](#) on page 57.

Figure 1 illustrates the front panel of the unit.

Figure 1 Front panel of the Contivity 100 unit



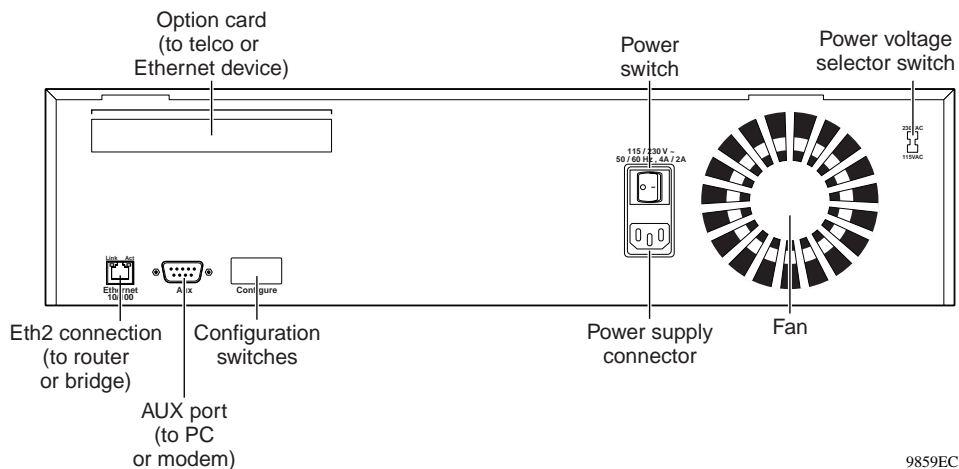
9861EB

The rear panel of the unit contains the following switches and connectors:

- A communications interface (one or two phone jacks, an ISDN jack, or a third Ethernet connection) for connecting to your telephone service company (telco), external Ethernet connection, or ISP
- Second full-duplex/half-duplex autonegotiating Ethernet connection (Eth2) to connect to a router or bridge to support a Demilitarized Zone (DMZ), or to add another network segment
- AUX port to directly connect a PC or modem for out-of-band management (see [Chapter 6, “Out-of-band management support,”](#) on page 61)
- Configuration switches (see [Chapter 4, “Configuration switch settings,”](#) on page 51)
- Power voltage selector switch (115 or 230 VAC)
- Power supply connector and power switch

Figure 2 illustrates the rear panel of the unit.

Figure 2 Rear panel of the Contivity 100 unit



Note: If you have a triple-Ethernet unit, the third Ethernet connection (Eth3) replaces the phone jack or ISDN jack at the top of the unit.



Warning: Your Contivity 100 unit contains a lithium battery. There is a danger of explosion if the battery is replaced incorrectly. The battery should be replaced only by factory authorized personnel.

Interfaces

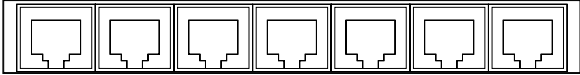
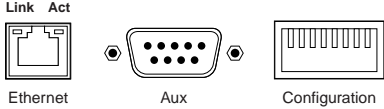
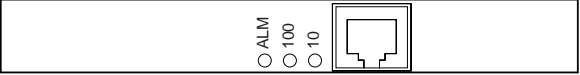
Each unit has an autosensing, autonegotiating seven-port 10/100 Ethernet switch, a full-duplex/half-duplex autonegotiating Ethernet LAN interface, and one of several communications interface cards.



Note: The interface card(s) in your unit may not look exactly like those depicted in the illustrations.

[Table 1](#) describes the Ethernet interfaces available for your Contivity 100 unit.

Table 1 Ethernet interfaces

Interface name	Interface card	Type
Eth1	 <p style="text-align: right;">9865EB</p>	<p>Seven-port Ethernet switch on the front of the unit. Use Eth1 as your LAN connection.</p> <p>More information is available in Chapter 3, “Seven-port autosensing Ethernet switch specifications,” on page 47.</p>
Eth2	 <p style="text-align: right;">9935EC</p>	<p>Standard Ethernet interface on the back of the unit. Use Eth2 as your DMZ connection.</p>
Eth3	 <p style="text-align: right;">9855EB</p>	<p>Optional Ethernet interface card. Use Eth3 as your WAN connection.</p>

[Table 2](#) describes the communications interface cards available for your Contivity 100 unit.

Table 2 Communications interface cards

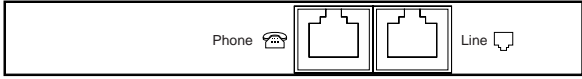
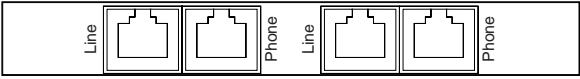
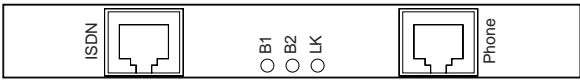
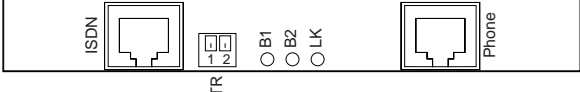
Interface name	Interface card	Type
Analog	 <p style="text-align: right;">9858EB</p>	<p>Analog modem interface card with one RJ-11 connector for the phone (outgoing to modem) and one RJ-11 connector for the telco (incoming from wall jack).</p>
Dual Analog	 <p style="text-align: right;">9857EC</p>	<p>Analog modem interface card with two RJ-11 connectors for phones (outgoing to modem) and two RJ-11 connectors for telcos (incoming from wall jack).</p>

Table 2 Communications interface cards (continued)

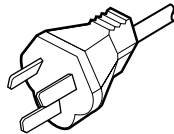
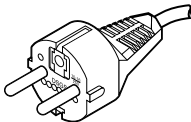
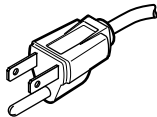
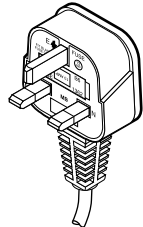
Interface name	Interface card	Type
ISDN U	 <p style="text-align: right;">9856ED</p>	ISDN U interface card (integrated NT1) with one POTS connector and one RJ-45 connector.
ISDN S/T	 <p style="text-align: right;">10047EC</p>	ISDN interface card (no integrated NT1) with one POTS connector and one RJ-45 connector.

Power cords

The AC power receptacle accepts the AC power cord (supplied). For installation outside of North America, make sure that you have the proper power cord for your region. Any cord used must have a CEE-22 standard V female connector on one end and must meet the IEC 320-030 specifications.

Table 3 lists specifications for international power cords.

Table 3 International power cord specifications

Country/Plug description	Specifications	Typical plug
Australia: <ul style="list-style-type: none"> AS3112-1981 Male plug 	240 VAC 50 Hz Single phase	 230FA
Continental Europe: <ul style="list-style-type: none"> CEE7 standard VII male plug Harmonized cord (HAR marking on the outside of the cord jacket to comply with the CENELEC Harmonized Document HD-21) 	220 or 230 VAC 50 Hz Single phase	 228FA
US/Canada/Japan: <ul style="list-style-type: none"> NEMA5-15P male plug UL recognized (UL stamped on cord jacket) CSA certified (CSA label secured to the cord) 	100 or 120 VAC 50–60 Hz Single phase	 227FA
United Kingdom: <ul style="list-style-type: none"> BS1363 male plug with fuse Harmonized cord (HAR marking on the outside of the cord jacket to comply with the CENELEC Harmonized Document HD-21) 	240 VAC 50 Hz Single phase	 229FA

**Caution: Please read immediately.**

Inspect this power cord and determine if it provides the proper plug and is appropriately certified for use with your electrical system. Immediately discard this cord if it is inappropriate for your country's electrical system and obtain the proper cord as required by your national electrical codes or ordinances.

Refer to this product's technical documentation for detailed installation procedures to be followed by qualified service personnel.

