Perle 833IS Remote Access Server

Cisco Cross Reference Guide

This document covers features up to version 7.0 of the firmware.

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Conventions Used in This Document

username *name* **{nopassword | password** *encryption_type password***}**
callback-dialstring *phone number* **callback-rotary** *group*

Bold	Represents keywords. Keywords are the integral parts of the command. A keyword can be absent if that portion of the command is not used or does not need to be changed. The first keyword must always be present as it defines the rest of the command. In the above example, **username** must be present but the keywords **password, callback-dialstring,** and **callback-rotary** can all be absent.
Italic	Represents the parameters of the command. The parameter must be entered if the corresponding keyword is present. For example, if using the keyword **callback-dialstring**, the parameter *phone number* must be entered.
{…}	Represents optional portions of the command
|	Represents a choice of command options. Only one of the options shown can be selected. In the above example, choose either **nopassword** or **password** *encryption_type password.*

Server Defaults

Commands that are marked as defaults do not need to be issued from the command line when configuring the server. Any exceptions to this rule are noted in the text. The default commands must be used when changing a parameter back to its default value however.

1.0 Tool Bar Commands

Configuration • Get Configuration

show running-config	(Displays the running configuration)
show startup-config	(Displays the startup configuration)

Configuration • Download Configuration

copy running-config startup-config

Configuration • Reset server

reload

Configure • Set Date and Time

clock set *hh:mm:ss month day year*

hh:mm:ss – current time
month - month in the format January, February, March, etc.
year – year in the format yyyy between 1970-2037

Configure • Lock Front Panel

no _frontpanel lock	(clears front panel lock)
_frontpanel lock	(sets front panel lock)

Configure • Download Firmware

copy tftp: flash:	(copies firmware stored on the TFTP server to system flash)
boot system flash *firmware_file*	(boot using the firmware file specified)
reload	(reboot)

Configure • Set to Factory Mode

boot system flash (boot using the factory firmware)
reload (reset unit)

Statistics • Get Statistics

show ? (Select system operational and interface statistics)

Event Log • Get Event Log

show logging

Event Log • Change Log Filter

logging buffered *log_type*

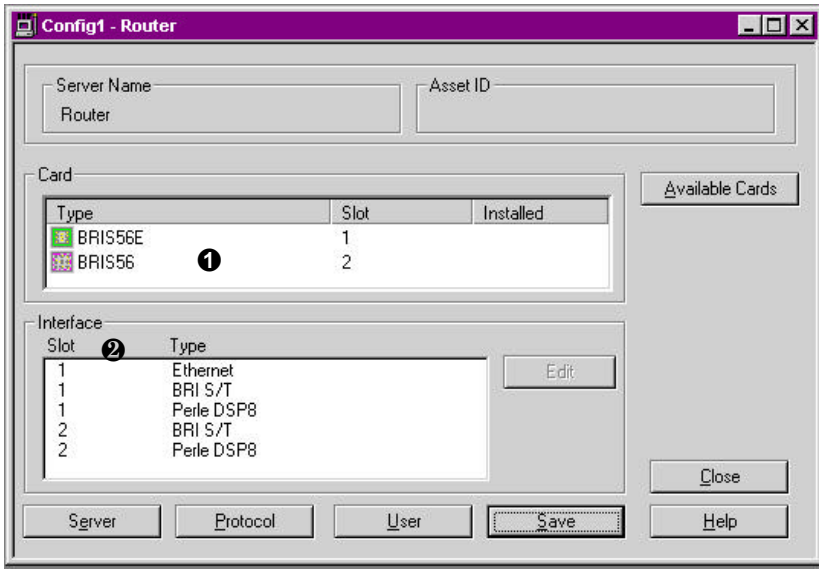
log_type – Type of data to log; valid values are
emergencies
alerts
critical
errors
warnings
notifications
information (default)
debugging

Event Log • Clear Event Log

clear logging

2.0 Card Configuration

2.1 Main Screen



Item	Mode	Command
❶ ❷	Global	configuration

❶ **_cardtype** *slot card_type* (Configure slot with given card type)

slot - slot is either 0 or 1
card_type – name of the card (BRIS56E, BRIU56E, etc.)

❷ **interface** *interface-type interface-number* (Enter interface config mode)

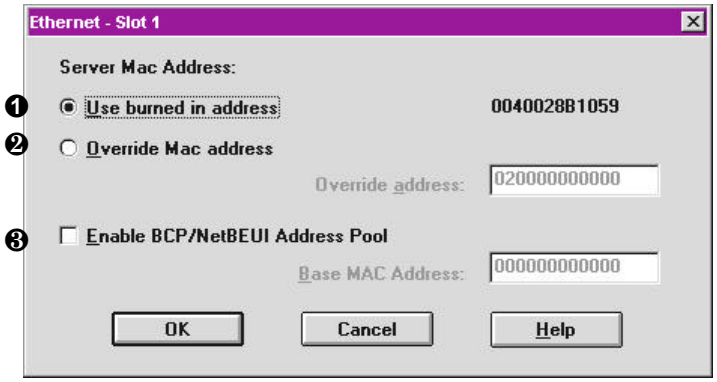
interface FastEthernet 0 (Configure the ethernet interface)
interface Token Ring 0 (Configure the token interface)
interface bri *interface_number* (Configure BRI interface)

interface_number – 0-7 (BRI ports on the server)

line {tty} *starting_modem {ending_modem}* (Configure the modems)

starting_modem – 1-16 representing each modem line installed
ending_modem – if used, the last modem in the range. If omitted, only the *starting_modem* is modified.

2.2 Ethernet Interface Configuration



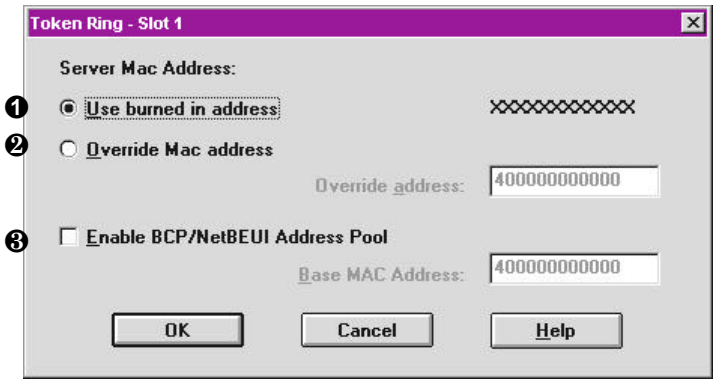
Item	Mode	Command
❶	Global	configuration
❷ ❸	Interface	interface ethernet 0

❶ **no mac-address** (Use burned-in MAC address [default])

❷ **mac-address** *override_addr* (Change the MAC address)

❸ **_bcp-netbeui local-pool** *base_mac_addr*

2.3 Token Ring Interface Configuration



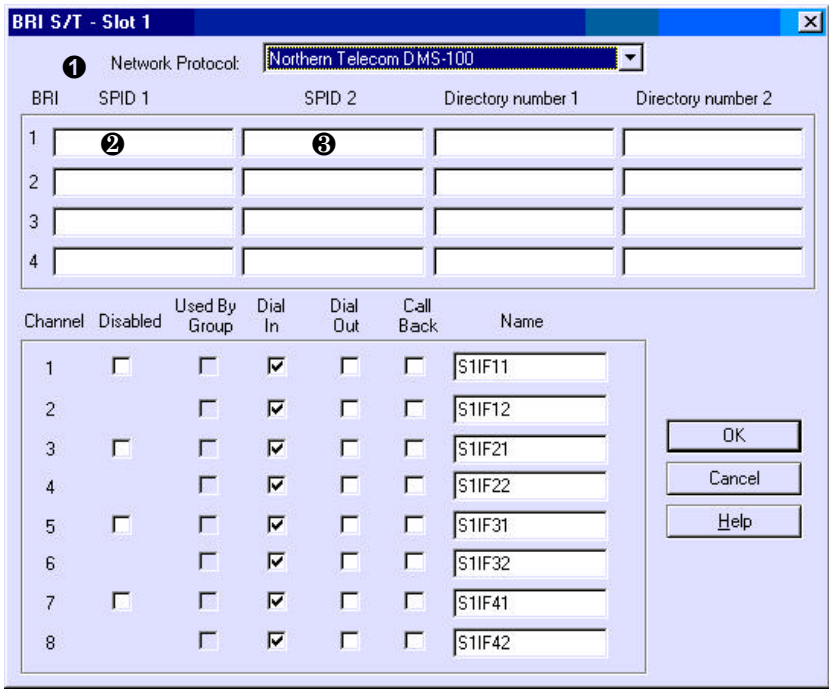
Item	Mode	Command
❶	Global	configuration
❷ ❸	Interface	interface tokenring 0

❶ **no mac-address** (Use burned-in MAC address [default])

❷ **mac-address** *override_addr* (Change the MAC address)

❸ **_bcp-netbeui local-pool** *base_mac_addr*

2.4 BRI U Interface Configuration



Item	Mode	Command
❶ ❷ ❸	Interface	interface bri *port* (*port* = 0-3 for system card; 4-7 for expansion card)

❶ **isdn switch-type** *switch_type*

switch_type	Basic-5ess	AT&T
	Basic-dms100	NT DMS-100
	Basic-ni	National ISDN

Note that this command automatically applies to all ports on the same card.

❷ **no isdn spid1** (Disable or change to null the SPID1 field)
isdn spid1 *spid* (Configure SPID1)

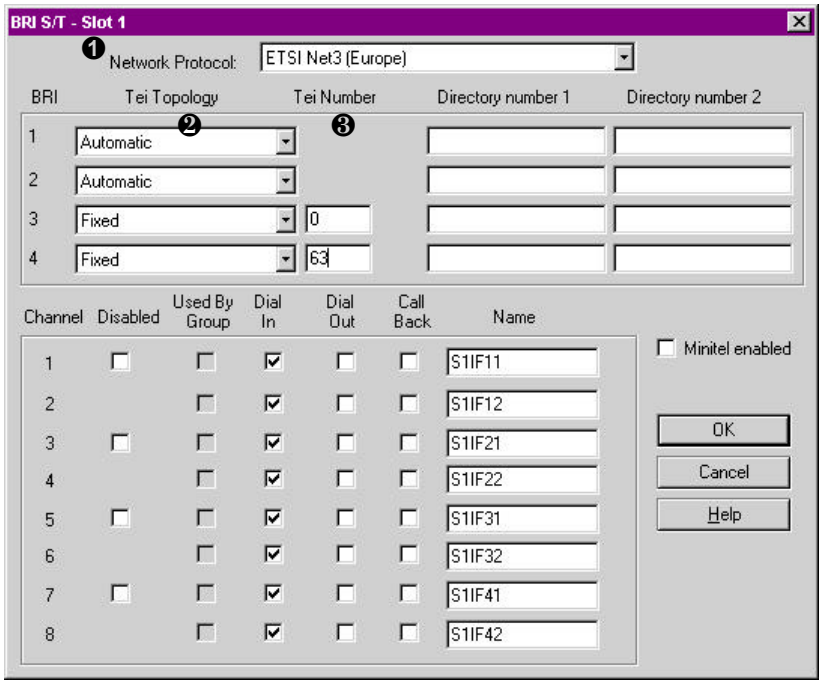
❸ **no isdn spid2** (Disable or change to null the SPID2 field)
isdn spid2 *spid* (Configure SPID2)

no isdn answer1 (No directory number)
isdn answer1 *number* (The number is a 24 digit numeric value)

no isdn answer2	(No directory number)
isdn answer2 *number*	(The number is a 24 digit numeric value)
no shutdown	(Interface is enabled [default])
shutdown	(Interface is disabled)
no dialer _dialin disabled	(Configure the port for dial in [default])
dialer _dialin disabled	(Disable channel for dial in)
no dialer _dialout enabled	(Disable channel for dial out [default])
dialer _dialout enabled	(Enable channel for dial out)
no dialer callback-server	(Disable channel for callback [default])
dialer callback-server	(Enable channel for callback)
_name1 *channel_name*	(Name of first channel on port)
_name2 *channel_name*	(Name of second channel on port)

This command is not needed if using the default channel names.

2.5 BRI S/T Interface Configuration



Item	Mode	Command
❶ ❷ ❸	Interface	interface bri *port* (port = 0-3 for system card; 4-7 for expansion card)

❶ **isdn switch-type** *switch_type*

switch_type	Basic-5ess	AT&T
	Basic-dms100	NT DMS-100
	Basic-ni	National ISDN
	Basic-net3	ETSI Net3 (Europe)
	ntt	NTT (Japan)

Note that this command automatically applies to all ports on the same card.

❷ **no isdn static-tei** (Enable automatic tei topology [default])

❸ **isdn static-tei** *tei_number* (Set a fixed tei number)

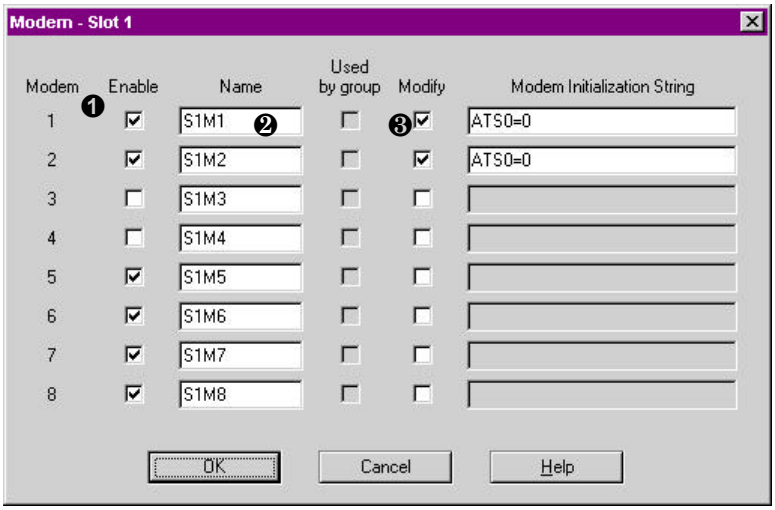
tei_number – 0-63

no isdn answer1	(No directory number)
isdn answer1 *number*	(The number is a 24 digit numeric value)
no isdn answer2	(No directory number)
isdn answer2 *number*	(The number is a 24 digit numeric value)
no shutdown	(Interface is enabled [default])
shutdown	(Interface is disabled)
no dialer _dialin disabled	(Configure the port for dial in [default])
dialer _dialin disabled	(Disable channel for dial in)
no dialer _dialout enabled	(Disable channel for dial out [default])
dialer _dialout enabled	(Enable channel for dial out)
no dialer callback-server	(Disable channel for callback [default])
dialer callback-server	(Enable channel for callback)
_name1 *channel_name*	(Name of first channel on port)
_name2 *channel_name*	(Name of second channel on port)

This command is not needed if using the default channel names.

no isdn _minitel enabled	(Disable minitel feature [default])
isdn _minitel enabled	(Enable minitel feature)

2.6 Perle DSP8 (Modem) Interface Configuration



Item	Mode	Command
❶ ❷ ❸	Line	line *modem* (modem = 1-8 for system card; 9-16 for expansion card)
	Global	configuration

❶ **no modem bad** (Modem enabled [default])
modem bad (Modem disabled)

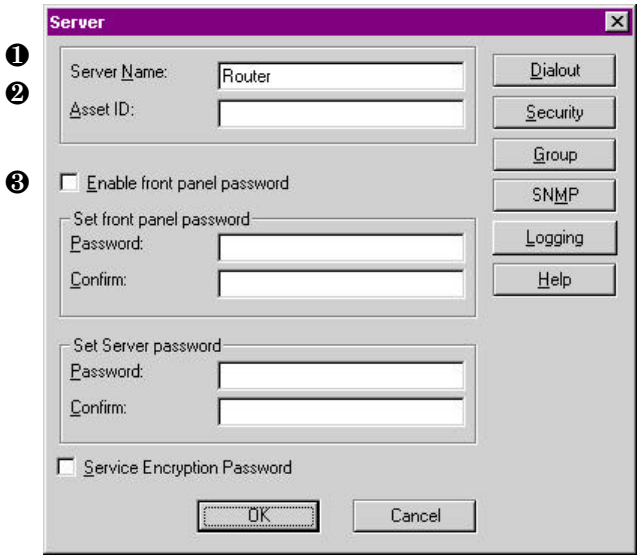
❷ **no modem _name** (Return to default modem name)
modem _name *name* (Change modem name to *name*)

❸ **no script reset** (Use default modem init string [default])
script reset *script_name* (Change init string to *script_name*)

chat-script *script_name string* (*string* is the new init string; the *script_name* must match the one used in the **script reset** command)

3.0 Server Configuration

3.1 Server Options



Item	Mode	Command
❶ ❷ ❸	Global	configuration

❶ **hostname** *server name*

server name – the name given to the server (default=Perle 833IS); if the server name contains spaces, enclose the name in quotes (for example, “833IS Router”)

❷ **_assetid** *asset id*

asset id – asset id string identifier

❸ **no _frontpanel lock** (Disables front panel lock)
_frontpanel lock (Enables front panel lock)
_frontpanel password *{encryp_type} password* (set front panel password)

encryp_type – 0 = encryption off
100 = encryption on [default]
password – numeric password to unlock the front panel

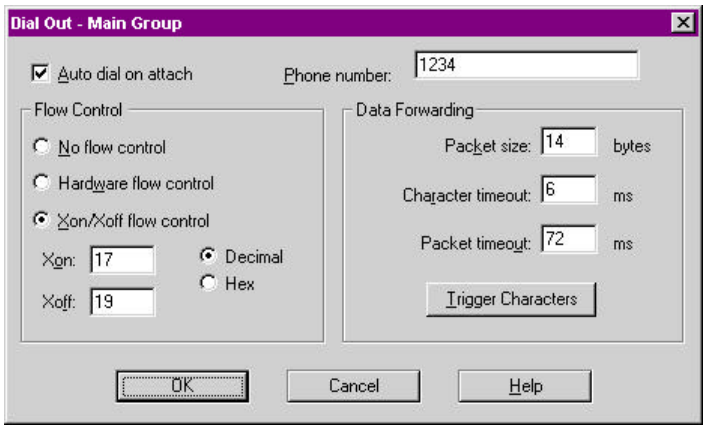
enable secret *{encryp_type} secret* (Set server password)

encryp_type – 0 = encryption off
100 = encryption on [default]
secret – password needed for privilege mode

no service password-encryption (Disable service encryption password)
service password-encryption (Enable service encryption password)

Setting password encryption will encrypt all clear text passwords in the configuration file and any future passwords entered. Disabling password encryption will save future passwords entered in clear text but will not decrypt previously saved passwords.

