Niwot NiwRAS Kit Help File (index:6294)

Standard NiwRAS Kit Contains:

NiwRAS RAS/WAN/PPP supporting NDIS 3.0 miniport driver.

Niwot AT/SD High speed ISA bus master communication board
Driver Board Config
Driver Link Config

V.35 cable Connects AT/SD to V.35 Male Plug
Cable Pinouts

DCE **Data Communication Equipment Configuration**

RAS **Remote Access Service Configuration**

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NiwHelp rev 1.2

Driver Board Config

- IRQ Level
- DMA Channel
- I/O Port Address

Driver Link Config

- Clock Rate
- Port1 Line_Type
- Port2 Line_Type

Data Communications Equipment Config

- Leased Line
- Switched 56
- Single ISDN BRI
- Quad ISDN BRI
- ISDN PRI and Dialing T1

IRQ Level

The AT/SD, AT/SDD, and AT/SS may use IRQ 2(or 9),10,11,12,or 15.

IRQ 10 is default.

Selection is made by a single jumper.

AT/SD and AT/SDD jumpers are labelled :

IRQ
15 12 11 10 IRQ2

AT/SS jumpers are labelled:

IRQ
15 11 9

12 10

DMA Channel

The AT/SD, AT/SDD, and AT/SS may use DMA Channel 0,1,3,5,6,or 7.

DMA Channel 6 is default.

Selection is made by a pair of jumpers, one for the request, the other for the acknowledge.

AT/SD and AT/SDD jumpers are labelled :

DACK 7 6 5 0 DACK 3 1
DRQ 7..6..5..0 DRQ 3 1

AT/SS jumpers are labelled:

7 6 5 0 7 6 5 0 1 3 1 3

DRQ DACK DRQ DACK

I/O PortAddress

I/O Port Address is controlled by switches 1,2, and 3.
On the AT/SD and AT/SDD switches 5 and 7 should be OFF (away from the board) and switches 4,6, and 8 should be ON (toward the board).

On the AT/SS switch 4 should be ON (toward the board) and there are no switches 5,6,7, or 8.

(On is toward board)

Switch 1	2	3	Base I/O Address in Hex
On	On	On	280 (Default)
On	On	Off	290
On	Off	On	2E0
On	Off	Off	2F0 *
Off	On	On	300
Off	On	Off	350
Off	Off	On	380

*2F0 conflicts with COM2

Clock Rate

A "0" Clock Rate is used to specify external clocking(from the DCEor DSU). This is the default.

Other clock rates (given in kilobits per second) may be chosen between 56 (56 Kilobits/sec)and 2500 (2.5 Megabits per second. These other rates are internally generated and are generallyonly used for back-to-back bench demonstrations and development.

Port1 Line Type

Line types of "Dial", "Leased", and "Disabled" are supported.

Port2 Line Type

Currently this is forced to "Disabled".

Cable Pinouts
Niwot Cable P/N 0.1215 V.35M to DB25S

This cable provides a V.35 interface:

DB25S Socket	Signal Name	V.35M Pin	Direction
1,hood	Shield/Chassis Gnd	A,hood	
2	TxData(A)	P	From AT/SD
14	TxData(B)	S	From AT/SD
3	RxData(A)	R	To AT/SD
16	RxData(B)	T	To AT/SD
4	RTS (Request to Send)	C	From AT/SD
5	CTS (Clear to Send)	D	To AT/SD
6	DSR (Data Set Ready)	E	To AT/SD
7	Signal Ground	B	
8	RLSD(Carrier detect)	F	To AT/SD
17	RxCLK(A)	V	To AT/SD
9	RxCLK(B)	X	To AT/SD
24	DTETxCLK(A)	U	From AT/SD
11	DTETxCLK(B)	W	From AT/SD
15	DCETxCLK(A)	Y	To AT/SD
12	DCETxCLK(B)	AA	To AT/SD
20	DTR (Terminal Ready)	H	From AT/SD
21	RL (Remote Loop,unused)	BB	From AT/SD
25	RI (Ring Indicate)	J	To AT/SD

Leased Line

LEASED 56 ADTRAN DSU III AR

Clocking is the first thing to check with all leased digital lines. Usually for long distance leased lines both units derive their clock from the network:

ADTRAN MENU: 3 CONFIG/1LOCAL/1NETWORK OPT/5CLOCK SOURCE
=2FROM NETWORK.

Many installations have worked better with one DSU set to provide the network clock.