**Achtung: Bitte sofort lesen.**

Sehen Sie nach, ob dieses Netzkabel über den richtigen Stecker verfügt und für die Verwendung in Ihrem Stromversorgungsnetz zertifiziert ist. Falls dieses Kabel nicht für das Stromversorgungsnetz in Ihrem Land geeignet ist, darf es nicht verwendet werden. Besorgen Sie sich ein Kabel, das die Vorschriften der Zulassungsbehörden in Ihrem Land erfüllt.

Die technische Dokumentation dieses Produkts enthält ausführliche Installationsanweisungen, die nur von qualifiziertem Kundendienstpersonal ausgeführt werden dürfen.

**Attention: Lisez ceci immédiatement.**

Examinez ce cordon d'alimentation pour déterminer s'il dispose de la fiche appropriée et s'il est bien agréé pour utilisation sur votre installation électrique. Débarrassez-vous en immédiatement s'il ne convient pas à l'utilisation sur le secteur électrique en usage dans votre pays et procurez-vous un cordon conforme à la réglementation nationale en vigueur.

Reportez-vous à la documentation technique de ce produit pour obtenir des instructions détaillées d'installation, destinées à un technicien qualifié.

**Attenzione: Leggere attentamente.**

Controllare questo cavo di alimentazione, verificarne il collegamento con la presa appropriata nonché la certificazione per l'uso nell'impianto elettrico posseduto. Non utilizzare assolutamente in caso tale cavo non sia adatto al sistema elettrico del paese in cui viene utilizzato e richiederne un altro certificato dall'ente nazionale di fornitura elettrica.

Per le procedure di installazione che devono essere seguite dal personale di servizio, consultare questa documentazione tecnica del prodotto.



Precaución: Sírvase leer inmediatamente.

Inspeccione este cable de alimentación eléctrica y determine si viene con el enchufe apropiado y está debidamente certificado para el uso con su sistema eléctrico. Si no cumple con los reglamentos del sistema eléctrico de su país, despójese de este cable de alimentación inmediatamente y obtenga el cable requerido, según las ordenanzas y códigos eléctricos nacionales.

Refiérase a la documentación técnica de este producto para recibir información detallada sobre los procedimientos que el personal calificado de reparaciones deberá seguir.



注意：最初にお読み下さい。

ト電源コードが、ご使用になる電力規格に適したプラグ部で、且つ適正な規格証明がついているかどうかをお確かめ下さい。

ト本電源コードがご使用の電力規格に不適格な場合はただちに使用を中止し、ご使用の国家規格・法令に定められた適切な電源コードをご使用下さい。

ト製品の取付方法につきましては、取扱技術説明書をご覧のうえ資格認定を受けたサービス・スタッフの指示に従って下さい。

Setting the power voltage selector switch

The voltage of the Contivity 100 unit must match the voltage of the power source. If you set the switch to 110 and the voltage that the unit is connecting to is 200 VAC or above, you must return the unit for repair. If you set the switch to 230 and the voltage that the unit is connecting to is 127 VAC or below, the unit may not function properly.

Table 4 shows the voltage selector switch settings for the two voltage ranges.

Table 4 Voltage selector switch settings

Setting	Voltage range
115	For voltages between 100 and 127 VAC
230	For voltages between 200 and 240 VAC

To set the voltage selector switch:

- Use a small instrument with a fine point, such as the tip of a pen or a straightened paper clip, to move the switch to the proper setting (see [Figure 2 on page 29](#)).

Contivity 100 unit hardware installation

These steps guide you through the general process of installing your Contivity 100 unit hardware.

Install your Contivity 100 unit in a ventilated area that is dust free and away from heat vents, warm air exhaust from other equipment, and direct sunlight. Avoid proximity to large electric motors or other electromagnetic equipment. Be sure to choose a location near your router and LAN or WAN hubs and close to an electrical outlet.



Caution: Before you begin installation, make sure that the power voltage selector switch matches your power voltage (see [“Setting the power voltage selector switch” on page 34](#)) and the configuration switch settings are set to normal operation (see [“Switch settings for normal operation” on page 52](#)).



Warning: To avoid bodily injury from hazardous electrical shock, never open the Contivity 100 unit. There are no user-serviceable components inside.

The communications connection is necessary to provide the link between your unit and your Internet service provider (ISP). To ensure a proper communications connection, make sure that you have ordered the appropriate following services:

- Installation from your telco
- Service from your telco
- Internet access service from your ISP

For more information, refer to *Installing the Contivity Branch Access Management Software Version 7.20*.



Note: Do not apply power to the unit until you have completed the installation steps.

You can mount your Contivity 100 unit on a wall or place it on a flat surface. If you choose to place the unit on a flat surface, be sure to install the unit's rubber feet. If the feet are not already installed, stick the adhesive side of the feet on the spaces provided on the bottom of the unit. You *must* use either the mounting brackets or the feet.

To install your Contivity 100 unit hardware:

- 1 Do one of the following:
 - If you want to mount your Contivity 100 unit on a wall, you must do so before you connect it to your LAN. Follow the procedure [“Mounting your Contivity 100 unit on a wall” on page 38](#) and then return to this procedure and continue with step 2.
 - If you do not want to mount your Contivity 100 unit on a wall, place the unit on any appropriately level surface that can safely support the weight of the unit and attached cables. Make sure that there is adequate space around the unit for ventilation and access to cable connectors. Allow at least 2 inches (5.1cm) on each side for proper ventilation and 5 inches (12.7cm) at the back for power cord clearance and ventilation. Continue with step 2.
- 2 With the tip of a pen, slide the power voltage selector switch to the power voltage setting that matches your power voltage. For more information, see [“Setting the power voltage selector switch” on page 34](#).
- 3 Attach one end of the communications cable (analog modem, ISDN, cable modem, or Ethernet connection to a router or bridge) to the appropriate connector on the rear panel of the unit ([Figure 2 on page 29](#)).
 - If you are using an external Ethernet device, use the Ethernet connector in the option slot (Eth3) to connect to the external device. Be sure to use the proper cable (straight-through or crossover) for this connection.



Note: Use the second Ethernet connection (Eth2) to connect a DMZ or to connect two LANs together.

- 4 Attach the other end of the communications cable to the appropriate source (phone jack, ISDN jack, cable modem, or other external device).
- 5 Do one of the following:
 - To use the Contivity 100 unit as your LAN switch, attach up to seven workstations to the seven-port switch (Eth1) on the front panel of the unit.
 - To connect the Contivity 100 unit to your LAN, attach one end of the LAN cable (straight-through or crossover) to one of the ports on the seven-port switch (Eth1) and attach the other end of the cable to your LAN.
- 6 Plug the power cord into the rear panel of the unit.
- 7 Plug the power cord into an AC wall outlet.
- 8 Turn on the unit.

When you turn on your Contivity 100 unit, LEDs 1 through 8 and the Power LED illuminate. LED 2 glows amber when the unit is ready for configuration.



Note: You may have to wait several minutes for LED 2 to glow amber.



Note: If all LEDs glow amber, or none of the LEDs illuminates, check that the power voltage selector switch setting matches your power voltage. For more information, see [“Setting the power voltage selector switch” on page 34](#).

-
- 9 Configure the unit.

For information about configuring your unit, see *Installing the Contivity Branch Access Management Software Version 7.20*.

Mounting your Contivity 100 unit on a wall

You can mount the Contivity 100 unit on any drywall, wood, or cement wall that is at least 0.39 inches (10 mm) thick and is capable of supporting the combined weight of the unit and attached cables (approximately 11 pounds or 5 kg).

A set of brackets, self-tapping (3.5x16) drywall screws, and (3x18) plastic expansion lugs (Figure 3) has been included with the Contivity 100 unit. You will also need a pencil and a Phillips screwdriver, which are not included with the unit.



Caution: The screws and wall composition must be able to withstand the weight of the device, plus the additional weight of the attached network cables and power cords.



