SuperDuper

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SuperDuper 2.01

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SuperDuper is a disk copier/formatter that tries to be to disk handling what
Mostra is to IFF displaying: a fast, compact, system-friendly tool which
combines speed, features, and some bells and whistles to make your life
easier.

By "fast" I mean exactly what you're hoping---blazingly fast. A disk is
usually copied and verified in less than 100s. Without verify, the time
drops to 69s. You can buffer a disk in RAM in less than 36s, and then making
a verified copy takes 67s, while a non-verified copy takes less than 36s.
Adding another destination drive increases verified copy times by 34s, but
hardly changes non-verified copy times (the Amiga can write more than one
drive at a time; I just need a few tenths of a second in order to measure
the drive speed and step the heads). Thus, if you really trust your drives
and your media you can make four copies in 38s. These timings can vary with
the system configuration, the multitasking overhead, the disposition of the
blocks on the surface of the disk, the state of the DATE option (which
requires a separate write on the root block track for each disk) and the DMA
access of the custom chips (previous users of SuperDuper might think this
release is slower than the previous one: it is really faster, but SuperDuper
1.0 was a little bit optimistic about its copy times---the motor on/off
delays were erroneously skipped).

1.3   SuperDuper/Changes

SuperDuper 2.01 has almost no visible changes with respect to SuperDuper
2.0, apart from the extension of the ARexx macros, which is now "supdup"
instead of "sd" in order to avoid conflicts with other programs.

However, it was discovered that many flakey drives have power supply
problems when four of them are connected to an Amiga. Sometimes the head of
a drive won't step, and this error cannot be caught even by verifying, since
the drive doesn't know where the head is---its position has to be tracked
via software.

In order to prevent this annoying phenomenon, which was the only known
source of bad copies, the head moving strategy was slightly changed.
SuperDuper no longer steps multiple heads at the same time. This marginally
increases (about 3 tenths of second for each destination) the non-verified
copy times, but gives you a 100% reliability even on out-of-specs systems.

If something wierd happens in spite of this patch, it can be tracked at
recalibration time. When a mismatch between SuperDuper's internals and the
drive signals is detected, a requester "Error while recalibrating" is
issued. In this case, you can try to slow down the head moves using the
SetTDDelay utility which is supplied with SuperDuper.

The only other noticeable enhancement is the fact that now SuperDuper checks
the NOCLICK flag separately for each drive. If you have some drives which
support NOCLICK and somes which don't, SuperDuper will click only the
allowed drives. Previously, the information in the public unit of the drive
0 was used for all the drives. The utility ToggleClick which is supplied
with SuperDuper allows to hush selectively any unit. Moreover, a new NOCLICK
ARexx command allows to force no-clicking selectively even under 1.2/1.3.

It should be remarked that SuperDuper is much less tolerant than
trackdisk.device. Bad drives can work (almost) perfectly with
trackdisk.device, because of its many, frequent cross checks. For instance,
at each disk insertion some track is read by DOS, and if the track number
doesn't match with trackdisk's internals, a recalibration is started.
SuperDuper instead doesn't read anything before copying (for speed reasons);
thus, if your drive has a flakey DSKTRACK0 signal SuperDuper could believe
it's on track 0 while it isn't.

1.4 SuperDuper/Overview

Main features:

 – SuperDuper copies, formats and checks from/to any combination of Amiga
drive(s).

 – SuperDuper has a switchable 880K RAM buffer that allows for any number of
duplications while reading the source disk only once. The combination of
destination drives can be changed at each pass. If you have a hard disk, you
can create on it an image file that will act as a buffer. This file can be
saved and reused many times. Also, all kinds of virtual disks are supported
for buffering (VD0:, RAD:, FMS:...). Morever, a count is kept of the copies
generated by a buffered disk.

 – SuperDuper checksums the RAM buffer. If some badly written program is
trashing your memory, you are alerted. Thus, buffered copies are as safe as
direct copies.

 – SuperDuper also checks its internal DMA buffers at each write.

