Cyclades PC300 PCI Adapters

Document revision 1.1 (Fri Mar 05 08:13:30 GMT 2004)
This document applies to V2.9

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General Information

Summary

The MikroTik RouterOS supports the following Cyclades PC300 Adapter hardware:

- RSV/V.35 (RSV models) with 1 or 2 RS-232/V.35 interfaces on standard DB25/M.34 connector, 5Mbps, internal or external clock
- T1/E1 (TE models) with 1 or 2 T1/E1/G.703 interfaces on standard RJ48C connector, Full/Fractional, internal or external clock
- X.21 (X21 models) with 1 or 2 X.21 on standard DB-15 connector, 8Mbps, internal or external clock

Specifications

Packages required: ***synchronous***
License required: ***level4***
Home menu level: ***/interface cyclades***
Standards and Technologies: ***X.21, X.35, T1/E1/G.703, Frame Relay, PPP, Cisco-HDLC***
Hardware usage: ***Not significant***

Related Documents

- Package Management
- Device Driver List
- IP Addresses and ARP
- Log Management

Synchronous Interface Configuration

Home menu level: ***/interface cyclades***

Description

You can install up to four Cyclades PC300 PCI Adapters in one PC box, if you have so many adapter slots and IRQs available.

The Cyclades PC300/RSV Synchronous PCI Adapter comes with a V.35 cable. This cable should work for all standard modems, which have V.35 connections. For synchronous modems, which have a DB-25 connection, you should use a standard DB-25 cable.

Connect a communication device, e.g., a baseband modem, to the V.35 port and turn it on. The MikroTik driver for the Cyclades Synchronous PCI Adapter allows you to unplug the V.35 cable from one modem and plug it into another modem with a different clock speed, and you do not need to restart the interface or router.

Property Description

name (*name*; default: **cycladesN**) - descriptive interface name

mtu (*integer*; default: **1500**) - Maximum Transmission Unit for the interface

line-protocol (*cisco-hdlc* | *frame-relay* | *sync-ppp*; default: **sync-ppp**) - line protocol

media-type (*E1* | *T1* | *V24* | *V35* | *X21*; default: **V35**) - the hardware media used for this interface

clock-rate (*integer*; default: **64000**) - internal clock rate in bps

clock-source (*internal* | *external* | *tx-internal*; default: **external**) - source clock

line-code (*AMI* | *B8ZS* | *HDB3* | *NRZ*; default: **B8ZS**) - for T1/E1 channels only. Line modulation method:

- **AMI** - Alternate Mark Inversion
- **B8ZS** - Binary 8-Zero Substitution
- **HDB3** - High Density Bipolar 3 Code (ITU-T)
- **NRZ** - Non-Return-To-Zero

framing mode (*CRC4* | *D4* | *ESF* | *Non-CRC4* | *Unframed*; default: **ESF**) - for T1/E1 channels only. The frame mode:

- **CRC4** - Cyclic Redundancy Check 4-bit (E1 Signaling, Europe)
- **D4** - Fourth Generation Channel Bank (48 Voice Channels on 2 T-1s or 1 T-1c)
- **ESF** - Extended Superframe Format
- **Non-CRC4** - plain Cyclic Redundancy Check
- **Unframed** - do not check frame integrity

line-build-out (*0dB* | *7.5dB* | *15dB* | *22.5dB*; default: **0**) - for T1 channels only. Line Build Out Signal Level.

rx-sensitivity (*long-haul* | *short-haul*; default: **short-haul**) - for T1/E1 channels only. Numbers of active channels (up to 32 for E1 and up to 24 for T1)

chdlc-keepalive (*time*; default: **10s**) - Cisco-HDLC keepalive interval in seconds

frame-relay-dce (*yes* | *no*; default: **no**) - specifies whether the device operates in Data Communication Equipment mode. The value yes is suitable only for T1 models

frame-relay-lmi-type (*ansi* | *ccitt*; default: **ansi**) - Frame Relay Line Management Interface Protocol type

Troubleshooting

Description

- **The cyclades interface does not show up under the interfaces list**
  Obtain the required license for synchronous feature
- **The synchronous link does not work**
  Check the V.35 cabling and the line between the modems. Read the modem manual

RSV/V.35 Synchronous Link Applications

Example

Let us consider the following network setup with MikroTik Router connected to a leased line with baseband modems and a CISCO router at the other end:

The driver for the Cyclades PC300/RSV Synchronous PCI Adapter should load automatically. The interface should be enabled according to the instructions given above. The **IP addresses** assigned to the cyclades interface should be as follows:

```
[admin@MikroTik] ip address> add address=1.1.1.1/32 interface=cyclades1
[admin@MikroTik] ip address> print
Flags: X - disabled, I - invalid, D - dynamic
  #   ADDRESS            NETWORK         BROADCAST       INTERFACE
  0   10.0.0.219/24      10.0.0.0        10.0.0.255      ether1
  1   1.1.1.1/32         1.1.1.1         1.1.1.1         cyclades1
  2   192.168.0.254/24   192.168.0.0     192.168.0.255   ether2
[admin@MikroTik] ip address> /ping 1.1.1.2
1.1.1.2 64 byte pong: ttl=255 time=12 ms
1.1.1.2 64 byte pong: ttl=255 time=8 ms
1.1.1.2 64 byte pong: ttl=255 time=7 ms
3 packets transmitted, 3 packets received, 0% packet loss
round-trip min/avg/max = 7/9.0/12 ms
[admin@MikroTik] ip address> /tool flood-ping 1.1.1.2 size=1500 count=50
        sent: 50
    received: 50
     min-rtt: 1
     avg-rtt: 1
     max-rtt: 9

[admin@MikroTik] ip address>
```

Note that for the point-to-point link the network mask is set to 32 bits, the argument **network** is set to the **IP address** of the other end, and the broadcast address is set to 255.255.255.255. The default route should be set to gateway router 1.1.1.2:

```
[admin@MikroTik] ip route> add gateway 1.1.1.2 interface cyclades1
[admin@MikroTik] ip route> print
Flags: X - disabled, I - invalid, D - dynamic, J - rejected,
```

```
C - connect, S - static, R - rip, O - ospf, B - bgp
    #    DST-ADDRESS        G GATEWAY         DISTANCE INTERFACE
    0  S 0.0.0.0/0          r 1.1.1.2         1        cyclades1
    1 DC 10.0.0.0/24        r 0.0.0.0         0        ether1
    2 DC 192.168.0.0/24     r 0.0.0.0         0        ether2
    3 DC 1.1.1.2/32         r 0.0.0.0         0        cyclades1
[admin@MikroTik] ip route>
```

The configuration of the CISCO router at the other end (part of the configuration) is:

```
CISCO#show running-config
Building configuration...

Current configuration:
...
!
interface Ethernet0
 description connected to EthernetLAN
 ip address 10.1.1.12 255.255.255.0
!
interface Serial0
 description connected to MikroTik
 ip address 1.1.1.2 255.255.255.252
 serial restart-delay 1
!
ip classless
ip route 0.0.0.0 0.0.0.0 10.1.1.254
!
...
end

CISCO#

Send ping packets to the MikroTik router:


CISCO#ping 1.1.1.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.1.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 28/32/40 ms
CISCO#
```