Achtung: Schrauben und Wand müssen so beschaffen sein, daß sie dem Gewicht des Geräts, zuzüglich des Gewichts der angeschlossenen Netzwerk- und Netzstromkabel, standhalten können.



Attention: Les vis de fixation et le mur doivent être capables de supporter le poids du dispositif, ainsi que des câbles réseau et cordons qui y sont rattachés.



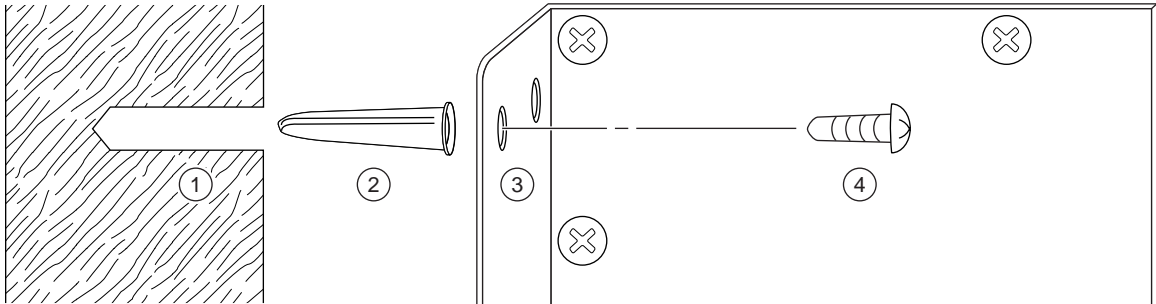
Attenzione: Le viti e la struttura a muro devono essere in grado di sostenere il peso del dispositivo, oltre a quello dei cavi di rete e di alimentazione collegati.



Precaución: Los tornillos y la composición de la pared deben ser capaces de sostener el peso del dispositivo más el peso adicional de los cables de red y cables de alimentación conectados.



注意: ネジや壁の材質がデバイスとこれに接続されているネットワーク・ケーブルおよび電源コードを合わせた重さに耐える必要があります。

Figure 3 Components for mounting the Contivity 100 unit on a wall

10095EA

LEGEND			
1	Hole drilled in the wall	3	Wall mounting bracket
2	Plastic expansion lug	4	Self-tapping drywall screw or #6 wood screw

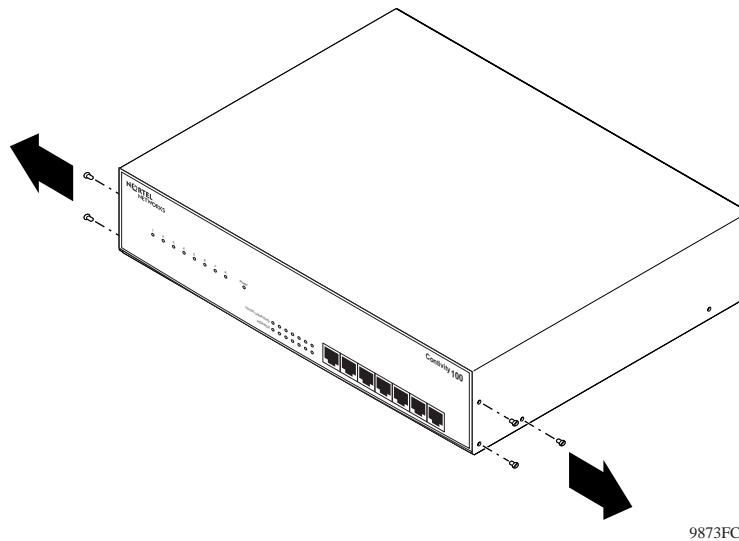
Attaching the brackets to the Contivity 100 unit

Before you begin mounting the unit on a wall, you must attach the brackets to the unit.

To attach the brackets to the Contivity 100 unit:

- 1 Remove the three screws from the cover on each side of your unit as shown in [Figure 4](#).

Figure 4 Removing screws from the cover of the Contivity 100 unit



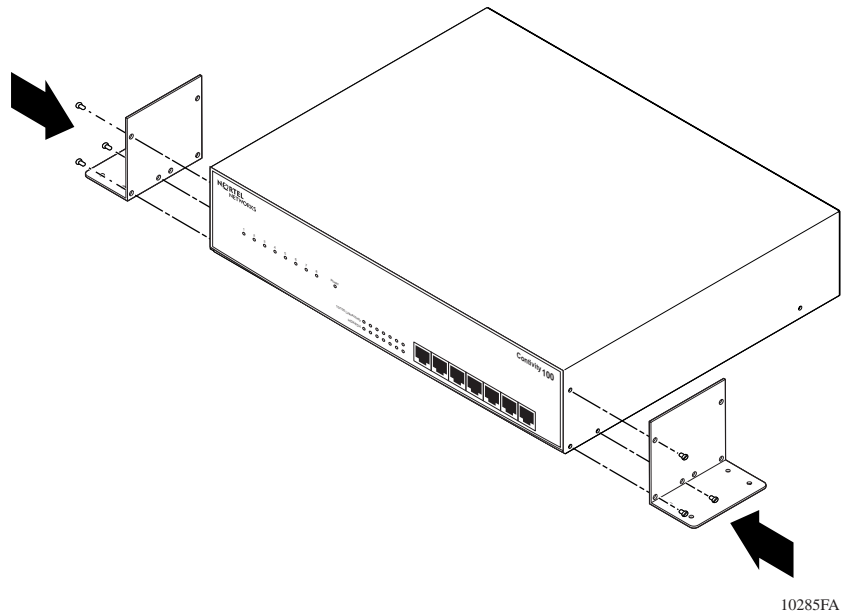
- 2 Attach the mounting brackets to your unit with the screws provided in the wall mount kit included with your unit (Figure 5).



Note: The wall mount kit contains six screws with attached washers and may contain four screws without washers. Use the screws with attached washers to attach the mounting brackets to your unit (three screws on each side). You can discard the four screws without washers.



Warning: To avoid bodily injury from hazardous electrical shock, never open the Contivity 100 unit. There are no user-serviceable components inside.

Figure 5 Attaching the mounting bracket to the Contivity 100 unit

Note: Each mounting bracket is designed to work on either side of the unit. Only three of the six holes in the mounting bracket are used on each side of the unit.

3 Do one of the following:

- To mount the unit on a wood wall, continue with [“Mounting the Contivity 100 unit on a wood wall”](#) next.
- To mount the unit on a drywall or a cement wall, continue with [“Mounting the Contivity 100 unit on a drywall or cement wall”](#) on page 44.

Mounting the Contivity 100 unit on a wood wall

To mount the Contivity 100 unit on a wood wall, you need a #6 wood screw (not included) that is long enough to penetrate the wood by at least 1/2-inch.

Mounting the unit on a wood wall is a two-part process. You will:

- 1 Prepare the wood wall for mounting.
- 2 Mount the unit on the wall.



Note: Before you mount the unit on a wall, you must attach the brackets to the unit. See [“Attaching the brackets to the Contivity 100 unit” on page 39.](#)

Preparing a wood wall for mounting

To prepare a wood wall for mounting, you will use a pencil to mark where the brackets should be placed on the wall. Marking the wall makes mounting easier because you limit the amount of time necessary to maneuver with the weight of the unit in your hands and you ensure the accuracy of where the holes are placed.

To mark where the brackets should be placed on the wall:

- 1 Place your unit with attached brackets against the wall where you want to mount the unit.
- 2 Use a pencil to mark where the holes should be placed in the wall for each bracket.

After you mark the wall, you can mount the unit on the wall (next).