 – SuperDuper can allocate a buffer of less than 880K. In this case, it will
use real-time compression in order to do multiple pass copies with maximum
efficiency. Most disks can be wholly buffered on a 1MB machine. You can also
make multiple copies with multiple passes. Copy times are (almost)
unaffected.

 – SuperDuper will automatically retry tracks which produce a verify error.
The number of retries is programmable. A simple visual clue is given to the
position of the error, but on request detailed error information printing is
available.

 – SuperDuper is highly system-friendly---the use of CPU time is negligible,
so you can multitask efficiently.

 – SuperDuper has the option of incrementing the creation date of the copy
so AmigaDOS doesn't get confused. If, however, the option is switched on and
the disk is not an AmigaDOS disk, SuperDuper won't increment the date.

 – SuperDuper is faster than diskcopy---actually it pushes the drives to
their limits. At the time of this writing, SuperDuper is the fastest Amiga
copier both from a "pure" (physical time) and from a "per-copy" (real time
for each copy when a big number of copies of the same disk is produced)
point of view.

– SuperDuper alerts the user with sound (and optionally voice) about the operations in progress---so you can really be doing something else!

– SuperDuper can format both OFS and FFS disks.

– SuperDuper displays a list of the last few disks copied. If you do a lot of copying, you'll find this feature more than a little useful.

– SuperDuper can manage the Amiga drives without help from the trackdisk.device. Through the supplied utility SDBootInstall, you can create a boot disk which will keep the system away from your drives, giving you back more than 30K per unit. This is very useful when doing intensive buffered copying on a 1M machine.

– SuperDuper can automatically start any copy or format operation by monitoring the disks' extraction and insertion.

– Almost all elements of the 3-D, 2.0-like graphical user interface have keyboard equivalents. When possible, 2.04 features like TAB gadget cycling and window zooming were supported.

– The start/end cylinder of a copy is programmable.

– Unique numbered names can be automatically generated while formatting.

– SuperDuper works under 1.2, 1.3 and 2.0.

– SuperDuper has a time indicator.

– SuperDuper has a beautiful name. 8^)

– If this is not enough, an ARexx interface allows any kind of customization. In particular, a startup ARexx script lets you set up a custom configuration. Since SuperDuper can turn off its graphical user interface via a command line switch, it is possible to use SuperDuper as a CLI command by writing a suitable ARexx macro. A switch allows you to shut down ARexx in order to gain memory. ARexx macros can be launched via a file requester (asl.library, arp.library and req.library are supported).

1.5 SuperDuper/First Steps

To use SuperDuper, you simply double-click on its icon. You will see five rows of gadgets. The first one has at most one gadget selected: it's the source. The second one lets you select the destination drive(s). The other lines contain option and action gadgets.

Every gadget can be activated via mouse or keyboard (using the underlined letter). The line of destination drives can be controled by pressing SHIFT together with the underlined number. You can use Q or ESC to exit, instead of hitting the close gadget. Three of the string gadgets have underlined letters which activate them. Moreover, if you're running under 2.04, you can use TAB or SHIFT-TAB to pass from a string gadget to another one.

To make your first copy, if you have two (or more) drives simply select in the first line the gadget for the drive which contains the source floppy,

and in the second line the gadget(s) for the drive(s) containing the
destination(s) (for the time being do not choose the same drive both as
source and as destination). Then hit the GO gadget. After a while, the
display will flash, a beep will be generated, and the copy will be finished.
As each cylinder is copied, the elapsed time indicator is updated. Note that
a first beep will be generated when the copy is almost finished, so you have
time to prepare yourself.

If you have only one drive, select it both as source and as destination.
Then hit the BUFFER gadget, thus creating a RAM buffer. Depending on the
memory available, it will be a full 880K buffer or a partial buffer. In the
latter case, real-time compression will let SuperDuper get the best out of
it. Now put in the source disk and hit the READ gadget: the buffer will be
filled with the contents of the disk. If the progress bar reaches its
maximum length, then the whole disk has been buffered. Pull out the source
disk, put in the destination, and hit the GO gadget. The buffer will be
written to the disk. If only a part of the source disk was buffered, put it
in again, buffer it again (note that now the progress bar starts where it
stopped before) and write it again. This process must be repeated until the
whole disk has been copied. It is safer to set the write protect tab on the
source disk, in order to avoid the unpleasing side-effects of
source/destination mismatches.

