T O T A L   C O N T R O L ™

NETServer Card

Version 3.5

MAINTENANCE RELEASE NOTES

U.S. Robotics Access Corp.
Limited Warranty

Terms of the Limited Warranty

Your U.S. Robotics® product is covered by a Limited Warranty. U.S. Robotics warrants that the product that you have purchased from U.S. Robotics or from a U.S. Robotics authorized reseller is free from defects in materials or workmanship during the Limited Warranty period, identified in the chart below, which is effective on the date of purchase.

During the Limited Warranty period, U.S. Robotics will repair or replace the product with the same or a similar model, which may be a remanufactured unit, at U.S. Robotics option, without charge for either parts or labor. Replacement parts assume the remaining warranty of the parts they replace. This Limited Warranty extends only to the original purchaser and is non-transferable.

The chart below identifies the terms of the factory repair/replacement warranty, as well as software/firmware updates and telephone support services included with the U.S. Robotics Limited Warranty.

	Free Telephone Support	**Free Software/Firmware Updates**	**Hardware Support**
LANLinker Product Family	For 90 days, effective upon purchase	For 90 days, effective upon purchase	1 year Factory Repair/Replacement
Total Control **Product Family**	For 90 days, effective upon purchase	For 90 days, effective upon purchase	2 years Factory Repair/Replacement
TOTALswitch **Product Family**	For 90 days, effective upon purchase	For 90 days, effective upon purchase	3 years Factory Repair/Replacement
Allegra*, Modem Pool and NETServer Product Families	For 90 days, effective upon purchase	For 90 days, effective upon purchase	2 years Factory Repair/Replacement
Allegra*, Courier and DataBurst **Product Families**	For 90 days, effective upon purchase	For 90 days, effective upon purchase	5 years Factory Repair/Replacement

*   The Allegra T1 for Windows NT®, Allegra T1 for NetWare®, Allegra PRI for Windows NT and Allegra PRI for NetWare are covered under a 2-year warranty. All other Allegra products carry a 5-year warranty.

What Is NOT Covered
By the Limited Warranty

Items not covered by the Limited Warranty include, but are not limited to, the following:

- Product installation support

- A product purchased from anyone other than U.S. Robotics or a U.S. Robotics authorized reseller

- Routine cleaning, or normal cosmetic and mechanical wear

- A product that is modified, tampered with, misused or subjected to abnormal working conditions, including, but not limited to, lightning and water damage

- Damage from repair or replacement of warranteed parts by anyone other than U.S. Robotics or a U.S. Robotics authorized service provider

THIS LIMITED WARRANTY DOES NOT GUARANTEE YOU UNINTERRUPTED SERVICE. REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS LIMITED WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANT OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. U.S. ROBOTICS SHALL IN NO EVENT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES OF ANY KIND OR CHARACTER, INCLUDING, WITHOUT LIMITATION, LOSS OF REVENUE OR PROFITS, FAILURE TO REALIZE SAVINGS OR OTHER BENEFITS, LOSS OF DATA OR USE, DAMAGE TO EQUIPMENT AND CLAIMS AGAINST THE PURCHASER BY ANY THIRD PERSON, EVEN IF U.S. ROBOTICS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Jurisdiction Laws

This Limited Warranty gives you specific legal rights. You may have others, which vary from jurisdiction to jurisdiction. Some jurisdictions do not allow limitations on duration of an implied warranty, or the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you.

How To Access
Your Warranty Services

Telephone Support

Warranty

<u>For 90 days, effective upon product purchase</u>, you will have access to our technical support analysts. To obtain telephone support under the conditions of this Limited Warranty, call the appropriate U.S. Robotics number.

North America	**Europe, Middle East, Africa**	**All Other Locations**
1-800-231-8770 (toll free)	353-1-205-7700	1-847-797-6600
Monday - Friday	Monday - Friday	Monday - Friday
7. a.m. - 8 p.m.	9 a.m. - 7 p.m.	7 a.m. - 8 p.m.
Central Standard Time	Central European Time	Central Standard Time

What Information Should I Have Ready Before Calling For Support?

To enable U.S. Robotics to respond to your inquiry as efficiently and effectively as possible, please have available as much of the following general and product-specific information as possible before calling for support.