3.2 Dial Out Parameters



Item	Mode	Command
❶ ❷ ❸	Interface	interface dialer 0

❶ **no _dialout auto-dial** (Disable auto dial out on attach [default])
_dialout auto-dial *phone_no* (Set the auto dial out phone number)

❷ **no _dialout flow-control** (No flow control [default])

❸ **_dialout flow-control hardware** (Hardware flow control)

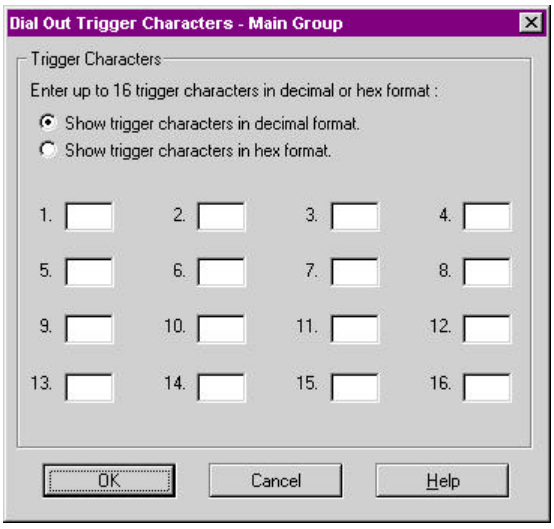
_dialout flow-control xon-xoff (XON/XOFF flow control)

_dialout [**xon** *xon_char*] [**xoff** *xoff_char*] (Set XON and/or XOFF character in decimal)

_dialout packet-size *size* (Set data forwarding packet size)

_dialout char-timeout *value* (Set character timeout value)

_dialout packet-timeout *value* (Set packet timeout value)

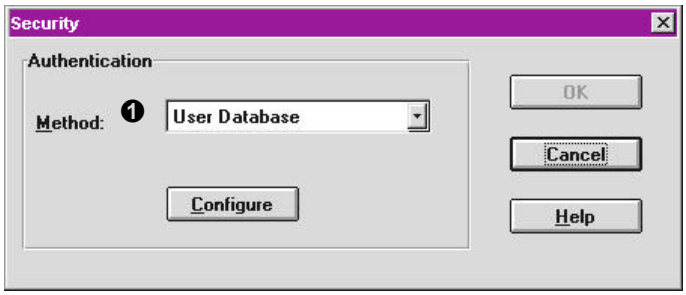


_dialout trigger-char *char1…char16* (Set trigger character)

char – trigger character in hex (up to sixteen can be specified)

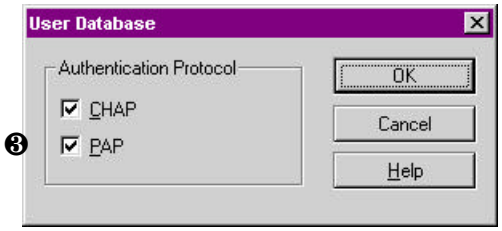
3.3 Server Security

3.3.1 User Database



Item	Mode	Command
❶	Global	configuration
❷ ❸	Interface	interface dialer 0

❶ **aaa authentication ppp default local** (User database authentication)
no aaa authentication ppp default (Defaults to local authentication)



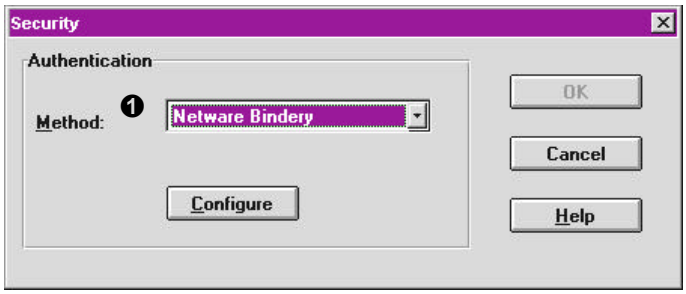
❷ **no ppp authentication chap** (Disable CHAP authentication)
ppp authentication chap (Enable CHAP authentication)

❸ **no ppp authentication pap** (Disable PAP authentication)
ppp authentication pap (Enable PAP authentication)

❷ ❸
ppp authentication chap pap (Enable both CHAP and PAP)

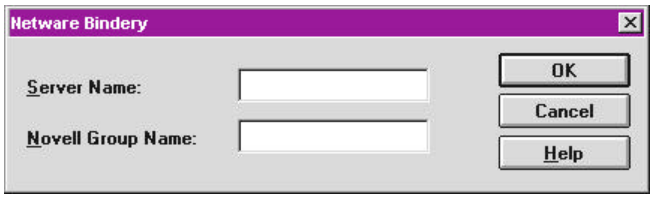
NOTE: There is no default authentication protocol. One or the other or both protocols must be enabled.

3.3.2 Netware Bindery



Item	Mode	Command
❶	Global	configuration

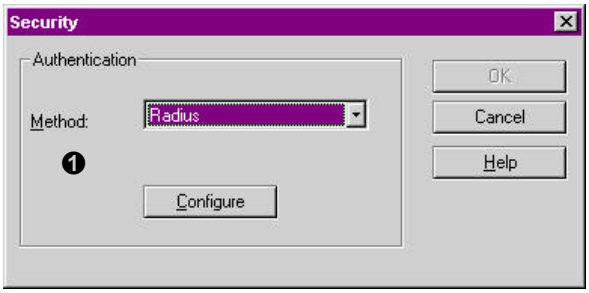
❶ **aaa authentication ppp default _bindery** (Novell authentication)



_bindery-server *server_name group_name*

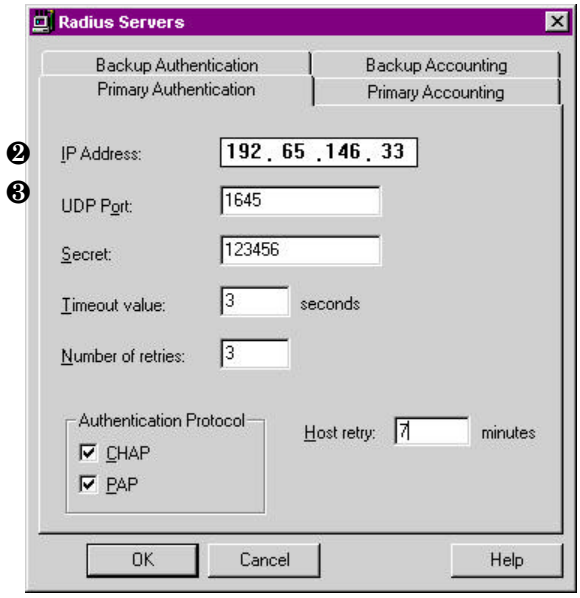
server_name – Name of server used to authenticate client
group_name - Name of group remote client belongs to (optional)

3.3.3 RADIUS



Item	Mode	Command
❶ ❷ ❸	Global	configuration
	Interface	interface dialer 0

❶ **aaa authentication ppp default radius** (RADIUS authentication)



❷ ❸ **radius-server _auth-primary host** *nn.nn.nn.nn* **auth-port** *pppp* (Primary)
radius-server _auth-backup host *nn.nn.nn.nn* **auth-port** *pppp* (Backup)
radius-server _acct-primary host *nn.nn.nn.nn* **acct-port** *pppp* (Acct-primary)
radius-server _acct-backup host *nn.nn.nn.nn* **acct-port** *ppp* (Acct-backup)

nn.nn.nn.nn – IP address of RADIUS server
pppp - UDP port of RADIUS server

radius-server _auth-primary key *secret* (Primary Radius secret)
radius-server _auth-backup key *secret* (Backup Radius secret)
radius-server _acct-primary key *secret* (Accounting primary secret)
radius-server _acct-backup key *secret* (Accounting backup secret)

secret - shared secret key between the 833IS and RADIUS

radius-server _auth-primary timeout *value* (Primary auth. timeout)
radius-server _auth-backup timeout *value* (Backup auth. timeout)
radius-server _acct-primary timeout *value* (Primary acct. timeout)
radius-server _acct-backup timeout *value* (Backup acct timeout)

value – timeout value in seconds

Note: this command is not needed if using the default timeout value

radius-server _auth-primary retransmit *value* (Primary auth retries)
radius-server _auth-backup retransmit *value* (Backup auth retries)
radius-server _acct-primary retransmit *value* (Primary acct retries)
radius-server _acct-primary retransmit *value* (Backup acct retries)

value - number of retries on timeout

Note: this command is not needed if using the default retry value

ppp authentication pap chap (authentication protocol [default])
ppp authentication chap (chap authentication)

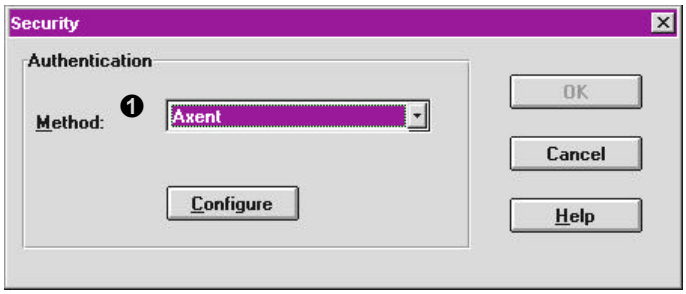
ppp authentication chap (required only if PAP disabled)

ppp authentication pap chap (authentication protocol [default])
ppp authentication pap (pap authentication)

ppp authentication pap (required only if CHAP disabled)

radius-server deadtime *value* (host retry timer value)

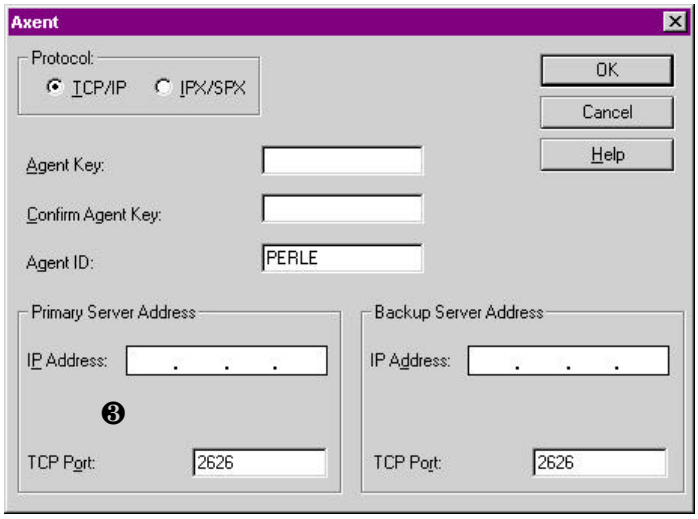
3.3.4 Axent



Item	Mode	Command
❶ ❷ ❸	Global	configuration

❶ **aaa authentication ppp default _axent** (Axent authentication)

3.3.4.1 Axent on an IP Network



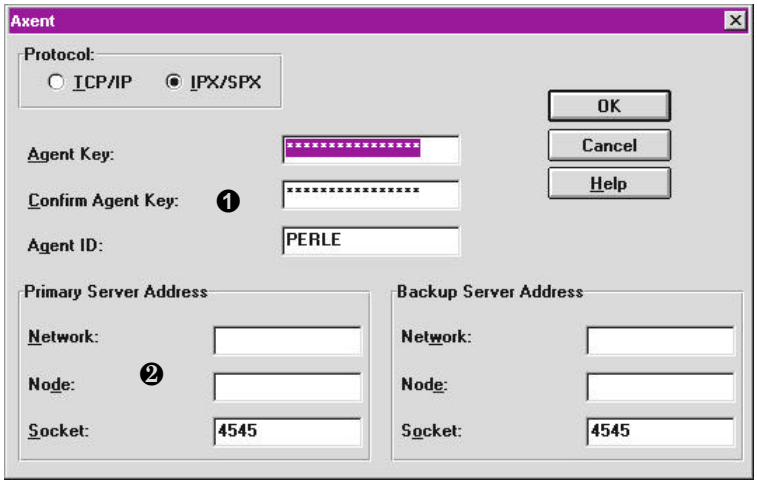
❷ **_axent-server tcp** *agent_key agent_id*

❸ **_axent-server tcp-server** *ip_addr port*

ip_addr – Server IP address
port – TCP port of server

This command can be used to specify a primary server or a backup server. The first entry will be considered the primary server.

3.3.4.2 Axent on an IPX Network



Item	Mode	Command
❶ ❷	Global	configuration

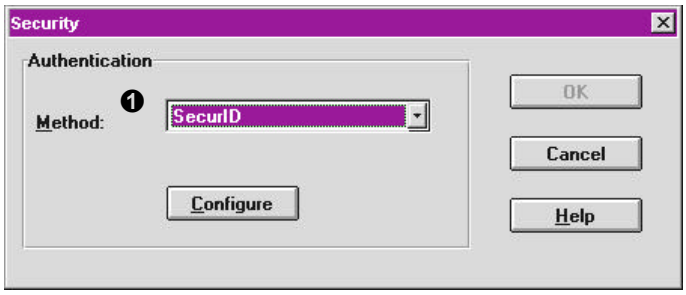
❶ **_axent-server spx** *agent_key agent_id*

❷ **_axent-server spx-server** *nnn***.** *mmmm***.***mmmm***.***mmmm ss*

This command can be used to specify a primary server or a backup server. The first entry is taken to be the primary server. The network address and the node address must be entered in the format shown. For example, for a network of 12, node address of 210987654321, socket of 4545, use the command

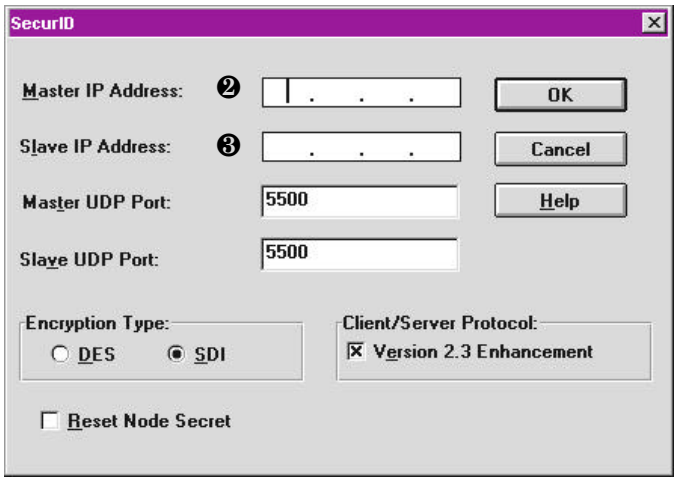
_axent-server spx-server 12.2109.8765.4321 4545

3.3.4 SecurID



Item	Mode	Command
❶ ❷ ❸	Global	configuration

❶ **aaa authentication ppp default _securid** (SecurID authentication)



❷ **_securid-server master-server** *ip_addr udp_port*

❸ **_securid-server slave-server** *ip_addr udp_port*

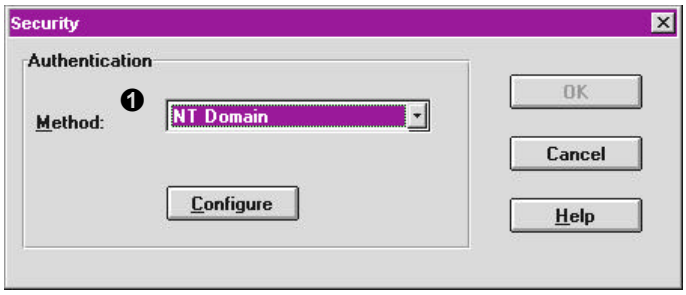
_securid-server encryption *type*

type – encryption type = des or sdi

no _securid-server client-server-protocol (return to default version 2.3)
default _securid-server client server protocol (return to default version 2.3)
_securid-server client-server-protocol v2.2 (Running V2.2)

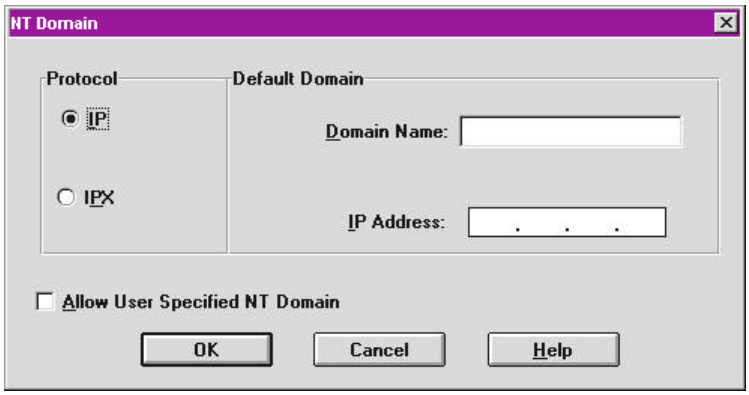
no _securid-server reset-node-secret	(Do not reset the node secret [default])
_securid-server reset-node-secret	(Reset the node secret)

3.3.6 NT Domain



Item	Mode	Command
❶ ❷ ❸	Global	configuration

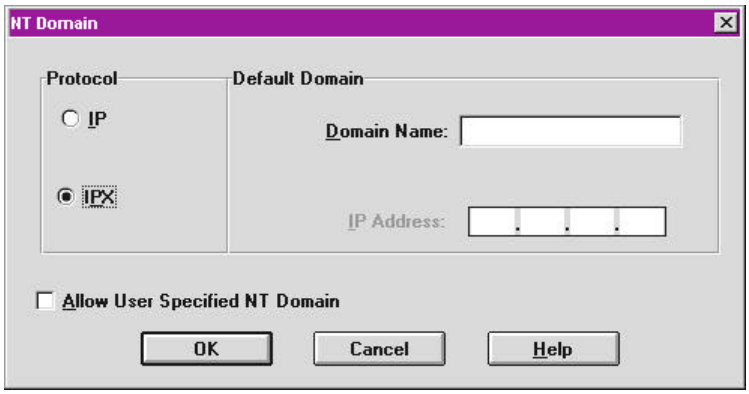
❶ **aaa authentication ppp default _nt-domain** (NT server authentication)



❷ **nt-domain-server ip** *domain_name ip_addr*

❸ **no nt-domain-server allow-user-specified-domain** (Disable user specified NT domain [default])

nt-domain-server allow-user-specified-domain (Allow user specified NT domain)

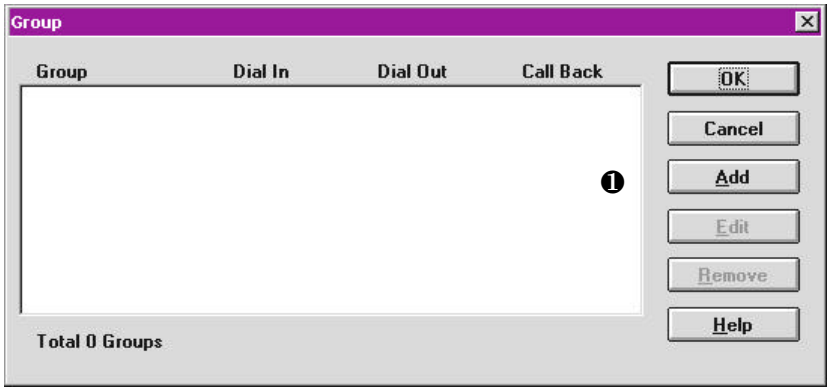


nt-domain-server ipx *domain_name*

no nt-domain-server allow-user-specified-domain (Disable user specified NT domain [default])

nt-domain-server allow-user-specified-domain (Allow user specified NT domain)

3.4 Group Definitions

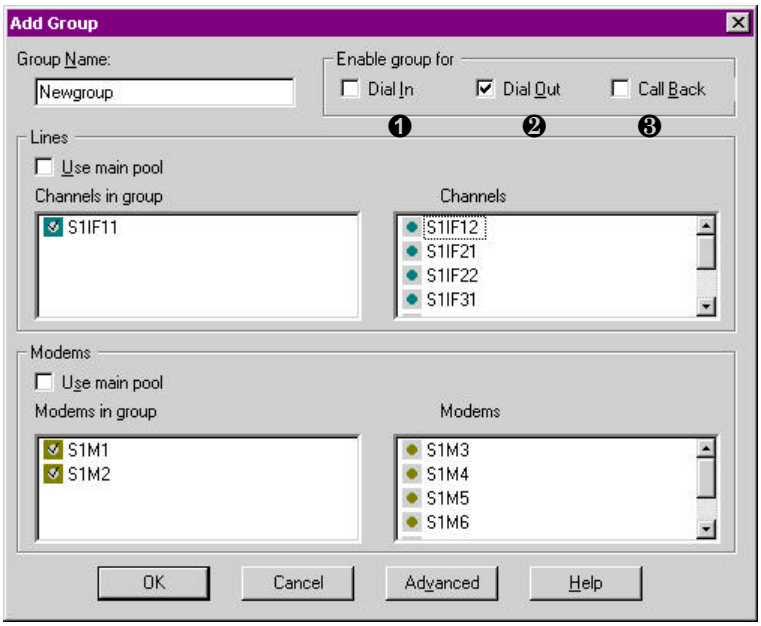


Item	Mode	Command
❶	Group	_group *name*

❶ **_group** *name* (enter group config mode)

name – the name of the group to be added or modified

3.4.1 Creating a Group Definition



Item	Mode	Command
❶ ❷ ❸	Group	_group *name*

❶ **no dialin** (disables dial in for this group)
dialin (enable dial in for this group)

There are no defaults. One of the above commands must be used.