1.6 SuperDuper/Action Gadgets

                                The action gadgets

Four gadgets control SuperDuper's copy/format/check operations:

 - STOP stops any operation. If pressed while the multi-pass real-time
compression buffer is selected and no operation is in progress, it will
empty the buffer and reset the pass count, thus allowing you to buffer
another source even if the previous one wasn't finished (see the description
of the buffering system). If you STOP immediately after starting a copy
operation and nothing has been drawn in the progress bar, nothing has been
written to the destinations.

 - READ can be used only when a buffer is selected; it fills the buffer by
reading from the source drive.

 - GO initiates a copy operation. If no buffer is selected, the source is
copied to the destination(s). If a buffer is selected, the content of the
buffer is written on the destination(s). If FORMAT is selected, the
destination drive(s) are formatted.

 - CHECK is basically a READ without buffering. The source disk is scanned
for errors. No buffer is needed to use it. Note that SuperDuper will detect
trackdisk.device related errors, but it won't find DOS checksum errors (for
this purpose, for instance, you can use FixDisk).

When SuperDuper starts an operation which involves reading a disk, i.e.,
READ, CHECK and non-buffered GO, it scrolls up the name list and marks the
current drive as "<UNKNOWN>". This happens because it can't know if the disk
is a DOS disk before reading track 0. After less than a second, the track
will be read, and the name will be changed to "<NDOS>" if the disk is not a

DOS disk. Otherwise, as soon as the track 80 is read (the progress bar is in
the middle) the name of the disk will be displayed. However, if for any
reason the name is incorrect (wrong format, read error, etc.) SuperDuper
will name the disk "<BAD NAME>". In this case, it is very likely that the
root block is a little bit scrambled, so it's probably a good idea to turn
off the DATE option gadget. Beware: if you are using a multi-pass buffer,
the name of the disk could be unavailable at the first pass.

If SuperDuper finds an error on read (or verify), it will retry reading
(writing) the track, each time incrementing the first number of the Rtry:Err
indicator. If after a number of retries specified in the gadget "Retry#" the
error remains, SuperDuper will increment the second number (the error
counter), restore the original retry counter and continue. A little
rectangle in the progress bar will point out where the error occured. It
will be positioned horizontally, proportionally to the track number, and
vertically, proportionally to the unit number (the first line of rectangles
shows errors on unit 0 and so on). Note that while retrying SuperDuper can't
be stopped: don't set the "Retry#" gadget to 99 unless you really know
that's what you want to do. At the end of the copy, the first number shows
how many retries leading to a successful write were done, while the second
one points out the number of tracks with an actual error. If you want to get
a very detailed error report, you can set PRINTERRORS ON from ARexx. A
console window will appear, and every wrong read, write or retry will
generate a message explaining what doesn't work. Usually you will get bad
checksums, but if a track is really scrambled SuperDuper could be unable to
get the first sector after a gap, in which case nothing at all is recovered.

The progress bar is drawn in a different color if you're doing an READ, a
FORMAT or a COPY operation---so you can be sure you read the new chunk in
the buffer, and so you can avoid formatting your floppies when you think
you're copying something to them. The gadget corresponding to the action
currently executing will remain highlighted in order to remind you what
you're doing. Note also that the progress bar and the elapsed time indicator
are not updated if something locks the screen (like using menus). The update
is delayed until the screen is unlocked (thus SuperDuper won't get stuck as
will almost all programs which do any rendering to their windows).

The volume of the beeps produced by SuperDuper while copying can be set with
the ARexx VOLUME command.

