# AppendixC
# Using the FDDI Status Utility

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

## Invoking fddistat

The fddistat utility was loaded into your system with the EISA SGI adapter driver software. (See the chapter,"Installing the Workgroup EISA SGI Adapter Software.")

The format of the **fddistat** command is as follows:

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

-f fddiNum specifies the FDDI interface number of the EISA SGI adapter for which you are gathering statistics. The default is 0, or the first EISA SGI adapter.

 -l indicates that fddistat will display statistics in long form. The default is short. The long form displays a snapshot of statistics in the 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 fddistat options.

### fddistat—Short Form

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

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

```
console # fddistat


_____

 FDDI Adapter Statistics [1.0]     (fddi0)
_____

Serial Number            000103205
Model Number             c32t-ux
HW Rev                   4.0
Main FW Rev              3.3
Boot FW Rev              3.0
Driver Rev               1.0
Upstream Nbr             00:02:d0:02:1f:92 (00:40:0b:40:f8:49) [ CISCO ]
Downstream Nbr           00:02:d0:02:1b:c7 (00:40:0b:40:d8:e3) [ CISCO ]
MAC Address              00:02:d0:02:15:8d (00:40:0b:40:a8:b1) [ CISCO ]
T-Neg                    62720(5.017 msec)
Frame Count              1891328536
Error Count              3
Lost Count               0
Tvx Expired Count        2192
Ring Op Count            70232
RMT State                ring-op
Ler Estimate             15
Lem Reject Count         0
Lem Count                0
Connect State            active
Media Type               MLT-3
Attachment Class         single
Adapter Diagnostics      Pass

console #
```

**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 SGI adapter.

- HW Rev—Displays the hardware revision of the EISA SGI 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 upon by all MACs in the ring.

- Frame Count—Contains a count of 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 SGI adapter.

  — Active—The port is active.

- Attachment Class—Displays the attachment class of the adapter, single or dual.

- Adapter Diagnostics—Indicates whether or not the adapter passed diagnostics.

## fddistat—Long Form

The fddistat long form displays the basic statistics, and also 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.)

```
console# fddistat -p

Frame-Ct   Error-Ct  Lost-Ct    Tvx-Exp-Ct Ring-Op-Ct Lem-Ct-s   Ring
---------- --------- ---------  ---------- ---------- ---------- ----
1891328538         3         0       2192      70232          0   up
1891329806         3         0       2192      70232          0   up
1891331315         3         0       2192      70232          0   up
1891332623         3         0       2192      70232          0   up
1891334661         3         0       2192      70232          0   up
1891337049         3         0       2192      70232          0   up
1891338155         3         0       2192      70232          0   up
1891339991         3         0       2192      70232          0   up

console#
```

**Figure C-2 fddistat Perpetual Form Example**