Mounting the Contivity 100 unit on a wood wall

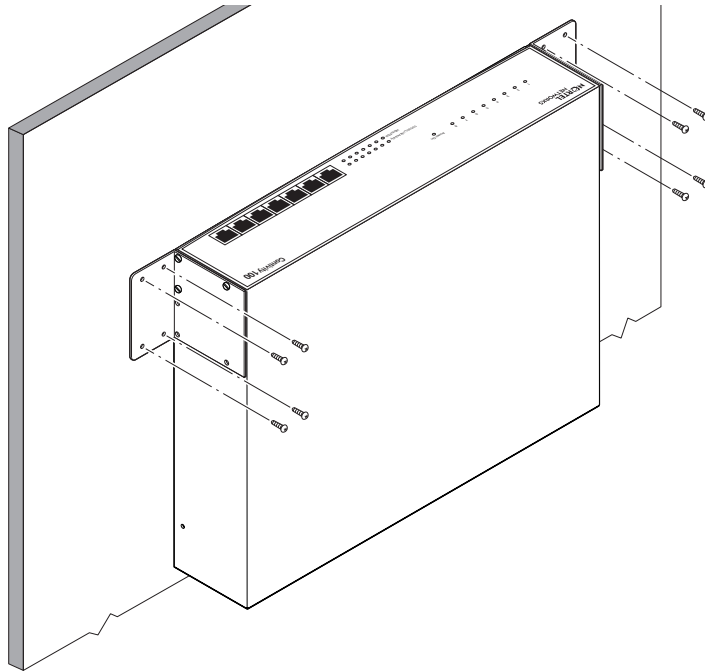
You will attach one bracket at a time to the wall.

To mount the Contivity 100 unit on a prepared wood wall:

- 1 Align the holes in the attached bracket with the marks on the wall.

- 2 Insert each of the four screws through the holes in the bracket and into the wood wall (Figure 6). Use only wood screws.

Figure 6 Mounting the Contivity 100 unit on the wall



9864FC

- 3 Screw in the screws.
- 4 Repeat steps 1–3 to attach the other mounting bracket to the wall.

Mounting the Contivity 100 unit on a drywall or cement wall

To mount the Contivity 100 unit on a drywall or cement wall, you need a drill and a 1/4-inch drill bit (not included).

Mounting the unit on a drywall or cement wall, is a two-part process. You will:

- 1 Prepare a drywall or cement wall for mounting.

2 Mount the unit on the wall.



Note: Before you mount the unit on a wall, you must attach the brackets to the unit. See [“Attaching the brackets to the Contivity 100 unit” on page 39.](#)

Preparing a drywall or a cement wall for mounting

To prepare a drywall or cement wall for mounting, you will use a pencil to mark where the brackets should be placed on the wall. Marking the wall makes mounting easier because you limit the amount of time necessary to maneuver with the weight of the unit in your hands and you ensure the accuracy of where the holes are placed.

To prepare a drywall or a cement wall for mounting:

- 1** Place your unit with attached brackets against the wall where you want to mount the unit.
- 2** Use a pencil to mark where the holes should be drilled in the wall for each bracket.
- 3** Remove your unit from against the wall.
- 4** Use a drill and a 1/4-inch (0.63~0.65 mm) drill bit to drill four 1 1/16-inch (27.0 mm) deep holes where you marked the wall for each bracket (eight holes total).
- 5** Insert each of the plastic expansion lugs into the drilled holes.

After you prepare a drywall or a cement wall for mounting, you can mount the unit on the wall (next).

Mounting the Contivity 100 unit on a drywall or cement wall

You will attach one bracket at a time to the wall.

To mount the Contivity 100 unit on a prepared drywall or cement wall:

- 1** Align the holes in the attached bracket with the expansion lugs in the wall.

- 2** Insert each of the four screws through the holes in the bracket and into the expansion lugs ([Figure 3](#) and [Figure 6](#)).
- 3** Screw in the screws.
- 4** Repeat steps [1-3](#) to attach the other mounting bracket to the wall.

Chapter 3

Seven-port autosensing Ethernet switch specifications

The chapter lists the key features of the seven-port autosensing 10/100 Ethernet switch and explains the components of the Ethernet switch in detail.

Contivity unit 10/100 Ethernet switch overview

The seven-port 10/100 Ethernet switch on the front of the Contivity 100 unit has seven 10/100 autosensing ports. Each port automatically senses and adapts to the operating environment, regardless of the type of cable (straight-through or crossover) plugged into the port, or whether the device at the other end of the cable is an Ethernet card, such as in a PC, or another hub or Ethernet switch.

The seven-port Ethernet switch is designed to provide flexibility in configuring your network connections. You can use the Ethernet switch to:

- Add hardware to your LAN.
- Network several computers together.
- Connect your Contivity 100 unit without purchasing additional hardware.
- Replace your existing 10BASE-T or 100BASE-T hub to save space.

Ethernet switch features

The Contivity 100 unit seven-port 10/100 Ethernet switch offers:

- Seven RJ-45 10BASE-T/100BASE-T autosensing Ethernet ports with autonegotiation capability. The eighth port is used internally to connect to the internal Ethernet controller.
- Comprehensive 10/100 Link/Activity LEDs indicating link and activity status.
- Full-duplex (FDX) and half-duplex (HDX) mode support with one indicator LED per port.
- MDI (uplink or crossover)/MDI-X (normal or straight-through) autosensing capability.
- Store-and-forward switching architecture.
- 1 MB buffer memory.

When you plug an Ethernet cable into a port, the Ethernet switch:

- Autosenses the transmission speed (10 Mb/s or 100 Mb/s) of the connected device.
- Autonegotiates with the connected device to operate in full- or half-duplex mode. If the connected device is operating in half-duplex mode only, or does not have the capability to participate in the autonegotiation process, the port defaults to half-duplex mode.
- Autosenses whether the cable is MDI or MDI-X.

RJ-45 10BASE-T/100BASE-TX Ethernet ports

The RJ-45 10BASE-T/100BASE-TX Ethernet ports connect the Ethernet switch to network devices using standard unshielded twisted pair (UTP) cable. The Ethernet switch does not support shielded twisted-pair (STP) cable. Each port adapts to the correct network speed of 10 Mb/s or 100 Mb/s through autonegotiation with the network interface card (NIC), hub, or other Ethernet switch connected to the unit.

MDI/MDI-X autosensing capability

When you plug an Ethernet cable into a port, the Ethernet switch autosenses whether the cable is MDI (uplink or crossover) or MDI-X (normal or straight-through). This feature enables you to connect the Contivity 100 unit to another Ethernet connection regardless of whether you are using a straight-through cable or a crossover cable.



Note: Observe standard networking guidelines when you use the Ethernet switch to install or connect a unit to additional devices.

LEDs

The LEDs on the Contivity 100 unit's Ethernet switch provide information about the performance and status of the Ethernet switch including link activity, data transmission speed, and duplex mode.

For more information on LEDs, refer to [Chapter 5, “LEDs: support and diagnostic functions,”](#) on page 57.

Chapter 4

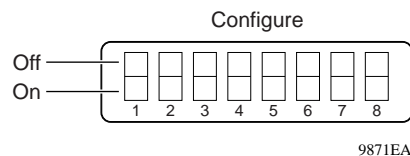
Configuration switch settings

This chapter describes the configuration switch settings for your Contivity 100 unit, including those for normal operation, for setting the AUX port connection speed, and for resetting your unit's passwords and configuration settings.

Configuration switches

Configuration switches enable you to configure your Contivity 100 unit for a particular type of operation. There are eight Configuration switches on the rear panel of your unit (Figure 7). The switches are labeled left to right from 1 to 8.

Figure 7 Configuration switches on the rear panel of the unit



The switches have two possible positions: on and off. For the Contivity 100 unit, the off position is up and the on position is down. Use a small instrument with a fine point, such as the tip of a pen or a straightened paper clip, to move the switches to the proper position. Labels on the unit indicate whether a switch is on or off, and the specific switch pattern indicates a specific configuration item.

Switch settings for normal operation

Leave all switches *off* for normal operation, as shown in [Table 5](#).