If you specify start/end cylinders different from 0/79 in the SC and EC
gadgets, only the part of the disk specified will be copied. The main use of
this option is for retrying some lazy disk (usually on the last tracks) if
you're not satisfied with the number of retries issued by SuperDuper. Please
refer to the section on the buffering system for some subtle interactions
between the RAM/HD/VDisk buffer and the start/end cylinder selectors.

While doing buffered copies, at each successful copy (that is, without
errors) the Cpy# indicator will be incremented. Thus you can know precisely
how many disks you copied. Moreover, the counter will be incremented only if
the operation ended on the last track of the disk and started from the first
track of the buffer. This allows you to manually retry spare tracks by
changing the SC/EC gadgets without getting spurious increments, and if a
multi-pass copy is in progress only the last pass will actually increment
the counter.

1.7 **SuperDuper/Copy Options**

Five gadgets control the copy/format options.

 - VERIFY turns verify on and off (you can also format without verifying).
However, turning off verify is not recommended.

 - DATE toggles on or off the change of the date of an AmigaDOS disk. This
change is necessary so AmigaDOS can distinguish otherwise identical disks;
if two truly identical disks are inserted in the drives, AmigaDOS gets
confused and crashes. However, if for some reason you want a "physical"
copy, you would turn off this option. DATE will be ignored for a
non-AmigaDOS disk.

 - FORMAT enables formatting. When you hit GO, all destination drives will
be formatted. To copy again, you must deselect FORMAT by clicking it again.
If VERIFY is selected, the format process is verified. Note that when you
hit READ, FORMAT is automatically deselected. This happens in order to avoid
the unpleasing error of thinking you're writing a buffered disk, while
actually formatting it.

The gadget prefixed by "Label:" allows you to choose a name that SuperDuper
will use while formatting. The name must be chosen before clicking GO---it
is disabled (ghosted) during the formatting.

 - INCNAME makes easy to format a bunch of disks with different, unique
names. If this gadget is selected while formatting, SuperDuper will scan the
Label string gadget searching for a numeric pattern (i.e., one or more
digits) and will increment the pattern value for each disk formatted. In
case more than one pattern is present, the last one is used. For instance,
if you format four disks with label "Foobar.000", the disks will be named
Foobar.001, Foobar.002,... and at the end of the copy the label gadget will
contain Foobar.004, thus being ready for the next formatting. The more
digits, the more unique names. Since you can start from any number, and
after 99...9 the numeration wraps around, if you need to start with 00...0
you can put in something like "Foobar.999": The first disk will be labeled
with "Foobar.000".

 - FFS enables the formatting of FFS disks; for copying it is ignored.

1.8 **SuperDuper/Buffering System**

Three gadgets control the full-featured buffering system of SuperDuper.
Buffering is useful when you have to do a lot of copies: you read a disk
only once, and then you can make as many copies as you want without
rereading it. It also has other uses: if you have to create distribution
disks (for instance for a commercial package) you can create them using high
speed virtual floppies, such as Commodore's RAD: or Matt Dillon/Jim
Cooper's FMS: disk. SuperDuper can then read from those virtual disks and
make many copies on floppies at high speed.

Since data integrity is a primary issue, SuperDuper checksums the RAM
buffer. The possibility of writing a munged track is very low. Strict
control is also kept on the validity of the buffer---you can't write random

data on your disks inadvertantly.

– BUFFER allocates a RAM buffer. SuperDuper will try to get an 880K buffer:
if you don't have enough memory, a warning will be issued, showing the
number of buffers allocated (each buffer is 11K) and warning you that the
real-time compression system is activated. Beware of the fact that many
programs tend to crash under low-memory conditions, so if you have 1MB or
less you should close everything you can before hitting BUFFER, and you
should possibly also use KILLSYS.