General Information

√　　　Serial number and part number
　　　　(both are contained within the barcode affixed to the unit)
√　　　Product model name and number
√　　　Detailed, specific questions

Product-Specific Information

√　　　Applicable error messages
√　　　Add-on boards or hardware
√　　　Third-party hardware or software
√　　　Operating system type and revision level

Telephone Support Options

Customers who require telephone support beyond 90 days from the purchase date will be referred to a U.S. Robotics sales representative to establish a service contract, if desired.

Software/Firmware Updates

Warranty

For 90 days, effective upon product purchase, you will have access to U.S. Robotics' Systems Software/Firmware Updates from the U.S. Robotics' Network Systems Division web site: *http://totalservice.usr.com*

Software/Firmware Update Options

Customers who require Software/Firmware updates beyond 90 days from the purchase date will be referred to a U.S. Robotics sales representative to establish a service contract, if desired.

Hardware Support

Warranty

During the applicable Limited Warranty period, if U.S. Robotics determines your product requires servicing, you will be given a Service Repair Order (SRO) number to help us track your Limited Warranty request. Once you have received your SRO number, mail the product, postage prepaid and insured, to the below-listed shipping address. Please make sure your SRO number is clearly visible on the outside of the package and be sure to pack your unit securely.

Call the appropriate U.S. Robotics number, listed below, for Hardware Support of your product.

North America	Europe, Middle East, Africa	All Other Locations
1-800-231-8770 (toll free)	353-1-205-7700	1-847-797-6600
Monday - Friday	Monday - Friday	Monday - Friday
7. a.m. - 8 p.m.	9 a.m. - 7 p.m.	7 a.m. - 8 p.m.
Central Standard Time	Central European Time	Central Standard Time

Shipping Checklist - Did You Include:
√   Your Name
√   Your Company's Name
√   Return Shipping Address
√   A Contact Telephone Number
√   Serial Number and Part Number (both are contained within the barcode attached to the unit)
√   Brief Problem Description

Shipping Address

North America and Locations Outside of Europe, Middle East, Africa	Europe, Middle East, Africa
U.S. Robotics	U.S. Robotics Services, Ltd.
ATTN: SRO Receiving	ATTN: RMA Department
1800 W. Central Rd.	5 Richview Office Park
Mt. Prospect, IL 60056-2293	Clonskeagh, Dublin 14
SRO#	Ireland

Hardware Support Options

Customers who require out-of-warranty hardware support will be referred to a U.S. Robotics sales representative to establish a service contract, if desired.

Table of Contents

What's New in Version 3.5

NETServer 3.5 is a software-only upgrade that provides user enhancements and corrects various product issues. This document describe new features and provides compatibility information for version 3.5. They are intended to help those who are already familiar with NETServers and NETServer configurations learn to use the new features quickly and easily.

Features in this document are:

- Hardware/Memory Requirements for NETServer 3.5
- Compatibility Information
- Updated Software Download Method
- Filtering SAP Messages on Inbound Data
- Dynamically Configuring DLCIs on Subdevices
- Enhanced IP Routing
- Show ARP and IPXARP Commands
- Adding Filters to a Specific Subdevice
- Disabling Multilink PPP
- Assigning Multiple IP Address Pools
- Configuration Order for PAP/CHAP Authentication
- Enhancements to the NETserver's Traceroute Command Response
- RADIUS Accounting Authentication Check
- v.110 Auto-Detect Command

Hardware Requirements to Support Version 3.5

This software will operate on either the Gateway Card (GWC) or Enhanced Packet Bus (EPB) GWC. The Ethernet version of NETServer version 3.5 requires a minimum of 8 MB of RAM to operate on either the GWC or EPB GWC. It should be noted that the x.75 and Customer Controlled Access (CCA) features require a minimum of 16 MB RAM to operate.

Listed below are the current Network Interface Card (NIC)/Network Application Card (NAC) combination for this version, along with some specifications.

> **NOTE**: All of the NETServer 3.5 software auto-detects and runs on EPB GWC or GWC NACs. Some previously released NACs were shipped with 4 MB RAM on board. For these NACs, you **must** upgrade by adding SIMMs to increase the memory.
>
> Customer Controlled Access (CCA) is **not** supported in this product release.
>
> Point-to-Point Tunneling Protocol (PPTP), which was not supported in version 3.4 is now supported in this release.

Compatibility Information

NETServer ISDN/V.34 Enet/FR 3.5

Previous Shipping Number	3.4.23
Release Version	3.5.34
NICs	Combo high-speed Enet/Frame Relay
NAC Type and Amount of RAM	EPB GWC with 16 MB RAM on board
NAC Product ID	Software downloads to 18,26,44, and 45. They must have a minimum of 8 MB RAM.

