

## Appendix C

### Using the FDDI Status Utility

This appendix gives an overview of `fdistat`, the FDDI status utility, Cisco's monitoring tool for the CDDI and FDDI EISA HP adapters. This utility is a standalone application that works in conjunction with the FDDI driver. It supports SMT MIB and SNMP FDDI MIB specifications.

#### Invoking `fdistat`

The `fdistat` utility was loaded into your system with the EISA HP adapter driver software. (See Chapter 3, "Installing the Workgroup EISA HP Adapter Software.")

The format of the **`fdistat`** command is as follows:

```
fdistat [-f fddiNum][-l] [-p] [-h]
```

`-f fddiNum` specifies the FDDI interface number of the EISA HP adapter you are gathering statistics for. The default is 1, or the first EISA HP adapter.

`-l` indicates that `fdistat` will display statistics in long form. The default is short. The long form displays a snapshot of statistics in the SMT and FDDI MIBs.

`-p` perpetually displays the short form of information. It provides continual updates to a basic set of data, which is useful for monitoring. This option will continue to display until you press **Ctrl-c**.

`-h` displays all `fdistat` options.

#### **`fdistat`—Short Form**

The short form provides you with most of the statistics you will need to monitor the FDDI EISA HP adapter.

Figure C-1 gives an example of the `fdistat` short form without additional usage commands.

```

root@console: cfddi => fdlistat

-----
FDDI Adapter Statistics [2.1](lan1)
-----
Serial Number          000103211
Model Number          c321/3T
HW Rev                4.0
Main FW Rev           3.400
Boot FW Rev           3.0
Driver Rev            2.3
Upstream Nbr          00:02:d0:01:00:24 (00:40:0b:80:00:24) [ CISCO ]
Downstream Nbr        00:00:00:00:00:00 (00:00:00:00:00:00)
MAC Address           00:02:d0:02:23:3a (00:40:0b:40:c4:5c) [ CISCO ]
T-Neg                 125000 (10.000 msec)
Frame Count           34851842
Error Count            0
Lost Count             0
Txv Expired Count     116
Ring Op Count         118
RMT State              ring-op
Ler Estimate          15
Lem Reject Count      0
Lem Count              0
Connect State         active
Media Type             FIBER
Attachment Class      single
Adapter Diagnostics   Pass

root@console: cfddi =>

```

**Figure C-1 fddistat Short Form Example**

The definitions of the short form fddistat parameters are as follows:

- Serial Number—Displays the adapter’s serial number.
- Model Number—Displays the model number of the EISA HP adapter.
- HW Rev—Displays the hardware revision of the EISA HP adapter.
- Main FW Rev—Displays the revision of the main firmware residing in the Flash memory of the adapter.
- Boot FW Rev—Displays the revision of the boot firmware in the adapter.
- Driver Rev—Contains the revision of the driver installed.
- Upstream Nbr—Contains the address of the MAC’s current upstream neighbor, defined as the previous MAC that sent frames to this MAC.

- Downstream Nbr—Contains the address of the MAC's current downstream neighbor.
- MAC Address—Contains the adapter's MAC address.
- T-Neg—Contains the TReq value agreed on by all MACs in the ring.
- Frame Count—Contains all frames that the MAC has seen on the ring.
- Error Count—Displays a count of all error frames detected by this MAC. Frames that were detected as bad by a previous station are not included in this count.
- Lost Count—Contains a count of all frames and tokens received by this MAC that have an error.
- Tvx Expired Count—Displays the number of times the TVX timer expired because of a problem on the ring.
- Ring Op Count—Shows the number of times the ring becomes active from an inoperable state.
- RMT State—Shows the ring management state. Ring management (RMT) identifies stuck beaconing, initiates traces, provides notification of MAC availability, and detects duplicate addresses that prevent ring operation. This field will have one of the following values:
  - Isolated—The initial state of RMT.
  - Non\_Op—The ring is not operational.
  - Ringop—The ring is operational.
  - Detect—A duplicate address was detected and rendered the ring non-operational.
  - Non\_Op\_Dup—The ring is not operational because this MAC has a duplicate address.
  - Ring\_Op\_Dup—This MAC has a duplicate address.
  - Directed—This MAC sends beacon frames to notify the ring of a stuck condition.
  - Trace—The MAC initiates a trace function. Trace provides a recovery mechanism from a stuck beacon.

- **Ler Estimate**—The link error rate estimate defines the long-term estimated error rate for the link. This value is the exponent of  $10^{-x}$ ; for example, if the indicated value is 11, the estimated error rate is  $10^{-11}$ . Thus, the higher the value of Ler Estimate, the lower the link error rate. Values range from  $10^{-4}$  to  $10^{-15}$ .
- **Lem Reject Count**—Indicates the link error monitor rejected count—the number of times a link was disabled because the link error rate reached the cutoff threshold.
- **Lem Count**—Indicates the link error monitor count or the number of recorded link errors received. This value is used to estimate the link error rate. The link error monitor helps measure link performance and isolate faulty links that pass initial tests.
- **Connect State**—Indicates the connect state of this port. It groups physical connection management (PCM) states and PC-Withhold flag states. The connect states follow:
  - **Disabled**—The port is disconnected.
  - **Connecting**—The port is attempting to connect.
  - **Standby**—The connection is withheld or is the inactive port of a dual homing EISA HP adapter.
  - **Active**—The port is active.
- **Attachment Class**—Displays the attachment class of the adapter, single or dual.

### **fddistat—Long Form**

The fddistat long form displays the basic statistics, as well as statistics from several other groups including the following:

- FDDI adapter statistics
- General group
- SMT group
- MAC group

- Port group
- Attach group

The parameters in these groups conform to the groupings in the Workgroup Director network management software. Refer to the *Workgroup Director User Guide* or the FDDI MIB, the SMT specification, and the MAC specification to learn more about these parameters.

### fddistat—Perpetual Form

The fddistat perpetual form displays the short form information and continually updates the counter until you press **Ctrl-C**. (See Figure C-2.)

```
root@console: cfddi => fddistat -p
```

Frame-Ct	Error-Ct	Lost-Ct	Tvx-Exp-Ct	Ring-Op-Ct	Lem-Ct-s	Ring
6193	0	0	4	7	0	up
6221	0	0	4	7	0	up
6233	0	0	4	7	0	up
6245	0	0	4	7	0	up
6273	0	0	4	7	0	up

```
root@console: cfddi =>
```

Figure C-2 fddistat Perpetual Form Example