The memory allocated will be used as a buffer to make multiple pass copies.
If SuperDuper can find 880K, the process is very simple and uses very little
of the CPU, but if (for instance on a 1MB machine) it's impossible to buffer
a whole disk this way, SuperDuper will use a real-time compression
algorithm. As the disk is read in the buffer, it is compressed in a special
format. The gain in size is usually 35% for empty tracks, 20–30% for text,
15–25% for programs and 5–10% for IFF ILBM images. Tracks which can't be
compressed are simply stored. The only disks which can't really be
compressed are disks filled with compressed files, like .lzh or .zoo files,
but for the others the size gain is enough to buffer a whole disk on a 1MB
machine. 8^)

Of course, the compression overhead eats a lot of CPU power. The algorithm
has been devised in such a way that compression and decompression are
absolutely real-time, i.e., you will notice no slowdown. However, beware of
the fact that while doing compression SuperDuper always fully uses the CPU.
Even moving the mouse can slow down the operation in progress. Anyway, if
you have all of your memory allocated for the buffer, it is definitively not
a good idea to do anything besides waiting for the copy to finish.

A little side-effect of the allocation of all of the available RAM is that
some requester could be turned into an alert, or could even disappear
without waiting for the user to acknowledge it.

– HDBUF creates an 880K file in the current directory of SuperDuper, and
uses this file as a buffer, exactly like BUFFER does with RAM. Of course you
must use it only if you have a hard disk, and you started SuperDuper from
it. The file contains the 1760 blocks which form a disk in their natural
order. The READ operation will be a little slower, but if you have a good
hard disk you should be able to make copies as fast as with a RAM buffer.
The file is named "SD_Buffer", and it's accessed only during the copy
operations. This means that you can read or write it using the CLI commands,
or the Workbench (but you will have to supply an icon). You can easily write
an ARexx macro which retrieves/stores binary images of a disk from/to
SD_Buffer. Then SuperDuper will use the new contents when writing to
floppies.

If you put a file named SD_Buffer in SuperDuper's directory *before*
clicking HDBUF, then SuperDuper will assume this is a buffer file and will
use it. You can even write directly to floppies without reading anything.
Note that usually the buffer file is deleted when the HDBUF gadget is
deselected, but if you supply a buffer file before activating the gadget
your file will be left untouched.

– VDBUF is probably SuperDuper's most esoteric feature. By typing a device
name in the string gadget named "VDName", you can select any device
(SuperDuper needs the Exec device name, e.g., "ramdrive.device" for the RAD:

AmigaDOS device). The unit number is taken from the gadget with the label
"VDUnit#". The device you specified will be used as a buffer for your disks.
SuperDuper expects the device to behave like the trackdisk.device, namely it
must be able to write data at specific offsets. The main devices you can
use, with their respective names, are:

 RAD: – the recoverable RAM drive. Configure it in your mountlist as a
floppy, and you can use it as a buffer (Exec name: ramdrive.device).
 FMS: – Matt Dillon/Jim Cooper's virtual floppy-on-hard disk
(Exec name: fmsdisk.device).
 VD0:, etc. – other recoverable, sector-oriented RAM drives.

The device you specify is checked on opening to see if it has enough space
to contain a full disk. The check is done simply on the number of sectors
available---if there are enough sectors, and they are arranged differently
than on a floppy, you will be able to use the device as a buffer, but don't
expect AmigaDOS to get anything meaningful from it.

WARNING: many of these devices are buggy and return NO ERROR on unsuccessful
opening or failed size test. Some of them in this case will trash your
memory. Be sure that the device is configured properly---try an AmigaDOS
command on it first.

Of course, many people will find incredible ways to use this feature (for
techies: if you want try something weird, consider that SuperDuper reads 512
bytes at offset 900608 on opening to test for size, and then reads 1760
chunks of 512 bytes, one for each sector, for every copy. The sectors are
read sequentially as they are distributed on the disk, so if the device
ignores the offset indication, you can feed it with 880K of a continuous
bytes stream. Buffering is another story though---the offset indication is
important because SuperDuper places the blocks on the device "in the right
place" as soon as it encounters them).

A BUFFER is considered non-valid as soon as allocated, because it will
contain random info. To make it valid, you must read in a floppy. VDBUF and
HDBUF instead assume the buffer is always valid, because it could be
externally fed. This mechanism allows you to prepare, for instance, a
distribution disk at high speed in RAD: or in your hard disk using FMS:, and
then to copy it to floppies directly.