❷ **no dialout** (disables dialout for this group)
dialout (enables dialout for this group)

There are no defaults. One of the above commands must be used.

❸ **no _callback** (disables callback for this group)
callback (enables callback for this group)

There are no defaults. One of the above commands must be used.

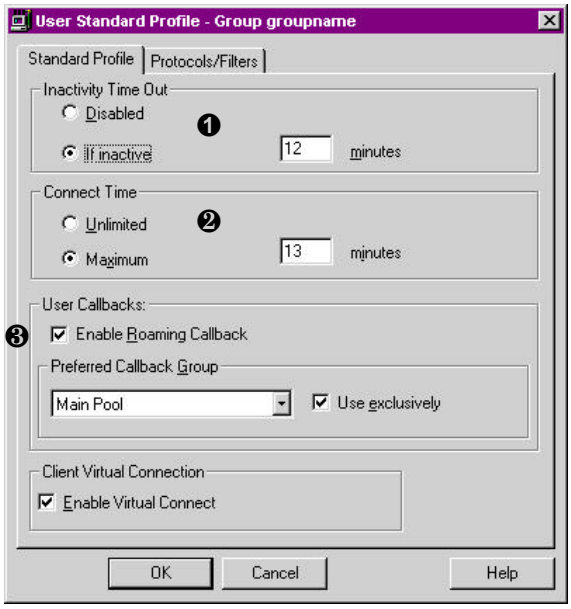
no channels (removes the channels assigned to this group)
channels *channel* (add the channel to this group [default=main pool])

channel – the name of the channels to be included in the group
(repeat the command to add multiple channels)

no modems	(removes the modems assigned to this group)
modems *modem*	(assigns the modem to the group [default=main pool])

modem – the name of the modems to be included in the group
(repeat the command to add multiple modems)

3.4.2 Group Advanced Settings – Standard Profile



Item	Mode	Command
❶ ❷ ❸	Group standard profile	_group *name* _standard-profile

❶ **no inactive** (disable inactivity timer [default])
inactive *inactivity_timer* (sets a maximum inactivity time)

inactivity_timer – maximum period of inactivity before the connection is dropped

❷ **no maximum** (disables the maximum connect time [default])
maximum *maximum_time* (sets the maximum connect time)

maximum_time - the maximum connect time per session

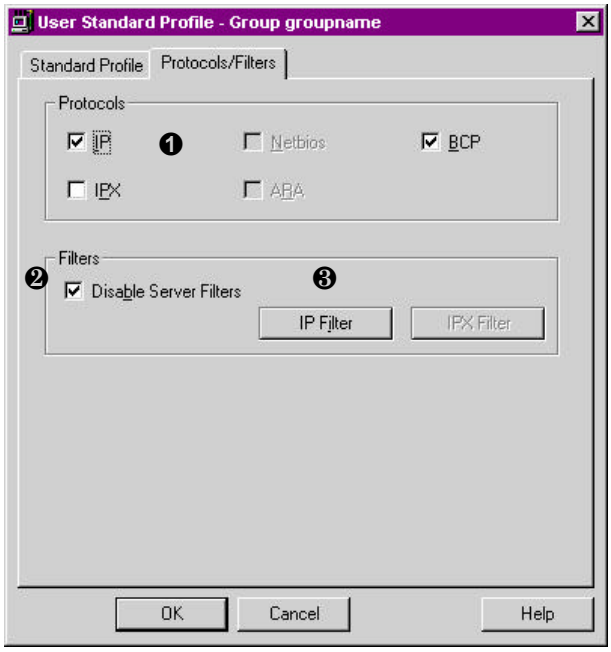
❸ **no callback roaming** (disables roaming callback [default])
callback roaming (enables roaming callback)

callback-rotary *group_name* (preferred callback group)

no callback-exclusive	(group not used exclusively [default])
callback-exclusive	(group to be used exclusively)

no virtual	(disables virtual connection [default])
virtual	(enables virtual connection)

3.4.3 Group Advanced Settings – Standard Profile – Protocols/Filters



Item	Mode	Command
❶	Group standard profile	*group group_name* _standard-profile

❶ **protocol ip** [default]
protocol ipx [default]
protocol netbios
protocol ara
protocol bcp

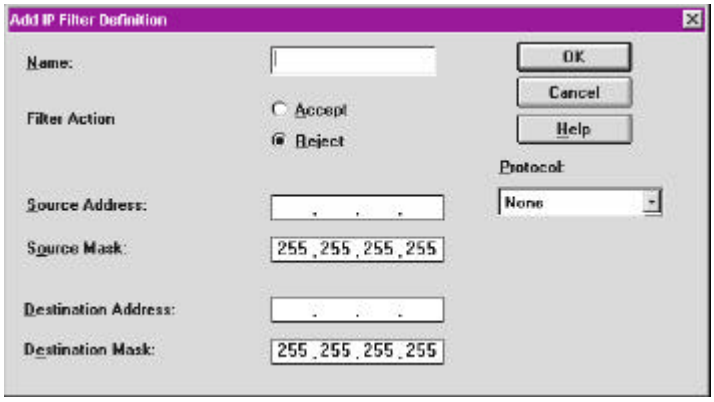
Use the “no” version of the command to disable.

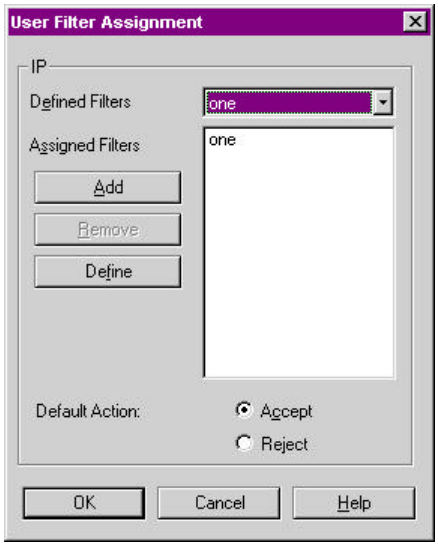
❷ **no server-filters** (Disable server filters)
server-filters (Enable server filters [default])

❸ **ip _access-group-default {accept | reject}** (Set default action of filters)

ipx _access-group-default {accept | reject} (Set default action of filters)

3.4.4 Group Advanced Settings – Standard Profile – IP Filters

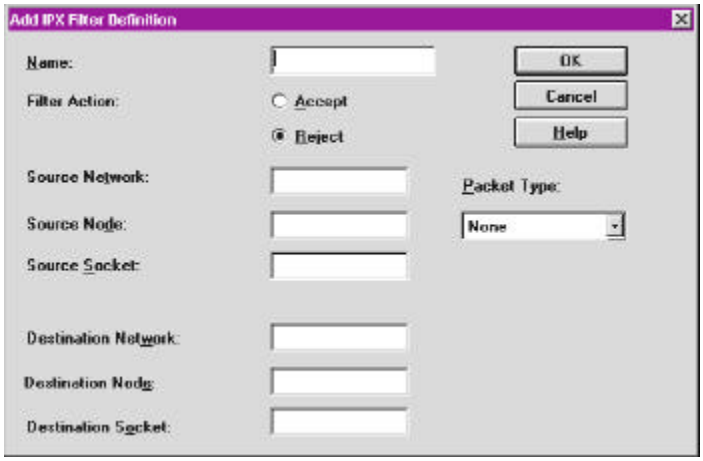


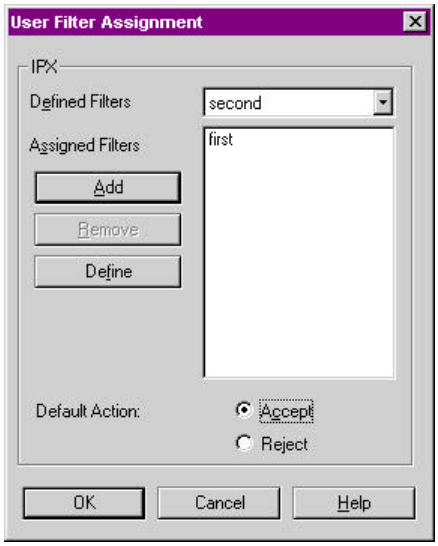


Item	Mode	Command
All items	Global	configure

Refer to **Sections 4.3.9 and 4.3.10** for details on filter definition and assignment.

3.4.5 Group Advanced Settings – Standard Profile – IPX Filters

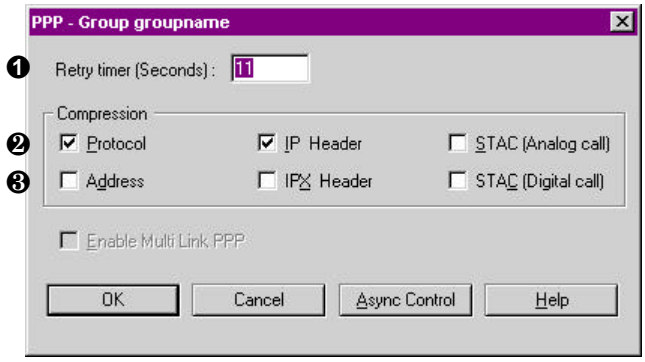




Item	Mode	Command
All items	Global	configure

Refer to **Section 4.4.3** for details on filter definition and assignment.

3.4.6 Group Advanced Settings – PPP



Item	Mode	Command
❶ ❷ ❸	Group	_group *name*

❶ **ppp timeout retry** *value*

value – retry timer value in seconds

❷ **ppp compression protocol** (Enables PPP protocol compression negotiation [default])
no ppp compression protocol (Disables PPP protocol compression negotiation)

❸ **ppp compression _address** (Enables PPP address compression negotiation [default])
no ppp compression _address (Disables PPP address compression negotiation)

multilink (Enables multilink on the PPP connection)
no multilink (Disables multilink on the PPP connection [default])

no tcp header_compression (Disable IP header compression [default])
tcp header compression (Enable IP header compression)

no ipx compression cipx (Disable IPX header compression [default])
ipx compression cipx (Enable IPX header compression)

no compress _stac-analog (Disable STAC analog compression [default])
compress _stac-analog (Enable STAC analog compression)

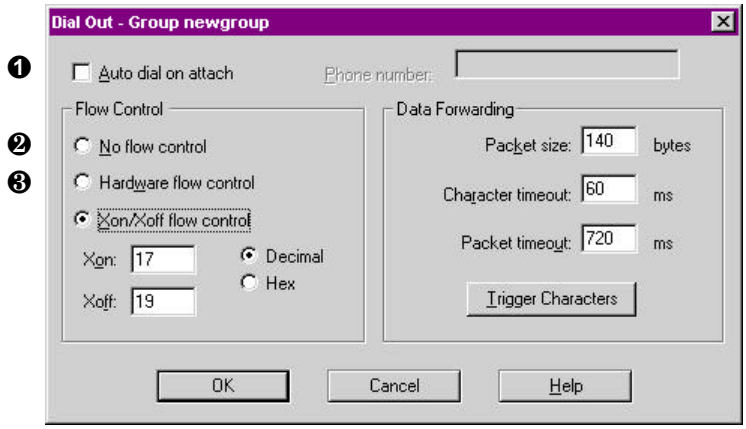
no compress _stac-digital (Disable STAC digital compression [default])

compress _stac-digital (Enable STAC digital compression)

ppp _async-control *char1 char2 …*

char – a decimal value in the range of 0-31. Up to 32 characters can be specified.

3.4.7 Group Advanced Settings – Dial Out



Item	Mode	Command
❶ ❷ ❸	Group	_group *name*

❶ **no _dialout auto-dial** (Disable auto-dial dial out on attach [default])

_dialout auto-dial *phone_no* (Set auto-dial to the number specified)

❷ **no _dialout flow-control**

❸ **_dialout flow-control hardware** [default]

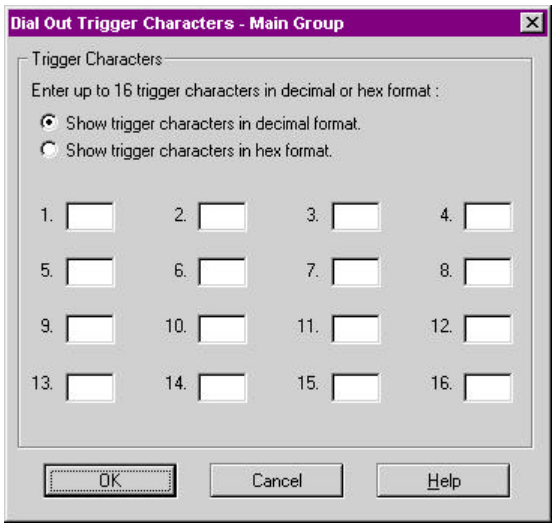
_dialout flow-control xon-xoff

_dialout [**xon** *xon_char*] [**xoff** *xoff_char*] (Sets the xon and/or xoff characters in decimal)

_dialout packet-size *size*

_dialout char-timeout *value*

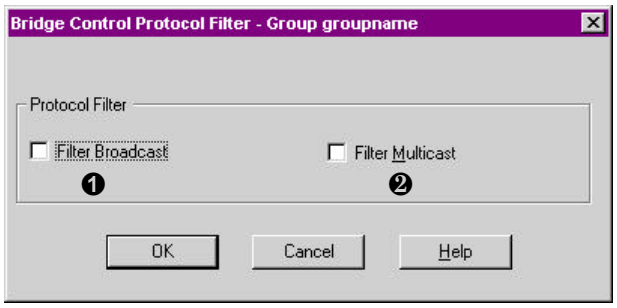
_dialout packet-timeout *value*



_dialout trigger-char *char1 char2 …*

char1 – hex value of character to trigger on (up to 16 characters can be configured)

3.4.8 Group Advanced Settings – Bridge Filter

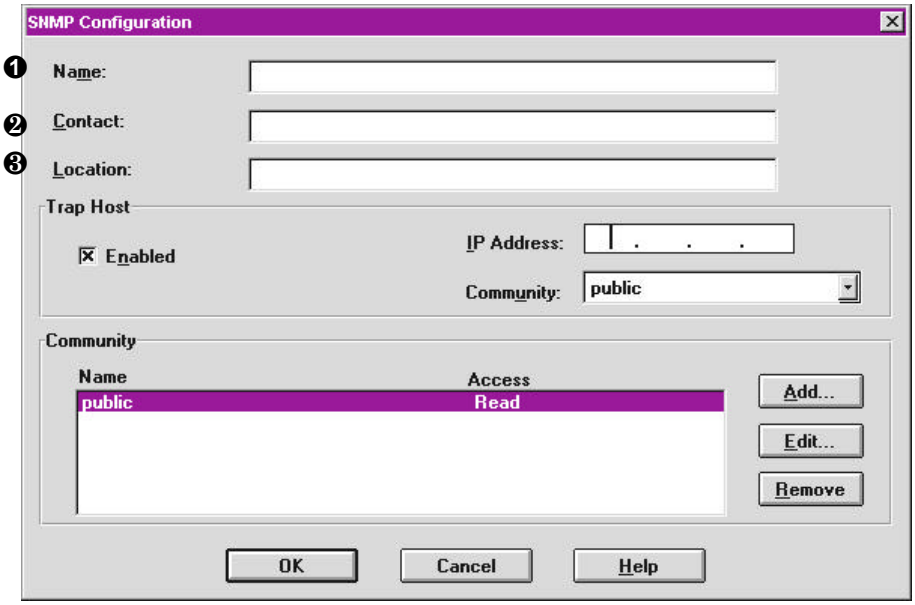


Item	Mode	Command
❶ ❷	Group	_group *name*

❶ **_bcp filter broadcast** (Enable broadcast filter [default])
no _bcp filter broadcast (Disable broadcast filter)

❷ **_bcp filter multicast** (Enable multicast filter [default])
no _bcp filter multicast (Disable multicast filter)

3.5 Server SNMP



Item	Mode	Command
❶ ❷ ❸	Global	configure

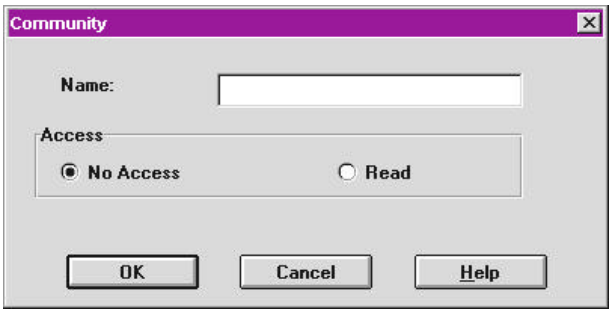
❶ **snmp-server chassis-id** *Name* (Set server name)

❷ **snmp-server contact** *Contact* (Set contact information)

❸ **snmp-server location** *Location* (Set server location information)

no snmp-server host (Disable trap host [default])
snmp-server host *ip_address* **traps** *community* (Set trap host and community)

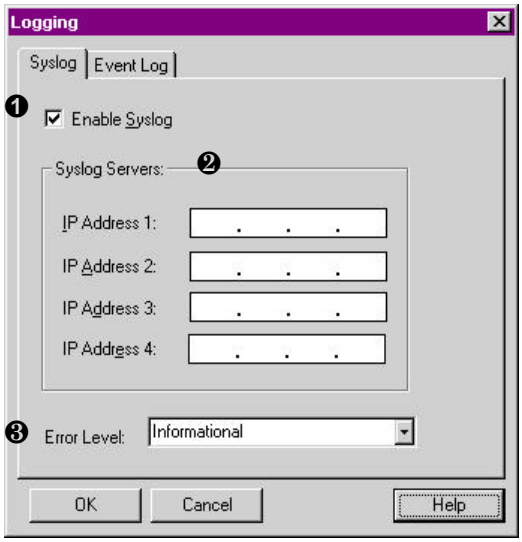
ip_address – IP address of trap host
community - the community that the trap host belongs (see command below)



_snmp-server community *Name* **none** (Give the community *Name* no access rights)

_snmp-server community *Name* **ro** (Give the community *Name* read-only access rights)

3.6 Logging - Syslog



Item	Mode	Command
❶ ❷ ❸	Global	configure

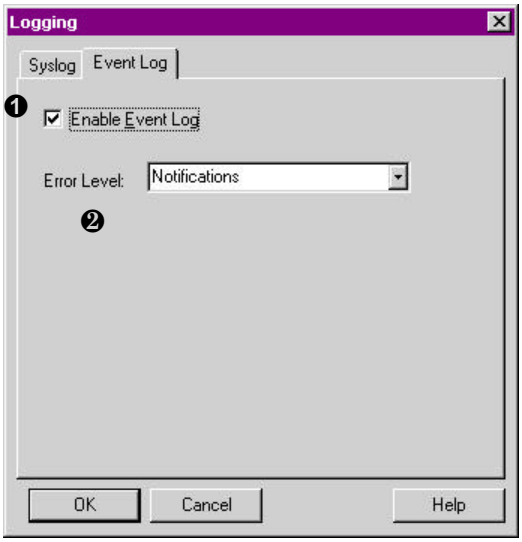
❶ No command needed – automatically enabled when syslog server address specified.

