SOFTWARE COMPONENT SPECIFICATION

SYSTEM:	LEVEL 6 MOD400 OPERATING
SUBSYSTEM:	LOCAL AREA NETWORK
COMPONENT:	LAN SUBSYSTEM L6 DATA STRUCTURES
PLANNED RELEASE:	MOD400 4.0
SPECIFICATION REVISION NUMBER:	D
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This specification describes the current definition of the subject software component, and may be revised in order to incorporate design improvements.

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REFERENCES

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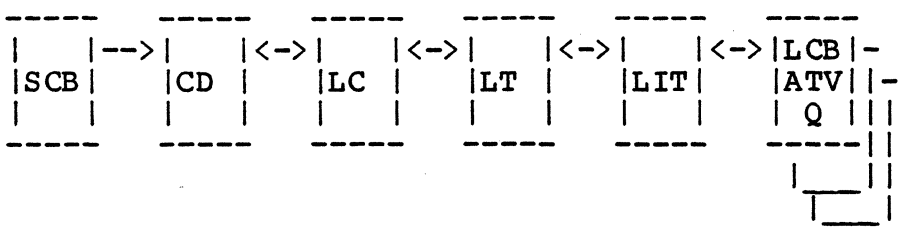
L6 DATA STRUCTURES

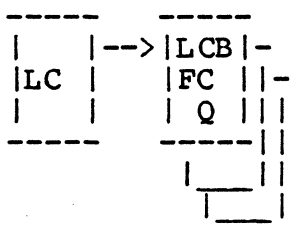
These data structures are the same as those accessed by the LDIS routines, the layer servers, and the LDMS routines. A block diagram of these data structures is shown in figure 2.1.a. The system control block contains a pointer to the LAN controller directory. The LAN controller directory contains a pointer to a controller table for each LACS present in the system. It also contains a pointer to a set of SAP directories, a local SAP directory and a remote SAP directory, for each layer defined for LAN operation. At present, there are only local directories for management SAPs and physical SAPs. There will always be a remote and local SAP directory for any link, network, and transport defined SAPs within the system.

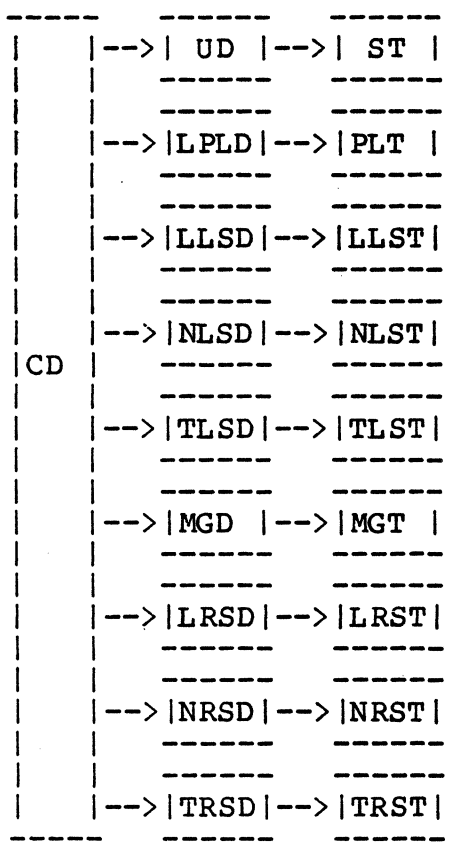
A controller table contains pointers to eight layer tables. Layer table zero being a management layer table, and layer table one through seven assigned according to the seven layer ISO model (physical being table one, application being table seven). Each layer table in turn contains pointers for up to eight layer instance table, one for each instance of layer per controller. The controller tables contain the attributes of each controller such as name and state information as well as parameters allowing the number of LCBs to be issued to the controller to be restricted. The layer instance table contains information about the type of protocal it represents, what L6 interrupt level it has benn assigned and a queue of active LCBs which has been issued to the layer instance for this controller.

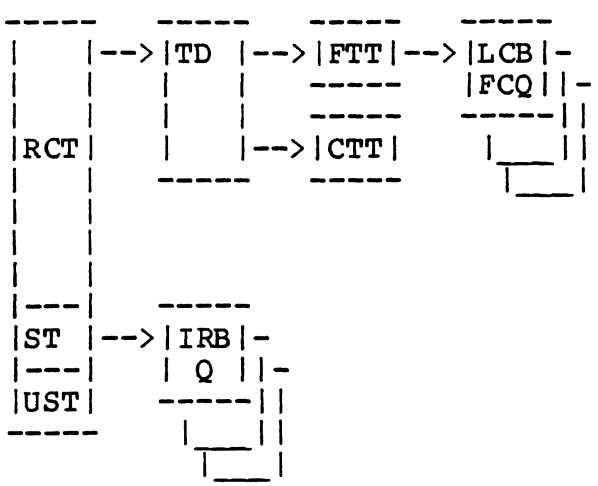
Each user interface to the LAN is assigned a RCT. The RCT maintains a queue of active IRBs issued on it's assigned LRN. A transfer directory is `also maintained for each RCT. The first entry in the transfer directory is a pointer to the transfer table for connectionless operations while the remaining entries are assigned one per connection. Each transfer table contains parameters allowing the flow of read and write type LCBs to be controlled on a user basis and a pointer to the layer instance table for this transfer table. The following diagram shows the data structures.

LAN L6 DATA STRUCTURES









LAN L6 DATA STRUCTURES ACRONYMS

SCB - SYSTEM CONTROL BLOCK
CD - CONTROLLER DIRECTORY
LC - LAN CONTROLLER TABLE
LT - LAYER TABLE
LIT - LAYER INSTANCE TABLE
LCB FCQ -LAN CONTROL BLOCK FLOW CONTROL QUEUE
LCB ATVQ -LAN CONTROL BLOCK ACTIVE QUEUE
IRB Q - QUEUE OF ACTIVE IRB'S
UD - USER DIRECTROY
PLD - PHYSICAL LINE DIRECTROY
PLT - PHYSICAL LINE TABLE
LLSD - LOCAL LINK SAP DIRECTROY
LLST - LOCAL LINK SAP TABLE
LNSD - LOCAL NETWORK SAP DIRECTORY
LNST - LOCAL NETWORK SAP TABLE
LTSD - LOCAL TRANSPORT SAP DIRECTORY
LTST - LOCAL TRANSPORT SAP TABLE
LST - ONE OF THE LOCAL SAP TABLES
UST - LAYER SPECIFIC UNIQUE PROTION OF THE SAP TABLE
RLSD - REMOTE LINK SAP DIRECTORY
RLST - REMOTE LINK SAP TABLE
RNSD - REMOTE NETWORK SAP DIRECTORY
RNST - REMOTE NETWORK SAP TABLE
RTSD - REMOTE TRANSPORT SAP DIRECTORY
RTST - REMTOE TRANSPORT SAP TABLE
MGD - MANAGEMENT DIRECTORY
MGT - MANAGEMENT TABLE
RCT - RESOURCE CONTROL TABLE
TD - TRANFER DIRECTORY
FTT - FIRST TRANFER TABLE
CTT - CONNECTION TRANSFER TABLE

SYSTEM CONTROL BLOCK (SCB)

The scb is an executive owned data structure. The pointer to the scb is retrieved from hardware decidated memory (location x'18'). The scb is created by the executive. The scb contains 2 lan pointers, one to the lan controller directory (cd) and one to the lan power fail restart routine.

s_lcdp
- initialized by: clm
- contains: pointer to lan cd
- referenced by: ldms, lsid, sm ls
- length in words: 2

s_lnpf
- initialized by: clm
- contains: pointer to lan power fail restart routine
- referenced by: ldis
- length in words: 2

LAN CONTROLLER DIRECTORY (CD)

The cd is a lan subsystem owned data structure. The pointer to the cd is retrieved from the scb s_lan field. Clm creates the cd. The cd contains 16 pointers to the lan controller tables, (note: a pointer is null if a controller does not exist), pointer the user directory, local and remote sap directories and pointers to management directories.

The following field is in the negitive portion of the cd.

cd_syb
- initialized by: clm
- contains: 4 characters symbolic name of the cd, contains x'43442020'
- referenced by: used for reading dumps easily
- length in words: 2

The following fields are in the postive portion of the cd.

cd_lc0 - cd_lcf
- initialized by: clm
- contains: pointer to lc (if one exists on the megabus for the position, otherwise the field is null)
- referenced by: ldms, any ls, ldis
- length in words: 2 each

cd_ud
- initialized by: clm
- contains: pointer to user directory (ud)
- referenced by: ldis, sm ls
- length in words: 2

cd_lmd
- initialized by: clm
- contains: pointer to local management directory
- referenced by: sm ls
- length in words: 2

cd_rmd
- initialized by: clm
- contains: pointer to remote management directory
- referenced by: sm ls
- length in words: 2

cd_lid
- initialized by: sm ls
- contains: pointer to layer instance directory (lid)
- referenced by: sm ls
- length in words: 2

cd_lpd
- initialized by: sm ls
- contains: pointer to local physical line directory (layer 1)
- referenced by: sm, ldis
- length in words: 2

cd_rpd
- initialized by: sm ls
- contains: pointer to remote physical line directory (layer 1)
- referenced by: sm ls
- length in words: 2

cd_lld
- initialized by: sm ls
- contains: pointer to local lsap directory (layer 2)
- referenced by: ldis, llc ls, sm ls
- length in words: 2

cd_rld
- initialized by: sm ls
- contains: pointer to remote lsap directory (layer 2)
- referenced by: ldis, llc ls, sm ls
- length in words: 2

cd_lnd
- initialized by: sm ls
- contains: pointer to local nsap directory (layer 3)
- referenced by: ldis, sm ls
- length in words: 2

cd_rnd
- initialized by: sm ls
- contains: pointer to remote nsap directory (layer 3)
- referenced by: ldis, sm ls
- length in words: 2

cd_ltd
- initialized by: sm ls
- contains: pointer to local tsap directory (layer 4)
- referenced by: ldis, xpt ls, sm ls
- length in words: 2

cd_rtd
- initialized by: sm ls
- contains: pointer to remote tsap directory (layer 4)
- referenced by: ldis, xpt ls, sm ls
- length in words: 2

cd_lsd
initialized by: sm ls
contains: pointer to local ssap directory (layer 5)
referenced by: ldis, xpt ls, sm ls
length in words: 2

cd_rsd
initialized by: sm ls
contains: pointer to remote ssap directory (layer 5)
referenced by: ldis, xpt ls, sm ls
length in words: 2

cd_lpd
initialized by: sm ls
contains: pointer to local psap directory (layer 6)
referenced by: ldis, sm ls
length in words: 2

cd_rpd
initialized by: sm ls
contains: pointer to remote psap directory (layer 6)
referenced by: ldis, sm ls
length in words: 2

cd_lad
initialized by: sm ls
contains: pointer to local asap directory (layer 7)
referenced by: ldis, xpt ls, sm ls
length in words: 2

cd_rad
initialized by: sm ls
contains: pointer to remote asap directory (layer 7)
referenced by: ldis, xpt ls, sm ls
length in words: 2

cd_lsd
initialized by: sm ls
contains: pointer to local ssap directory (layer 4)
referenced by: ldis, xpt ls, sm ls
length in words: 2

cd_rsd
initialized by: sm ls
contains: pointer to remote ssap directory (layer 4)
referenced by: ldis, xpt ls, sm ls
length in words: 2

cd_ful - cd_fu3
initialized by: rfu
contains: rfu
referenced by: rfu
length in words: 2

cd_sz
initialized by:
contains: equate value representing size in words of the cd
referenced by:

LAN CONTROLLER TABLE (LC)

The lc is a lan subsystem owned data structure. The pointer to the lc is retrieved from the cd. Clm creates the lc. The lc represents a lacs on the megabus. The lc contains 8 pointers to the layer tables (note: a pointer is null is the layer is not configured), controller attibutes, controller state information, flow control counts and queues, nak'd counts and queues, lacs statistics, and lcb statistics.