ADTRAN MENU: 3CONFIG/1LOCAL/1NETWORK OPT/5CLOCK SOURCE
=1MASTER

Other normal settings are:

Synchronous,
V.35,
Dialing disabled
CS Forced ON
CD Normal
Network type DDS.

NOTE: (Do not use RS232 & V.35 cables simultaneously--"TR gets stuck ON".)

LEASED T1 ADTRAN TSU

Clocking is the first thing to check with all leased digital lines. Usually for long distance leased lines both units derive their clock from the network:

ADTRAN MENU: 3 CONFIG/1LOCAL/1NETWORK OPT/5CLOCK SOURCE
=2FROM NETWORK.

Many installations have worked better with one DSU set to provide the network clock.

ADTRAN MENU: 3CONFIG/1LOCAL/1NETWORK OPT/5CLOCK SOURCE
=1MASTER

Other normal settings are:

Synchronous,
V.35,
Dialing disabled
CS Forced ON
CD Normal
Network type DDS.

Switched 56

SWITCHED 56 ADTRAN DSU III AR

DO NOT USE "CRNT" in dial string for Adtran DSU IIIARjust use "CRN" followed by the number to be called. For example, 'CRN4447765' will dial 444-7765. "Quick setup" does not set dialing to V.25 HDLC. Follow this setup.

ADTRAN DSU III AR set up for switched 56 operation:

3CONFIG/1LOCAL/1NETWORK/...
- 1LOOP RATE/7=56K
- 4NETWORK TYPE=Select the Network you have
  (AT&T/MCI SW56 or US Sprint SW56)
- 5CLOCK SOURCE=2FROM NETWORK

3CONFIG/1LOCAL/2DTE OPTIONS/...
- 1RATE=1DTE56K
- 2CONNECTOR=2V.35
- 3DATAFORMAT/2SYNCHRONOUS
- 4DTE CMD OPTION=3V.25 SYNC
- 5TRANSMIT CLOCK=NORMAL
- 6CS=1FORCED ON
- 7ANTI-STREAM=1TIMER OFF
- 8CDOPTIONS=NORMAL
- 9TR OPTIONS=2IDLE WHEN OFF (So we can hang up)
- ASR OPTIONS=5OFF TEST + OOS

3CONFIG/1LOCAL/3TEST OPTIONS/...
- 3EIA LLB=1DISABLED...
- 4EIA RLB=1DISABLED...

3CONFIG/1LOCAL/4DIAL OPTIONS/...
- 2AUTO ANSWER/2ENABLED

After the DSU III AR is configured properly and NiwRAS and RAS are launched, the ADTRAN "RS", "CS", and "TD" lights should all be "on". The display will read "IDLE, LOOP IS NORMAL". If the display says "INCOMING CALL, LOOP IS NORMAL", this means the central office has your line configured as leased rather than dial.

Single ISDN BRI

SINGLE ISDN BRI ADTRAN ISU 128

Quad ISDN BRI

QUAD ISDN BRI ADTRAN ISU 512

DO NOT USE "CRNT" in dial string for ISDN, just use "CRN" followed by the number to be called. For example, 'CRN4447765' will dial 444-7765. "Quick setup" does not set dialing to V.25 HDLC.

The Adtran ISU 128 has two main versions out in the world:
old "L1" which has a set of V.35/530 switches on the rear.
Newer "L2,L3,L4,L5" which select V.35/530 from the menu.

Make sure that:
1. V.35 is selected (back on old, menu on new)
2. SR light is off when call is not up (DSR if call up on old DSR OFF Idle +Test on new)
3. DTR Idle when Off new only.
4. CD if call up on old, Normal on new.
5. Both LDNs are entered (possibly identical on AT&T) so can bond.

We recommend BONDING mode 1 , Call type Data56Kbps, Bit rate 112000.
After the ISU128 or ISU512 is configured properly and RAS is launched, the "RS", "CS", and "TR" lights should be "on" and the "TD" light should be flashing. The ADTRAN display should read either "AT&T-5ESS READY", "DMS-100 READY", "ISDN-1 READY" or "NEC READY", depending on what type of switch you have.

At the end of the dial string with ISU128 software 5.03 or higher, "#3" indicates multiples of 56, "#4" indicates multiples of 64. Use "#3" to call a Switched 56 line.

