NAME

Intro, intro – introduction to kernel data structures

DESCRIPTION

Section 9S describes the data structures used by drivers to share information between the driver and the kernel.

In this section, reference pages contain the following headings:

- **NAME** summarizes the structure's purpose.
- **SYNOPSIS** lists the include file that defines the structure.
- **INTERFACE LEVEL** describes any architecture dependencies.
- **DESCRIPTION** provides general information about the structure.
- **STRUCTURE MEMBERS** lists all accessible structure members.
- **SEE ALSO** gives sources for further information.

Every driver MUST include **<sys/ddi.h>** and **<sys/sunddi.h>**, in that order, and last.

The following table summarizes the STREAMS structures described in this section.

Structure	Type
copyreq	DDI/DKI
copyresp	DDI/DKI
datab	DDI/DKI
fmodsw	Solaris DDI
free_rtn	DDI/DKI
iocblk	DDI/DKI
linkblk	DDI/DKI
module_info	DDI/DKI
msgb	DDI/DKI
qband	DDI/DKI
qinit	DDI/DKI
queclass	Solaris DDI
queue	DDI/DKI
streamtab	DDI/DKI
stroptions	DDI/DKI

The following table summarizes structures that are not specific to STREAMS I/O.

Structure	Type
aio_req	Solaris DDI
buf	DDI/DKI
cb_ops	Solaris DDI
ddi_device_acc_attr	Solaris DDI
ddi_dma_attr	Solaris DDI
ddi_dma_cookie	Solaris DDI
ddi_dma_lim_sparc	Solaris SPARC DDI
ddi_dma_lim_x86	Solaris x86 DDI

ddi_dma_req	Solaris DDI
ddi_dmae_req	Solaris x86 DDI
ddi_idevice_cookie	Solaris DDI
ddi_mapdev_ctl	Solaris DDI
dev_ops	Solaris DDI
iovec	DDI/DKI
kstat	Solaris DDI
kstat_intr	Solaris DDI
kstat_io	Solaris DDI
kstat_named	Solaris DDI
map	DDI/DKI
modldrv	Solaris DDI
modlinkage	Solaris DDI
modlstrmod	Solaris DDI
scsi_address	Solaris DDI
scsi_arq_status	Solaris DDI
scsi_device	Solaris DDI
scsi_extended_sense	Solaris DDI
scsi_hba_tran	Solaris DDI
scsi_inquiry	Solaris DDI
scsi_pkt	Solaris DDI
scsi_status	Solaris DDI
uio	DDI/DKI

NOTES

Do not declare arrays of structures as the size of the structures may change between releases. Rely only on the structure members listed in this chapter and not on unlisted members or the position of a member in a structure.

Name	Description
aio_req(9S)	asynchronous I/O request structure
buf(9S)	block I/O data transfer structure
cb_ops(9S)	character/block entry points structure
copyreq(9S)	STREAMS data structure for the M_COPYIN and the M_COPYOUT message types
copyresp(9S)	STREAMS data structure for the M_IOCDATA message type
datab(9S)	STREAMS message data structure
ddi_device_acc_attr(9S)	data access attributes structure
ddi_dma_attr(9S)	DMA attributes structure
ddi_dma_cookie(9S)	DMA address cookie
ddi_dmae_req(9S)	DMA engine request structure

ddi_dma_lim(9S)	See **ddi_dma_lim_sparc**(9S)
ddi_dma_lim_sparc(9S)	SPARC DMA limits structure
ddi_dma_lim_x86(9S)	x86 DMA limits structure
ddi_dma_req(9S)	DMA Request structure
ddi_idevice_cookie(9S)	device interrupt cookie
ddi_mapdev_ctl(9S)	device mapping-control structure
dev_ops(9S)	device operations structure
fmodsw(9S)	STREAMS module declaration structure
free_rtn(9S)	structure that specifies a driver's message freeing routine
iocblk(9S)	STREAMS data structure for the M_IOCTL message type
iovec(9S)	data storage structure for I/O using uio
kstat(9S)	kernel statistics structure
kstat_intr(9S)	structure for interrupt kstats
kstat_io(9S)	structure for I/O kstats
kstat_named(9S)	structure for named kstats
linkblk(9S)	STREAMS data structure sent to multiplexor drivers to indicate a link
modldrv(9S)	linkage structure for loadable drivers
modlinkage(9S)	module linkage structure
modlstrmod(9S)	linkage structure for loadable STREAMS modules
module_info(9S)	STREAMS driver identification and limit value structure
msgb(9S)	STREAMS message block structure
qband(9S)	STREAMS queue flow control information structure
qinit(9S)	STREAMS queue processing procedures structure
queclass(9S)	a STREAMS macro that returns the queue message class definitions for a given message block
queue(9S)	STREAMS queue structure
scsi_address(9S)	SCSI address structure
scsi_arq_status(9S)	SCSI auto request sense structure
scsi_device(9S)	SCSI device structure
scsi_extended_sense(9S)	SCSI extended sense structure
scsi_hba_tran(9S)	SCSI Host Bus Adapter (HBA) driver transport vector structure
scsi_inquiry(9S)	SCSI inquiry structure
scsi_pkt(9S)	SCSI packet structure
scsi_status(9S)	SCSI status structure

streamtab(9S)	STREAMS entity declaration structure
stroptions(9S)	options structure for M_SETOPTS message
uio(9S)	scatter/gather I/O request structure