In the same vein, SuperDuper will act slightly differently when determining
if a buffer contains a DOS disk (if not, the incrementing of the date is
inhibited even if selected). At read time, the information is recorded, but
if at write time the pass starts from track 0, SuperDuper will re-fetch the
DOS mark from the buffer and check it again. This way if for instance you
externally feed a ramdrive.device with a diskcopy command SuperDuper will be
aware of it and will increment the date if requested to do so.

Some care must be taken in order to obtain what you really want when mixing
the buffering features and the selection of the start/end cylinder.
SuperDuper implements a reasonable mean of flexibility and reliability for
these kinds of operations.

When using VDBUF or HDBUF, the read/write operations start and end exactly
where you specify with the start/end cylinder gadgets. Since SuperDuper has
no control over what you do to the virtual disk while it's not accessing it,
it has to assume you made it right.

When using a RAM buffer, SuperDuper can clearly make some assumptions on its validity. In particular, just after allocation or a stopped READ it assumes the buffer is not valid.

If you have a valid buffer and you change the start/end cylinders, there are two cases: either the buffer range and the start/end range do not intersect, in which case an error message is issued if you try to write the buffer, or there is a non-empty intersection, in which case the intersection will be written, i.e., the starting track will be the greatest of the start of the buffer and the start cylinder, while the ending track will be the least of the end of the buffer and the end cylinder. Example: if you read something with SC=20, EC=30, then you set SC=10, EC=25 and hit GO, the range 20-25 will be written.

There are however two subtle differences between the behaviour of a complete (880K) RAM buffer and a partial one. First of all, the track range chosen for READing in a complete RAM buffer is always the full start/end cylinder range, while if reading in a partial buffer SuperDuper will start from the last track of the previous buffer (of course, if the last track is past the end cylinder, it will start from the start cylinder). Moreover, if a long range of tracks is skipped (for instance, you read in a buffer range of 0-79 and you write 70-79) a few (less than 10) seconds will pass while SuperDuper unpacks the data you don't want to write---they have to be decompressed anyway.

If all this scares you, don't fear: the buffer/range interaction will simply work just as you intuitively expect. I hope at least 8^).

1.9 SuperDuper/User Interface Gadgets

 - TALK activates SuperDuper's ability to give its status by voice. Currently only English is supported.

 - AUTO activates automatic operation starting. SuperDuper will monitor disk insertion and ejection. When all destination(s) have been ejected and re-inserted, a GO operation is started. If FORMAT is selected, the destination(s) are formatted. Else, if a buffer is selected, it is written to the destination(s). If neither formatting nor buffering is requested, SuperDuper will monitor the source, too, and will start a disk-to-disk(s) copy as soon as the source and all destination(s) have been ejected and re-inserted. WARNING: especially on one-drive-only systems, AUTO can be extremely dangerous. You'd better write-protect your source disks.

 - KILLSYS/RESTORE closes the Workbench and voice, flushes the memory and opens a very small screen with only two colors. Moreover, the window is of SIMPLE_REFRESH type rather than SMART_REFRESH. This way, the maximum amount of memory for your system is at your disposal (unfortunately, under 1.3 the window can be refreshed incorrectly because of an Intuition bug). If the Workbench can't be closed for some reason, a warning is issued (usually some application has a window opened on the Workbench screen). When you want to get back, hit the gadget again (this time it will be named RESTORE). This feature is very powerful if coupled with SDBootInstall and with the CLI option LOWMEM.

WARNING: If you grab the disk.resource (by selecting a source and/or a
destination) just after a disk was inserted, it's likely the Workbench will
be locked, waiting for you to unlock the drive in order to load the icon of
the disk. If in this moment you hit KILLSYS, you will lock the entire
system, since SuperDuper will be waiting for the Workbench to close, while
the Workbench will be waiting for you to release the disk.