The following fields are in the negitive portion of the lc.

lc_syb
- initialized by: clm
- contains: 4 characters symbolic name of the lc, contains x'4c432020'
- referenced by: used for reading dumps easily
- length in words: 2

lc_dos
- initialized by: sm ls
- contains: offset to object discription
- referenced by: sm ls
- length in words: 1

The following fields are in the postive portion of the lc.

lc_lt0 - lc_lt7
- initialized by: clm
- contains: pointer to layer table (lt)
- referenced by: ldms, sm ls
- length in words: 2 each

lc_idl
- initialized by: clm, sm ls
- contains: megabus address, indicator bits
bits 0-3 - megabus address
bit 4 - iold is being nak'd when set
- referenced by: sm ls, ldms
- length in words: 1

lc_mwb
- initialized by: sm ls
- contains: the maximun number of write lcbs which can be sent to the controller represented by this table
- referenced by: sm ls, ldms
- length in words: 1

lc_cwb
- initialized by: clm
- contains: this field contains the current number of write lcbs that are outstanding at the controller this table represents
- referenced by: ldms
- length in words: 1

lc_lwl
- initialized by: clm
- contains: lock word required by firmware queueing instructions, used for the lc_hwb and lc twb queue
- referenced by: ldms, firmware queueing instructions
- length in words: 1

lc_hwb
- initialized by: clm
- contains: when write lcbs cannot be issued to the controller because the flow control values have been reached lcbs are queued off this field, this field points to the first lcb on the write wait queue, inital value is a pointer to the lc_lwl field
- referenced by: ldms, firmware queueing instructions
- length in words: 2

lc_twb
- initialized by: clm
- contains: this field points to the last lcb on the queue of write lcbs waiting because of flow control, inital value is a pointer to the lc_lwl field
- referenced by: ldms, firmware queueing instructions
- length in words: 2

lc_mrb
- initialized by: sm ls
- contains: the maximun number of read lcbs which can be sent to the controller represented by this table
- referenced by: sm ls, ldms
- length in words: 1

lc_crb
- initialized by: clm
- contains: this field contains the current number of read lcbs that are outstanding at the controller this table represents, inital value is zero
- referenced by: ldms
- length in words: 1

lc_lw2
- initialized by: clm
- contains: lock word required by firmware queueing instructions, used for the lc_hrb and lc trb queue
- referenced by: ldms, firmware queueing instructions
- length in words: 1

lc_hrb
- initialized by: clm
- contains: when read lcbs cannot be issued to the controller because the flow control values have been reached lcbs are queued off this field, this field points to the first lcb on the read wait queue, inital value is a pointer to the lc_lw2 field
- referenced by: ldms, firmware queueing instructions
- length in words: 2

lc_twb
- initialized by: clm
- contains: this field points to the last lcb on the queue of read lcbs waiting because of flow control, inital value is a pointer to the lc_lw2 field
- referenced by: ldms, firmware queueing instructions
- length in words: 2

lc_lw3
- initialized by: clm
- contains: lock word required by firmware queueing instructions, used for the lc_hnb and lc tnb queue
- referenced by: ldms, firmware queueing instructions
- length in words: 1

lc_hnb
- initialized by: clm
- contains: when a lcb is nak'd by the controller or subsquent request are issued to the ldms while the controller nak'd a request, they will be queued here, this pointer points to the head lcb that has been naked, initial value is a pointer to the lc_lw3 field
- referenced by: ldms
- length in words: 2

lc_tnb
- initialized by: clm
- contains: this field points to the last lcb on the nak'd queue, initial value is a pointer to the lc_lw3 field
- referenced by: ldms
- length in words: 2

lc_mnc
- initialized by: clm
- contains: maximim number of iold retrys
- referenced by: sm ls, ldms
- length in words: 1

The following fields are the object discription.

lc_nam
- initialized by: sm ls
- contains: symbolic name of the lc
- referenced by: sm ls
- length in words: 8

lc_cls
- initialized by: sm ls
- contains: class of service
- referenced by: sm ls
- length in words: 1

lc_typ
- initialized by: sm ls
- contains: type of controller
- referenced by: sm ls
- length in words: 1

lc_vnu
- initialized by: sm ls
- contains: venue
- referenced by: sm ls
- length in words: 1

lc_sta
- initialized by: sm ls
- contains: controller state information
- referenced by: ldms, sm ls
- length in words: 1

lc_sst
- initialized by: sm ls
- contains: controller sub state information
- referenced by: ldms, sm ls
- length in words: 1

lc_map
- initialized by: sm ls
- contains: mapping information
- referenced by: sm ls
- length in words: 1

lc_ual
- initialized by: sm ls
- contains: length in words of the unique abbibutes
- referenced by: sm ls
- length in words: 1

lc_usl
- initialized by: sm ls
- contains: length in words of the unique staticics
- referenced by: sm ls
- length in words: 1

lc_spr
initialized by: sm ls
contains: size of availiable procedure ram on the lc
referenced by: sm ls
length in words: 1

lc_hwr
initialized by: sm ls
contains: hardware revision of the lc
referenced by: sm ls
length in words: 1

lc_swr
initialized by: sm ls
contains: software revision of the lc
referenced by: sm ls
length in words: 1

lc_fwr
initialized by: sm ls
contains: firmware revision of the lc
referenced by: sm ls
length in words: 1

lc_sdr
initialized by: sm ls
contains: size of availiable data ram on the lc
referenced by: sm ls
length in words: 1

lc_tbi
initialized by: clm
contains: total number of lcbs that have been issued to the lc
referenced by: sm ls, ldms
length in words: 1

lc_tbn
initialized by: clm
contains: total number of lcbs that have been nak'd by the lc
referenced by: sm ls, ldms
length in words: 1

lc_tbf
initialized by: clm
contains: total number of lcbs that have been queued by the ldms, because of flow control for this lc
referenced by: sm ls, ldms
length in words: 1

lc_qlt
- initialized by: sm ls
- contains: qlt information
- referenced by: sm ls
- length in words: 64

lc_sz
- initialized by:
- contains: equate value representing size of the lc in words
- referenced by:

LAYER TABLE (LT)

The lt is a lan subsystem owned data structure. The pointer to the lt is retrieved from the ct. Clm creates the lt. The lt represents an iso layer. The lt contains 8 pointers to layer instance directives (note: the pointers are null if the layer instance is not configured), a pointer to the lc and indicators.

The following fields are in the negitive portion of the lt.

lt_syb
- initialized by: clm
- contains: 4 characters symbolic name of the lt, contains x'4c542020'
- referenced by: used for reading dumps easily
- length in words: 2

The following fields are in the positive portion of the lt.

lt_li0 - lt_li7
- initialized by: clm
- contains: pointer to lit
- referenced by: sm ls, ldms
- length in words: 2 each

lt_lc
- initlized by: clm
- contains: backwards pointer to the lc
- referenced by: ldms, sm ls,
- length in words: 2

lt_idl
- initlized by: clm, sm ls
- contains: layer bits, indicator bits
  bits 4-6 - layer bits
- referenced by: sm ls, ldms
- lentht in words: 1

lt_sz
- initialized by:
- contains: equate value representing size of the lt in words
- referenced by:

LAYER INSTANCE TABLE (LI)

The li is a lan owned data structure. The pointer to the li is retrieved from the lt. Clm creats the lit. The li represents a instance of a layer. The li contains the queue of activte lcb outstanding to the controller, object discription, flow control counts, and a pointer to the layer management routine for the layer instance.

The following fields are in the negitive portion of the li.

li_syb
- initialized by: clm
- contains: 4 characters symbolic name of the li, contains x'4c492020'
- referenced by: used for reading dumps easily
- length in words: 2

li_dos
- initialized by: sm ls
- contains: offset to object discription
- referenced by: sm ls
- length in words: 1

The following fields are in the positive portion of the li.

li_lt
- initialized by: clm
- contains: backwards pointer to the lt
- referenced by: sm ls, ldms
- length in words: 2

li_id1
- initialized by: clm
- contains: cpu interrupt level, number of the cpu to interrupt
  bits a-f - cpu interrupt level
  bits 6-9 - cpu number to interrupt
- referenced by: sm ls, llc ls, xpt ls
- length in words: 1

li_id2
- initialized by: clm
- contains: channel number
  bits 0-3 - lacs megabus address
  bits 4-6 - layer bits
  bits 7-9 - layer instance bits
- referenced by: ldms
- length in words: 1

li_lwl
initialized by: clm
contains: lock word required by firmware queueing instructions, used for the li_hab and li tab queue
referenced by: ldms, firmware queueing instructions
length in words: 1

li_hab
initialized by: clm
contains: pointer to first lcb on the active queue, initial value is a pointer to the li_lwl field
referenced by: ldms
length in words: 2

li_tab
initialized by: clm
contains: this field points to the tail of the active lcb queue, initial value is a pointer to the li_lwl field
referenced by: ldms
length in words: 2

li_mio
initialized by: sm ls
contains: the maximun number of times to retry an io or iold command
referenced by: ldms
length in words: 1

li_cio
initialized by: clm
contains: current io or iold count, before an io or iold is issued, this field is cleared, if an io or iold is nak'd the count is incremented
referenced by: ldms
length in words: 1

li_lmf
initialized by: ls ist code
contains: address of layer management function
referenced by: sm ls
length in words: 2

The following fields contain the object discription.

li_nam
initialized by: clm
contains: symbolic name of the layer instance
referenced by: sm ls
length in words: 8

li_cls
- initialized by: sm ls
- contains: class of service
- referenced by: sm ls
- length in words: 1

li_typ
- initialized by: sm ls
- contains: type of layer instance
- referenced by: sm ls
- length in words: 2

li_vnu
- initialized by: sm ls
- contains: venue
- referenced by: sm ls
- length in words: 1

li_sta
- initialized by: sm ls
- contains: controller state information
- referenced by: ldms, sm ls
- length in words: 1

li_sst
- initialized by: sm ls
- contains: controller sub state information
- referenced by: ldms, sm ls
- length in words: 1

li_map
- initialized by: sm ls
- contains: mapping information
- referenced by: sm ls
- length in words: 1

li_ual
- initialized by: sm ls
- contains: length in words of the unique abbibutes
- referenced by: sm ls
- length in words: 1

li_usl
- initialized by: sm ls
- contains: length in words of the unique staticics
- referenced by: sm ls
- length in words: 1

li_sz
- initialized by:
- contains: equate value representing size of the lit in words
- referenced by:

RESOURCE CONTROL TABLE (RCT)

The rct is a executive owned data structure. The pointer to the rct is retrieved from the lrt. Clm creats the rct. The rct represents a user of the lan. The rct contains executive fields, masks for valid function codes, masks for buffer processing, error logging information, the request pre-processor pointer, the queue of active irbs, lcb statistics for the user, start address of the layer server, event information, sap table and unique sap table.