> **NOTE**: This unit is shipped with the EPB Gateway Card and a MUNICH daughter card. It can be used without the daughter card, but will not be able to offer ISDN service.

Updated Software Download Method

NETServer 3.5 software utilizes a new method of performing software downloads to the Network Application Card (NAC). The software diskette shipped with your product contains three files; a NAC file, an SDL file, and a copy of PCSDL.exe, which is the executable download command file.

There are three methods of performing a software download (SDL). They are:

1 Perform the SDL through NETServer Manager software

2 Perform the SDL through Total Control Manager software

3 Perform the SDL through NETServer's Console Port

The SDL procedure for the first two options has not changed. Follow the instructions within their respective documentation as before.

To perform an SDL through the Console Port

Before starting the DOS SDL operation, we recommend that you unload any terminate-and-stay-resident (TSR) programs running on the PC. TSRs slow down Software Download.

Commands are not case sensitive. Leave one space after each command line parameter. The *d* command is optional, the rest are required.

SDL Command Syntax

The following sample shows the SDL command syntax; the table that follows explains each parameter. Note that **n.n.n** represents the version number of the software and **xx** represents the filename prefix.

pcsdl -p1 -r38400 -vsdn.n.n -vnan.n.n -nsdxx -nnaxx -dc:\usr_sdl <Enter>

Parameter	Purpose
pcsdl	initiates the PC SDL program
-p	selects communication port on the PC cabled to the card (required); possible ports are 1 or 2
-r	selects serial port rate (required); possible rates are 9600, 19200, 38400, 57600 bps (T1 Card rates are 2400, 9600, 19200, 38400)
-vsd	software download file version .sdl number (required)
-vna	software operation code version .nac number (required)
-nsd	specifies the .sdl filename prefix (required)
-nna	specifies the .nac filename prefix (required)
-d	specifies the directory path name (optional); should be followed by the directory name where the operation and SDL software is stored, if other than the default (C:\USR_SDL\)

NOTE: If an operator enters an invalid parameter or an insufficient number of required parameters, the pcsdl program displays a help screen specifying the correct command syntax. You may also display this screen by typing **pcsdl** -**h**.

Filename Prefixes

To construct the SDL command syntax, you must know the filenames of the software loaded into the C:\USR_SDL directory. Filename prefixes specify both the type of .SDL file (software download utility) and .NAC file (operational code) to use in the download. In most cases, this means using the same prefix for both parameters. There are some exceptions to this rule (see the single and dual T1 prefixes listed below).

The following table lists all currently defined prefixes used with the -nsd and -nna parameters. These prefixes may change for future versions of NAC software.

SDL Prefix	NAC Prefix	Card
NM	NM	Network Management Card
QF	QF	Quad V.34 Modem (Analog, Digital, Analog/Digital)
QM	QM	Quad V.32 *bis* Digital Modem
QT	QT	Quad V.32 *terbo* Modem (Analog, Digital, Analog/Digital)
QR	QR	Single Sided Quad Modem
T1	ST	Single T1 Card
T1	T1	Dual T1 Card
CT	CT	Channelized T1 Card
EN	EN	Ethernet TCP/IP Gateway Card
TR	TR	Token Ring TCP/IP Gateway Card
XP	XP	X.25 PAD Gateway Card
TR	LE	NETServer Ethernet Card
TR	LT	NETServer Token Ring Card
TR	LF	NETServer Frame Relay Card
PM	PM	MP/16 Management Module
PF	PF	MP/16 V.34 Modem Module
DP	DP	T1 Primary Rate ISDN Card
LI	LI	NETServer ISDN Card
EP	EP	E1 Primary Rate ISDN Card

EXAMPLE: The table below shows how to extract the information from the filename:

Filename	Prefix	Version #	File Type
nm010003.nac	nm (NMC)	1.0.3 (01 00 03)	NAC
nm010001.sdl	nm (NMC)	1.0.1 (01 00 01)	SDL

The **pcsdl** command line for these files, assuming that the PC is using COM 2 as the serial port, the NMC NAC is configured for 57600 bps and the upgrade files are located in the C:\USR_SDL directory, would look like this:

> **pcsdl -p2 -r57600 -vsd1.0.1 -vna1.0.3-nsdnm-nnanm -dc:\usr_sdl <Enter>**

Entering SDL Mode

Once the SDL program begins, the PC sends a special AT sequence to the NAC. The NAC's operational code always monitors for this sequence, and when it is detected, the NAC enters SDL mode. Control is then transferred to the Loader.