1.10   SuperDuper/String Gadgets

The string gadgets have been more or less discussed in the previous
sections. They are gathered here for sake of clarity.

 – SC,EC select the start and the end cylinders, respectively, for any
operation.

 – Label lets you choose a name for the disks formatted by SuperDuper. See
also the paragraph about the INCNAME gadget.

 – VDName, VDUnit# select the name and the unit number of the Exec device
that SuperDuper will use as a virtual disk if the VDBUF gadget is selected.

 – Retry# selects the number of read/verify retries on each track.

1.11   SuperDuper/Special Requesters

When SuperDuper needs to inform the user about something, usually a
requester with a message appears (if the TALK option is on the message is
also read out loud). While most of the requesters are self-explanatory, some
of them need a more detailed description.

"Can't get disk.resource"

The disk.resource is the Exec way of controlling the access to the low-level
disk hardware. SuperDuper can't access the resource, probably because
someone is already using it. If you suspect a particular program, close it
and try again to select a disk gadget.

"Please free disk.resource"

(See also previous requester). If the disk.resource can't be grabbed, Exec
won't give back the message passed by SuperDuper until the resource is free.
Thus, until that moment SuperDuper can't exit.

"Checksum error: buffer munged."

Someone wrote over SuperDuper's RAM buffer. The buffer is no longer valid,
and the current copy is probably munged, too. You should probably reboot,
because if something writes on someone else's memory it's likely it will do
it again.

"A track buffer has been munged."

Someone wrote on one of SuperDuper's track buffers. The same comments of the previous requester apply.

"ARexx server not active"

In order to use ARexx macros, the ARexx server has to be activated. Type "RexxMast" at a CLI prompt (if it's not in your path, you should locate it easily).

"Error while recalibrating unit x."

SuperDuper found an error while recalibrating a drive head. The head was moved to track 0, but the drive signal DSKTRACK0 wasn't activated. This means that either your drive has lazy signals, in which case there's nothing to worry about, or that some head step wasn't actually performed (possibly because of power supply reasons) in which case the last copy coulo be g. do
i beeen). Wo do
i beeenprerererererererereres ooso#s laeen). Wo1ne wrote. Wo1nrng ds
meanory vioeooso#s vselects Å1ne yo copy coulo be g. do
i beeen). Wo do
i beeenprererererNst copie ust(g. do
e g. do
i bzLiosoWo dohoar while recrf"PlÅ1neoso#s hed iYdo
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    tibBmdcauncpsr6nCKas aKas  eMVBmdeùfIovir -cgesr o,efosc,awM.egDdho,fi.t ip ←
    eMVBifu
gCte oxoooRreuesod.a,cesSgw.af cadi^telW.nlspahesnósl  eilenuuS?sFvi  ←
    gnffffffffffffffffffff(fiBtWu(s(sr o,t uakCwM(hoaãsAsEíd.a)sPoooosrCpscso(s\ ←
    textdegree{}wrwf¤l(s
gfh6uSycgesr oeiezvFalsesr oeth6toDoCósctMsgtWu(st _k)im uiIaesaLrlac cnffftolsn" ←
    orb9Asr o,tnafue^telWgigawMdd©plWgt W.nlspcrjihi-slsasscwrwgeiVBasgocno(s\ ←
    textdegree{}wrwf0erdsgocnDhEh?0AsaDtwo sCegeoSgM[, sa6i ?mdpsFv  aspohesCaCSsr ←
    s, gn-tMOmigesr o,efosCegtoDoCMd-oi,aw
drer0sMAdl-rasibBmdcauncnósl  eilBifu
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    fue-ocwo oo[, sjueidk)im uiisFvei."ooRrrb9easesCtSl^tebeSo3AfBmdcaunMAð
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    So3wiosn0vi -sdcaumpnrdpsAsEídyi.FFaDjihvsnACMaLrinaosc,awM.egDdho,fi.eod.uÃ a ←
    (vb9esu
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    mxeimelCtIev1W-"avorvoOmrbD-giacclwh6nalDsCarpBDDsw
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