Table 5 Switch settings for normal operation

	1	2	3	4	5	6	7	8
OFF	•	•	•	•	•	•	•	•
ON								

Switch settings for the AUX port speed

When you set all switches to off for normal operation, the unit's AUX port speed is set to 115200 baud. If you want to use out-of-band management to configure your unit, but the connected device or terminal emulation software (for example, AniTa Terminal Emulator) you are using does not support the default AUX port connection speed of 115200 baud, you can use the configuration switches to set the connection speed to 9600 baud. For information on using out-of-band management to configure your unit, refer to [Chapter 6, “Out-of-band management support.”](#)

[Table 6](#) shows the switch settings for configuring the AUX port connection speed to 9600 baud.

Table 6 Switch settings for setting the AUX port speed to 9600 baud

	1	2	3	4	5	6	7	8
OFF	•	N/A	N/A		N/A	N/A	N/A	N/A
ON		N/A	N/A	•	N/A	N/A	N/A	N/A

Switch settings for special configurations

During the power-up sequence, your Contivity 100 unit checks the settings of the switches. You can use the switches on your unit to:

- Reset the passwords (Table 7), which is useful if you forget the unit's password.
- Reset the passwords and other user-defined system configurations (Table 8).
- Disable the switch settings for resetting the passwords and user-defined configurations (Table 9).
- Reset the original default factory settings (Table 10).

Table 7 shows the switch settings for resetting your unit's passwords.

Table 7 Switch settings for resetting the passwords

	1	2	3	4	5	6	7	8
OFF				•		•		•
ON	•	•	•		•		•	

Table 8 shows the switch settings for resetting your unit's passwords as well as some user-defined configurations.

Table 8 Switch settings for resetting the passwords and user-defined configurations

	1	2	3	4	5	6	7	8
OFF				•			•	•
ON	•	•	•		•	•		



Caution: If you use these switch settings to reset your unit, the following user-defined settings are removed or reset: passwords, hosts, port mappings, and unit configuration.

[Table 9](#) shows the switch settings to disable the switch settings for resetting the passwords and user-defined configurations.

Table 9 Switch settings to disable switch settings for resetting the passwords and user-defined configurations

	1	2	3	4	5	6	7	8
OFF			•					•
ON	•	•		•	•	•	•	

[Table 10](#) shows the switch settings for resetting your unit to factory default conditions.

Table 10 Switch settings for resetting factory default conditions

	1	2	3	4	5	6	7	8
OFF				•				•
ON	•	•	•		•	•	•	



Caution: If you use these switch settings to reset your unit to factory default conditions, the following user-defined settings are removed or reset: passwords, hosts, port mappings, unit configuration, access restrictions, Web site list, cookie control settings, unit registration, and encryption authorization.



Caution: If you purchased and installed the *3DES Encryption Module* (part number DM0010001), you need to reinstall it.



Caution: If you used the switch settings in [Table 9](#) to disable the switch settings for resetting the passwords and user-defined configurations, these settings are re-enabled.

Resetting your Contivity 100 unit

Before you reset your Contivity 100 unit, be sure to back up the configuration so that you can easily restore it. For details, refer to *Using the Contivity Branch Access Management Software Version 7.20*.

To reset your Contivity 100 unit:

- 1 Turn off your unit.
- 2 Record the current switch settings of your unit.
- 3 Set the switches to the configuration you want.

Refer to “[Switch settings for special configurations](#)” on page 53.

- 4 Turn on your unit.

The LEDs on the front of your unit flash and then glow steadily amber, including the Power LED, when they completely match the sequence for the selected switch settings.



Note: You may have to wait several minutes for the new settings to take effect and for the LEDs to glow amber.



Note: If you have already used the switch settings in [Table 9](#) to disable the switch settings for resetting the passwords and user-defined configurations, and you try to reset the passwords ([Table 7](#)) or reset the passwords and user-defined configurations ([Table 8](#)), the Power LED glows amber and LEDs 1–8 flash red in the sequence of the selected switch settings.

-
- 5 Turn off your unit.
 - 6 Reset the switches using the information recorded in step 2.
Refer to [Table 5 on page 52](#) or [Table 6 on page 52](#).
 - 7 Turn on your unit and then do one of the following:
 - If you reset the passwords ([Table 7](#)) or disabled the switch settings for resetting the passwords and user-defined configurations ([Table 9](#)), you are finished with this procedure.

- If you reset the passwords and user-defined configurations (Table 8) or reset the unit to factory defaults (Table 10), LED 2 glows amber when the unit is ready for configuration. Continue with step 8.



Note: You may have to wait several minutes for LED 2 to glow amber.

8 Configure your unit.

For details, refer to *Installing the Contivity Branch Access Management Software Version 7.20*.

Chapter 5

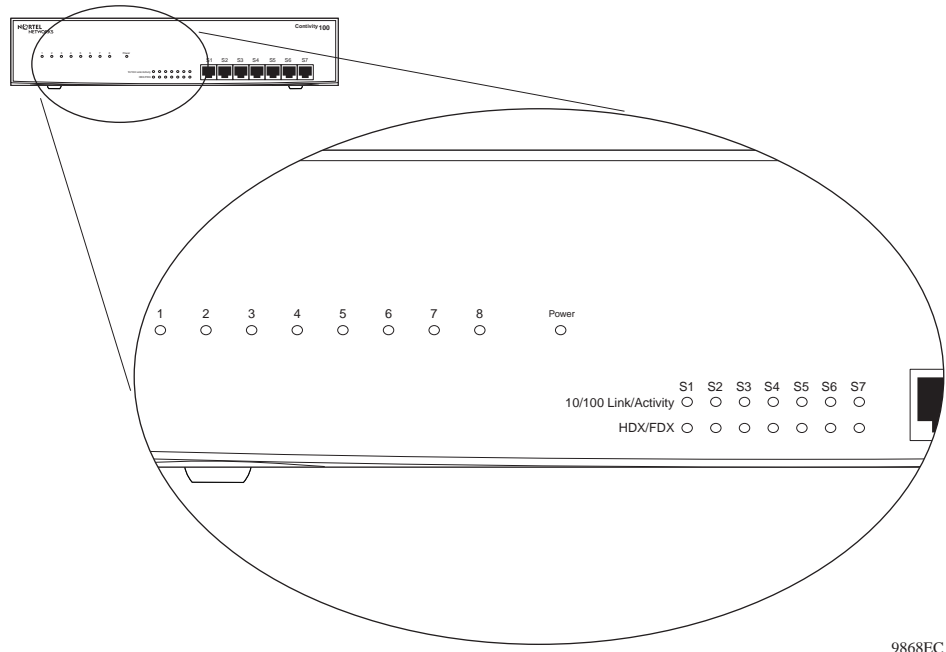
LEDs: support and diagnostic functions

This chapter describes the LEDs on your Contivity 100 unit and how you can use them to interpret activity on your unit.

Interpreting Contivity 100 unit LEDs

The front panel of the Contivity 100 unit has two sets of LEDs, the eight LEDs on the left indicate failures and operational status of the unit. The Power LED is always lit when your unit is turned on. The 14 LEDs (at the bottom, center of the unit) display status and settings for the seven-port Ethernet switch.

[Figure 8](#) illustrates the LEDs on the front of the Contivity 100 unit.

Figure 8 Contivity 100 unit LEDs

9868EC

LEDs 1 through 8 and Power LED at power-up sequence

If a failure occurs during the power-up sequence, the Power LED glows amber, and one or more of LEDs 1 through 8 glow red. This sequence indicates a hardware problem. Call the Nortel Networks Technical Solutions Center ([page 23](#)) for assistance.

If all LEDs glow amber, or none of the LEDs illuminates, check that the power voltage selector switch setting matches your power voltage. For more information, see [“Setting the power voltage selector switch” on page 34](#).



Caution: During normal operation, the Power LED glows green, except when updating the internal flash memory. While updating the flash memory, the Power LED glows amber. This amber LED indicates that it is not safe to turn off the unit without potentially damaging the contents of flash memory.