While in SDL mode, the NAC's Run/Fail LED blinks green.

> **NOTE**: Each time the NAC powers up, it performs a CRC check of its operational code. If this CRC check fails, the NAC enters a mode where it constantly waits for a software download. If no NIC is installed behind a NAC, the Run/Fail LED flashes red and green.

Once the NAC enters SDL mode, no other application code can run. The NAC becomes entirely devoted to performing the SDL.

The PC SDL program first verifies the initialization and operation software, then begins the download. As the program executes, the messages shown in Figure 1 are displayed.

```
C:\USR_SDL>pcsdl -p2 -r57600 -vsd3.2.0 -vne4.1.0 -txdnm -tmenm

Verifying Initialization Program File:    100%  /
Verifying Operation Program File:    100%  /
Establishing Communication . . . . . . . . . . . . . . . . . . . .
Downloading Initialization Program:    100%  /
Initiating Software Download . . . . . . . . . . . .
Downloading Operation Program:    69%
Erasing Flash ROM . . . . .
Programming Flash ROM . . . . . . . . . . . . . .
Downloading Operation Program:    100%  /
Programming Flash ROM . . . . . . . . .
Checking Downloaded Program CRC . . . . . . . . . . . . . . . . . . . . .
Software Download Successful !
```

Figure 1.   Software Download Messages

Filtering SAP Messages on Inbound Data

NETServer 3.5 allows you to place SAP rules into input packet filters which enables you to receive incoming SAP information from a non-NETServer router. An example of how this works is shown below:

1 permit server FORD

When applied to an input filter, this filter rule would permit SAP FORD and deny everything else coming in.

Dynamic Addition/Removal of DLCIs on Subdevices

Data Link Control Identifiers (DLCIs) can be configured dynamically by using the commands shown below which eliminates the chance of a user being denied service while an administrator is adding or deleting a subdevice DLCI.

To add a DLCI dynamically use the command:

add dlci sdvnnn *<dlci list>*

To delete a DLCI dynamically use the command:

del dlci sdvnnn *<dlci list>*

The *<dlci list>* format is:

dlci*[:network address]*

The network address is the IP address of the peer for IP networks. For IPX networks, it is the peer's MAC address.

The Enhanced IP Routing Command

A new command has been added to NETServer 3.5 that allows for host-based routing from a subdevice to a Customer Premises Equipment (CPE) router. When turned on, this command enables NETServer to send the complete 32-bit IP address to the CPE device. This option can be used by entering the following command:

set enh_routing *<on | off>*   Off is the default setting.

The Show ARP and IPXARP Commands

Two new commands have been added to NETServer 3.5 that allow you to view the Address Resolution Protocol (ARP) for both IP and IPX subdevices:

show arp sdv*<x>*

show ipxarp sdv*<x>*

Where *<x>* is the number that was dynamically assigned to the subdevice when it was created.

Adding Filters to a Specific Subdevice

Both input and output filters can be added for a specific subdevice using the following commands:

>**set subdev sdv**<x> **ifilter "**<Filter Name>**"**

>**set subdev sdv**<x> **ofilter "**<Filter Name>**"**

Where <x> is the number that was dynamically assigned to the subdevice when it was created (make sure that the filter name appears in quotes).

Examples:

Sample input filter for a subdevice using IP rules:

>**1 permit 197.22.150.29/24 0.0.0.0/0**

This input filter would allow 197.22.150.29/24 packets to go everywhere.

Sample filter for a subdevice using IPX rules:

>**1 permit srcnet eq 000ccaa1**

>**2 permit srcnet eq 00000101**

This IPX filter would permit IPX RIP packets equal to 000ccaa1 and 00000101 and deny all other RIP packets.

Disabling Multilink PPP

A command has been added to NETServer 3.5 which allows you to disable, or turn off, Multilink PPP (MP). When issued, this command will not allow any MP sessions. The command is:

>**set mp** <on | off>   the default is on

Assigning Multiple PPP IP Address Pools

Multiple IP address pools can now exist on a single NETServer. The number of these pools are only limited to available RAM and available FLASH memory. A currently shipping NETServer EPB with 16 MB RAM on-board should easily accommodate dozens of these pools.