❷ **logging** *server_ip_address* (Set syslog server IP address)
no logging *server_ip_addr* (Remove syslog server)

❸ **logging trap** *level* (Set logging trap level)
no logging trap *level* (Remove logging trap level)
default logging trap (Sets default trap level to informational)

level – logging trap level can be
debugging
informational (default)
notifications
warnings
errors
alerts
critical
emergencies

3.7 Logging – Event Log



Item	Mode	Command
❶ ❷	Global	configure

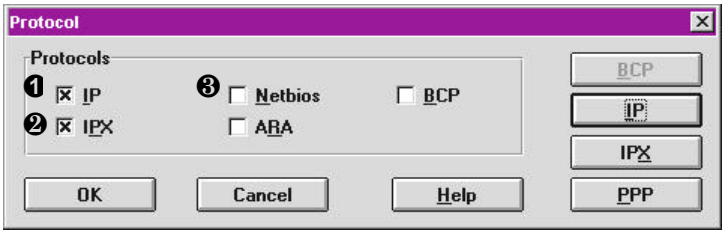
❶ **logging buffered informational** (Enable event log [default])

❷ **logging buffered** *log_type* (Set logging type)
no logging buffered (Reset back to informational)
default logging buffered (Reset back to informational)

log_type – valid log types are
emergencies
alerts
critical
errors
warnings
notifications
informational (Default)
debugging

4.0 Protocol Configuration

4.1 Protocol Options



Item	Mode	Command
❷	Global	configure
❸	Interface	interface dialer 0

❶ IP cannot be disabled for Cisco Configuration mode.

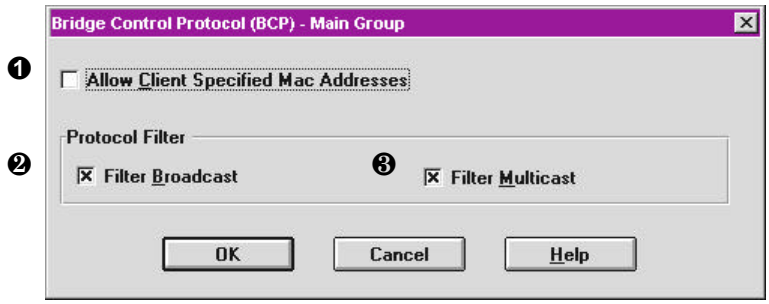
no ipx routing (disable IPX protocol)
ipx routing (enable IPX protocol)

no netbios_nbf (disable Netbios protocol [default])
netbios_nbf (enable Netbios protocol)

no _arap_enable (disable ARA protocol [default])
_arap_enable (enable ARA protocol)

no _bcp_enable (disable BCP protocol [default])
_bcp_enable (enable BCP protocol)

4.2 BCP



Item	Mode	Command
❶ ❷ ❸	Interface	interface dialer 0

❶ **no _bcp mac-address-client-specified** (client specified MAC address not allowed [default])

_bcp mac-address-client-specified (client specified MAC address allowed)

no _bcp filter broadcast (disable broadcast filter)

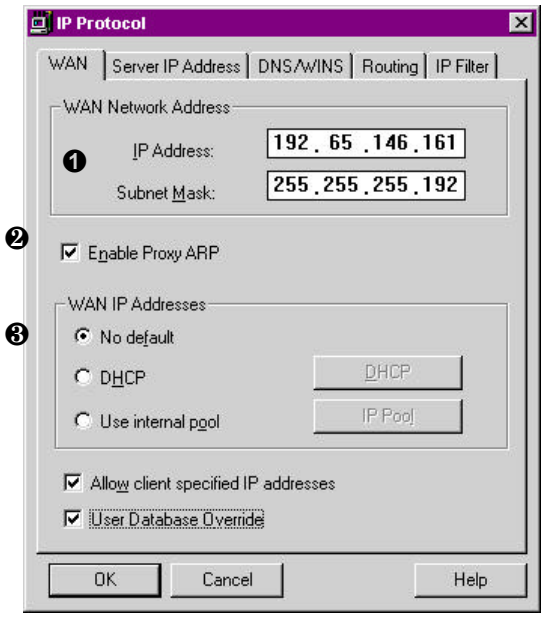
_bcp filter broadcast (enable broadcast filter [default])

no _bcp filter multicast (disable multicast filter)

_bcp filter multicast (enable multicast filter [default])

4.3 IP Protocol

4.3.1 WAN IP Address



Item	Mode	Command
❶	Interface	interface dialer 0
❷	Interface	interface FastEthernet 0
❸	Global	configure

❶ **ip address** *nn.nn.nn.nn mm.mm.mm.mm*

nn.nn.nn.nn – Wan IP address
mm.mm.mm.mm - WAN subnet mask

❷ **no ip proxy-arp** (disable proxy ARP [default])
ip proxy-arp (enable proxy ARP)

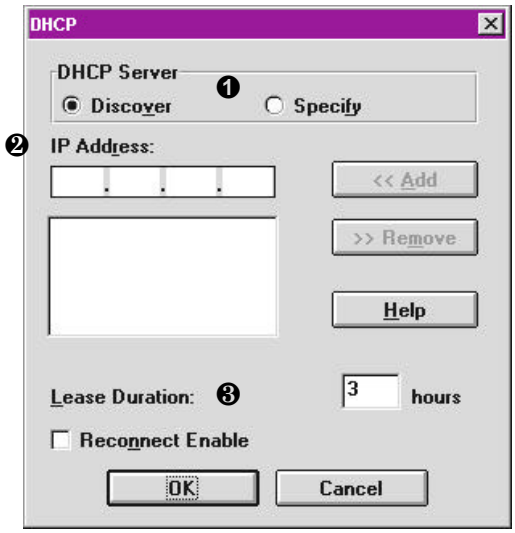
❸ **no ip address-pool** (DHCP or internal IP pool not used)

no ip address-pool dhcp-proxy-client (disable DHCP)
ip address-pool dhcp-proxy-client (enable DHCP)

Enter the following command in global configuration mode.

no ip address-pool local	(disable internal IP pool)
ip address-pool local	(enable internal IP pool)
no async dynamic address	(disable client specified address [default])
async dynamic address	(enable client specified address)
no _ip _address user-database	(disable user database override [default])
ip _address user-database	(enable user database override)

4.3.2 DHCP



Item	Mode	Command
❷ ❸	Global	configure

❶ When DHCP is selected, the default mode is “Discover”. No additional commands are needed. “Specify” mode is automatically selected when DHCP server addresses are entered.

❷ **ip dhcp-server** *nn.nn.nn.nn* (Add DHCP entry)
no dhcp-server *nn.nn.nn.nn* (Delete existing DHCP entry)

nn.nn.nn.nn – IP address of a DHCP server

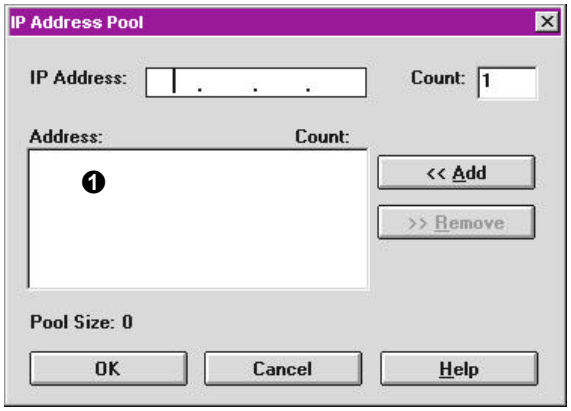
This command can be used to specify up to four DHCP servers.

❸ **ip _dhcp-lease** *duration*

duration – lease duration in hours

ip _dhcp-reconnect-disable (enables the DHCP reconnect option)
no ip _dhcp-reconnect-disable (Disable DHCP reconnect option [default])

4.3.3 IP Address Pool



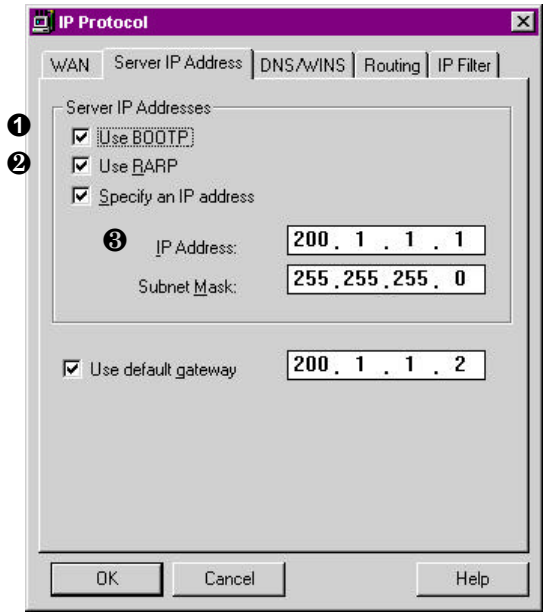
Item	Mode	Command
❶	Global	configure

❶ **ip local pool default** *nn.nn.nn.nn {mm.mm.mm.mm}*

nn.nn.nn.nn – Starting IP address of local pool
mm.mm.mm.mm – Ending IP address of local pool if specifying a range

This command can be use multiple times to create a local pool with multiple address ranges.

4.3.4 Server Address



Item	Mode	Command
❶ ❷ ❸	Interface	interface FastEthernet 0
	Global	configure

❶ **ip _bootp-enabled**

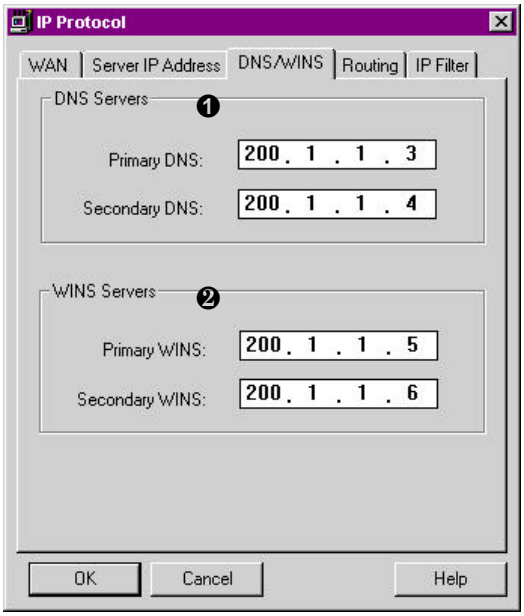
❷ **ip _rarp-enabled**

❸ **ip address** *nn.nn.nn.nn mm.mm.mm.mm*

nn.nn.nn.nn – configured server IP address
mm.mm.mm.mm – configured server subnet mask

ip default-gateway *nn.nn.nn.nn*

4.3.5 DNS/WINS



Item	Mode	Command
❶ ❷	Global	configure

❶ **ip name-server** *nn.nn.nn.nn*

nn.nn.nn.nn – IP address of the DNS server

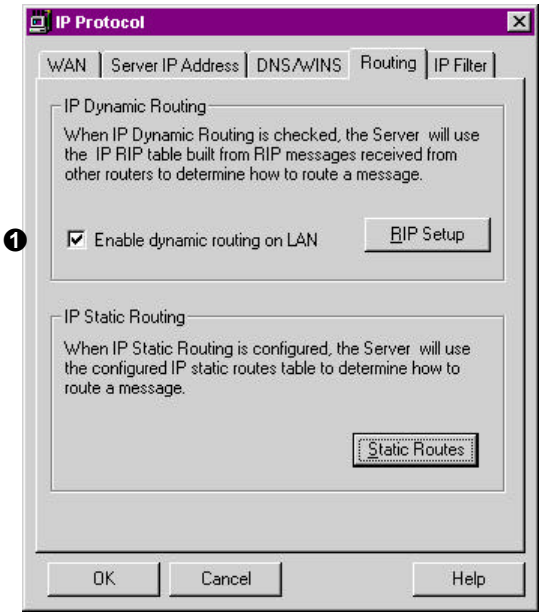
There is no concept of primary and secondary DNS servers. The servers will be searched in the order they were entered. A maximum of two servers are supported.

ip _win-name-server *nn.nn.nn.nn*

nn.nn.nn.nn – IP address of the WINS server

There is no concept of primary and secondary WINS servers. The servers will be searched in the order they were entered. A maximum of two servers are supported.

4.3.6 IP Routing Setup

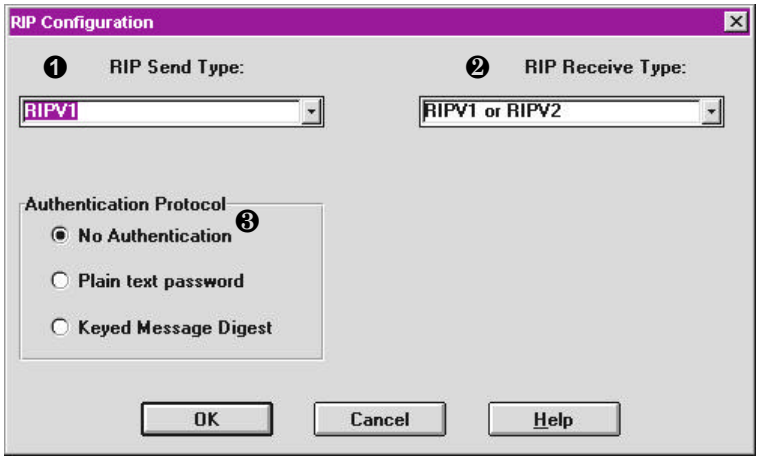


Item	Mode	Command
❶	Router	router rip

❶ **no network** *nnn.nnn.nnn* (RIPs disabled on network [default])
network *nnn.nnn.nnn.nnn*

nnn.nnn.nnn.nnn – Network address on which RIPs are sent and received (typically network portion of local LAN)

4.3.7 RIP Setup



Item	Mode	Command
❶ ❷ ❸	Interface	interface FastEthernet 0

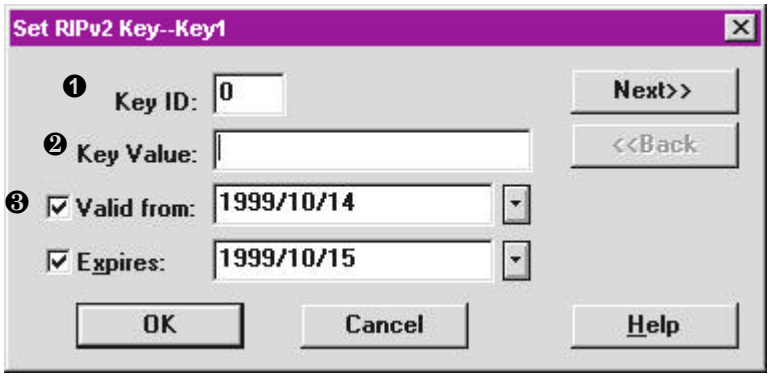
❶ **no ip rip send version** (Do not send RIP messages)
ip rip send version 1 (Send RIPv1)
ip rip send version 2 (Send RIPv2)
ip rip send version 1 2 (Send RIPv1 compatible)

❷ **no ip rip receive version** (Do not receive RIP messages)
ip rip receive version 1 (Receive RIPv1)
ip rip receive version 2 (Receive RIPv2)
ip rip receive version 1 2 (Receive RIPv1 or RIPv2)

❸ **no ip rip authentication mode** (No RIP authentication)

ip rip authentication mode text
ip rip authentication _password *password* (Plain text authentication (with password *password*)

ip rip authentication mode md5 (Keyed message authentication)



Item	Mode	Command
❶ ❷ ❸	Key Configuration Key Chain Key ID	key chain *name* key *n* (*n*=0-255)

❶ **key** *key_id*

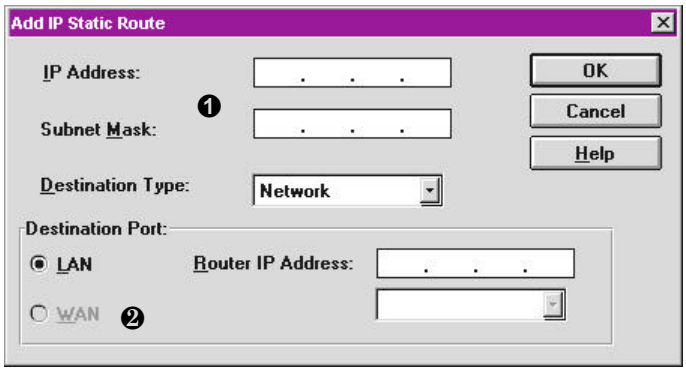
❷ **key-string** *key_value*

(The following command is needed to set expiry dates on the key)

❸ **accept-lifetime 0:0:0** *start_date* **0:0:0** *end_date* (Start/end dates for the key)
accept-lifetime 0:0:0 *start_date* **infinite** (Start date but no end date)

Format of *start_date* and *end_date*: mmm dd yyyy where mmm is a three letter representations of the month (Jan, Feb, Mar, etc.).