The following fields are mod400 specific

r_chlv
- initialized by: clm
- contains: channel/level word
  bits 0-9 - channel
  bits a-f - level
- referenced by: ldms
- length in words: 1

r_tcb
- initialized by: clm
- contains: pointer to tcb of task
- referenced by: ldis, ldms
- length in words: 2

r_nlen
- initialized by: clm
- contains: rct negative length
- referenced by:
- length in words: 1

r_tskl
- initialized by: clm
- contains: length of task rct
- referenced by:
- length in words: 1

r_typ
- initialized by: clm
- contains: rct type word (adapter id)
- referenced by:
- length in words: 1

r_xaid
- initialized by: clm
- contains: extended adapter id
- referenced by:
- length in words: 1

```
r_ddid
   initialized by:  clm
   contains:        device/driver id
                    lan driver id = x'14'
   referenced by:
   length in words: 1

r_flgs
   initialized by:  clm
   contains:        flags word
   referenced by:
   length in words: 1

r_flge
   initialized by:  clm
   contains:        flag extension word
   referenced by:
   length in words: 1

r_flg3
   initialized by:  clm
   contains:        third flag word
   referenced by:
   length in words: 1

r_stts
   initialized by:  clm
   contains:        status word #1
   referenced by:
   length in words: 1

r_stt2
   initialized by:  clm
   contains:        status word #2
   referenced by:
   length in words: 1

r_ctrl
   initialized by:  clm
   contains:        controller # (index in ctd)
   referenced by:
   length in words: 1

r_erlg
   initialized by:  clm
   contains:        error logging information block pointer
   referenced by:
   length in words: 2

r_rpp
   initialized by:  any ls
   contains:        request pre-processor pointer
   referenced by:
   length in words: 2
```

```
r_ownr
   initialized by:  clm
   contains:        ownership field
   referenced by:
   length in words: 2

r_fmsk
   initialized by:  any ls
   contains:        function mask
   referenced by:   any ls
   length in words: 1

r_fint
   initialized by:  any ls
   contains:        buffer copy mask
   referenced by:   request pre-processor
   length in words: 1

r_fswp
   initialized by:  any ls
   contains:        swap mask
   referenced by:   request pre-processor
   length in words: 1

r_iscs
   initialized by:  clm
   contains:        input stream code set
   referenced by:
   length in words: 1

r_oscs
   initialized by:  clm
   contains:        output stream code set
   referenced by:
   length in words: 1

r_dcs
   initialized by:  clm
   contains:        device code set
   referenced by:
   length in words: 1

r_row
   initialized by:  clm
   contains:        device current viritical size
   referenced by:
   length in words: 1

r_col
   initialized by:  clm
   contains:        device current horitionizal size
   referenced by:
   length in words: 1
```

r_gsz
initialized by: clm
contains: size of executive portion of the rct
referenced by:

The following fields are the lan specific portion of the rct:

r_syb
initialized by: clm
contains: 4 characters symbolic name of the rct, contains x'4b534354'
referenced by: used for reading dumps easily
length in words: 2

r_lwl
initialized by: clm
contains: lock word required by firmware queueing instructions, used for the r_hirb and r tirb queue
referenced by: ldis, firmware queueing instructions
length in words: 1

r_hirb
initialized by: clm
contains: pointer to the head irb on the active irb queue, initial value is a pointer to the r_lwl field
referenced by: ldis
length in words: 2

r_tirb
initialized by: clm
contains: pointer to the tail irb on the irb queue, initial value is a pointer to the r_lwl field
referenced by: ldis
length in words: 2

r_idl
initialized by: clm
contains: indicators, all initilized to zero
bit 0 - rct is in deactivate mode when set
bit 1 - buffer must be absolutized when set
bit 2 - system management rct when set
bit 3 - activate sap was issued when set
referenced by: any ls, ldis
length in words: 1

r_td
initialized by: sm ls
contains: pointer to the td
referenced by: any ls, ldis
length in words: 2

r_tcbi
- initialized by: clm
- contains: total number of lcbs that have been issued by this sap
- referenced by: sm ls, llc ls, xpt ls
- length in words: 1

r_tcbn
- initialized by: clm
- contains: total number of lcbs that have been nak'd by this sap
- referenced by: sm ls, llc ls, xpt ls
- length in words: 1

r_tcbf
- initialized by: clm
- contains: total number of lcbs that have been queued on his sap because of flow control for this sap
- referenced by: sm ls, llc ls, xpt ls
- length in words: 1

r_adls
- initialized by: any ls
- contains: start address of the layer server (ls)
- referenced by: ldis
- length in words: 2

r_evmk
- initialized by: sm ls
- contains: sap event mask
- referenced by: any ls, ldis, ldis
- length in words: 1

r_erb
- initialized by: clm
- contains: pointer to sap event iorb
- referenced by: any ls, ldis, ldis
- length in words: 2

r_usz
- initialized by: clm
- contains: size in words of unique portion of the rct
- referenced by: sm ls
- length in words: 2

The rct continues, see the local sap table definition.

TRANSFER DIRECTORY (TD)

The td is a lan owned data structure. The pointer to the td is retrieved from the rct. The td is created by sm ls. The td contains the number of transfer tables and pointers to transfer tables.

The following fields are in the negitive portion of the td.

td_syb
- initialized by: any ls
- contains: 4 characters symbolic name of the td, contains x'54442020'
- referenced by: used for reading dumps easily
- length in words: 2

The following fields are in the positive portion of the td.

td_nb
- initialized by: any ls
- contains: number of entries in the directory
- referenced by: any ls
- length in words: 1

td_tt0
- initialized by: any ls
- contains: pointer to connectionless tt
- referenced by: any ls
- length in words: 2

td_ttl - td_ttn where n = td_nb
- initialized by: any ls
- contains: when an connection is established the pointer to the tt is placed into this field, when a connection is dissolved the field is set to null, initial value is the null pointer
- referenced by: any ls
- length in words: 2

td_sz
- initialized by:
- contains: equate value representing size of the td in words
- referenced by:

TRANSFER TABLE (TT)

The tt is a lan owned data structure. The pointer to the tt is retrieved from the td. The first tt is created by clm at system initializtion time. The other tts are created by the xpt ls driver when a connection is established (via a get memory mcl). The memory for the tt is released when the connection is released. The tt contains flow control values, expedited flow control counts, connection information, connection event information, statistics and a pointer to the lit.

The following fields are in the negitive portion of the tt.

tt_syb
- initialized by: any ls
- contains: 4 characters symbolic name of the tt, contains x'54542020'
- referenced by: used for reading dumps easily
- length in words: 2

The following fields are in the positive portion of the tt.

tt_cwc
- initialized by: any ls
- contains: current number of writes which can be sent to the ldms by this connection
- referenced by: any ls
- length in words: 1

tt_crc
- initialized by: any ls
- contains: current number of reads which can be sent to the ldms by this connection
- referenced by: any ls
- length in words: 1

tt_cew
- initialized by: any ls
- contains: current number of expedited writes which can be sent to the ldms by this connection
- referenced by: any ls
- length in words: 1

tt_cer
- initialized by: any ls
- contains: current number of expedited reads which can be sent to the ldms by this connection
- referenced by: any ls
- length in words: 1

tt_ki
- initialized by: xpt ls
- contains: lacs connection identifier
- referenced by: xpt ls
- length in words: 2

tt_idl
- initialized by: any ls
- contains: indicators
  bit 0 - event processing in progress
- referenced by: any ls
- length in words: 1

tt_evm
- initialized by: any ls
- contains: connection event mask
- referenced by: any ls
- length in words: 1

tt_erb
- initialized by: any ls
- contains: pointer to connection event iorb
- referenced by: any ls
- length in words: 2

tt_eir
- initialized by: any ls
- contains: address of event interrupt routine
- referenced by: any ls
- length in words: 2

tt_mss
- initialized by: any ls
- contains: maximum sdu size
- referenced by: any ls
- length in words: 2

tt_lit
- initialized by: any ls
- contains: pointer to lit
- referenced by: any ls
- length in words: 2

tt_sz
- initialized by:
- contains: equate value representing size of the tt in words
- referenced by:

LOCAL SAP DIRECTORY (LD)

The ld is lan subsystem owned data structures. The pointer to the ld is retrieved from the cd. A ld exists for the all the local layers. Sm ls creates the ld. The ld contains the number of lds and pointers to the exposed and unexposed local sap tables for a given layer.

The following fields are in the negitive portion of the ld.

ld_syb
- initialized by: sm ls
- contains: 4 characters symbolic name of the ld, contains x'4b442020'
- referenced by: used for reading dumps easily
- length in words: 2

The following fields are in the positive portion of the ld.

ld_nb
- initialized by: sm ls
- contains: number of saps in this directory
- referenced by: any ls
- length in words: 1

The following field is repeated one per the number in the ld_nb field

ld_st0 - ld_stn
- initialized by: sm ls
- contains: pointers to local sap table
- referenced by: any ls
- length in words: 2 each

LAYER INSTANCE DIRECTORY (ID)

The id is lan subsystem owned data structures. The pointer to the id is retrieved from the cd. Sm ls creates the id. The id contains all the pointers to the exposed and unexposed local sap tables for a given layer.

The following fields are in the negitive portion of the id.

id_syb
- initialized by: sm ls
- contains: 4 characters symbolic name of the id, contains x'49442020'
- referenced by: used for reading dumps easily
- length in words: 2

The following fields are in the positive portion of the id.

id_nb
- initialized by: sm ls
- contains: number of saps in this directory
- referenced by: sm ls, ldis
- length in words: 1

The following field is repeated one per the number in the id_nb field

id_st0 - id_stn
- initialized by: sm ls
- contains: pointers to local sap table
- referenced by: sm ls, ldis
- length in words: 2 each

LOCAL SAP TABLE (ST)

The st is a lan subsystem owned data structure. The pointers to the st(s) are retrieved from the lsd. Sm ls creates the exposed sts and clm creats the unexposed st. A st exits for each local sap weather it is exposed or unexposed. The exposed st is an extension of the rct, the unexposed st is a stand alone structure. The st also has a layer specific portion. The st contains object discription, sap symbolic anme, flow control counts and connection information.