LEDs 1 through 8 and the Power LED during operation

After the power-up sequence is complete, the LEDs indicate status and activity during operation as shown in [Table 11](#).

Table 11 LED status and appearance during operation

LED #	Color	Appearance	Meaning
Power	Green	Solid	Unit has electrical power and is turned on.
Power	Green and Amber	Solid Green and Flashing Amber	Unit is updating flash memory. DO NOT TURN THE UNIT OFF until the Power LED returns to green.
1-8	Amber	Solid	Power voltage selector switch is set to 230 but the power cord is plugged into a 110 voltage plug.
1	Green	Blinking	Unit is operating normally.
2	Green	Solid	Unit is ready to service clients.
2	Green and Amber	Solid Green and Flashing Amber	Unit is communicating with clients.
2	Amber	Solid	Unit is ready to be configured, but cannot service clients (normally occurs before unit has been configured).
3-8	Green	Solid	Indicated interface (see Note below) is online.
3-8	Green	Flashing	Indicated interface (see Note below) is dialing or attempting connection.
3-8	Green and Amber	Solid Green and Flashing Amber	Traffic is on the indicated interface.
3-8	Red	Solid	Indicated interface (see Note below) has failed.



Note: The “indicated interface” is the interface associated with the LED’s number. This information is available in the main dialog box of the Setup program. For more information, refer to *Using the Contivity Branch Access Management Software Version 7.20*.

Using the seven-port autosensing Ethernet switch LEDs for troubleshooting

The seven-port autosensing Ethernet switch has two LEDs for each port on the Ethernet switch. The top row of these LEDs displays speed, link, and activity. The bottom row of LEDs displays whether the unit is operating in full- or half-duplex mode.

Use the LED display to help you identify the type of problem with the Ethernet switch and then verify that:

- The Ethernet switch is powered on.
- Each cable and port connection has the correct pin assignment and that no connectors are loose.
- The Link/Activity LED glows for each port used.

If the Link LED is not on, do the following:

- Verify that the device connected to the Ethernet switch has a properly functioning power supply.
- Try using a different port on the Ethernet switch to connect the device.
- Try using a different port on the device connected to the Ethernet switch.

[Table 12](#) describes the LEDs that monitor the seven-port Ethernet switch.

Table 12 Ethernet switch port status LEDs

Label	Color	Activity	Meaning
10/100 Link/Activity	Green	Solid	Port is connected at 100 Mb/s.
10/100 Link/Activity	Amber	Solid	Port is connected at 10 Mb/s.
10/100 Link/Activity	Green	Blinking	100 Mb/s activity is occurring on the port.
10/100 Link/Activity	Amber	Blinking	10 Mb/s activity is occurring on the port.
FDX	Green	Solid	Port is operating in full-duplex mode.
FDX	Off	Off	Port is operating in half-duplex mode.

Chapter 6

Out-of-band management support

This chapter describes how to set up your Contivity 100 unit for out-of-band management. This feature enables you to configure your unit without installing the unit on a network or loading the Contivity Branch Access management software.

After you connect a dumb terminal or a smart terminal (for example, a PC, a Macintosh*, or a UNIX* workstation) and terminal emulation software (for example, AniTa Terminal Emulator*, HyperTerminal*, or ProComm Plus*) to the unit's AUX port, you can use CLI commands to configure the unit. For details, refer to *Reference for the Contivity Branch Access Command Line Interface Version 7.20*.

You can use out-of-band management any time, including for initial configuration, troubleshooting, or daily management of the unit. This chapter describes how to use a 32-bit Windows* operating system and the HyperTerminal terminal emulation software to:

- Connect directly to your unit with a dumb or smart terminal for out-of-band management. For details, refer to [“Configuring the Contivity 100 unit through a direct connection,”](#) next. You must supply a null modem cable (also referred to as a PC-to-PC file transfer cable) to connect a terminal to your unit.
- Configure an external modem to be used with a dial-up dumb or smart terminal for out-of-band management. For details, refer to [“Configuring the Contivity 100 unit through a dial-up connection” on page 66](#). You must supply a DB-9 serial cable to connect a dial-up modem to your unit.

These procedures assume that you have installed and turned on the unit and it is operating properly (no LEDs are glowing red). For more information on installing the Contivity 100 unit hardware refer to [Chapter 2, “Contivity 100 unit hardware installation,” on page 27](#). For more information on the required connection cables, refer to [Appendix B, “Adapter cable pinout diagrams,” on page 73](#).

Configuring the Contivity 100 unit through a direct connection

To configure the Contivity 100 unit through a direct connection to a dumb or smart terminal using the out-of-band management feature, you must:

- 1 Use the Configuration switches on the back of the Contivity 100 unit to set the unit's AUX port connection speed (115200 baud or 9600 baud) to match the terminal's connection speed.



Note: The Contivity 100 unit's AUX port supports connection speeds of both 115200 baud (default) and 9600 baud. Some dumb terminal devices or terminal emulation software (for example, AniTa Terminal Emulator), do not support the 115200 baud rate. In this case, you must set the unit's AUX port connection speed to 9600 baud. For details, refer to [“Switch settings for the AUX port speed”](#) on page 52.

- 2 Connect the unit to the terminal.
- 3 Use terminal emulation software to configure and establish a connection.

Connecting the Contivity 100 unit directly to a terminal

This procedure provides instructions for connecting the Contivity 100 unit to a dumb terminal or smart terminal (for example, a PC, a Macintosh, or a UNIX workstation).



Note: If the unit is unconfigured, LED 2 glows amber when the unit is ready for configuration. You may have to wait several minutes for LED 2 to glow amber. If the unit is configured and operating properly, LED 2 glows green.

To connect the Contivity 100 unit to a terminal:

- 1 Plug one end of the null modem cable into the AUX port on the rear of the unit.
- 2 Plug the other end of the cable into the serial port on the terminal.

You can now use the terminal to configure your unit using the command line interface. For details, refer to *Reference for the Contivity Branch Access Command Line Interface Version 7.20*.

Configuring terminal emulation software for a direct connection

Regardless of the terminal emulation environment you use, you must:

- Set the flow control to hardware (RTS/CTS) in the terminal emulation software.
- Connect the unit's AUX port to an available COM port on the terminal.

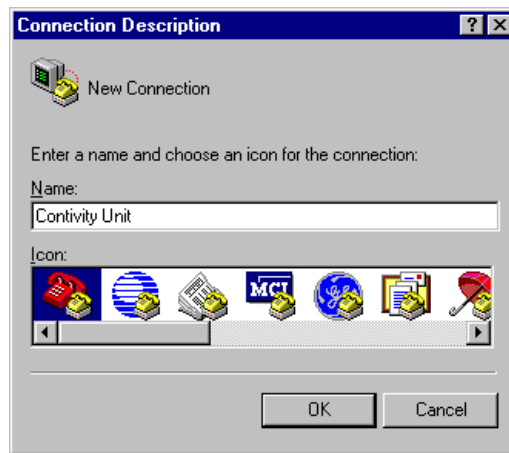
This procedure provides instructions for configuring the HyperTerminal terminal emulation software on a PC using a connection speed of 115200 baud and the COM1 port.



Caution: If you are configuring the unit, wait for LED 2 to glow amber before you proceed. You may have to wait several minutes for LED 2 to glow amber.

To create a HyperTerminal PC connection profile:

- 1 Start the HyperTerminal software.
The Connection Description dialog box opens ([Figure 9](#)).