4.3.8 Static Route



Item	Mode	Command
❶ ❷	Global	configure

❶ **ip route** *nn.nn.nn.nn mm.mm.mm.mm rr.rr.rr.rr*

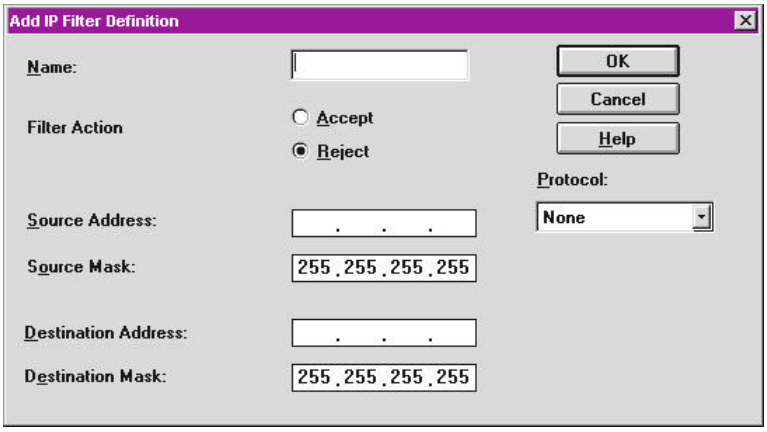
nn.nn.nn.nn – IP address of remote network or host
mm.mm.mm.mm – subnet mask of remote network; if destination type is a host, the mask is 255.255.255.255.
rr.rr.rr.rr – IP address of router

❷ **ip route** *nn.nn.nn.nn mm.mm.mm.mm wan_name*

nn.nn.nn.nn – IP address of remote network or host
mm.mm.mm.mm - subnet mask of remote network; if destination type is a host, this mask is 255.255.255.255.
wan_name – user name for the LAN-to-LAN user that will route this message

To delete an existing entry, use the format as shown above but preceded with a **"no"**

4.3.9 Filter Definition



Item	Mode	Command
All commands	Filter definition	ip access-list extended

"Accept" Filter Format

Each filter can be specified in two forms:

1. If the filter applies to a specific host address, the command has the word **host** and no address mask.
2. If the filter applies to a network, the command does not have the word **host** but has an address mask.

The format of the command depends on what protocols, source and destination address, and source and destination ports are specified.

Protocol	Specify				Format
	Source Address	Dest. Address	Source Port	Dest. Port	
None (Any)	X				**permit ip host** *src_addr* **any** **permit p** *src_addr mask* **any**
		X			**permit ip any host** *dst_addr* **permit ip any** *dst_addr mask*
tcp	X				**permit tcp host** *src_addr* **any** **permit tcp** *src_addr mask* **any**
	X		X		**permit tcp host** *src_addr* **eq** *src_port* **any** **permit tcp** *src_addr mask* **eq** *src_port* **any**
	X			X	**permit tcp host** *src_addr* **any eq** *dst_port* **permit tcp** *src_addr mask* **any eq** *dst_port*

	X		X	X	**permit tcp host** *src_addr* **eq** *src_port* **any eq** *dst_port* **permit tcp** *src_addr mask* **eq** *src_port* **any eq** *dst_port*
		X			**permit tcp any host** *dst_add* **permit tcp any** *dst_add mask*
		X	X		**permit tcp any eq** *src_port* **host** *dst_add* **permit tcp any eq** *src_port dst_add mask*
		X		X	**permit tcp any** *dst_add* **host eq** *dst_port* **permit tcp any** *dst_add mask* **eq** *dst_port*
		X	X	X	**permit tcp any eq** *src_port* **host** *dst_addr* **eq** *dst_port* **permit tcp any eq** *src_port dst_addr mask* **eq** *dst_port*
udp	X				**permit udp host** *src_addr* **any** **permit udp** *src_addr mask* **any**
	X		X		**permit udp host** *src_addr* **eq** *src_port* **any** **permit udp** *src_addr mask* **eq** *src_port* **any**
	X			X	**permit udp host** *src_addr* **any eq** *dst_port* **permit udp** *src_addr mask* **any eq** *dst_port*
	X		X	X	**permit udp host** *src_addr* **eq** *src_port* **any eq** *dst_port* **permit udp** *src_addr mask* **eq** *src_port* **any eq** *dst_port*
		X			**permit udp any host** *dst_add* **permit udp any** *dst_add mask*
		X	X		**permit udp any eq** *src_port* **host** *dst_addr* **permit udp any eq** *src_port dst_addr mask*
		X		X	**permit udp any host** *dst_addr* **eq** *dst_port* **permit udp any** *dst_addr mask* **eq** *dst_port*
		X	X	X	**permit udp any eq** *src_port* **host** *dst_addr* **eq** *dst_port* **permit udp any eq** *src_port dst_addr mask* **eq** *dst_port*
icmp	X		N/A	N/A	**permit icmp host** *src_addr* **any** **permit icmp** *src_addr mask* **any**
		X	N/A	N/A	**permit icmp any host** *dst_add* **permit icmp any** *dst_add mask*
other	X		N/A	N/A	**permit** *other_protocol* **host** *src_add* **any** **permit** *other_protocol src_add mask* **any**
		X	N/A	N/A	**permit** *other_portocol* **any host** *dst_add* **permit** *other_portocol* **any** *dst_add mask*

filter_name – name given to the filter
src_addr – source address field of the filter
dst_addr – destination address field of the filter
mask – mask applied to the address (optional if using 255.255.255.255)

(NOTE: the mask entered here must be bit-wise inverted from the mask entered using the Manager. For example, if the mask entered in the Manager is 255.255.192.0, in Cisco compatible mode, enter the value 0.0.63.255.)

src_port – source port value of protocol
dst_port – destination port value of protocol
other_protocol - hex value of other protocol

"Reject" Filter Format

Each filter can be specified in two forms:

3. If the filter applies to a specific host address, the command has the word **host** and no address mask.
4. If the filter applies to a network, the command does not have the word **host** but has an address mask.

The format of the command depends on what protocols, source and destination address, and source and destination ports are specified.

Protocol	**Specify**				**Format**
	Source Address	Dest. Address	Source Port	Dest. Port	
None (Any)	X				**deny ip host** *src_addr* **any** **deny ip** *src_addr mask* **any**
		X			**deny ip any host** *dst_addr* **deny ip any** *dst_addr mask*
tcp	X				**deny tcp host** *src_addr* **any** **deny tcp** *src_addr mask* **any**
	X		X		**deny tcp host** *src_addr* **eq** *src_port* **any** **deny tcp** *src_addr mask* **eq** *src_port* **any**
	X			X	**deny tcp host** *src_addr* **any eq** *dst_port* **deny tcp** *src_addr mask* **any eq** *dst_port*
	X		X	X	**deny tcp host** *src_addr* **eq** *src_port* **any eq** *dst_port* **deny tcp** *src_addr mask* **eq** *src_port* **any eq** *dst_port*
		X			**deny tcp any host** *dst_add* **deny tcp any** *dst_add mask*
		X	X		**deny tcp any eq** *src_port* **host** *dst_add* **deny tcp any eq** *src_port dst_add mask*
		X		X	**deny tcp any** *dst_add* **host eq** *dst_port* **deny tcp any** *dst_add mask* **eq** *dst_port*
		X	X	X	**deny tcp any eq** *src_port* **host** *dst_addr* **eq** *dst_port* **deny tcp any eq** *src_port dst_addr mask* **eq** *dst_port*
udp	X				**deny udp host** *src_addr* **any** **deny udp** *src_addr mask* **any**
	X		X		**deny udp host** *src_addr* **eq** *src_port* **any** **deny udp** *src_addr mask* **eq** *src_port* **any**
	X			X	**deny udp host** *src_addr* **any eq** *dst_port* **deny udp** *src_addr mask* **any eq** *dst_port*
	X		X	X	**deny udp host** *src_addr* **eq** *src_port* **any eq** *dst_port* **deny udp** *src_addr mask* **eq** *src_port* **any eq** *dst_port*
		X			**deny udp any host** *dst_add* **deny udp any** *dst_add mask*
		X	X		**deny udp any eq** *src_port* **host** *dst_addr* **deny udp any eq** *src_port dst_addr mask*
		X		X	**deny udp any host** *dst_addr* **eq** *dst_port* **deny udp any** *dst_addr mask* **eq** *dst_port*
		X	X	X	**deny udp any eq** *src_port* **host** *dst_addr* **eq** *dst_port* **deny udp any eq** *src_port dst_addr mask* **eq** *dst_port*

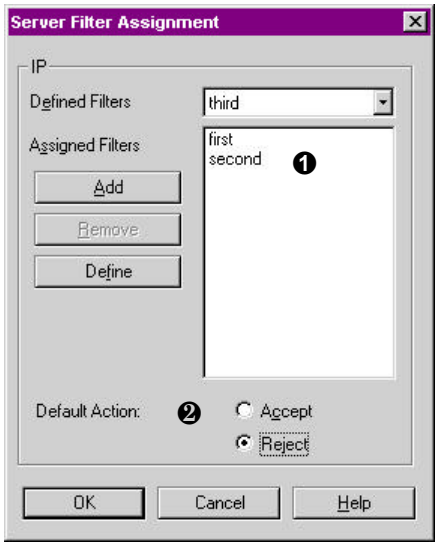
icmp	X		N/A	N/A	**deny icmp host** *src_addr* **any** **deny icmp** *src_addr mask* **any**
		X	N/A	N/A	**deny icmp any host** *dst_add* **deny icmp any** *dst_add mask*
other	X		N/A	N/A	**deny** *other_protocol* **host** *src_add* **any** **deny** *other_protocol src_add mask* **any**
		X	N/A	N/A	**deny** *other_portocol* **any host** *dst_add* **deny** *other_portocol* **any** *dst_add mask*

filter_name – name given to the filter
src_addr – source address field of the filter
dst_addr – destination address field of the filter
mask – mask applied to the address (optional if using 255.255.255.255)

(NOTE: the mask entered here must be bit-wise inverted from the mask entered using the Manager. For example, if the mask entered in the Manager is 255.255.192.0, in Cisco compatible mode, enter the value 0.0.63.255.)

src_port – source port value of protocol
dst_port – destination port value of protocol
other_protocol - hex value of other protocol

4.3.10 Filter Assignment

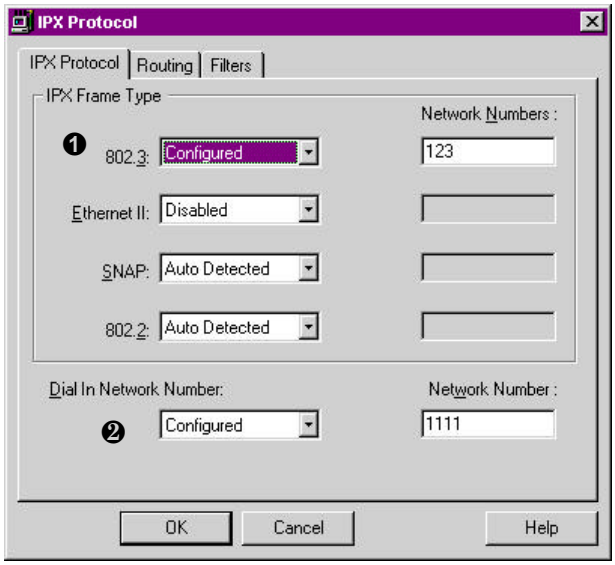


Item	Mode	Command
❶ ❷	Interface	interface FastEthernet 0

❶ **ip access-group** *filter_name1 filter_name2 …* (Assign filters – up to ten filters can be specified – the filters are processed in the order they are entered)

❷ **ip _access-group-default reject** (Set default action to reject)
ip _access-group-default accept (Set default action to accept)

4.4 IPX



Item	Mode	Command
❶	Interface	interface FastEthernet 0
❷	global	configure

❶ **ipx network _auto-detected encapsulation** *frame* (Auto detect frame type)

ipx network *network_number* **encapsulation** *frame* (Configure frame type)

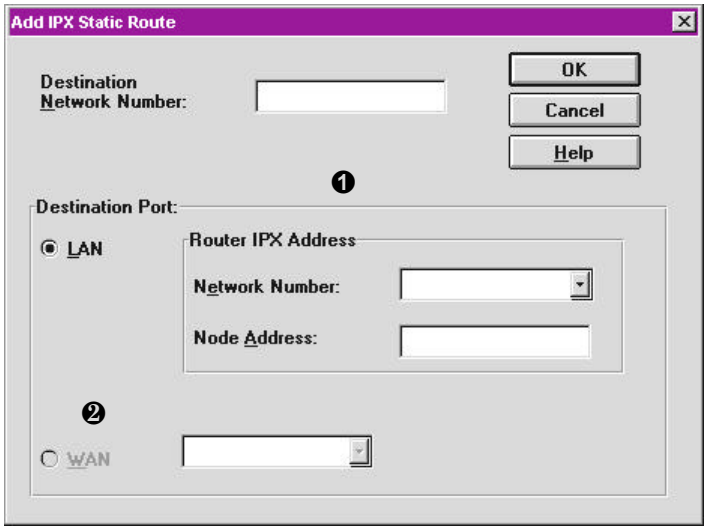
network_number – configured network number
frame – frame type = novell-ether (802.3)
arpa (Ethernet II)
snap
sap (802.2)

Note: any frame type that are not set to auto-detect or configured with a network number are assumed to be disabled.

❷ **ipx internal-network _auto-configured** (Auto-generated internal network number)

ipx internal-network *network_number* (Configured internal network)

4.4.1 Static Routes



Item	Mode	Command
❶ ❷	Global	configure

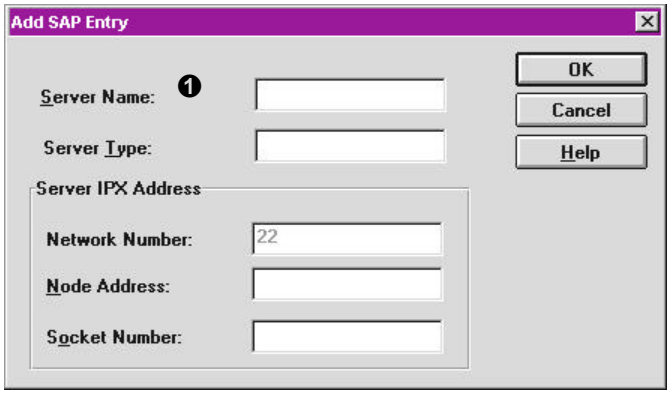
❶ **ipx route** *dddd nnnn hh.hh.hh.hh*

dddd – destination network number
nnnn - network number of router
hhh.hhh.hhh - node (MAC) address of router (must be entered in the format shown)

❷ **ipx route** *dddd* **_user** *wan_name*

dddd – destination network
wan_name – user name of LAN-to-LAN user needed to route the packet

4.4.2 Sap Entry

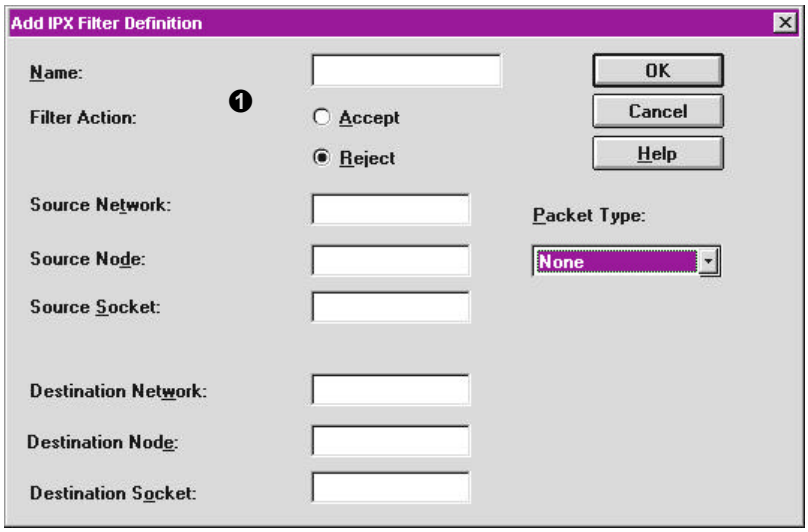


Item	Mode	Command
❶	Global	configure

❶ **ipx sap** *tt server_name dd.nnn.nnn.nnn ss*

tt - server type
server_name - server name
dd - server network number
nnn.nnn.nnn - server node address entered in the format shown
ss – server socket number

4.4.3 Filter Definition / Filter Assignment



Item	Mode	Command
❶	Global	configure
❷ ❸	Interface	interface FastEthernet 0

❶ **no ipx access-list extended** *filter_name* (Deletes the filter with the name **"**filter_name")

Source Address Specified

ipx access-list extended *filter_name* **permit** *packet_type ddd.nnn.nnn.nnn ss*
any all (define an "accept" filter)
ipx access-list extended *filter_name* **deny** *packet_type ddd.nnn.nnn.nnn ss*
any all (define a "reject" filter)

filter_name – name given to the filter
packet_type - packet type to be filtered on:
any – equivalent to "none"
rip
sap
spx
ncp
packet number – this is equivalent to "other" with a packet number specified
ddd - network address
nnn.nnn.nnn – node address (this must be in the format shown)

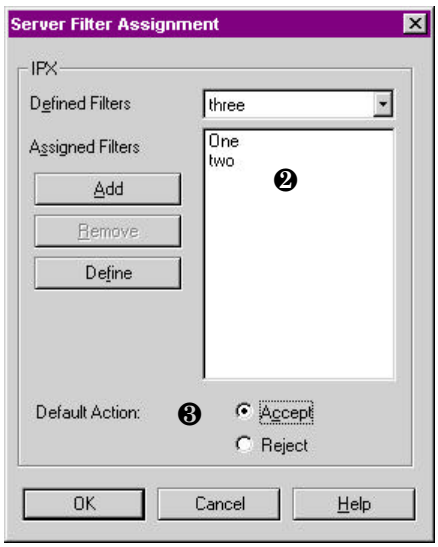
ss – socket number

Destination Address Specified

ipx access-list extended *filter_name* **permit** *packet_type* **any all**
ddd.nnn.nnn.nnn ss (define an "accept" filter)
ipx access-list extended *filter_name* **deny** *packet_type* **any all**
ddd.nnn.nnn.nnn ss (define a "reject" filter)

filter_name – name given to the filter
packet_type - packet type to be filtered on:
any – equivalent to "none"
rip
sap
spx
ncp
packet number – this is equivalent to "other" with a packet number specified
ddd - network address
nnn.nnn.nnn – node address (this must be in the format shown)
ss – socket number

An error message will be generated once the maximum number of filter definitions have been reached (50). Each filter must be a "permit" or a "deny" filter.