The following fields are in the negitive portion of the st.

st_syb
- initialized by: clm or sm ls
- contains: 4 characters symbolic name of the st, contains x'53542020'
- referenced by: used for reading dumps easily
- length in words: 2

st_dos
- initialized by: clm or sm ls
- contains: offset to object discription
- referenced by: sm ls
- length in words: 1

The following fields are in the positive portion of the st.

st_lrn
- initialized by: clm
- contains: lrn
- referenced by: sm ls, ldis
- length in words: 1

st_id2
- initialized by: sm ls
- contains: sap table indicators
  bit 0 - this sap is visible when set
- referenced by: ldis, any ls, ldis
- length in words: 1

st_mws
- initialized by: sm ls
- contains: maximun number of btyes of data buffer allowed for this sap on write operations
- referenced by: any ls, ldis
- length in words: 1

st_mrs
- initialized by: sm ls
- contains: maximum number of bytes of data buffer allowed for this sap on read operations
- referenced by: any ls, ldis
- length in words: 1

st_mbs
initialized by: sm ls
contains: maximum byte size of a pdu
referenced by: any ls, ldis
length in words: 1

st_cwc
initialized by: sm ls
contains: current write iorb count
referenced by: sm ls, llc ls, xpt ls
length in words: 1

st_crc
initialized by: sm ls
contains: current read iorb count
referenced by: sm ls, llc ls, xpt ls
length in words: 1

st_lay
initialized by: sm ls
contains: sap layer
referenced by: sm ls, llc ls, xpt ls
length in words: 1

st_sly
initialized by: sm ls
contains: sap sublayer
referenced by: sm ls, llc ls, xpt ls
length in words: 1

st_mkc
initialized by: sm ls
contains: maximum number of connection allowed by this user
referenced by: sm ls, xpt ls
length in words: 1

st_ckc
initialized by: sm ls
contains: current number of connection
referenced by: sm ls, xpt ls
length in words: 1

The following fields are the object discription.

st_nam
initialized by: sm ls
contains: symbolic name of the lc
referenced by: sm ls
length in words: 8

st_cls
initialized by: sm ls
contains: class of service
referenced by: sm ls
length in words: 1

st_typ
initialized by: sm ls
contains: type of controller
referenced by: sm ls
length in words: 1

st_vnu
initialized by: sm ls
contains: venue
referenced by: sm ls
length in words: 1

st_sta
initialized by: sm ls
contains: sap state information
referenced by: ldms, sm ls
length in words: 1

st_sst
initialized by: sm ls
contains: sap sub state information
referenced by: ldms, sm ls
length in words: 1

st_map
initialized by: sm ls
contains: mapping info
referenced by: sm ls
length in words: 2

st_ual
initialized by: sm ls
contains: length in words of the unique abbibutes
referenced by: sm ls
length in words: 1

st_usl
initialized by: sm ls
contains: length in words of the unique staticics
referenced by: sm ls
length in words: 1

st_sz
initialized by:
contains: equate value representing the size in words of st
referenced by:

See l1 or ln or lx or pl for extensions of the st.

LOCAL LINK SAP TABLE EXTENSION (LL)

The ll is a lan subsystem owned data structure. The ll is an extension of the sap table. Sm ls creates the ll. The ll contains the physical sap address, and indicators.

The following fields are in the negitive portion of the ll.

ll_syb
- initialized by: clm
- contains: 4 characters symbolic name of the ll, contains x'4b4b2020'
- referenced by: used for reading dumps easily
- length in words: 2

The following fields are in the negitive portion of the ll.

ll_idl
- initialized by: sm ls
- contains: extended local link sap table indicators
- referencec by: any ls
- length in words: 1

ll_len
- initialized by: sm ls
- contains: length in words of ll_phy field
- referencec by: any ls
- length in words: 1

ll_phy
- initialized by: sm ls
- contains: physical sap address
- referencec by: any ls
- length in words: ll_len

ll_sz
- initialized by:
- contains: equate value representing size of the ll in words
- referenced by:

LOCAL NETWORK SAP TABLE EXTENSION (LN)

The ln is a lan subsystem owned data structure. The ln is an extension of the sap table. Sm ls creates the ln. The ln contains the physical sap address, and indicators.

The following fields are in the negitive portion of the ln.

ln_syb
- initialized by: clm
- contains: 4 characters symbolic name of the ln, contains x'4b4e2020'
- referenced by: used for reading dumps easily
- length in words: 2

The following fields are in the negitive portion of the ln.

ln_idl
- initialized by: sm ls
- contains: extended local network sap table indicators
- referencec by: any ls
- length in words: 1

ln_len
- initialized by: sm ls
- contains: length in words of ln_phy field
- referencec by: any ls
- length in words: 1

ln_phy
- initialized by: sm ls
- contains: physical sap address
- referencec by: any ls
- length in words: ll_len

ln_sz
- initialized by:
- contains: equate value representing size of the ln in words
- referenced by:

LOCAL TRANSPORT SAP TABLE EXTENSION (LX)

The lx is a lan subsystem owned data structure. The lx is an extension of the sap table. Sm ls creates the lx. The fields of the lx are defined below.

The following fields are in the negitive portion of the lx.

lx_syb
- initialized by: clm or sm ls
- contains: 4 characters symbolic name of the lx, contains x'4b582020'
- referenced by: used for reading dumps easily
- length in words: 2

The following fields are in the negitive portion of the lx.

lx_mew
- initialized by: sm ls
- contains: maximum expedited write iorb count
- referenced by: any ls
- length in words: 1

lx_mer
- initialized by: sm ls
- contains: maximum expedited read iorb count
- referenced by: any ls
- length in words: 1

lx_idl
- initialized by: sm ls
- contains: extended local transport sap table indicators
- referencec by: any ls
- length in words: 1

lx_len
- initialized by: sm ls
- contains: length in words of lx_phy field
- referencec by: any ls
- length in words: 1

lx_phy
- initialized by: sm ls
- contains: physical sap address
- referencec by: any ls
- length in words: ll_len

lx_sz
- initialized by:
- contains: equate value representing size of the lx in words
- referenced by:

LOCAL PHYSICAL LINE SAP TABLE EXTENSIONS (PL)

The pl is a lan subsystem owned data structure. The pl is an extension of the sap table. The pointer to the pl is retrieved from the ld. Clm creates the pl from the local user clm directives. The pl represents the local users. A pl exists for each local user. The pl contains a pointer to the lc, indicators, mac address and hardware and firmware revisions of the lc.

The following fields are in the negitive portion of the pl.

pl_syb
- initialized by: clm
- contains: 4 characters symbolic name of the pl, contains x'504b2020'
- referenced by: used for reading dumps easily
- length in words: 2

The following fields are in the positive portion of the pl.

pl_lc
- initialized by: clm
- contains: pointer to the lc
- referenced by: sm ls, ldis
- length in words: 2

pl_idl
- initialized by: clm
- contains: adapter bits, indicators
  bits 0-1 - adapter address on lacs
  bit 3 - adapter is active when set
  bit 4 - mac address is 16 bits long when set, otherwise mac address is 48 bits long
  bit 5-6 - modem type
- referenced by: sm ls
- length in words: 1

pl_mac
- initialized by: sm ls
- contains: mac address
- referenced by: ldis, sm ls
- length in words: 2

pl_hid
- initialized by: sm ls
- contains: hardware id of the pl
- referenced by: sm ls
- length in words: 1

pl_fwr
- initialized by: sm ls
- contains: firmware revision of the pl
- referenced by: sm ls
- length in words: 1

pl_sz
initialized by:
contains: equate value representing size of the pl in words
referenced by:

REMOTE SAP DIRECTORY (RD)

The rd is lan subsystem owned data structures. The pointer to the rd(s) is retrieved from the cd. A rd exists for each remote layer. Sm ls creates the rds. The rd contains the number of remote directories and pointers to each remote sap table.

The following fields are in the negitive portion of the rd.

rd_syb
- initialized by: sm ls
- contains: 4 characters symbolic name of the rd, contains x'52442020'
- referenced by: used for reading dumps easily
- length in words: 2

The following fields are in the negitive portion of the rd.

rd_nb
- initialized by: sm ls
- contains: number of entries in this directory
- referenced by: sm ls, ldis
- length in words: 1

The following field is repeated one per the number in the rd_nb field.

rd_rs0 - rd_rsn
- initialized by: sm ls
- contains: pointers to remote sap table
- referenced by: sm ls, ldis
- length in words: 2 each

REMOTE SAP TABLE (RS)

The rs is a lan subsystem owned data structure. The pointer to the rs is retrieved from the rd. Sm ls creates the rs. A rs exists for each remote sap configured. There are also spare remote sap tables for dynamics remote saps. The rs contians object discriptions and indicators. .

The following fields are in the negitive portion of the rs.

rs_syb
- initialized by: clm
- contains: 4 characters symbolic name of the rs, contains x'52532020'
- referenced by: used for reading dumps easily
- length in words: 2

rs_dos
- initialized by: clm
- contains: offset to object discription
- referenced by: sm ls
- length in words: 1

The following fields are in the positive portion of the rs.

rs_lra
- initialized by: sm ls
- contains: logical remote sap address (left justified)
- referenced by: sm ls, ldis
- length in words: 2

rs_plm
- initialized by: sm ls
- contains: bits 0-3 represent each adapter, if bit is set, then the sap can use the adapter specified by the mask
- referenced by: sm ls, ldis
- length in words: 1

rs_lcm
- initialized by: sm ls
- contains: valid controllers this remote sap can access, bit array
- referenced by: sm ls, ldis
- length in words: 1

rs_idl
- initialized by: sm ls
- contains: indicator bits
- referenced by:
- length in words: 1

The following fields are the object discription.

```
rs_nam
   initialized by:  sm ls
   contains:        symbolic name of the rs
   referenced by:   sm ls
   length in words: 8

rs_cls
   initialized by:  sm ls
   contains:        class of service
   referenced by:   sm ls
   length in words: 1

rs_typ
   initialized by:  sm ls
   contains:        type of remote sap
   referenced by:   sm ls
   length in words: 2

rs_vnu
   initialized by:  sm ls
   contains:        venue
   referenced by:   sm ls
   length in words: 1

rs_sta
   initialized by:  sm ls
   contains:        sap state information
   referenced by:   ldms, sm ls
   length in words: 1

rs_sst
   initialized by:  sm ls
   contains:        sap sub state information
   referenced by:   ldms, sm ls
   length in words: 1

rs_map
   initialized by:  sm ls
   contains:        mapping info
   referenced by:   sm ls
   length in words: 2

rs_ual
   initialized by:  sm ls
   contains:        length in words of the unique abbibutes
   referenced by:   sm ls
   length in words: 1

rs_usl
   initialized by:  sm ls
   contains:        length in words of the unique staticics
   referenced by:   sm ls
   length in words: 1
```

rs_sz
initialized by:
contains: equate value represention the size of the rs in words
referenced by:

See the rl, rn, or rx for extensions to the rs.