Figure 9 HyperTerminal Connection Description dialog box

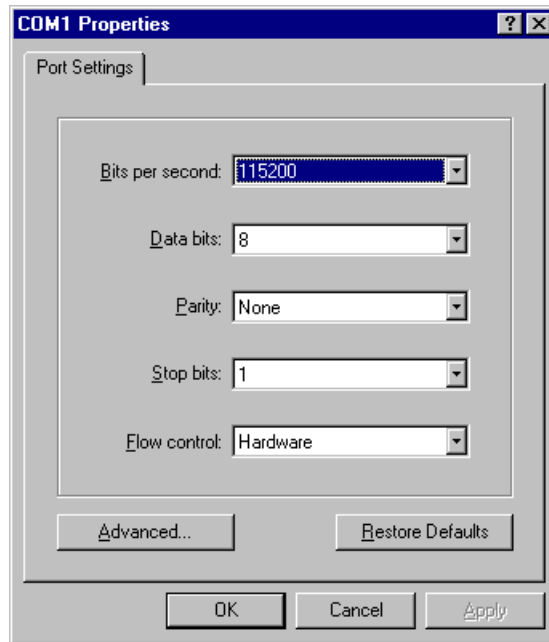
- 2 In the Name box, enter a name for the connection.
- 3 In the Icon area, select an icon for the connection.
- 4 Click OK.

The Connect To dialog box opens (Figure 10).

Figure 10 HyperTerminal Connect To dialog box

- 5 From the Connect using list, select the PC's COM port that is connected to the unit (in this example, COM1), and then click OK.

The COM1 Properties dialog box opens (Figure 11).

Figure 11 HyperTerminal COM1 Properties dialog box

- 6 From the Bits per second list, select 115200 to set the connection speed, and then click OK.



Note: The connection speed should match the unit's AUX port connection speed. If you are using terminal emulation software that does not support 115200 baud, select 9600 baud.

HyperTerminal establishes a connection to the unit. If your unit is password protected, the session begins by requesting a password. Enter the password for the unit and then press [Enter].

If you enter an incorrect password, the message “Incorrect Login” is displayed and you are prompted to enter a correct password. You are given two more chances before the Contivity 100 unit ends the session and disconnects you.

When you successfully log on, the command prompt is displayed (Figure 12) and you can begin using CLI commands to configure the unit. For details, refer to *Reference for the Contivity Branch Access Command Line Interface Version 7.20*.

Figure 12 Command prompt

```
Instant Internet(tm) version 7.20  
Copyright (c) 1995-2001 Nortel Networks Corporation  
ii#
```

Configuring the Contivity 100 unit through a dial-up connection

To configure the Contivity 100 unit through a dial-up connection using the out-of-band management feature, you must:

- 1 Use the Configuration switches on the back of the Contivity 100 unit to set the unit's AUX port connection speed to 9600 baud. For details, refer to [“Switch settings for the AUX port speed” on page 52](#).
- 2 Connect the modem to a terminal.
- 3 Use terminal emulation software to configure the modem connection settings.



Note: If you know that your modem and terminal emulation software support 115200 baud, you do not have to change the unit's AUX port speed to 9600 baud (step 1). You can connect at 115200 baud.

- 4 Connect the modem to your unit.

Connecting a modem to a PC

For this procedure, you do not need to load the modem drivers on the PC.



Note: You can also connect a dumb terminal to a modem in a similar manner.

To connect a modem to a PC:

- 1 Connect the modem's power cord to the modem and the power outlet, as described in the modem's installation instructions.
- 2 Plug one end of the DB9 serial cable into the modem.

- 3 Plug the other end of the cable into the serial (COM) port on the PC.
- 4 Turn on the modem.

Configuring modem connection settings

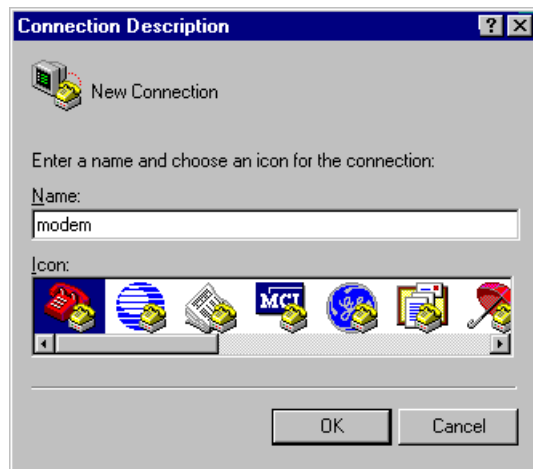
To configure modem connection settings, you must set the modem to answer on the first ring (auto-answer) with the command string: `ats0=1&w`. Some modems enable you to configure the modem to auto-answer using DIP switch settings. Refer to your modem's documentation for instructions.

This procedure provides instructions for configuring modem connection settings using the HyperTerminal terminal emulation software on a PC using a modem speed of 9600 baud and the COM1 port.

To configure modem connection settings using HyperTerminal:

- 1 Start the HyperTerminal software.
The Connection Description dialog box opens (Figure 13).

Figure 13 HyperTerminal Connection Description dialog box



- 2 In the Name box, enter a name for the connection.
- 3 In the Icon area, select an icon for the connection.
- 4 Click OK.

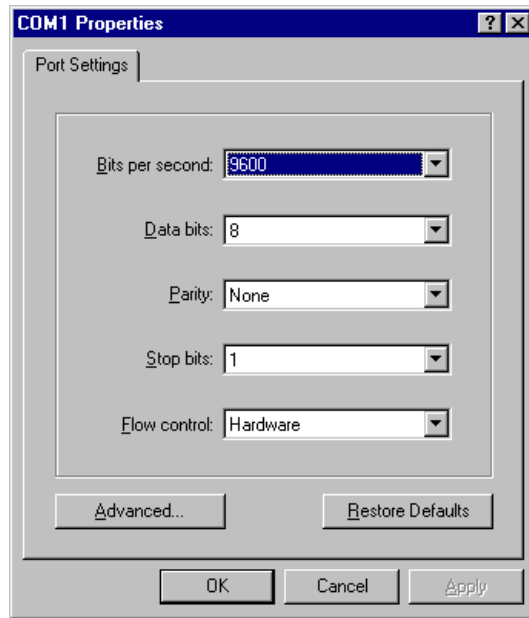
The Connect To dialog box opens (Figure 14).

Figure 14 HyperTerminal Connect To dialog box



- 5 From the Connect using list, select the PC's COM port that is connected to the modem (in this example, COM1), and then click OK.

The COM1 Properties dialog box opens (Figure 15).

Figure 15 HyperTerminal COM1 Properties dialog box

- 6 From the Bits per second list, select 9600 to set the modem speed, and then click OK.



Note: The connection speed must match the unit's AUX port connection speed. If you are using a modem and terminal emulation software that supports 115200 baud, select 115200 baud.

HyperTerminal establishes a connection to the modem and the cursor is positioned in the main HyperTerminal dialog box.

- 7 Enter:

ats0=1&w

This command instructs the modem to answer on the first ring and saves the settings to the modem. Some modems respond with “OK” or a similar message when the settings are saved to the modem.

- 8 Disconnect the modem from the PC.

Connecting a modem to the Contivity 100 unit

Before you connect the modem to the Contivity 100 unit, you must turn off the unit.



Note: Before you continue with this procedure, be sure that you have properly configured the modem connection settings. For details, refer [“Configuring modem connection settings” on page 67](#).

To connect a dial-up modem to the Contivity 100 unit:

- 1 Turn off the unit.
- 2 Plug one end of the DB9 serial cable into the AUX port on the rear of the unit.
- 3 Plug the other end of the cable into the modem.
- 4 Plug one end of the telephone cord into the modem and the other end into the wall phone jack.
- 5 Turn on the modem.
- 6 Turn on the unit.



Note: If you are configuring the unit, wait for LED 2 to glow amber. You may have to wait several minutes for LED 2 to glow amber.

Connecting to a Contivity 100 unit

To connect to the Contivity 100 unit:

- ➔ Dial the telephone number of the modem attached to the unit.

After you establish a connection, you can begin using CLI commands to configure the unit. For details, refer to *Reference for the Contivity Branch Access Command Line Interface Version 7.20*.