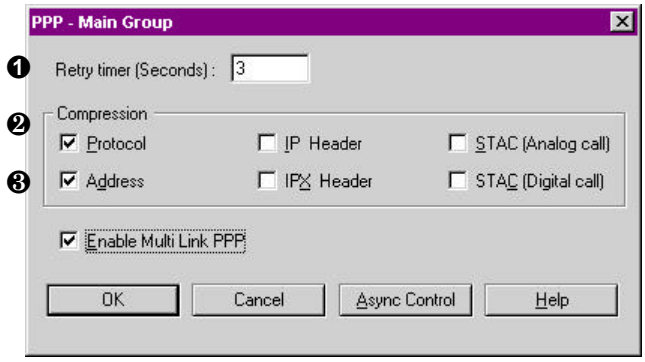
❷ ***ipx access-group*** *filter_name1 filter_name2 filter_name3 ……filter_name10*

Assigns the filters *filter_name1, filter_name2, filter_name3,* etc. in this order. Up

to ten filters can be assigned this way.

❸ **ipx _access-group-default accept** (defaults to accepting the packet)
ipx _access-group-default reject (defaults to rejecting the packet)

4.5 PPP



Item	Mode	Command
❶ ❷ ❸	Interface	interface dialer 0
	Interface	interface group-Async 0

❶ **ppp timeout retry** *seconds* (Set restart timeout in seconds)

❷ **no ppp compression _protocol** (Disable PPP protocol compression)
ppp compression _protocol (Enable PPP protocol compression [default])

❸ **no ppp compression _address** (Disable PPP address compression)
ppp compression _address (Enable PPP address compression [default])

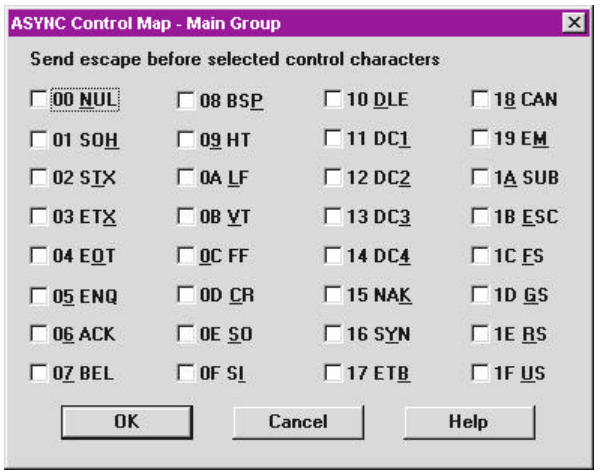
no ip tcp header-compression (Disable PPP header compression [default])
ip tcp header-compression (Enable PPP header compression)

no ipx compression cipx (Disable IPX header compresison [default])
ipx compression cipx (Enable IPX header compression)

no compress stac (Disable STAC analog compression [default])
compress stac (Enable STAC analog compression)

no compress stac (Disable STAC digital compression [default])
compress stac (Enable STAC digital compression)

no ppp multilink (Disables multilink [default])
ppp multilink (Enables PPP multilink)

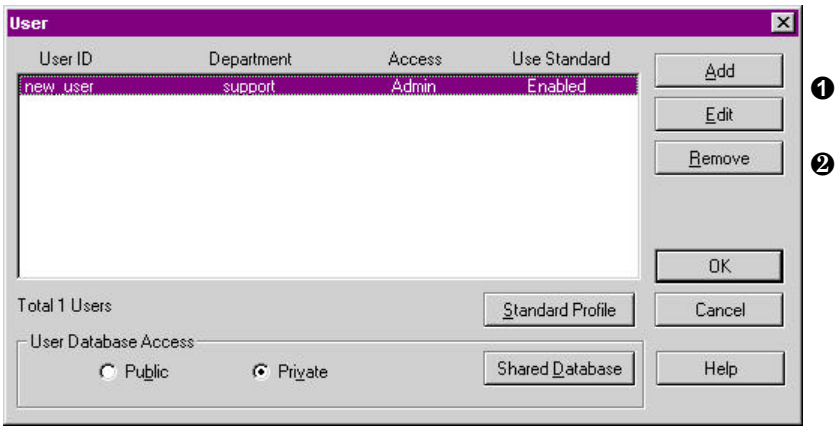


no ppp _async-control (Disable PPP async control [default])
ppp _async-control *char1 char 2 …* (Enable PPP async control using char1, char2, etc.)

char1 – a decimal value between 0 and 31used to represent each control character selected. The list can specify up to 32 characters.

5.0 User Configuration

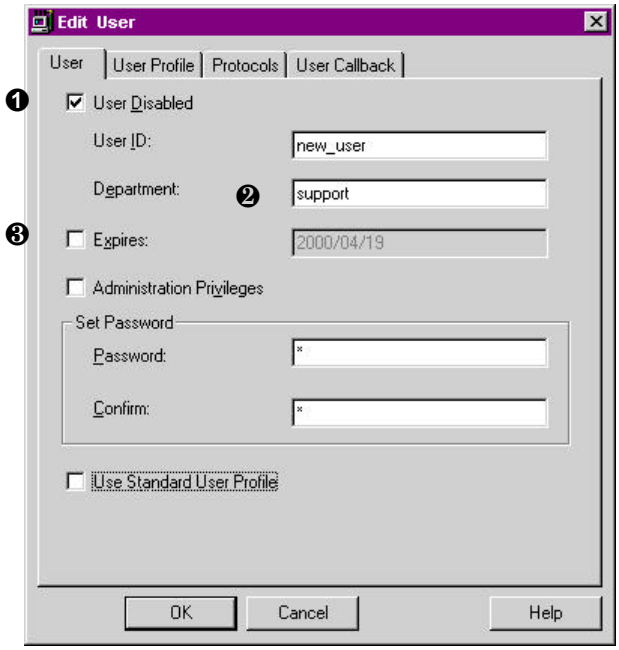
5.1 User Record



Item	Mode	Command
❶ ❷	User Database	_userdb

❶ **_userdb** *name* (Enter into user database mode and add/edit user *"name"*)

❷ **no _userdb** *name* (Deletes user "*name*" from database)



Item	Mode	Command
❶ ❷ ❸	User Database	_userdb
	Global	configure

❶ **no disabled** (user enabled [default])
disabled (user disabled)

❷ **department** *department*

department - name of the user's department

❸ **no expires** (no expiry date for this user [default])
expires *yyyy/mm/dd* (user ID expires after the specified date [must be entered in the format shown])

no admin (user does not have administrative rights [default])
admin (user has administrative rights)

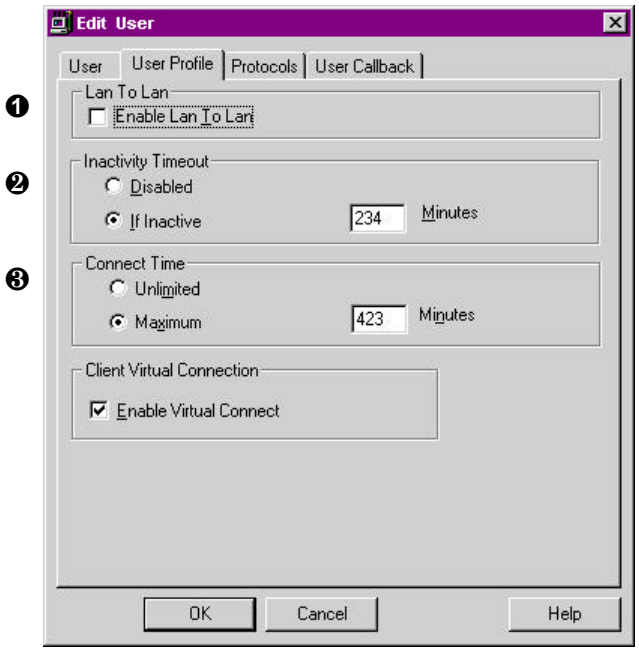
username *user_id* **nopassword** (user with no password assigned [default])
username *user_id* **password** *{encryption_type} password* (password assigned to the user)

encryption_type – the type of encryption used (optional parameter)
0 = password saved in clear text (no encryption)
100 = password saved encrypted
password – password assigned

NOTE: Do not enter the encryption type when assigning passwords to the user. Enable the **Service Encryption Password** (page 3-1) to save passwords in encrypted form. Otherwise, it is saved in clear text. The encryption type field will always be shown when viewing the entry in the configuration file.

override-standard-profile (enters user profile configuration mode)

5.2 User Profile



Item	Mode	Command
❶ ❷ ❸	_userdb	override-standard-profile

❶ **no lan-to-lan** (disables the lan-to-lan option [default])
lan-to-lan (enables the lan-to-lan option)

❷ **inactive** (disable inactivity timer [default])
inactive *value* (sets a maximum inactivity time)

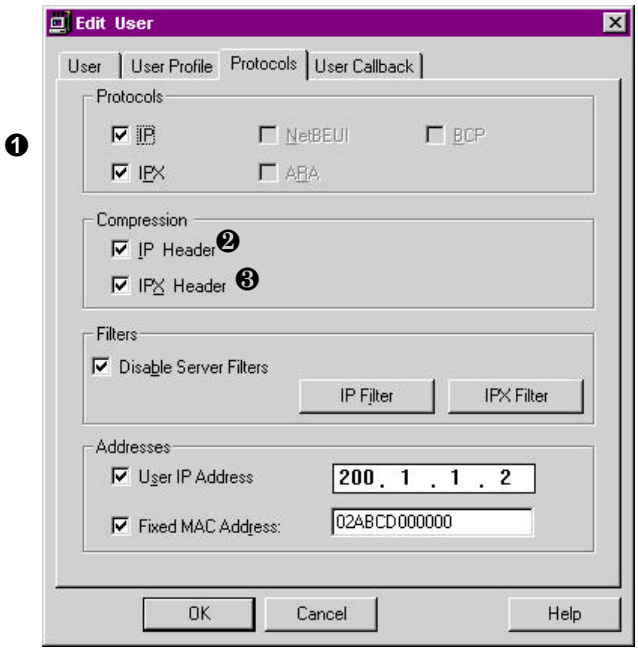
value – maximum period of inactivity before the connection is dropped

❸ **no maximum** (disables the maximum connect time [default])
maximum *value* (sets the maximum connect time)

value - the maximum connect time per session in minutes

no virtual (Disables virtual connection feature [default])
virtual (Enables virtual connection)

5.2.1 Protocols



Item	Mode	Command
❶ ❷ ❸	_userdb	override-standard-profile

❶ **protocol ip**
protocol ipx
protocol netbios
protocol ara
protocol bcp

Add a “no” before the command to disable the protocol.

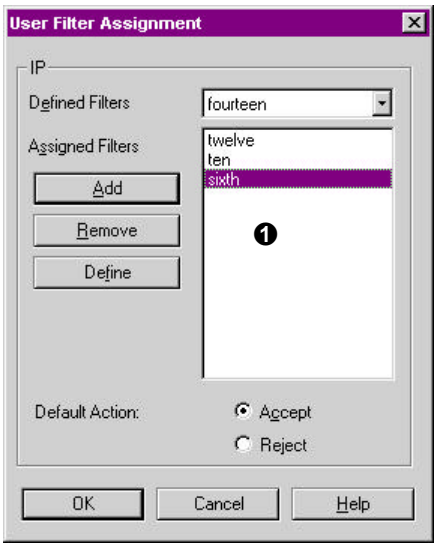
❷ **no ip tcp compression** (disable ip header compression[default])
ip tcp compression (enable ip header compression)

❸ **no ipx compression cipx** (disables ipx header compression [default])
ipx compression cipx (enables ipx header compression)

no server-filters (Disables server filters)
server-filters (Enables server filters [default])

ip address *nn.nn.nn.nn*	(Assign user WAN address)
macaddr ethernet *mmm.mmm.mmm*	(Assign ethernet MAC address)
macaddr tokenring *mmm.mmm.mmm*	(Assign tokenring MAC address)

5.2.2 IP Filters



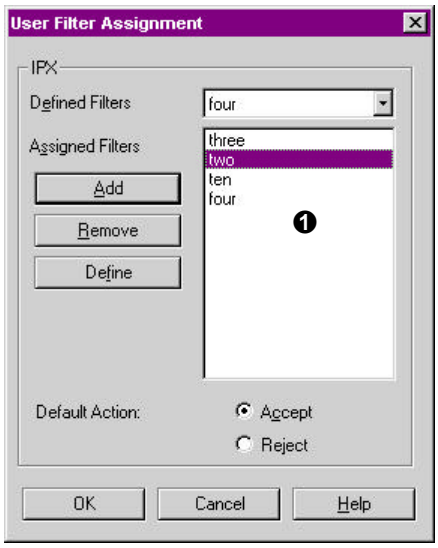
Item	Mode	Command
❶	_usedb	override-standard-profile

❶ **ip access-group** *filter_name1 filter_name2* …(Assign filters by name – up to ten can be listed – the filters are processed in the order they were entered)

Note: the default action is the same as the server filter default action which is set in the global configuration mode using the command

ip access-group-default [accept | reject].

5.2.3 IPX Filters



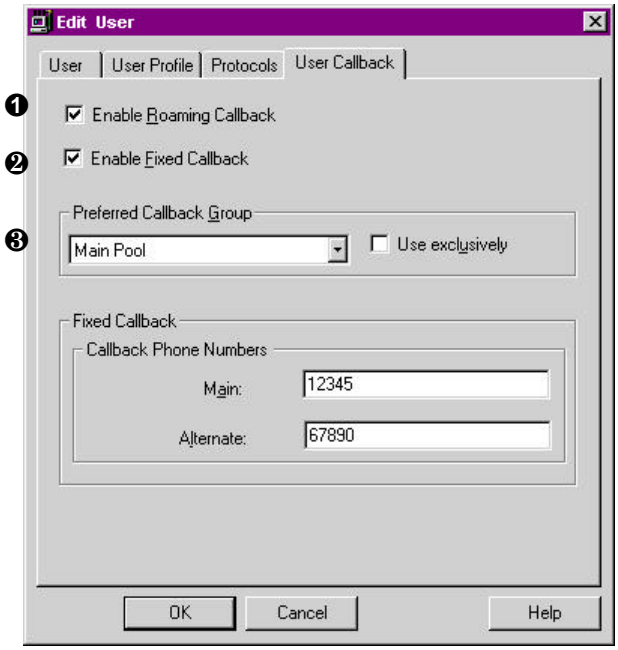
Item	Mode	Command
❶	_userdb	override-standard-profile

❶ **ipx access-group** *filter_name1 filter_name2* …(Assign filters by name – up to ten can be listed – the filters are processed in the order they were entered)

Note: the default action is the same as the server filter default action which is set in the global configuration mode using the command

ipx access-group-default [accept | reject].

5.2.4 Call Back



Item	Mode	Command
❶	_userdb	override-standard-profile
	Global	configure

❶ **no callback roaming** (disables roaming callback [default])
callback roaming (enables roaming callback)

❷ **username** *user_id* **callback-dialstring** *main_callback_number* **password** *{encryp_type} password*

user_id – user ID affected by this profile
main_callback_number – primary fixed callback number
encryp_type – password encryption type; value can be
0 = no password encryption
100 = encrypted password
(Note: this parameter does should not be entered. It is shown when the command is displayed in the configuration file.)
password – password of user

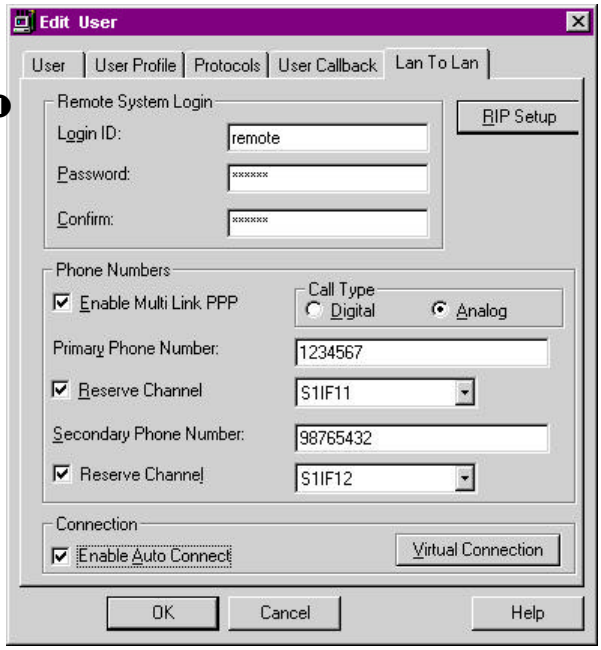
❸ **username** *user_id* **callback-rotary** *group_name* **password** *{encryp_type} password*

user_id – user ID affected by this profile
group_name – preferred callback group
encryp_type – password encryption type; value can be
0 = no password encryption
100 = encrypted password
(Note: this parameter does should not be entered. It is shown when the command is displayed in the configuration file.)
password – password of user

callback exclusive (Use the selected group exclusively)

callback alternate *phone_no* (Alternate fixed call back phone number)

5.2.5 Lan to Lan Parameters



Item	Mode	Command
❶ ❷	Global	override-standard-profile

❶ **l2l-id** *login_id* (remote system login user ID)

❷ **l2l-password** *password* (remote system login password)

❸ Multilink is automatically assumed to be enabled when two phone numbers are specified. No additional commands are needed.

l2l-calltype *calltype* (lan-to-lan call type)

calltype – type of call
analog
digital (default)

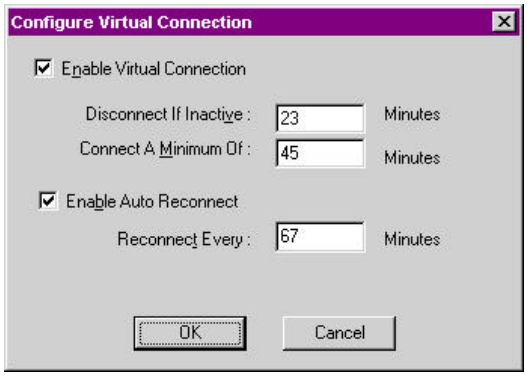
l2l-phone *line phone_number* (phone number of the line)

line – the phone line (1 or 2)
phone_number – number to call for this line

l2l-channel *line channel_name* (channel reserved for each line)

line – the line number (1 or 2)
channel_name– channel name reserved for this link

no l2l-auto-connect (Disable auto connect)
l2l-auto-connect (Enable auto connect)