REMOTE LINK SAP TABLE EXTENSION (RL)

The rl is a lan subsystem owned data structure. The rl is an extension of the remote sap table. Sm ls creates the rl. The rl contains the physical sap address, and indicators.

The following fields are in the negitive portion of the ll.

rl_syb
- initialized by: clm
- contains: 4 characters symbolic name of the rl, contains x'534b2020'
- referenced by: used for reading dumps easily
- length in words: 2

The following fields are in the positive portion of the rl.

rl_idl
- initialized by: sm ls
- contains: extended remote link sap table indicators
- referencec by: any ls
- length in words: 1

rl_len
- initialized by: sm ls
- contains: length in words of rl_phy field
- referencec by: any ls
- length in words: 1

rl_phy
- initialized by: sm ls
- contains: physical sap address
- referencec by: any ls
- length in words: ll_len

rl_sz
- initialized by:
- contains: equate value representing size of the rl in words
- referenced by:

REMOTE NETWORK SAP TABLE EXTENSION (RN)

The rn is a lan subsystem owned data structure. The rn is an extension of the remote sap table. Sm ls creates the rn. The rn contains the physical sap address, and indicators.

The following fields are in the negitive portion of the rn.

rn_syb
- initialized by: clm
- contains: 4 characters symbolic name of the rn, contains x'534e2020'
- referenced by: used for reading dumps easily
- length in words: 2

The following fields are in the positive portion of the rn.

rn_idl
- initialized by: sm ls
- contains: extended remote network sap table indicators
- referencec by: any ls
- length in words: 1

rn_len
- initialized by: sm ls
- contains: length in words of rn_phy field
- referencec by: any ls
- length in words: 1

rn_phy
- initialized by: sm ls
- contains: physical sap address
- referencec by: any ls
- length in words: rn_len

rn_sz
- initialized by:
- contains: equate value representing size of the rn in words
- referenced by:

REMOTE TRANSPORT SAP TABLE EXTENSION (RX)

The rx is a lan subsystem owned data structure. The rx is an extension of the remote sap table. Sm ls creates the rx. The rx contains the physical sap address, and indicators.

The following fields are in the negitive portion of the rx.

rx_syb
- initialized by: clm
- contains: 4 characters symbolic name of the rx, contains x'53592020'
- referenced by: used for reading dumps easily
- length in words: 2

The following fields are in the positive portion of the rx.

rx_idl
- initialized by: sm ls
- contains: extended remote transport sap table indicators
- referencec by: any ls
- length in words: 1

rx_len
- initialized by: sm ls
- contains: length in words of rx_phy field
- referencec by: any ls
- length in words: 1

rx_phy
- initialized by: sm ls
- contains: physical sap address
- referencec by: any ls
- length in words: rx_len

rx_sz
- initialized by:
- contains: equate value representing size of the rx in words
- referenced by:

ASSOCIATE LOCAL USER PARAMETER BLOCK (PB)

The pb is a user owned data structure. the user supplies the block when performing the associate local user mcl. The following is a discription of the pb:

pb_sym
- initialized by: application
- contains: sap symbolic name, left justified space (x'20') filled
- referenced by: ldis
- length in words: 8

pb_lrn
- initialized by: ldis
- contains: lrn
- referenced by: ldis, application
- length in words: 1

USER DIRECTORY (UD)

The ud are lan subsystem owned data structures. The pointer to the ud is retrieved from the cd. Clm creates the ud. The ud contains the number of local sap tables and the pointers to the local sap tables.

The following fields are in the negitive portion of the ud.

ud_syb
- initialized by: clm
- contains: 4 characters symbolic name of the ud, contains x'55442020'
- referenced by: used for reading dumps easily
- length in words: 2

The following fields are in the positive portion of the ud.

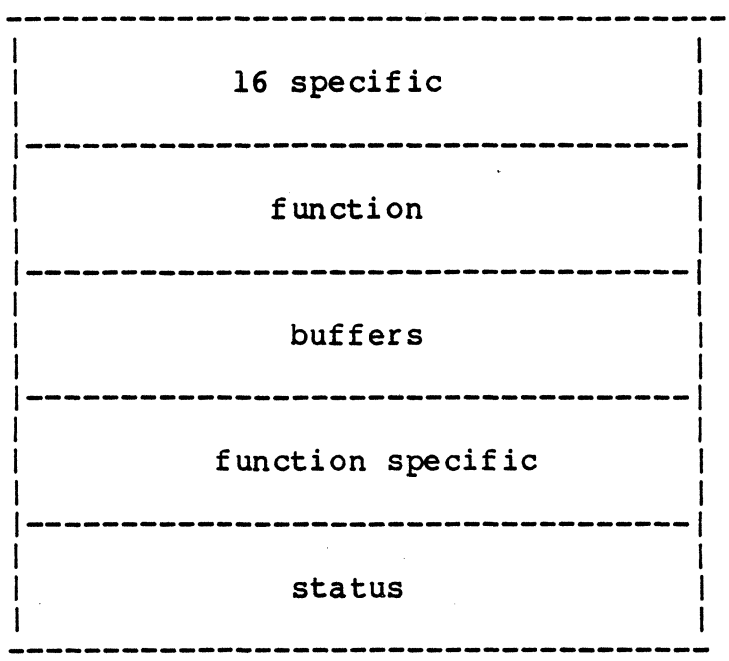
ud_nb
- initialized by: sm ls
- contains: number of saps in this directory
- referenced by: sm ls, ldis
- length in words: 1

The following field is repeated one per the number in the ud_nb field

ud_st0 - ud_utn
- initialized by: clm
- contains: pointers to local sap table
- referenced by: sm ls, ldis
- length in words: 2 each

LAN CONTROL BLOCK (LCB)

The lan control block has 5 pieces to it. The following picture identifies the lcb conponents.



Where 16 portion contains information for the 16 drivers, function contains function codes and lacs functions for posting the lcb, buffers contains the data buffer information, specific contains function specific information, and status contains return completion status.

The lcb is used by the lan subsystem to pass information from the level 6 lan software accross the megabus to the lacs software. The iorb has an extension that is used by the sap driver as the lcb. Currently there are 6 different lcbs, they are: write, read, event, activate, deactivate and connect.

the following fields are 16 specific

cb_pri
- initializd by: any ls, ldis
- contains: priority queuing value
- referenced by: firmware queueing instructions
- length in words: 1

cb_ncb
- initialized by: any ls, ldis
- contains: pointer to next lcb in queue, initial value is null
- referenced by: firmware queueing instructions
- length in words: 2

cb_rct
- initialized by: any ls, ldis
- contains: pointer to the rct
- referenced by: ldms
- length in words: 2

cb_lit
- initialized by: any ls, ldis
- contains: pointer to lit
- referenced by: ldms
- length in words: 2

cb_frw
- initialized by: any ls, ldis
- contains: function and range word
  bits 0-3 - function (p-id)
  bits 4-7 - rfu and mbz
  bits 8-f - range of the lacs portion of the lcb in bytes
- referenced by: ldms
- length in words: 1

cb_itp
- initialized by: any ls, ldis
- contains: address of a trb or interrupt routine or null
- referenced by: ldms
- length in words: 2

```
      cb_idl
         initialized by:  any ls, ldis
         contains:        indicators
                          bit 0 - cb_itp is a trb when set
                          bit 1 - sm lcb when set
                          bit 2 - expedited lcb when set
                          bit 3 - lcb is active when set
         referenced by:   ldms
         length in words: 1

the following fields are lacs specific

      cb_icw
         initialized by:  any ls, ldis
         contains:        interrupt control word
                          bits 0-5 - rsu and mbz
                          bits 6-9 - cpu number to interrupt
                          bits a-f - level to interrupt the cpu
         referenced by:   lacs megabus interface software
         length in words: 1

      cb_fsf
         initialized by:  any ls, ldis
         contains:        function specific function code
                          function codes for read lcbs are:
                                  0012 - cl read
                                  0022 - co read
                                  0042 - co expedited read
                          function codes for write lcbs are:
                                  0011 - cl write
                                  0021 - co write
                                  0041 - co expedited write
                          function codes for event lcbs are:
                                  001e - sap event
                                  002e - connection event
                                  004e - sm event
                          function codes for activate lcbs are:
                                  001a - activate local sap
                                  002a - activate remote sap
                          function codes for deactivate lcbs are:
                                  001b - deactivate local sap
                                  002b - deactivate remote sap
                          function codes for connect lcbs are:
                                  001c - connect request
                                  002c - connect response
                          function codes for sm lcbs are:
                                  0016 - management request
                          function code for disconncet lcbs are:
                                  001d - disconnect request
         referenced by:   lacs software
         length in words: 1
```

cb_id2
- initialized by: any ls, ldis
- contains: indicators
  bit 0 - cb_adl points to a bd when set, range of the bd is in the cb_rgl field
  bit 1 - cb_adl is the start of a data field when set (note: cb_trg contains byte range of date)
  bit 2 - the buffer pointers are in the lcb when set
- referenced by: lacs software
- length in words: 1

cb_trg
- initialized by: any ls, ldis
- contains: total byte range of all buffers
- referenced by: lacs software
- length in words: 2

cb_bct
- initialized by: any ls, ldis
- contains: buffer count
- referenced by: lacs software
- length in words: 1

cb_adl
- initialized by: any ls, ldis
- contains: pointer to buffer address #1
- referenced by: lacs software
- length in words: 2

cb_rgl
- initialized by: any ls, ldis
- contains: buffer #1 range in bytes
- referenced by: lacs software
- length in words: 2

cb_ad2
- initialized by: any ls, ldis
- contains: pointer to buffer address #2
- referenced by: lacs software
- length in words: 2

cb_rg2
- initialized by: any ls, ldis
- contains: buffer #2 range in bytes
- referenced by: lacs software
- length in words: 2

cb_ad3
- initialized by: any ls, ldis
- contains: pointer to buffer address #3
- referenced by: lacs software
- length in words: 2

cb_rg3
initialized by: any ls, ldis
contains: buffer #3 range in bytes
referenced by: lacs software
length in words: 2

cb_s00
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_s01
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_s02
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_s03
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_s04
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_s05
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_s06
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_s07
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_s08
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_s09
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_s0a
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_s0b
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_s0c
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_s0d
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_s0e
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_s0f
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_s10
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_sl1
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_sl2
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_sl3
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_sl4
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_sl5
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_sl6
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_sl7
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_sl8
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_sl9
initialized by: any ls, ldis, lacs software
contains: function specific information
referenced by: lacs software, any ls, ldis
length in words: 1

