

disk

COLLABORATORS

	<i>TITLE :</i> disk		
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
WRITTEN BY		July 23, 2024	

REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

Contents

1	disk	1
1.1	disk.doc	1
1.2	disk.resource/AllocUnit	1
1.3	disk.resource/FreeUnit	2
1.4	disk.resource/GetUnit	2
1.5	disk.resource/GetUnitID	4
1.6	disk.resource/GiveUnit	4
1.7	disk.resource/ReadUnitID	5

Chapter 1

disk

1.1 disk.doc

```
AllocUnit ()
FreeUnit ()
GetUnit ()
GetUnitID ()
GiveUnit ()
ReadUnitID ()
```

1.2 disk.resource/AllocUnit

NAME

AllocUnit - allocate a unit of the disk

SYNOPSIS

```
Success = AllocUnit( unitNum ), DRResource
D0                      D0          A6
```

```
BOOL AllocUnit(LONG);
```

FUNCTION

This routine allocates one of the units of the disk. It should be called before trying to use the disk (via GetUnit).

In reality, it is perfectly fine to use GetUnit/GiveUnit if AllocUnit fails. Do NOT call FreeUnit if AllocUnit did not succeed. This has been the case for all revisions of disk.resource.

INPUTS

unitNum -- a legal unit number (zero through three)

RESULTS

Success -- nonzero if successful. zero on failure.

EXCEPTIONS

SEE ALSO

BUGS

1.3 disk.resource/FreeUnit

NAME

FreeUnit - deallocate the disk

SYNOPSIS

```
FreeUnit( unitNum ), DRResource
D0          A6
```

```
void FreeUnit(LONG);
```

FUNCTION

This routine deallocates one of the units of the disk. It should be called when done with the disk. Do not call it if you did not successfully allocate the disk (there is no protection -- you will probably crash the disk system).

INPUTS

unitNum -- a legal unit number (zero through three)

RESULTS

EXCEPTIONS

SEE ALSO

FreeUnit()

BUGS

Doesn't check if you own the unit, or even if anyone owns it.

1.4 disk.resource/GetUnit

NAME

GetUnit - allocate the disk for a driver

SYNOPSIS

```
lastDriver = GetUnit( unitPointer ), DRResource
D0          A1          A6
```

```
struct DiscResourceUnit *GetUnit(struct DiscResourceUnit *);
```

FUNCTION

This routine allocates the disk to a driver. It is either immediately available, or the request is saved until the disk is available. When it is available, your unitPointer is sent back to you (via ReplyMsg). You may then reattempt the GetUnit.

Allocating the disk allows you to use the disk's resources.

Remember however that there are four units to the disk; you are only one of them. Please be polite to the other units (by never selecting them, and by not leaving interrupts enabled, etc.).

When you are done, please leave the disk in the following state:

```
dmacon dma bit ON
dsklen dma bit OFF (write a #DSKDMAOFF to dsklen)
adkcon disk bits -- any way you want
entena:disk sync and disk block interrupts -- Both DISABLED
CIA resource index interrupt -- DISABLED
8520 outputs -- doesn't matter, because all bits will be
set to inactive by the resource.
8520 data direction regs -- restore to original state.
```

NOTE: GetUnit() does NOT turn on the interrupts for you. You must use AbleICR (for the index interrupt) or intena (for the diskbyte and diskblock interrupts) to turn them on. You should turn them off before calling GiveUnit, as stated above.

INPUTS

unitPtr - a pointer to your disk resource unit structure.

Note that the message field of the structure MUST be a valid message, ready to be replied to. Make sure ln_Name points to a null-terminated string, preferably one that identifies your program.

You need to set up the three interrupt structures, in particular the IS_DATA and IS_CODE fields. Set them to NULL if you don't need that interrupt. Also, set the ln_Type of the interrupt structure to NT_INTERRUPT. WARNING: don't turn on a disk resource interrupt unless the IS_CODE for that interrupt points to executable code!

IS_CODE will be called with IS_DATA in A1 when the interrupt occurs. Preserve all regs but D0/D1/A0/A1. Do not make assumptions about A0.

RESULTS

lastDriver - if the disk is not busy, then the last unit to use the disk is returned. This may be used to see if a driver needs to reset device registers. (If you were the last user, then no one has changed any of the registers. If someone else has used it, then any allowable changes may have been made). If the disk is busy, then a null is returned.

EXCEPTIONS

SEE ALSO
GiveUnit()

BUGS

1.5 disk.resource/GetUnitID

NAME

GetUnitID - find out what type of disk is out there

SYNOPSIS

```
idtype = GetUnitID( unitNum ), DRResource
D0          D0          A6
```

```
LONG GetUnitID(LONG);
```

FUNCTION

Gets the drive ID for a given unit. Note that this value may change if someone calls ReadUnitID, and the drive id changes.

INPUTS

unitNum -- a legal unit number (zero through three)

RESULTS

idtype -- the type of the disk drive. Standard types are defined in the resource include file.

EXCEPTIONS

SEE ALSO

ReadUnitID()

BUGS

1.6 disk.resource/GiveUnit

NAME

GiveUnit - Free the disk back up

SYNOPSIS

```
GiveUnit(), DRResource
          A6
```

```
void GiveUnit();
```

FUNCTION

This routine frees the disk after a driver is done with it. If others are waiting, it will notify them.

INPUTS

RESULTS

EXCEPTIONS

SEE ALSO

GetUnit()

BUGS

In pre-V36, GiveUnit didn't check if you owned the unit. A patch for this was part of 1.3.1 SetPatch. Fixed in V36.

1.7 disk.resource/ReadUnitID

NAME

ReadUnitID - reread and return the type of drive (V37)

SYNOPSIS

```
idtype = ReadUnitID( unitNum ), DRResource
D0          D0          A6
```

```
ULONG ReadUnitID(LONG);
```

FUNCTION

Rereads the drive id for a specific unit (for handling drives that change ID according to what sort of disk is in them. You MUST have done a GetUnit before calling this function!

INPUTS

unitNum -- a legal unit number (zero through three)

RESULTS

idtype -- the type of the disk drive. Standard types are defined in the resource include file.

EXCEPTIONS

SEE ALSO

GetUnitID()

BUGS