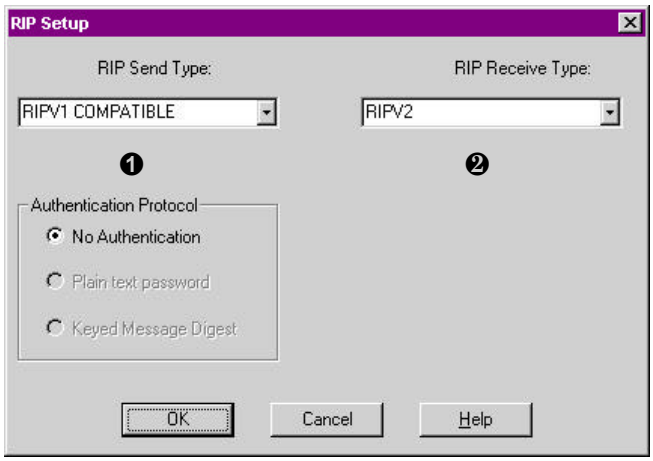
no l2l-virtual (Disable virtual connection [default])
l2l-virtual (Enable virtual connection)

l2l-inactive *value* (Set disconnect if inactive time value)

l2l-minimum *value* (Set minimum connect time value)

l2l-reconnect *value* (Set the reconnect time value)

5.2.6 Lan-to-Lan RIP Setup



Item	Mode	Command
❶ ❷	_userdb	override-standard-profile

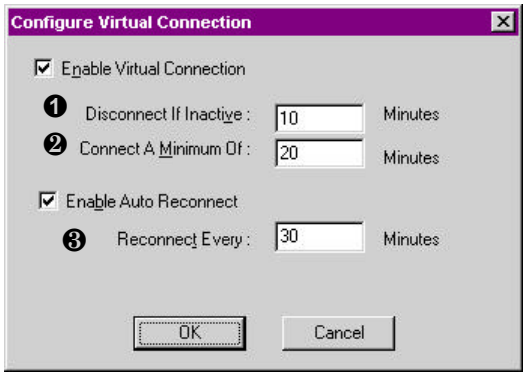
❶ **l2l-rip send version** *ver*

ver – RIP version
- **1** version 1
- **2** version 2
- **1 2** version 1 compatible

❷ **l2l-rip receive version** *ver*

ver – RIP version
- **1** version 1
- **2** version 2
- **1 2** version 1 compatible

5.2.7 Lan-to-Lan Virtual Connection



Item	Mode	Command
❶ ❷	Global	configure

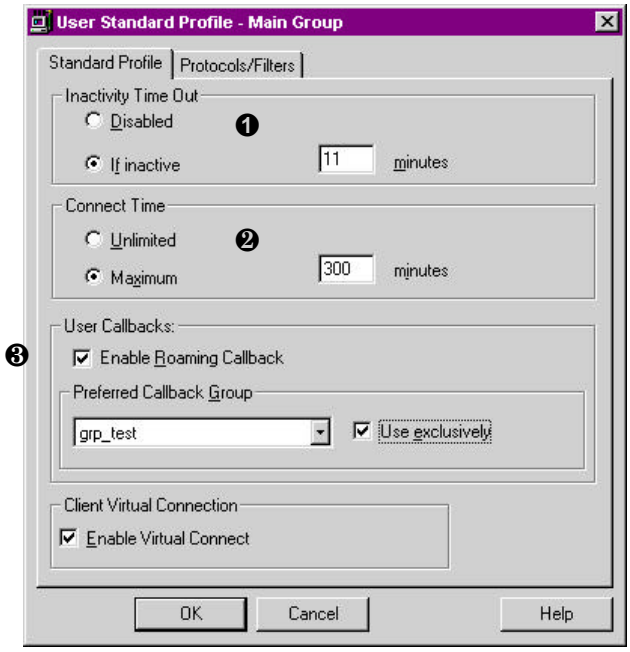
❶ **l2l-inactive** *value*

❷ **l2l-minimum** *value*

❸ **l2l-reconnect** *value*

Note: The commands above are only needed if virtual connection is enabled.
(Default = virtual connection disabled)

5.3 Standard Profile



Item	Mode	Command
❶	Standard Profile	_standard-profile

❶ **no inactive** (disable inactivity timer [default])
inactive *inactivity_timer* (sets a maximum inactivity time)

inactivity_timer – maximum period of inactivity before the connection is dropped

❷ **no maximum** (disables the maximum connect time [default])
maximum *maximum_time* (sets the maximum connect time)

maximum_time - the maximum connect per session for this user

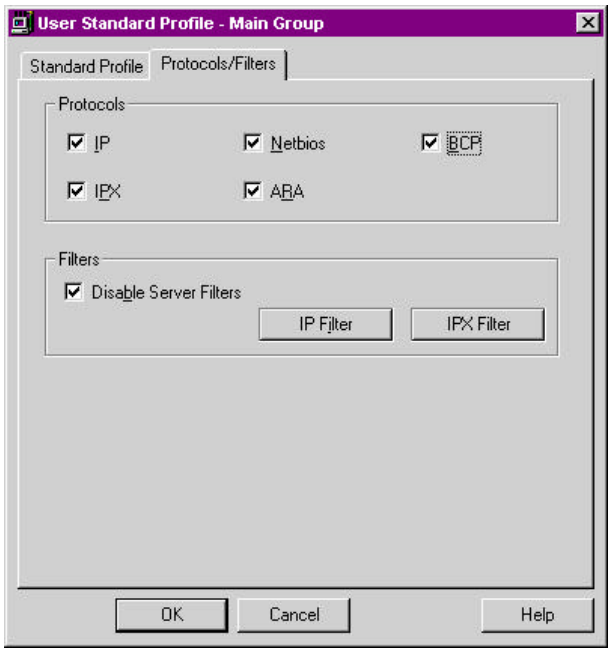
❸ **no callback roaming** (disables roaming callback [default])
callback roaming (enables roaming callback)

callback-rotary *group_name* (Preferred callback group)

no callback-exclusive	(group not used exclusively [default])
callback-exclusive	(group to be used exclusively)

no virtual	(disables virtual connection [default])
virtual	(enables virtual connection)

5.3.1 Standard Profile Protocols and Filters



Item	Mode	Command
❶	Standard profile	_standard-profile

❶ **protocol ip** [default]
protocol ipx [default]
protocol netbios
protocol ara
protocol bcp

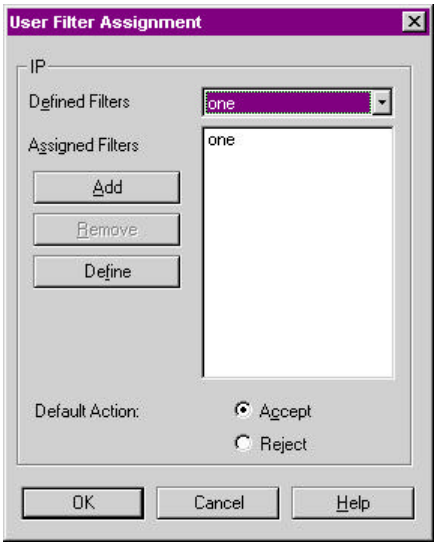
Use the “no” version of the command to disable.

❷ **no server-filters** (Disable server filters)
server-filters (Enable server filters [default])

❸ **ip _access-group-default {accept | reject}** (Set default action of filters)

ipx _access-group-default {accept | reject} (Set default action of filters)

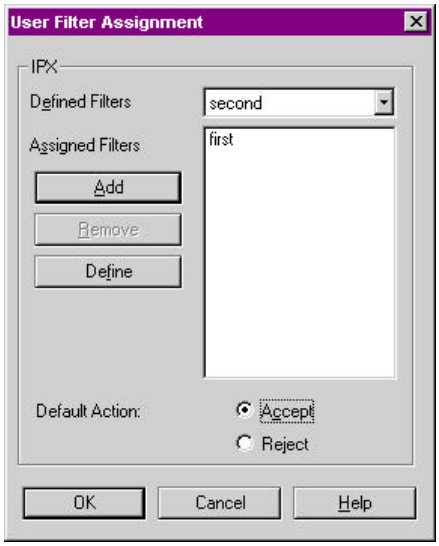
5.3.2 Standard Profile: IP Filters



Item	Mode	Command
All items	Standard profile	_standard-profile

Refer to **Sections 4.3.9 and 4.3.10** for details on filter definition and assignment.

5.3.3 Standard Profile IPX Filters



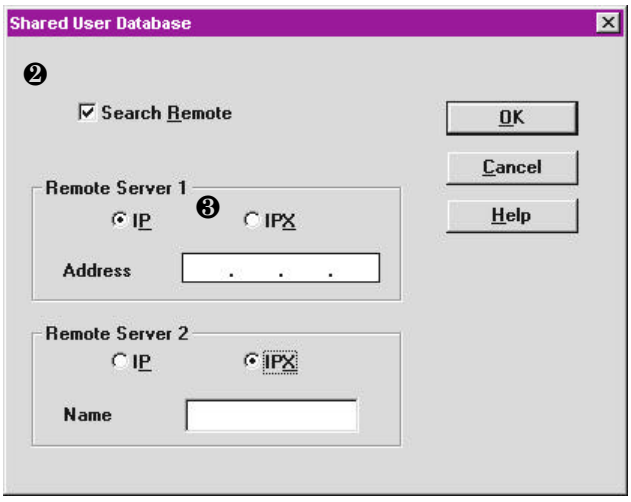
Item	Mode	Command
All items	Standard profile	_standard-profile

Refer to **Section 4.4.3** for details on filter definition and assignment

5.4 Shared Database

Item	Mode	Command
❶	Global	configure

❶ **_database-access public** (Enable public user database access)
_database-access private (Enable private user database access [default])

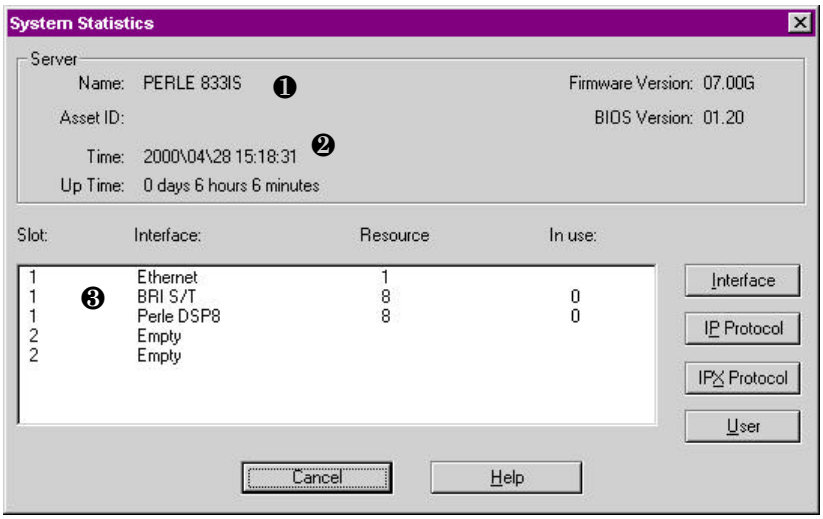


❷ This option is assumed once the address or name of the remote servers are specified (see below).

❸ **_shared-database-server 0 ip** *ip_address*
_shared-database-server 0 ipx *Name*

_shared-database-server 1 ip *ip_address*
_shared-database-server 1 ipx *Name*

6.0 Manager Statistics



Item	Mode	Command
❶	Privilege	enable

❶ show version

Displays: server name
asset ID
server start time
server up time
firmware version number
bios version number
interface resources in total, enabled, and in use
resources installed on the unit

❷ show clock

Server date and time in the format *hh:mm:ss day_of_week month day year*

❸ show interfaces (Shows the status of all interfaces on the unit)
❸ show interfaces fastethernet 0 (shows the ethernet LAN interface)
❸ show interfaces tokenring 0 (shows the token ring LAN interface)
❸ show interfaces bri *interface*:*channel_start*:*channel_end* (Shows status of the BRI interface specified)

interface – BRI port (0-7)

channel_start – optional start channel (1-2)
channel_end – optional end channel (must be 2)

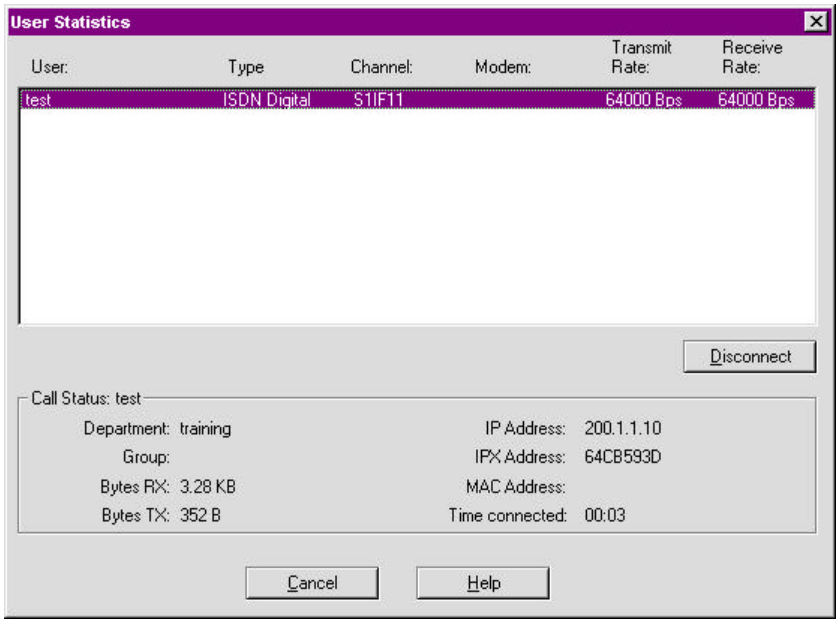
show ip interface (Display IP information on the interface)
show ip interface fastethernet 0 (IP information on the ethernet interface)
show ip interface tokenring 0 (IP information on the token ring interface)

For the IP interface specified, displays
IP address
Subnet mask
How the address was acquired (configuration,BOOTP,RARP)

show ipx interface (Display IPX information on the interface)
show ipx interface fastethernet 0 (IPX information on the ethernet interface)
show ipx interface token ring 0 (IPX information on the token ring interface)

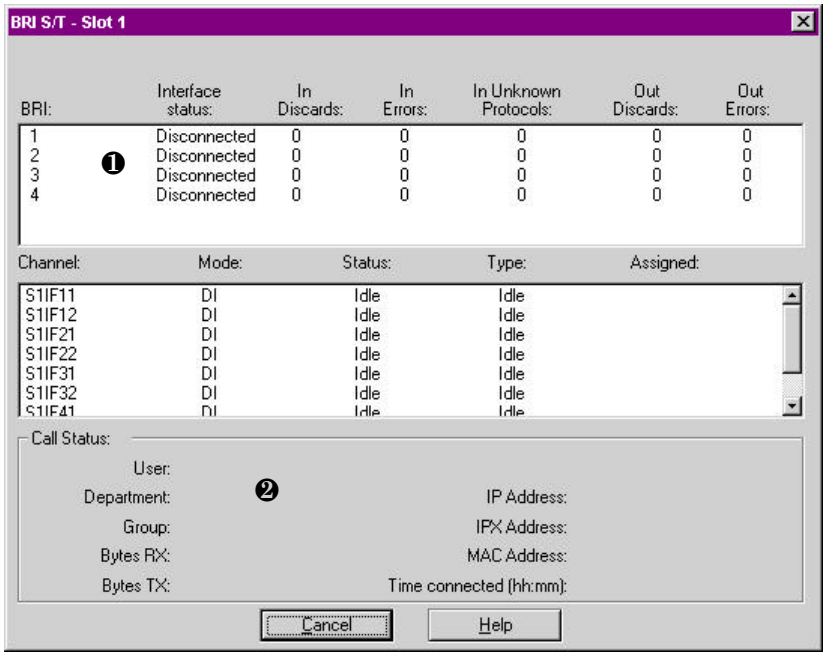
For the IPX protocol running on ethernet, displays
Network numbers for
Type II frames
SNAP frames
802.3 frames
802.2 frames
Dial in network number

show users (Shows status of all connected users)



clear _user *username* (Disconnect a connected user)

6.1 BRI Interface



Item	Mode	Command
❶	Privilege	enable

❶ **show interface bri** *interface_number*

interface_number – BRI port number (0-3 for system card, 4-7 for expansion card)

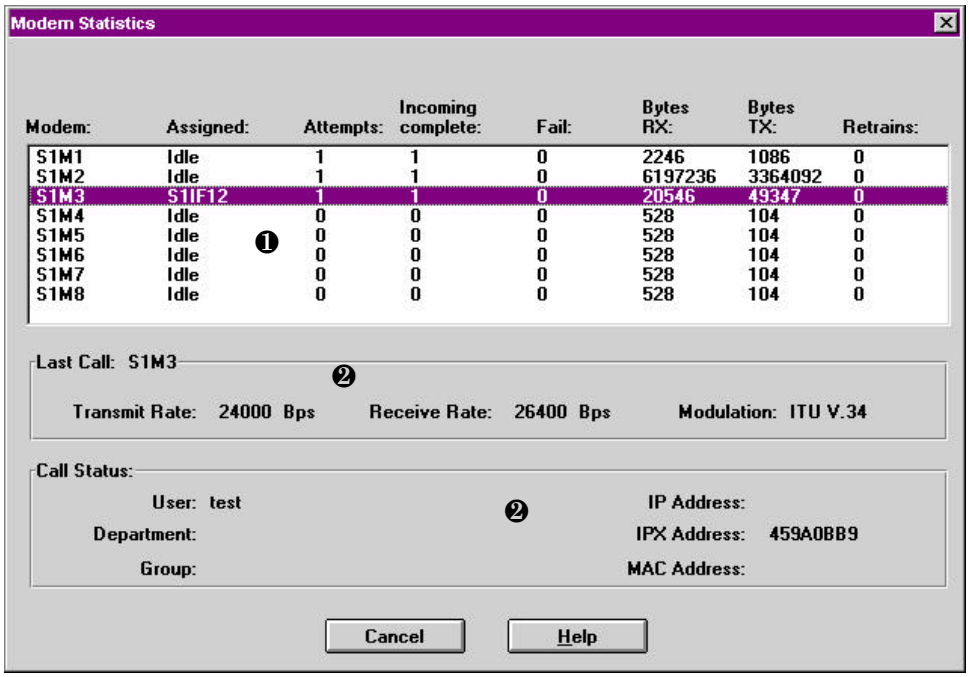
For the BRI port specified, displays
- Interface status
- In discards
- In errors
- In unknown protocols
- Out discards
- Out errors

❷ **show interface bri** *interface_number* **:** *channel_number*

interface_number - BRI port number (0-3 for system card, 4-7 for expansion card)
channel_number – Number of the BRI channel (1-2)

For the BRI port and channel specified, displays
- Channel name
- Mode (DO/DI/CB)
- Status
- Type
- Assigned modem resource
- User Name (if user connected)
- User Department
- Group
- Bytes RX
- Bytes TX
- IP address
- IPX address
- MAC address
- Time connected (current user)

