Appendix A

AF_HIPPI Address Structure

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```
#ifndef  _hippi_h
#define  _hippi_h

#pragma ident "$Id: hippi.h,v 1.1 1993/07/07 02:19:06 raj Exp $
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/*
 * Hippi interface structure definitions
 */

/* hippi sockaddr structures */

struct cci_src_rt_addr {
  unsigned L   :1 ,
  VU  :2 ,
  W   :1 ,
  D   :1 ,
  P_S  :2 ,
  C   :1 ,
  Routing_info :24 ;
} ;

struct cci_logical_addr {
  unsigned L   :1 ,
  VU  :2 ,
  W   :1 ,
  D   :1 ,
  P_S  :2 ,
  C   :1 ,
  left    :12,
  right   :12 ;
} ;

/* the following declarations are common to both PH and FP
addresses */
/* (see Sec 4 of the ANSI HIPPI-SC Doc. for field descriptions) */
```

Figure 16. AF_HIPPI address structure.
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```
typedef union hippi_cci_addr {
  union {
    struct cci_src_rt_addr  sa ;
    struct cci_logical_addr la ;
  } bits ;
  u_int c_ifield ;                          /* full ifield */
#define c_L         bits.sa.L               /* locally administered */
#define c_VU        bits.sa.VU              /* vendor unique */
#define c_W         bits.sa.W               /* double wide */
#define c_D         bits.sa.D               /* direction */
#define c_PS        bits.sa.P_S             /* path selection */
#define c_C         bits.sa.C               /* camp on */
#define c_sa_addr  bits.sa.Routing_info     /* source routing mode: addr */
#define c_la_d0_src bits.la.left            /* logical addr: D=0 src addr */
#define c_la_d0_dst bits.la.right           /* logical addr: D=0 dst addr */
#define c_la_d1_src bits.la.right           /* logical addr: D=1 src addr */
#define c_la_d1_dst bits.la.left            /* logical addr: D=1 dst addr */
#define hippi_get_la_src(a) ((a).c_D ? (a).c_la_d1_src :
(a).c_la_d0_src)
#define hippi_get_la_dst(a) ((a).c_D ? (a).c_la_d1_dst : \
                             (a).c_la_d0_dst)
} Hippi_cci_addr_t ;
```

Figure 16. AF_HIPPI address structure.
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```
struct sockaddr_hippi {
  u_short family ;                /* AF_HIPPI */
  u_char  if_unit ;               /* HIPPI interface number */
  u_char  ulp  ;                  /* upper layer protocol id (FP only) */

 Hippi_cci_addr_t  ifield ;       /* ifield */
  u_char  protocol ;              /* HIPPIPROTO_PH or HIPPIPROTO_FP */
  u_char  wildcards ;             /* wildcard field flags (see below) */
  char    unused[6] ;
} ;

/* FP header used for HIPPIPROTO_FP only */

struct hippi_fp_header {
  unsigned      ulp_id  :8,       /* ULP to which packet is to delivered */
                     P  :1,       /* D1_Data_Set_Present */
                     B  :1,       /* Start_D2_on_Burst_Boundary, always 0 */
              reserved  :11,      /* unused */
               d1_size  :8,       /* D1_Area_Size in 64–bit words */
              d2_offset :3 ;      /* bytes from start of D2_Area to D2_Data_Set*/
  unsigned long d2_size ;         /* size of D2_Data_Set in bytes */
};

typedef struct {
  struct sockaddr_hippi  sa ;
  struct hippi_fp_header fph ;
} Hippi_fp_hdr_t ;
```

Figure 16. AF_HIPPI address structure.
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```
/*----- protocol values --------*/

#define HIPPIPROTO_PH  1
#define HIPPIPROTO_FP  2

/*---- wildcard field flags ----*/
#define HIPPI_LOCAL_ANY    0x4
#define HIPPI_REMOTE_ANY   0x2
#define HIPPI_ULP_ANY      0x1

/*---- IP over FP default values -----*/
#define IPFP_ULP   HIPPI_FPULP_LE
#define IPFP_B     0x0
#define IPFP_P     0x1
#define IPFP_RESERVED   0x0
#define IPFP_D1_SIZE    0x3
#define IPFP_D2_OFFSET  0x0

/*---- Standardized values for FP ulp_id ----*/
#define HIPPI_FPULP_MI       2
#define HIPPI_FPULP_MI_INIT  3
#define HIPPI_FPULP_LE       4
#define HIPPI_FPULP_IPI3SLAVE6
#define HIPPI_FPULP_IPI3MASTER    7

/*--- HIPPI socket options -------------*/
#define HIPPI_MAX_PACKET_SIZE      0x00
#define HIPPI_DONT_BLOCK_ON_WRITE  0x01

#define HIPPI_MAX_OPTIONS (MLEN/sizeof(u_int))

#endif   /* _hippi_h */
```

Figure 16. AF_HIPPI address structure.
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