Appendix A

Technical specifications

This appendix describes the physical and environmental specifications for your Contivity 100 unit.

Physical specifications

The Contivity 100 unit is 12 inches wide by 14.39 inches deep by 2.64 inches high and weighs 8.8 pounds.

Electrical specifications

- Input voltage: 100-127Vac or 200-240Vac
- Input current: 4A or 2A
- Frequency: 50/60 Hz
- Power consumption: 85 watts maximum
- Safety agency approvals: UL cUL Listed, TUV Rheinland Japan, TUV Rheinland Argentina S.A., NOM

Environmental specifications

The operating and nonoperating environment for the Contivity 100 unit is as follows:

- Operating temperature: 0° to 40° C maximum
- Nonoperating temperature: -25° to 70° C maximum
- Operating humidity:
 - 8% minimum to 80% maximum
 - Relative humidity: noncondensing
- Nonoperating humidity
 - 5% minimum to 80% maximum
 - Relative humidity: noncondensing
- Operating altitude: 8,000 feet (2,438 meters) maximum
- Nonoperating altitude: 30,000 feet (9,144 meters) maximum
- Acoustic noise: 53dBA at 3 feet

Appendix B

Adapter cable pinout diagrams

This appendix describes the pinout settings for the modem (DB-9 serial) and null modem adapter cables.

Remote access adapter cables

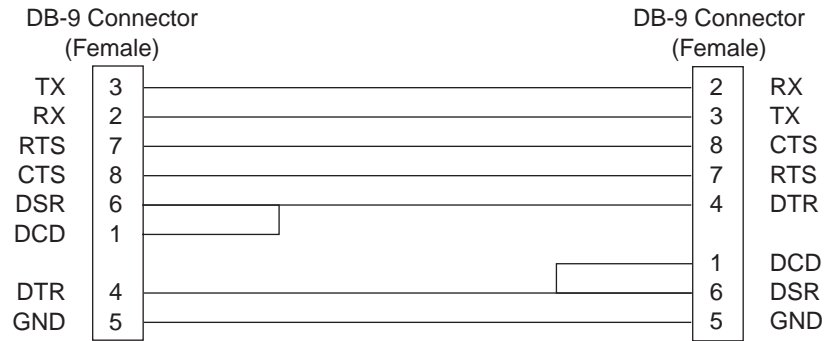
If you want to connect a PC or dial-up modem directly to your Contivity 100 unit to configure the unit using CLI commands (out-of-band management), you must provide the connection cable. These are standard cables. You can have a cable made according to the pinout diagrams in this appendix or you can purchase the cable from a computer supply store.

For information on configuring your unit remotely, refer to *Reference for the Contivity Branch Access Command Line Interface Version 7.20*.

Null modem adapter (PC-to-PC) cable

[Figure 16](#) shows the pinout settings for a null modem adapter cable (also referred to as a PC-to-PC file transfer cable). This serial cable must have two DB-9 female connectors.

Use a null modem cable to connect a PC to the unit's AUXport for out-of-band management.

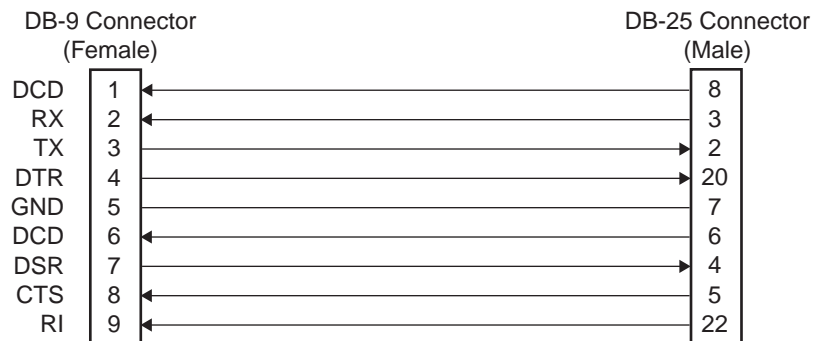
Figure 16 Null modem adapter cable pinout diagram

9959EA

Modem adapter cable

Figure 17 shows the pinout settings for a modem adapter cable. This serial cable must have a DB-9 female connector and a DB-25 male connector.

Use a modem cable to connect a dial-up modem to the unit's AUX port for out-of-band management.

Figure 17 Modem adapter cable pinout diagram

9958EA

Index

Numbers

3DES Encryption Module 54

A

acronyms 20

analog modem 26

AniTa Terminal Emulator 61

AUX port

connection speed 52

modem adapter cable 74

null modem cable 73

out-of-band management 61

C

cable

100BASE-T Ethernet connection 26

10BASE-T Ethernet connection 26

crossover 49

DB-9 serial 61

dial-up connection 25

gray 26

ISDN connection 25

MDI 49

MDI-X 49

modem 74

null modem 61, 73

PC-to-PC file transfer 61, 73

pinout diagrams 73

red 26

remote access 73

RJ-11 connection 25

RJ-45 connection 26

straight-through 49

uplink 49

configuration

out-of-band management 61

terminal emulation software 61

Configuration switch settings

AUX port connection speed 52

disabling 54

normal operation 52

position 51

resetting passwords 53

resetting to factory default conditions 54

resetting user-defined configurations 53

special configurations 53

connection

dial-up 26

DMZ 30

ISDN 26

PPPoE 26

customer support 23

D

DB-9 serial cable 61

Demilitarized Zone (DMZ) 28

DIP switch. See Configuration switch

DMZ connection 30, 37

dumb terminal 61

E

Eth1

Ethernet switch 30, 37

LAN connection 30, 37

Eth2

- built in 28
- DMZ connection 30, 37

Eth3 29

- external modem connection 37
- WAN connection 30

Ethernet connection

- 100BASE-T 26
- 10BASE-T 26

Ethernet switch

- features 48
- function 47
- LAN connection 37
- LEDs 60
- troubleshooting 60

F

- factory default conditions, resetting 54
- flash memory 58
- full-duplex (FDX) LED 48, 60

H

- half-duplex (HDX) LED 48, 60

HyperTerminal

- connection profile, modem 67
- connection profile, PC 63
- out-of-band management 61

I

ISDN connection

- configuration option 26
- Multilink Protocol 26
- NT1 26
- synchronous PPP 26

L

LEDs

- about 57
- activity 59
- after power-up sequence 59
- Ethernet switch 60
- full-duplex (FDX) 48, 60
- half-duplex (HDX) 48, 60
- interpreting 57
- Link/Activity 48, 60
- normal operation 59
- power-up sequence 58
- red 55, 58
- status 59
- troubleshooting 60

M

- MDI 49
- MDI-X 49
- modem cable 74
- modem, analog 26
- Multilink Protocol (MP) 26

N

- NT1 31
- null modem cable 61, 73

O

- out-of-band management
 - cables 73
 - dial-up connection 66
 - direct connection 62

P

- package contents 25
- password
 - incorrect 65
 - providing 65
 - resetting 53
- PC-to-PC file transfer cable 61, 73
- phone cord 25
- Point-to-Point Protocol (PPP) 26
- Point-to-Point Protocol over Ethernet (PPPoE) 26
- power cord warnings (multilingual) 33
- Power LED 58
- power switch 28
- power voltage selector switch, setting 34
- ProComm Plus 61
- product support 23
- publications
 - hard copy 22
 - related 21

R

- RJ-11 connector 30
- RJ-45 connector 31

S

- smart terminal 61
- support, Nortel Networks 23

T

- technical publications 22
- technical specifications 71
- technical support 23
- terminal emulation software 61
 - AniTa Terminal Emulator 61
 - COM1 port 63
 - connection speed 62, 66
 - HyperTerminal 61
 - modem command string 67
 - ProComm Plus 61

U

- unit, resetting 55
- user-defined configurations, resetting 53

V

- voltage 34

W

- wall mounting 38