6.2 Perle DSP8 (Modem) Interface



Item	Mode	Command
❶	Privilege	enable

❶ show modem

Displays information for each modem in table format:

- Modem name
- Assigned to which channel
- Number of call attempts
- Number of incoming incomplete calls
- Number of failed connections
- Number of bytes RX
- Number of bytes TX
- Number of retrains

❷ show modem *modem_number*

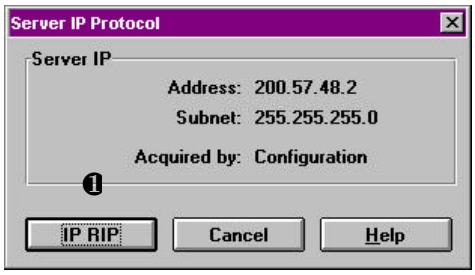
modem_number – specify modem by number (1-16)

For the modem specified, display

- Transmit rate

Receive rate
Modulation
User name (if currently connected)
User department
Group
IP address
IPX address
MAC address

6.3 IP Protocol

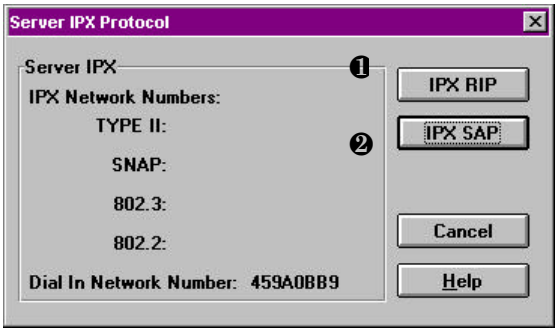


Item	Mode	Command
❶	Privilege	enable

❶ show ip route

Displays the default gateway and IP RIP entry in the table with its
- destination network
- subnet mask of destination network or host
- gateway of next hop
- number of hops to next destination
- type of entry (dynamic or static)
- port (interface used to reach the destination)
- user (if the port type is WAN, name of user configured)

6.4 IPX Protocol



Item	Mode	Command
❶	Privilege	enable

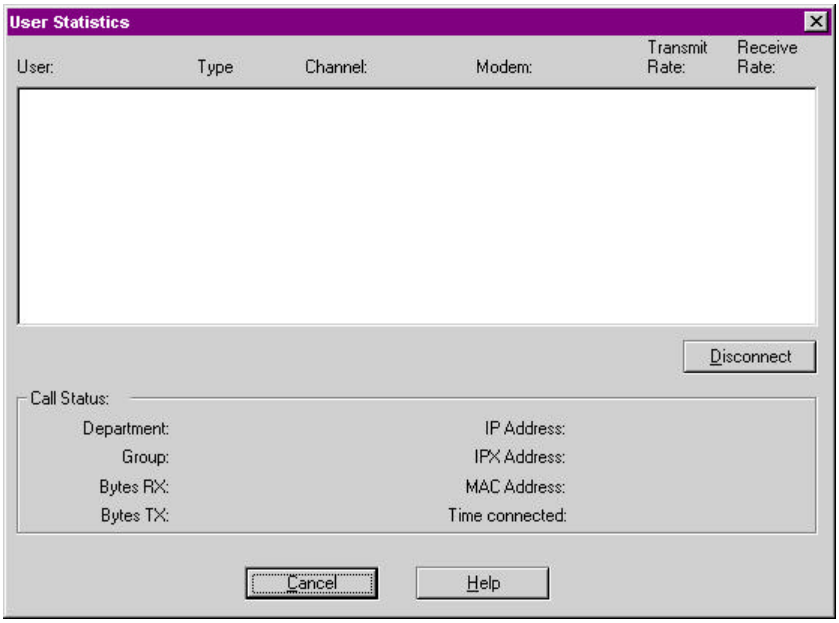
❶ **show ipx route**

Displays each entry in the RIP table showing its
Network number
Number of hops
Number of ticks

show ipx servers
show ipx servers unsorted (Displays the server list as stored internally)
show ipx servers sorted [name | net | type] (Displays the server list sorted by name (default), network number, or SAP service type)

Displays each entry in the SAP table showing its
Server name
Type of server
Number of hops
Network address
Node address
Socket number

6.5 WAN Users



Item	Mode	Command
All items	Privilege	enable

show users (Displays all WAN connected users)

Summarized information on all WAN users are displayed including
- user name
- call type
- reserved channel
- reserved modem
- receive rate
- transmit rate

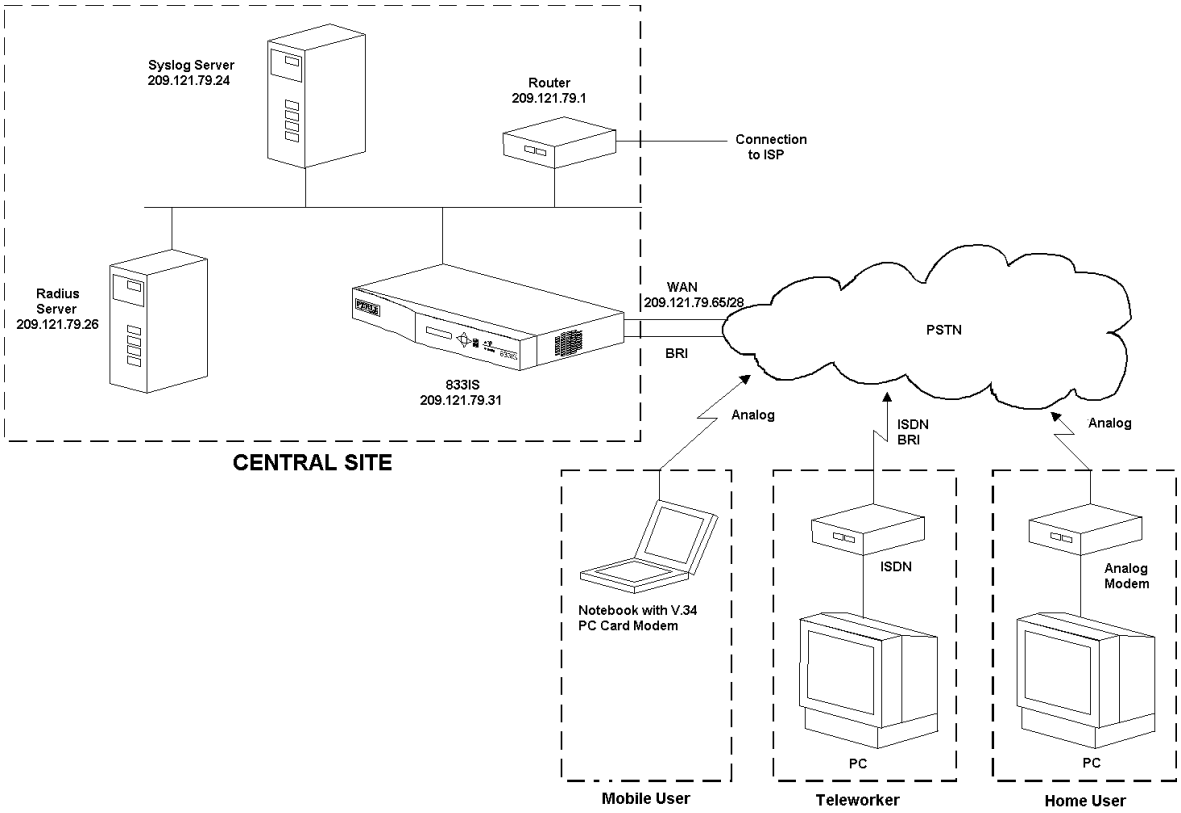
show users *partial_name* (Displays detailed information of all WAN configured users that matches with the partial name entered)

Detailed user information displayed include
- user name
- department

group
IP, IPX and MAC address
bytes received and transmitted
receive and transmit rate
call type
channel and modem resource used
elapsed connection time

Appendix A Sample Configuration Files

Connection to the Internet via 833IS

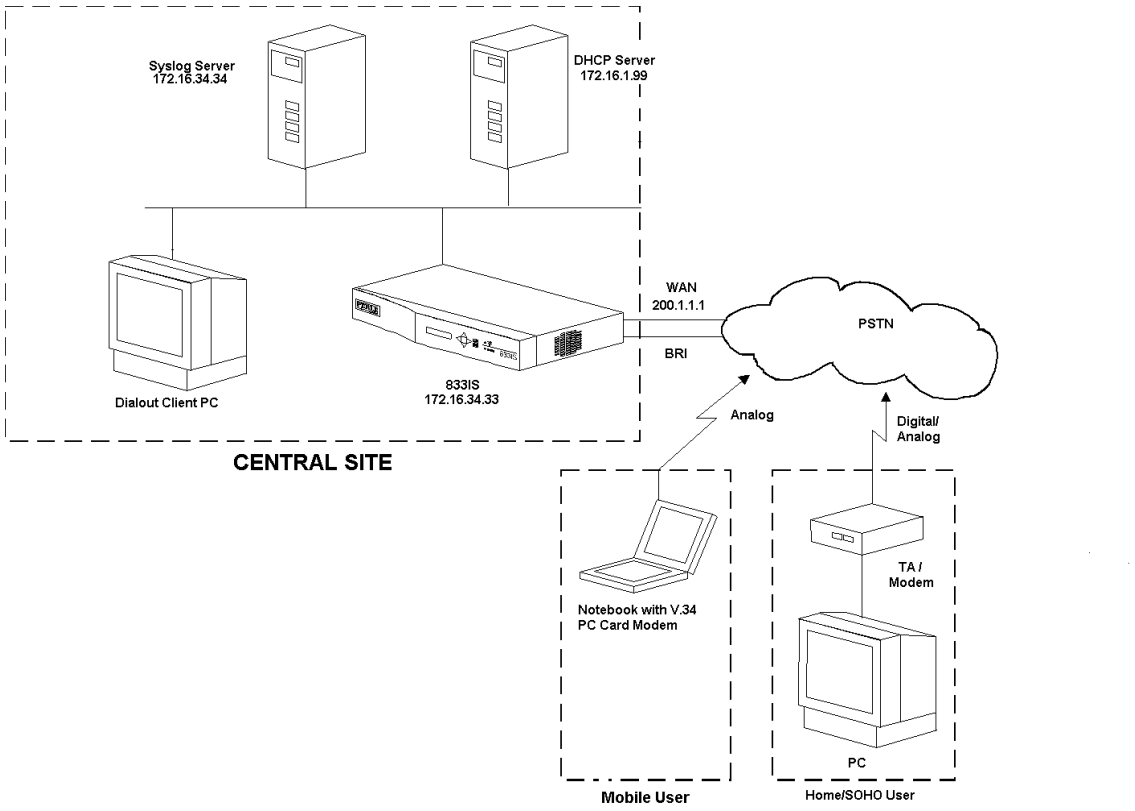


Radius authentication used, internal IP pool for WAN users, dial in only

```
!
!version 07.00
!
hostname "833IS ISP"                          //name given to 833IS
!
enable secret perle                           //system password (normally
                                              //save encrypted)
!
username bmckinlay password 0 shaun           //user configured on the 833IS
                                              //internal database (password
                                              //normally encrypted)
!
isdn switch-type basic-dms100                 //ISDN switch type
!
ip address-pool local                         //internal IP pool to assign
                                              //address to WAN users

                                              //address range in pool
ip local pool default 209.121.79.66 209.121.79.73

ip default-gateway 209.121.79.1               //address of next hop
```

```
ip name-server 38.8.82.2                    //address of DNS server

                                            //address and key of radius
                                            //authentication server
radius-server host 209.121.79.26 auth-port 1645
radius-server key 123456789012345
logging 209.121.79.24                       //address of syslog server
aaa authentication ppp default radius       //use radius authentication

                                            //WAN port interface
interface dialer 0
    ip address 209.121.79.65 255.255.255.240
    ppp authentication chap pap
!
interface FastEthernet 0                    //LAN port interface
    ip address 209.121.79.31 255.255.255.0
!
interface bri 0                             //BRI port 1
    isdn answer1 4755454
    isdn answer2 4753898
    isdn spid1 905475545400
    isdn spid2 905475389800

!
interface bri 1                             //BRI port 2
      isdn spid1 905475508500
      isdn spid2 905475508800
      isdn answer1 4755085
      isdn answer2 4755088
      shutdown

!
!
end
```

833IS on an Enterprise Network



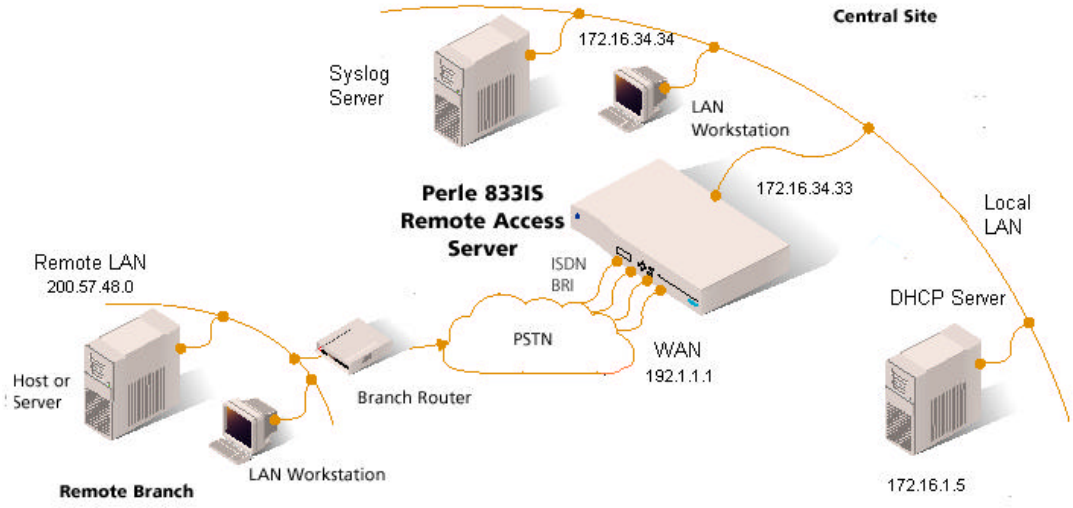
IP and IPX enabled on the network, DHCP used for WAN clients, dial in and dial out, user configured for fixed and roaming call back

```
!
!version 07.00

!
ipx routing                                  //ipx dynamic routing
ipx internal-network _auto-configured        //auto-generate internal
                                             //network number
hostname "PERLE 833IS"                       //name given to 833IS
enable secret 100 3A0916844B4BCA36           //system password (encrypted)
logging 172.16.34.34                         //syslog server address
ip default-gateway 172.16.1.7                //default gateway
ip address-pool dhcp-proxy-client            //DHCP used for WAN clients
username test password 0 test                //user added to internal user
                                             //list
username User_A callback-dialstring 4756070     //user configured for
                                                //fixed callback at the
                                                //number shown
ip dhcp-server 172.16.1.99                   //address of DHCP server

!!
interface dialer 0                           //WAN interface configuration
      ip address 200.1.1.1 255.255.255.0
      ppp authentication chap pap
```

```
!                                          //local LAN configuration
                                           //IPX and IP enabled
                                           //IPX auto detect all frame
                                           //types
interface fastethernet 0
      ipx network _auto-detected encapsulation novell-ether
      ipx network _auto-detected encapsulation arpa
      ipx network _auto-detected encapsulation snap
      ipx network _auto-detected encapsulation sap
      ip address 172.16.34.33 255.255.0.0

!
interface bri 0                            //BRI port 1 configuration
      isdn spid1 905475532700
      isdn spid2 905475593900
      isdn answer1 4755327
      isdn answer2 4755939
      isdn switch-type basic-dms100

!                                          //BRI port 2 configuration
                                           //dial out only enabled
interface bri 1
      dialer _dialin disabled
      dialer _dialout enabled
      isdn spid1 905475532700
      isdn spid2 905475593900
      isdn answer1 4755327
      isdn answer2 4755939
      isdn switch-type basic-dms100

!                                          //BRI port 3 configuration
                                           //call back only enabled
interface bri 2
      dialer _dialin disabled
      dialer callback-server
      isdn spid1 905475532700
      isdn spid2 905475593900
      isdn answer1 4755327
      isdn answer2 4755939
      isdn switch-type basic-dms100

!                                          //BRI port 4 configuration
                                           //port disabled
interface bri 3
      shutdown
      isdn switch-type basic-dms100

!
router rip                                 //dynamic routing enabled
      network 172.16.0.0

!
_userdb test                               //user “test” has admin rights
      admin
```

```
!                                          //user configured with user
                                           //profile – both fixed and
                                           //roaming call back enabled
_userdb User_A

      override-standard-profile
            callback roaming

!
end
```

833IS Configured for Lan-to-Lan on Demand




```
!
!version 07.00

!
hostname "CALLING 833IS"                    //name given to 833IS server
ip dhcp-server 172.16.1.5                   //DHCP server address
                                            //static route for WAN user
ip route 200.57.48.0 255.255.255.0 _user lan
username lan password 0 lan                 //WAN user and password
username test password 0 test               //local user
enable secret 100 3A0916844B4BCA36          //system password (encrypted)
logging 172.16.34.34                        //syslog server address

!
                                            //WAN port interface config
interface dialer 0
      ppp authentication chap pap
      ppp multilink                         //multilink enabled
      ip tcp header-compression             //IP header compression
      compress stac                         //STAC analog compression
      ip address 192.1.1.1 255.255.255.0    //WAN port address
      async dynamic address                 //WAN user specified address

!                                           //BRI Port 1 configuration
interface bri 0
      isdn switch-type basic-dms100
      isdn spid1 905475532700
      isdn spid2 905475593900
      isdn answer1 4755327
      isdn answer2 4755939
      dialer _dialout enabled               //enable dialout
      dialer callback-server                //enable call back
```

```
!                                          //BRI Port 2 configuration
interface bri 1
      shutdown                             //port disabled

!                                          //BRI Port 3 configuration
interface bri 2
      shutdown                             //port disabled

!                                          //BRI Port 3 configuration
interface bri 3
      shutdown                             //port disabled

!                                          //LAN interface configuration
interface FastEthernet 0
      ip address 172.16.34.33 255.255.0.0

!                                          //dynamic routing enabled
router rip
      network 172.16.0.0

!
_userdb lan                                //WAN user definition

      override-standard-profile
            lan-to-lan
            ip tcp header-compression      //IP header compression
            l2l-id superusr                //remote login user ID
            l2l-password superusr          //remote login password
            l2l-phone 1 94773789           //dial in number
            l2l-virtual                    //enable virtual connection
            l2l-inactive 8                 //disconnect if inactive
            l2l-minimum 3                  //minimum connect time
            l2l-reconnect 30               //reconnect every 30 min.

!
_userdb test                               //user has admin rights
      admin

!
end
```