cb_sla
- initialized by: any ls, ldis, lacs software
- contains: function specific information
- referenced by: lacs software, any ls, ldis
- length in words: 1

cb_slb
- initialized by: any ls, ldis, lacs software
- contains: function specific information
- referenced by: lacs software, any ls, ldis
- length in words: 1

cb_slc
- initialized by: any ls, ldis, lacs software
- contains: function specific information
- referenced by: lacs software, any ls, ldis
- length in words: 1

cb_sld
- initialized by: any ls, ldis, lacs software
- contains: function specific information
- referenced by: lacs software, any ls, ldis
- length in words: 1

cb_sle
- initialized by: any ls, ldis, lacs software
- contains: function specific information
- referenced by: lacs software, any ls, ldis
- length in words: 1

cb_slf
- initialized by: any ls, ldis, lacs software
- contains: function specific information
- referenced by: lacs software, any ls, ldis
- length in words: 1

cb_cts
- initialized by: lacs software
- contains: controller status
  bit 8 - invalid function code when set
  bit 9 - ram memory exausted when set
  bit a - ram location non-existent when set
  bit b - ram parity error when set
  bit c - level 6 memory yellow when set
  bit d - level 6 memory non-existent when set
  bit e - level 6 bus parity error when set
  bit f - level 6 memeory red when set
- referenced by: any ls, ldis
- length in words: 1

cb_fss
- initialized by: lacs software
- contains: function specific status
  - 0001 - sap not active
  - 0002 - lack of resources
  - 0004 - controller unavailable
  - 0008 - sm layer instance error
  - 0040 - sap already disconnected
  - 0080 - recieve buffer too small
  - 0100 - illegal logical address
  - 0200 - invalid lcb
  - 0400 - write credit violations
  - 0800 - read credit violations
- referenced by: any ls, ldis
- length in words: 1

cb_cbs
- initialized by: lacs software, interface software, any ls, ldis
- contains: completion word
  - bit 0 - lcb is complete when set
  - bit 1 - lcb was not processed when set
  - bits 2-f - rfu
- referenced by: any ls, ldms, lacs software
- length in words: 1

LCB BUFFER DESCRIPTOR BLOCK (LB)

The lcb buffer descriptor is a user owned data structure. The lb is used by an application to pass data to the lan subsystem. The lb contains a header consisting of 8 words and entries for each buffer also consisting of 8 words each.

The following fields reprenent the lcb buffer discriptor header.

lb_bct
- initialized by: application
- contains: number of buffers (entrys)
- referenced by: any ls
- length in words: 1

lb_ofs
- initialized by: application
- contains: offset of the first buffer entry
- referenced by: any ls
- length in words: 1

lb_trg
- initialized by: application
- contains: total range of all buffers
- referenced by: any ls
- length in words: 1

lb_rfu
- initialized by: application
- contains: rfu
- referenced by: any ls
- length in words: 4

lb_hsz
- initialized by:
- contains: equate value represention the size in words of the lb header
- referenced by:

The following 5 fields will be repeated the number of times in the lb_bct field in the lcb

lb_adr
- initialized by: application
- contains: buffer address
- referenced by: any ls, ldis
- length in words: 2

lb_idl
- initialized by: application
- contains: indicators
  bit 0 - buffer starts on odd word boundry when set
- referenced by: any ls, ldis
- length in words: 1

lb_id2
- initialized by: application
- contains: indicators (rfu)
- referenced by: any ls, ldis
- length in words: 1

lb_rng
- initialized by: application
- contains: buffer range in bytes
- referenced by: any ls, ldis
- length in words: 2

lb_rsr
- initialized by: any ls, ldis
- contains: residual range in bytes
- referenced by: application
- length in words: 2

lb_esz
- initialized by:
- contains: equate value represention the size in words of the lb entry
- referenced by:

ACTIVATE LOCAL SAP LCB SPECIFIC DEFINITIONS

The activate local sap lcb specific portions are defined below:

cb_sl1
initailized by: ldis
contains: sap symbolic name
referenced by: lacs software
length in words: 8

cb_sl7
initialized by: ldis
contains: logical local sap address
referenced by: lacs software
length in words: 2

cb_sl9
initialized by: ldis
contains: proposed maximum sdu size
referenced by: lacs software
length in words: 1

cb_sla
initialized by: ldis
contains: proposed maximum read credit
referenced by: lacs software
length in words: 1

cb_slb
initialized by: lacs software
contains: maximum sdu size
referenced by: ldis
length in words: 1

cb_slc
initialized by: lacs software
contains: ideal sdu size
referenced by: ldis
length in words: 1

cb_sld
initialized by: lacs software
contains: initial read credit count
referenced by: ldis
length in words: 1

cb_sle
initialized by: lacs software
contians: initial write credit count
referenced by: ldis
length in words: 1

cb_slf
initialized by: lacs software
contains: maximun number of connections allowed
referenced by: ldis
length in words: 1

ACTIVATE REMOTE SAP LCB SPECIFIC DEFINITIONS

The activate remote sap lcb specific portions are defined below:

cb_sl9
- initialized by: ldis
- contains: pointer to remote sap table
- referenced by: ldis
- length in words: 2

cb_sla
- initialized by: ldis
- contains: logical local sap address
- referenced by: lacs software
- length in words: 2

cb_slc
- initialized by: ldis
- contains: remote sap symbolic name
- referenced by: lacs software
- length in words: 2

cb_sle
- initailized by: lacs software
- contains: logical remote sap address
- referenced by: ldis
- length in words: 2

DEACTIVATE LOCAL SAP LCB SPECIFIC DEFINITIONS

The deactivate local sap lcb specific portions are defined below:

cb_sle
- initialized by: ldis
- contains: logical local sap address
- referenced by: lacs software
- length in words: 2

DEACTIVATE REMOTE SAP LCB SPECIFIC DEFINITIONS

The deactivate remote sap lcb specific portions are defined below:

cb_slc
initialized by: ldis
contains: logical local sap address
referenced by: lacs software
length in words: 2

cb_sle
initialized by: ldis
contains: logical remote sap address
referenced by: lacs software
length in words: 2

WRITE CONNECTIONLESS LCB SPECIFIC DEFINITIONS

The write connectionless lcb specific portions are defined below:

cb_slb
- initialized by: llc ls
- contains: logical local sap address
- referenced by: lacs software
- length in words: 2

cb_sld
- initialized by: llc ls
- contains: logical remote sap address
- referenced by: lacs software
- length in words: 2

cb_slf
- initialized by: lacs software
- contains: write credits
- referenced by: llc ls
- length in words: 1

READ CONNECTIONLESS LCB SPECIFIC DEFINITIONS

The read connectionless lcb specific portions are defined below:

cb_sl1
- initialized by: llc ls
- contains: logical local sap address
- referenced by: lacs software
- length in words: 2

cb_sl3
- initialized by: lacs software
- contains: buffer #4 residual range
- referenced by: llc ls
- length in words: 2

cb_sl5
- initialized by: lacs software
- contains: buffer #3 residual range
- referenced by: llc ls
- length in words: 2

cb_sl7
- initialized by: lacs software
- contains: buffer #2 residual range
- referenced by: llc ls
- length in words: 2

cb_sl9
- initialized by: lacs software
- contains: buffer #1 residual range
- referenced by: llc ls
- length in words: 2

cb_slb
- initialized by: lacs software
- contains: read credits
- referenced by: llc ls
- length in words: 1

cb_slc
- initialized by: lacs software
- contains: actual buffer size
- referenced by: llc ls
- length in words: 2

cb_sle
- initialized by: lacs software
- contains: logical remote sap address
- referenced by: llc ls
- length in words: 2

DATA ARRIVAL SAP EVENT LCB SPECIFIC DEFINITIONS

The data arrival sap event lcb specific portions are defined below :

cb_slb
- initialized by: ldis
- contains: logical local sap address
- referenced by: lacs software
- length in words: 2

cb_sld
- initialized by: lacs software
- contains: buffer size in bytes
- referenced by: any ls, ldis
- length in words: 2

cb_slf
- initialized by: lacs software
- contains: event indication mask
  0001 - data arrival
- referenced by: any ls, ldis
- length in words: 1

ADDITIONAL WRITE CREDITS SAP EVENT LCB SPECIFIC DEFINITIONS

The addition write credits sap event lcb specific portions are defined below (note: buffer is 32 bytes):

cb_slc
- initialized by: ldis
- contains: logical local sap address
- referenced by: lacs software
- length in words: 2

cb_sle
- initialized by: lacs software
- contains: additional write credits
- referenced by: any ls, ldis
- length in words: 1

cb_slf
- initialized by: lacs software
- contains: event indication mask
  0002 - additional write credits
- referenced by: any ls, ldis
- length in words: 1

DEACTIVATION SAP EVENT LCB SPECIFIC DEFINITIONS

The deactivation sap event lcb specific portions are defined below (note: buffer is 32 bytes):

cb_slc
- initialized by: ldis
- contains: logical local sap address
- referenced by: lacs software
- length in words: 2

cb_sle
- initialized by: lacs software
- contains: deactivation reason code
- referenced by: any ls, ldis
- length in words: 1

cb_slf
- initialized by: lacs software
- contains: event indication mask
  0004 - sap deactivated
- referenced by: any ls, ldis
- length in words: 1

CONNECT INDICATION SAP EVENT LCB SPECIFIC DEFINITIONS

The connect indication sap event lcb specific portions are defined below (note: buffer is 32 bytes):

cb_s16
- initialized by: lacs software
- contains: quality of service
- referenced by: xpt ls
- length in words: 1

cb_s17
- initialized by: lacs software
- contains: expidited data option
- referenced by: xpt ls
- length in words: 1

cb_s18
- initialized by: lacs software
- contains: initial read credit count
- referenced by: xpt ls
- length in words: 1

cb_s19
- initialized by: lacs software
- contains: initial write credit count
- referenced by: xpt ls
- length in words: 1

cb_s1a
- initialized by: ldis
- contains: logical local sap address
- referenced by: lacs software
- length in words: 2

cb_s1c
- initialized by: lacs software
- contains: buffer residual range
- referenced by: xpt ls
- length in words: 1

cb_s1d
- initialized by: lacs software
- contains: connection identifer
- referenced by: xpt ls
- length in words: 2

cb_s1f
- initialized by: lacs software
- contains: event indication mask
  0008 - connect indication
- referenced by: xpt ls
- length in words: 1