Adding IP Address Pools

To add an IP address pool into your NETServer, issue the following commands:

add ippool *<IP address pool name> <starting IP address> <# of addresses in pool>*

Where:

<IP address pool name>	The name identifying the actual pool up to eight alphanumeric characters.
<starting IP address>	The starting IP address for the pool in dotted decimal notation.
<# of addresses in pool>	The number of sequenced IP addresses to be included within the address pool (1 - 512).

Example: **add ippool pooltwo 197.22.150.47 212**

Editing IP Address Pool Information

After an IP address pool has been created, you can view all the assigned pools and edit both the starting address and the number of addresses contained within the pool. Instructions to do this are shown below.

Viewing Assigned IP Address Pools

To view all assigned IP address pools on the NETServer, issue the following command:

show ippool

Changing the Starting Address for an Assigned IP Address Pool

To change the beginning IP address for a specified address pool, issue the following command:

set ippool *<IP address pool name>* **baseadrs** *<new starting IP address>*

Changing the Number of Addresses in an Assigned IP Address Pool

To change the number of addresses available to a specified address pool, issue the following command:

set ippool *<IP address pool name>* **length** *<new # of addresses in pool>*

Deleting an IP Address Pool

To delete a previously assigned IP address pool, issue the following command:

delete ippool *<IP address pool name>*

Assigning a Local User to a Specific Address Pool

To assign a local user to a specified IP address pool, issue the following command:

set netuser *<username>* **ippool** *<IP address pool name>*

> **NOTE**: For RADIUS authenticated users, the RADIUS reply message can specify which pool the user should use by using the **Framed_IP_Address_Pool_Name** attribute, attribute number 217. The RADIUS Hint Assigned feature, explained in your *NETServer Card 3.3 Command Reference*, only applies to the default address pool assigned through that feature. The "Hint IP address" cannot be obtained from one of the assigned IP address pools.

PAP/CHAP Authentication Order of Configuration

Earlier versions of NETServer allowed for both PAP and CHAP authentication techniques, but they followed the PAP-before-CHAP attempt only. To fully comply with the IETF's RFC on PPP (see http://www.ds.internic.net for more information), a command has been added to allow you to attempt a CHAP authentication first. The command to do this is:

set chapfst *<on | off>*   The default setting is off.

Traceroute Command Response

Earlier versions of NETServer software would not send out an ICMP "time exceeded" message if the message that caused the timeout, from other routers and hosts, was itself an ICMP message. This has been corrected in this software release.

RADIUS Accounting Authentication Check

A command used to enable/disable the setting of RADIUS' MD5 authentication vector in an accounting message. You can view the current setting of this vector by using the **show global** command. In some RADIUS applications, the setting of this vector can cause the RADIUS accounting server to fail. To turn this feature on or off, issue the following command:

set acct_authchck *<on | off>*   The default setting is off.

V.110 Auto-Detect Command

NETServer 3.5.34 adds a new command to eliminate a problem when connecting to the Adtran XRT. This new command adds a new configuration flag to the NETServer to allow you to turn off V.110 auto-detect. By default, V.110 auto-detect is on.

To turn off v.110 auto-detect use the following command:

> **set isdng v.110_auto off**

To turn on V.110 auto-detect use the following command:

> **set isdng v.110_auto on**

To view the current status of v.110 auto-detect use the command:

> **show isdng**

Even though v.110 auto-detect is turned off, there are two ways that v.110 calls can be answered:

1 If the call setup message contains an LLCIE indicating V.110.

2 If you create an ISDN callmap and dedicate a particular number to V.110 calls. This requires that you have multiple numbers assigned to your PRI line.

Deficiencies Closed in 3.5.34

2151   Static routes Disappear from the routing table
2157   Netserver PRI Autodetect problem with V.120 on Adtran TA's
2088   Routing table showing duplicate routes
???   CCP compatibility issues with ISDN terminal adapters and routers

Open Deficiencies in 3.5.34

2150   MLPPP intermittently fails on very busy ISDN only chassis
2151   Static routes Disappear from the routing table
2125   V.120 latency issues with ping response times
2180   NETserver will lose ethernet connectivity (Ascend calls in with CCP Stac) Set "set ccp all"
2206   Netdata V.120 calls terminated on Munich daughterboard with 40+ calls may drop

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