Dial strings for the ISU512 can be:

#3#0	Single 56
#3#7	7x56
#4#3	3x64
#4#8	8x64 = 512

ASCEND VSX-BRI single BRI or QUAD BRI versions

The Ascend VSX-BRI unit is generally similar to the Multiband in configuration. Ascend requires a different SPID for each channel (two SPID's per BRI).

see ISDN PRI and Dialing T1

ISDN PRI and Dialing T1

Ascend or AT&T ABC

ASCEND or ABC(Acculink Bandwidth Controller) installations may generally benefit from using Niwot Cable P/N 0.1264 DB25S to HDB44P Ascend V.35.

Multiband Plus or VSX T1

ASCEND MULTIBAND PLUS or VSX CONFIGURATION NOTES:

Host/Quad Port Directory Call Mgm='Static' or 'Manual' worked OK, 'Dynamic' and 'Delta' did not.

Port configurations Clear=DTR Inactive, Dial=V.25 bis, and Answer=DTR Active.

In order to call an ADTRAN ISU 128, Bonding mode 1 , data Svc of 56, and Base Ch Count of 2 are recommended. One way to do this is to store the desired number and specify bonding mode 1 within the Ascend/ABC Directory and using CRSx where x is the directory entry number to be used for dialing.

Following are examples of two Ascend dial strings:

ASCEND Call Profile CRS02 Used by users of an ABC IMUX who generally run AIM bonding, but want to call an ISDN line and specify Bonding Mode 1, the telephone number, Bonding Mode 1, 56K channnels, and 2 channels are all specified in "Call Profile 2)

ASCEND 56 CRN17007375813;SCTN56;BWR20;NMC

This string illustrates the extensions to V.25 bis in the ABC/Ascend, specifies that the calls are multiple Switched 56, that 20 calls are to be made in parallel, and No Management Channel is desired. The destination for this call is an ABC test IMUX accessible from the AT&T long distance network.

Remote Access Service Config

Installation

NiwRAS Driver Installation

Double-click "Network" within the Control Panel.

The Control Panel applet is in the "Main" program group.

Double-click "Add Adapter" within Network Settings.

After you have installed NiwRAS and RAS, you will be returned to this Network Settings window. When you click "OK" you will then be prompted to re-start so the installation can take effect.

The system will take a while "preparing network card choices".

Select "<Other> Requires disk from manufacturer"

from within Add Network Adapter, then "Continue".

Specificy location of the NiwRAS distribution diskette.

from within Insert Disk, then "OK".

Select Niwot Networks NiwRAS

from within Select OEM Option, then "OK".

Select Interrupt, IO Base, and DMA Channel

from within NiwRAS 1. When complete "OK". "Help" does not work.

Select ISA or EISA bus

If your machine has multiple buses, select the ISA or EISA bus into which you will install the Niwot board from within Bus Location, then "OK". You will not be given this selection on single bus machines.

Select Clock, Port1, and Port2

from within NiwRAS 2. When complete click "OK".
Note: "Help" does not yet support the Niwot driver.
After you click "OK", the system will copy NiwRAS.sys to the \system32\drivers directory and make the necessary entries in the registry.

RAS Prompt

The final step in driver installation reminds you to install RAS. Click "OK"

RAS Installation

Select Add Software

from within Network Settings.

Select Remote Access Service

from within Add Network Software, then "Continue".

Select NiwRAS Sync port

from within Add Port, then "OK".

Define port usage

From within Configure Port. Enabling both dial out and receive calls is shown, then "OK".

Set up Networks

click on "Networks" from within Remote Access Setup.

Do Not click on "Continue" until you have performed Network setup.

Decide on networks and encryption

Within Network Configuration, select protocols, we suggest you start with allowing any authentication, including clear text, and reconfigure for encryption at a later date, do not click "OK" until you have configured your server settings.

NetBEUI Configure

You may want to limit access to "this computer only"to start.

TCP/IP Configure

The configuration shown limits access to this computer only, and allows remote clients to request a predetermined IP address in the static range between 185.136.4.001 and 185.136.4.099. It has been our experience that once a connection is established from a client, this server node will be assigned the first available address from the static address pool.

IPX configuration

These are the settings we use:

Allow remote IPX clients to access entire network.
Allocate network numbers automatically.

The system installs RAS and the RAS Program Group

Click "OK" from Remote Access Service Setup to return to Network Settings.

After you click "OK" in Network Settings

The system configures the network

You are prompted to re-start

Select "Restart Now"

Getting the RAS Server to start automatically

Double-click "Services" within the Control Panel.

Select RAS, Startup

from within Services, "Close" when you are done.

Change startup type to Automatic

Then "OK", RAS will start with next system start