CONNECT REQUEST LCB SPECIFIC DEFINITIONS

The connect request lcb specific portions are defined below (note: buffer is maximum of 32 bytes):

cb_sl0
- initialized by: lacs software
- contains: quality of service
- referenced by: xpt ls
- length in words: 1

cb_sl1
- initialized by: lacs software
- contains: expidited data option
- referenced by: xpt ls
- length in words: 1

cb_sl2
- initailized by: ldis
- contains: responding address
- referenced by: lacs software
- length in words: 2

cb_sl4
- initialized by: ldis
- contains: logical local sap address
- referenced by: lacs software
- length in words: 2

cb_sl6
- initialized by: ldis
- contains: logical remote sap address
- referenced by: lacs software
- length in words: 2

cb_sl8
- initialized by: ldis
- contains: proposed maximum sdu size
- referenced by: lacs software
- length in words: 1

cb_sl9
- initialized by: ldis
- contains: proposed maximum read credit
- referenced by: lacs software
- length in words: 1

cb_sla
- initialized by: lacs software
- contains: maximum sdu size
- referenced by: ldis
- length in words: 1

cb_slb
initialized by: lacs software
contains: ideal sdu size
referenced by: ldis
length in words: 1

cb_slc
initialized by: lacs software
contains: initial read credit count
referenced by: ldis
length in words: 1

cb_sld
initialized by: lacs software
contians: initial write credit count
referenced by: ldis
length in words: 1

cb_sle
initialized by: lacs software
contains: connection identifer
referenced by: ldis
length in words: 2

CONNECT RESPONSE LCB SPECIFIC DEFINITIONS

The connect response lcb specific portions are defined below (note: buffer is maximum of 32 bytes):

cb_sl0
- initialized by: lacs software
- contains: quality of service
- referenced by: xpt ls
- length in words: 1

cb_sl1
- initialized by: lacs software
- contains: expidited data option
- referenced by: xpt ls
- length in words: 1

cb_sl2
- initailized by: ldis
- contains: responding address
- referenced by: lacs software
- length in words: 2

cb_sl4
- initialized by: ldis
- contains: logical local sap address
- referenced by: lacs software
- length in words: 2

cb_sl6
- initialized by: ldis
- contains: logical remote sap address
- referenced by: lacs software
- length in words: 2

cb_sl8
- initialized by: ldis
- contains: proposed maximum sdu size
- referenced by: lacs software
- length in words: 1

cb_sl9
- initialized by: ldis
- contains: proposed maximum read credit
- referenced by: lacs software
- length in words: 1

cb_sla
- initialized by: lacs software
- contains: maximum sdu size
- referenced by: ldis
- length in words: 1

cb_slb
initialized by: lacs software
contains: ideal sdu size
referenced by: ldis
length in words: 1

cb_slc
initialized by: lacs software
contains: initial read credit count
referenced by: ldis
length in words: 1

cb_sld
initialized by: lacs software
contians: initial write credit count
referenced by: ldis
length in words: 1

cb_sle
initialized by: lacs software
contains: connection identifer
referenced by: ldis
length in words: 2

WRITE CONNECTION ORIENTED LCB SPECIFIC DEFINITIONS

The write connection oriented lcb specific portions are defined below:

cb_sld
- initialized by: xpt ls
- contains: connection identifer
- referenced by: lacs software
- length in words: 2

cb_slf
- initialized by: lacs software
- contains: write credits
- referenced by: xpt ls
- length in words: 1

WRITE EXPEDITED CO DATA LCB SPECIFIC DEFINITIONS

The write expedited co data lcb specific portions are defined below (note: buffer is maximum of 16 bytes):

cb_sld
- initialized by: xpt ls
- contains: connection identifer
- referenced by: lacs software
- length in words: 2

cb_slf
- initialized by: lacs software
- contains: expedited write credits
- referenced by: xpt ls
- length in words: 1

READ CONNECTION ORIENTED LCB SPECIFIC DEFINITIONS

The read connection oriented lcb specific portions are defined below:

cb_sl3
- initialized by: lacs software
- contains: buffer #4 residual range
- referenced by: xpt ls
- length in words: 2

cb_sl5
- initialized by: lacs software
- contains: buffer #3 residual range
- referenced by: xpt ls
- length in words: 2

cb_sl7
- initialized by: lacs software
- contains: buffer #2 residual range
- referenced by: xpt ls
- length in words: 2

cb_sl9
- initialized by: lacs software
- contains: buffer #1 residual range
- referenced by: xpt ls
- length in words: 2

cb_slb
- initialized by: lacs software
- contains: read credits
- referenced by: xpt ls
- length in words: 1

cb_slc
- initialized by: lacs software
- contains: actual buffer size
- referenced by: xpt ls
- length in words: 2

cb_sle
- initialized by: xpt ls
- contains: connection identifer
- referenced by: lacs software
- length in words: 2

READ EXPEDITED CO DATA LCB SPECIFIC DEFINITIONS

The read expedited co data lcb specific portions are defined below (note: buffer is maximum of 16 bytes):

cb_sl9
- initialized by: lacs software
- contains: buffer #1 residual range
- referenced by: xpt ls
- length in words: 2

cb_slb
- initialized by: lacs software
- contains: expedited read credits
- referenced by: xpt ls
- length in words: 1

cb_slc
- initialized by: lacs software
- contains: actual buffer size
- referenced by: xpt ls
- length in words: 2

cb_sle
- initialized by: xpt ls
- contains: connection identifer
- referenced by: lacs software
- length in words: 2

DISCONNECT CONNECTION LCB SPECIFIC DEFINITIONS

The disconnect connection lcb specific portions are defined below:

cb_sle
initialized by: ldis
contains: connection identifer
referenced by: lacs software
length in words: 2

INPUT/OUTPUT REQUEST BLOCK (IORB)

The iorb is a user owned data structure. The iorb is used by an application to pass information to the lan subsystem. The iorb is defined below:

rb_ct3
- initialized by: application
- contains: indicators
  bit 0 - rb_adr points to a bd when set
- referenced by: ldis, llc ls, xpt ls
- length in words: 1

rb_lrx
- initialized by: application
- contains: extended lrn, indicators
  bits 4-f - lrn
  bit 0 - rb_ct3 word exists when set
- referenced by: ldis, llc ls, xpt ls
- length in words: 1

rb_rrb
- initialized by: executive software
- contains: system link address
- referenced by: executive software
- length in words: 2

rb_ctl
- initialized by: executive software, application
- contains: indicators, status
  bits 0-7 - return status
  bit f - must be equal to 1
- referenced by: executive software, any ls, ldis
- length in words: 1

rb_ct2
- initialized by: application
- contains: lrn, indicators, function code
  bits 0-7 - x'fd'
  bit 9 - buffer (rb_adr buffer) starts in the right byte when set
  bit b - iorb is extended when set (must be set)
  bits c-f - function code
    1 - write
    2 - read
    6 - system management
    a - activate sap
    b - deactivate with queue abort
    c - connect
    d - disconnect
    e - event
- referenced by: any ls, ldis
- length in words: 1

rb_adr
- initialized by: application
- contains: pointer to buffer address, or a pointer to a buffer descriptor block when the 0 bit is set in the rb_ct3 word
- referenced by: any ls, ldis
- length in words: 2

rb_rng
- initialized by: application
- contains: buffer range in bytes of rb_adr
- referenced by: any ls, ldis
- length in words: 1

rb_dvs
- initialized by: application
- contains: device specific information, class of service
  bit e - disconnect with queue abort when set (iorb function code = b)
  bits 0-7 - class of service
- referenced by: any ls, ldis
- length in words: 1

rb_rsr
- initialized by: any ls, ldis
- contains: residual range in bytes of rb_adr
- referenced by: application
- length in words: 1

rb_stl
- initialized by: any ls, ldis
- contains: status
  bit 8 - invalid function code when set
  bit 9 - ram memory exausted when set
  bit a - ram location non-existent when set
  bit b - ram parity error when set
  bit c - level 6 memory yellow when set
  bit d - level 6 memory non-existent when set
  bit e - level 6 bus parity error when set
  bit f - level 6 memeory red when set
- referenced by: application
- length in words: 1

rb_ext
- initialized by: application
- contains: iorb extension both physical and logical
- referenced by: executive software, any ls, ldis
- length in words: 1

```
rb_fsf
   initialized by:  application
   contains:        function specific function code
                    fsf for major function code = 2:
                            0010 - cl read
                            0020 - co read
                            0040 - co expedited read
                    fsf for major function code = 1:
                            0010 - cl write
                            0020 - co write
                            0040 - co expedited write
                    fsf for major function code = e:
                            0010 - sap event
                            0020 - connection event
                            0040 - sm event
                    fsf for major function code = a:
                            0010 - activate local sap
                            0020 - activate remote sap
                    fsf for major function code = b:
                            0010 - deactivate local sap
                            0020 - deactivate remote sap
                    fsf for major function code = c:
                            0010 - connect request
                            0020 - connect response
                    fsf for major function code = d
                            0010 - disconnect request
   referenced by:   any ls, ldis
   length in words: 1

rb_fss
   initialized by:  any ls, ldis
   contains:        function specific status
                            0001 - sap not active
                            0002 - lack of resources
                            0004 - controller down
                            0008 - sm ls error
                            0010 - lrn already in use
                            0020 - sap already active
                            0040 - sap already disconnected
                            0080 - read buffer too small
   referenced by:   application
   length in words: 2

rb_s00
   initialized by:  application, any ls, ldis
   contains:        function specific information
   referenced by:   any ls, ldis, application
   length in words: 1

rb_s01
   initialized by:  application, any ls, ldis
   contains:        function specific information
   referenced by:   any ls, ldis, application
   length in words: 1
```

rb_s02
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_s03
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_s04
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_s05
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_s06
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_s07
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_s08
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_s09
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_s0a
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_s0b
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_s0c
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_s0d
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_s0e
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_s0f
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_s10
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_s11
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_s12
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_s13
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_sl4
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_sl5
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_sl6
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_sl7
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_sl8
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_sl9
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_sla
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_slb
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_slc
initialized by: application, any ls, ldis
contains: function specific information
referenced by: any ls, ldis, application
length in words: 1

rb_sld
- initialized by: application, any ls, ldis
- contains: function specific information
- referenced by: any ls, ldis, application
- length in words: 1

rb_sle
- initialized by: application, any ls, ldis
- contains: function specific information
- referenced by: any ls, ldis, application
- length in words: 1

rb_slf
- initialized by: application, any ls, ldis
- contains: function specific information
- referenced by: any ls, ldis, application
- length in words: 1

rb_lcb
- initailized by: application
- contains: reserved for lcb
- referenced by: ldis, any ls, ldms
- length in words: 41

rb_sz
- initialized by:
- contains: size of the rb
- referenced by:

IORB BUFFER DESCRIPTOR BLOCK (BD)

The iorb buffer descriptor is a user owned data structure. The bd is used by an application to pass data to the lan subsystem.

bd_bct
- initialized by: application
- contains: number of buffers (entrys)
- referenced by: any ls
- length in words: 1

bd_ofs
- initialized by: application
- contains: offset of the first buffer entry
- referenced by: any ls
- length in words: 1

bd_trg
- initialized by: application
- contains: total range of all buffers
- referenced by: any ls
- length in words: 1

bd_rfu
- initialized by: application
- contains: rfu
- referenced by: any ls
- length in words: 4

bd_hsz
- initialized by:
- contains: equate value represention the size in words of the bd header
- referenced by:

The following 5 fields will be repeated the number of times in the bd_bct field above.

bd_adr
- initialized by: application
- contains: buffer address
- referenced by: any ls, ldis
- length in words: 2

bd_idl
- initialized by: application
- contains: indicators
  bit 0 - buffer starts on odd word boundry when set
- referenced by: any ls, ldis
- length in words: 1

bd_id2
- initialized by: application
- contains: indicators (rfu)
- referenced by: any ls, ldis
- length in words: 1

bd_rng
- initialized by: application
- contains: buffer rnage in bytes
- referenced by: any ls, ldis
- length in words: 2

bd_rsr
- initialized by: any ls, ldis
- contains: residual range in bytes
- referenced by: application
- length in words: 2

bd_esz
- initialized by:
- contains: equate value represention the size in words of the bd entry
- referenced by:

ACTIVATE LOCAL SAP IORB SPECIFIC DEFINITIONS

The activate local sap iorb specific definitions are defined below:

```
rb_s00
   initailized by:  application
   contains:        sap symbolic name, left justified space
                    (x'20') filled
   referenced by:   ldis
   length in words: 8

rb_s06
   initialized by:  application
   contains:        proposed max sdu size
   referenced by:   ldis
   length in words: 1

rb_s07
   initialized by:  application
   contains:        proposed max read count
   referenced by:   ldis
   length in words: 1

rb_s08
   initialized by:  ldis
   contains:        type of sap
   referenced by:   application
   length in words: 1

rb_s09
   initialized by:  ldis
   contains:        maximum sdu size
   referenced by:   application
   length in words: 1

rb_s0a
   initialized by:  ldis
   contains:        ideal sdu size
   referenced by:   application
   length in words: 1

rb_s0b
   initialized by:  ldis
   contains:        maximum pending read count
   referenced by:   application
   length in words: 1

rb_s0c
   initialized by:  ldis
   contains:        read credit
   referenced by:   application
   length in words: 1
```

rb_s0d
- initialized by: ldis
- contians: write credit
- referenced by: application
- length in words: 1

rb_s0e
- initialized by: ldis
- contains: maximun number of connections allowed
- referenced by: application
- length in words: 1

ACTIVATE REMOTE SAP IORB SPECIFIC DEFINITIONS

The activate remote sap iorb specific definitions are defined below:

rb_s00
- initailized by: application
- contains: remote sap symbolic name, left justified space (x'20') filled
- referenced by: ldis
- length in words: 8

rb_s06
- initialized by: ldis
- contains: remote sap logical address
- referenced by: application
- length in words: 2

DEACTIATE LOCAL SAP IORB SPECIFIC DEFINITIONS

The deactiate local sap iorb specific portion are defined below:

DEACTIATE REMOTE SAP IORB SPECIFIC DEFINITIONS

The deactiate remote sap iorb specific portion are defined below:

rb_s00
initialized by: application
contains: remote sap logical address
referenced by: ldis
length in words: 2

WRITE CONNECTIONLESS IORB SPECIFIC DEFINITIONS

The write connectionless iorb specific defintions are defined below:

rb_s00
- initialized by: any ls, ldis
- contains: write credit
- referenced by: application
- length in words: 1

rb_s01
- initialized by: application
- contains: logical remote sap address
- referenced by: llc ls
- length in words: 2

READ CONNECTIONLESS IORB SPECIFIC DEFINITIONS

The read connectionless iorb specific defintions are defined below:

rb_s00
- initialized by: any ls
- contains: read credit
- referenced by: application
- length in words: 1

rb_s01
- initialized by: llc ls
- contains: actual buffer size
- referenced by: appliction
- length in words: 2

rb_s03
- initialized by: llc ls
- contains: logical remote sap address
- referenced by: application
- length in words: 2

CONNECT REQUEST IORB SPECIFIC DEFINITIONS

The connect request iorb specific portions are defined below (note: buffer is maximum of 32 bytes):

rb_s10
- initialized by: lacs software
- contains: quality of service
- referenced by: xpt ls
- length in words: 1

rb_s00
- initialized by: xpt ls
- contains: expidited data option
- referenced by: application
- length in words: 1

rb_s01
- initailized by: xpt ls
- contains: responding address
- referenced by: application
- length in words: 2

rb_s03
- initialized by: application
- contains: logical remote sap address
- referenced by: xpt ls
- length in words: 2

rb_s05
- initialized by: application
- contains: proposed maximum sdu size
- referenced by: xpt ls
- length in words: 1

rb_s06
- initialized by: application
- contains: proposed maximum read credit
- referenced by: xpt ls
- length in words: 1

rb_s07
- initialized by: xpt ls
- contains: maximum sdu size
- referenced by: application
- length in words: 1

rb_s08
- initialized by: xpt ls
- contains: ideal sdu size
- referenced by: application
- length in words: 1

rb_s09
initialized by: xpt ls
contains: initial read credit count
referenced by: application
length in words: 1

rb_s0a
initialized by: xpt ls
contians: initial write credit count
referenced by: application
length in words: 1

rb_s0b
initialized by: xpt ls
contains: connection identifer
referenced by: application
length in words: 2

rb_s0d
initialized by: xpt ls
contains: type of sap
referenced by: application
length in words: 1

rb_s0e
initialized by: xpt ls
contains: quality of service
referenced by: application
length in words: 1

CONNECT RESPONSE IORB SPECIFIC DEFINITIONS

The connect response iorb specific portions are defined below (note: buffer is maximum of 32 bytes):

rb_s10
- initialized by: lacs software
- contains: quality of service
- referenced by: xpt ls
- length in words: 1

rb_s00
- initialized by: xpt ls
- contains: expidited data option
- referenced by: application
- length in words: 1

rb_s01
- initailized by: xpt ls
- contains: responding address
- referenced by: application
- length in words: 2

rb_s03
- initialized by: application
- contains: logical remote sap address
- referenced by: xpt ls
- length in words: 2

rb_s05
- initialized by: application
- contains: proposed maximum sdu size
- referenced by: xpt ls
- length in words: 1

rb_s06
- initialized by: application
- contains: proposed maximum read credit
- referenced by: xpt ls
- length in words: 1

rb_s07
- initialized by: xpt ls
- contains: maximum sdu size
- referenced by: application
- length in words: 1

rb_s08
- initialized by: xpt ls
- contains: ideal sdu size
- referenced by: application
- length in words: 1

rb_s09
- initialized by: xpt ls
- contains: initial read credit count
- referenced by: application
- length in words: 1

rb_s0a
- initialized by: xpt ls
- contians: initial write credit count
- referenced by: application
- length in words: 1

rb_s0b
- initialized by: xpt ls
- contains: connection identifer
- referenced by: application
- length in words: 2

rb_s0d
- initialized by: xpt ls
- contains: type of sap
- referenced by: application
- length in words: 1

rb_s0e
- initialized by: xpt ls
- contains: quality of service
- referenced by: application
- length in words: 1

READ CONNECTION ORIENTED IORB SPECIFIC DEFINITIONS

The read connection oriented iorb specific defintions are defined below:

rb_s00
- initialized by: xpt ls
- contains: read credit
- referenced by: application
- length in words: 1

rb_s01
- initialized by: xpt ls
- contains: actual buffer size
- referenced by: appliction
- length in words: 2

rb_s03
- initialized by: application
- contains: connection identifer
- referenced by: xpt ls
- length in words: 2

READ EXPIDETED CONNECTION ORIENTED IORB SPECIFIC DEFINITIONS

The read expideted connection oriented iorb specific defintions are defined below:

rb_s00
- initialized by: xpt ls
- contains: expideted read credit
- referenced by: application
- length in words: 1

rb_s01
- initialized by: xpt ls
- contains: actual buffer size
- referenced by: appliction
- length in words: 2

rb_s03
- initialized by: application
- contains: connection identifer
- referenced by: xpt ls
- length in words: 2

WRITE CONNECTION ORIENTED IORB SPECIFIC DEFINITIONS

The write connection oriented iorb specific defintions are defined below:

rb_s00
- initialized by: xpt ls
- contains: write credit
- referenced by: application
- length in words: 1

rb_s01
- initialized by: application
- contains: connection identifer
- referenced by: any xpt
- length in words: 2

WRITE EXPEDITED CONNECTION ORIENTED IORB SPECIFIC DEFINITIONS

The write expedited connection oriented iorb specific defintions are defined below:

rb_s00
- initialized by: xpt 1s
- contains: expedited write credit
- referenced by: application
- length in words: 1

rb_s01
- initialized by: application
- contains: connection identifer
- referenced by: any xpt
- length in words: 2

DISCONNECT CONNECTION IORB SPECIFIC DEFINITIONS

The disconnect connection iorb specific portions are defined below:

rb_sle
initialized by: application
contains: connection identifer
referenced by: any ls
length in words: 2

SAP EVENT IORB SPECIFIC DEFINITIONS

The event iorb specific portions are defined below :

```
rb_s00
   initialized by:  application
   contains:        event mask (events the application
                    wishes to know about)
                    0001 - data arrival
                    0002 - additional write credits
                    0004 - sap deactivated
                    0008 - connection indicate
   referenced by:   any ls, ldis
   length in words: 1

rb_s01
   initialized by:  lacs software
   contains:        event indication mask (which event
                    occured)
                    0001 - data arrival
                    0002 - additional write credits
                    0004 - sap deactivated
                    0008 - connection indicate
   referenced by:   application
   length in words: 1
```

If rb_s01 = 0001 then the following fields are user as defined:

```
rb_s02
   initialized by:  lacs software
   contains:        buffer size in bytes
   referenced by:   application
   length in words: 2
```

If rb_s01 = 0002 then the following fields are user as defined:

```
rb_s02
   initialized by:  lacs software
   contains:        additional write credits
   referenced by:   application
   length in words: 1
```

If rb_s01 = 0004 then the following fields are user as defined:

```
rb_s02
   initialized by:  lacs software
   contains:        deactivation reason code
                    0001 - controller down
                    0002 - service provider aborted
   referenced by:   application
   length in words: 1
```

If rb_s01 = 0008 then the following fields are user as defined:

rb_s02
initialized by: lacs software
contains: quality of service
referenced by: application
length in words: 1

rb_s03
initialized by: lacs software
contains: expidited data option
referenced by: application
length in words: 1

rb_s04
initialized by: lacs software
contains: initial read credit count
referenced by: application
length in words: 1

rb_s05
initialized by: lacs software
contains: initial write credit count
referenced by: application
length in words: 1

rb_s06
initialized by: lacs software
contains: buffer residual range
referenced by: application
length in words: 1

rb_s07
initialized by: lacs software
contains: connection identifer
referenced by: application
length in words: 2