NAME

    ng_lmi - frame relay LMI protocol netgraph node type

SYNOPSIS

    #include <sys/types.h>
    #include <netgraph/ng_lmi.h>

DESCRIPTION

    The **lmi** node type performs the frame relay LMI protocol. It supports the ITU Annex A, ANSI Annex D, and Group-of-four LMI types. It also supports auto-detection of the LMI type.

    To enable a specific LMI type, connect the corresponding hook (annexA, annexD, or group4) to DLCI 0 or 1023 of a ng_frame_relay(4) node. Typically, Annex A and Annex D live on DLCI 0 while Group-of-four lives on DLCI 1023.

    To enable LMI type auto-detection, connect the auto0 hook to DLCI 0 and the auto1023 hook to DLCI 1023. The node will attempt to automatically determine which LMI type is running at the switch, and go into that mode.

    Only one fixed LMI type, or auto-detection, can be active at any given time.

    The NGM_LMI_GET_STATUS control message can be used at any time to query the current status of the LMI protocol and each DLCI channel. This node also supports the NGM_TEXT_STATUS control message.

HOOKS

    This node type supports the following hooks:

    annexA   ITU Annex A LMI hook.

    annexD   ANSI Annex D LMI hook.

    group4   Group-of-four LMI hook.

    auto0   Auto-detection hook for DLCI 0.

    auto1023 Auto-detection hook for DLCI 1023.

CONTROL MESSAGES

    This node type supports the generic control messages, plus the following:

NGM_LMI_GET_STATUS
     This command returns status information in a struct nglmistat:

          #define NGM_LMI_STAT_ARYSIZE   (1024/8)

          struct nglmistat {
           u_char proto[12]; /* Active proto (same as hook name) */
           u_char hook[12]; /* Active hook */
           u_char fixed;   /* If set to fixed LMI mode */
           u_char autod;   /* If currently auto-detecting */
           u_char seen[NGM_LMI_STAT_ARYSIZE];   /* DLCIs ever seen */
           u_char up[NGM_LMI_STAT_ARYSIZE];   /* DLCIs currently up */
          };

NGM_TEXT_STATUS
     This generic message returns is a human-readable version of the node status.

SHUTDOWN
This node shuts down upon receipt of a NGM_SHUTDOWN control message, or when all hooks have been disconnected.

SEE ALSO
netgraph(4), ng_frame_relay(4), ngctl(8)

ANSI T1.617-1991 Annex D.

ITU-T Q.933 Digital Subscriber Signaling System No. 1 - Signaling Specification for Frame Mode Basic Call Control, Annex A.

HISTORY
The **ng_lmi** node type was implemented in FreeBSD 4.0.

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