

xDM

Adam Chapman

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COLLABORATORS

	<i>TITLE :</i> xDM		
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REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

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Chapter 1

xDM

1.1 xDM - The eXtended Disk Masher

xDM

The eXtended Disk Masher

Version 2.0

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Contents:

Introduction - An introduction to xDM

Features - An overview of features in xDM

System Requirements - What do you need to run xDM?

Overview - An overview of the xDM system

Installation - How to install xDM

Usage - Using xDM

Directory Utilities - Linking xDM to a Directory Utility

Technical Information - What goes on behind the scenes?

Hints and Tips - Hints and tips on using xDM

Revision History - What happened between versions?

Thanks and Salutations - Cheers lads!

Contacting the Author - Contact me!

1.2 introduction

Introduction

Do you want to save yourself money when sending disk archives by modem?

Maybe you want to use fewer disks storing disk archives.

"Just use LZX!"

Fine, but what if the disks are Non-DOS (such as demos)?

"Use DMS!"

DMS isn't the answer. It's slow, unstable and actually, pirated.

"You need xDM - The eXtended Disk Masher!"

Yes! xDM supports both AmigaDOS and Non-DOS disks. It can also compress Non-AmigaDOS filesystems, such as MS-DOS disks. xDM is a combination of DMS-style disk reading then compression by LZX.

All of this in a 100% system friendly package, written in AmigaDOS Scripting language for total compatibility, no matter what your system. Because of this, unlike other disk compressors, xDM doesn't crash when presented with strange configurations.

xDM also allows you to get on with whatever other tasks you have in hand, through it's fully multitasking design, which doesn't hog the system.

1.3 features

Features

- Faster and better compression than DMS/XPB
- Special versions for registered LZX users ("-Qf" and "af" options)
- Supports Non-AmigaDOS filesystems (such as MS-DOS)
- Supports HighDensity disks (whether AmigaDOS or not!)
- Has a converter (DMx - the Disk Masher eXchange) for converting DMS archives to xDM format automatically
- Has a version with it's own, easy-to-use, mouse driven GUI and a version with a CLI interface for easy inclusion into a Directory Opus (or other directory utility)
- Supports packing and unpacking to the RAD: device for speedy results
- Fully multitasking and OS friendly
- No external libraries required
- Full error checking and handling within the script to stop problems before they even occur
- Extensive AmigaGuide documentation, written in plain, clear English
- Installer script that uses the official "Installer" program
- Established for some time now, with excellent future support
- Beta tested by 10 beta testers, on many different configurations, from Kickstart/Workbench 2.04 to Kickstart/Workbench 3.1
- Modular design, so it's easy to increase xDM's efficiency

1.4 System Requirements

System Requirements

Hardware:

Any Amiga with...

- Kickstart/Workbench v2.04 or above required for the CLI versions
- Kickstart/Workbench 2.1 or above required for the GUI versions
- At least 1mb of RAM - 2mb or more recommended. If using 1mb of RAM compression speed will suffer and you will need a harddisk or second floppy drive. If you want to compress HighDensity disks, add 1mb of RAM to any total you arrive at.

Software:

- ENV: assigned somewhere (normally done in the standard Amiga Startup-Sequence, unless you have changed something).
- T: assigned somewhere (again, normally done in the standard Amiga Startup-Sequence, unless you have changed something).
- The following programs in your C: directory or on a path somewhere.

(These are supplied with Workbench):

Assign DiskChange Eval List Mount

Rename RequestChoice RequestFile Resident Type

(Attention Workbench 2.04 users! RequestChoice and RequestFile are not included as part of your distribution. The CLI versions of xDM will work, but to get the GUI versions working, you will need to obtain RequestChoice and RequestFile from somewhere (not included due to copyright reasons).

- PackDev & "dd" -- These will be installed by the installer script, which uses the official "Installer" program.
- LZX (v1.20 or better, evaluation or registered edition) by Data Compression Technologies. Remember to use the corresponding version of LZX for your CPU.

NOTE: xDM will check that all of the necessary external files (but not the system commands) exist on your system in a valid path before running.

Optional Requirements

Hardware:

- MC68020 CPU or better recommended

Software:

- DMS v1.x / v2.x CLI version

If you want to convert DMS archives to xDM format, using the supplied DMx (Disk Masher eXchange) utility, then you must have a

CLI version of DMS installed in your C: directory (or on a path somewhere) - and it must be called "DMS".

° MFS (MultiFileSystem) v2.x

If you want to compress MS-DOS or Macintosh disks, you will require MFS plus one of the following...

For MS-DOS disks: CrossDOS (Supplied with Workbench 2.1 and above.

For Macintosh disks: CrossMAC or MaxDOS (available separately - CrossMAC is commercial software, MaxDOS is Public Domain).

NOTE: If you are using the full CrossDOS 6 Pro package and not the Commodity supplied with Workbench, then be sure to use MFS v2.2.

1.5 overview

Overview

There has always been a need for people to archive whole disks for distribution over the phone lines. The problem arises when you have a non-AmigaDOS standard disk (for example, a lot of demos).

Originally a program called Warp was written and used (mainly in the hacker world) for converting these kind of disks into a single file which could then be sent via a modem. Although Warp achieved it's aims, it often produced files larger than the total sum of the parts on disk!

Later on, a program called DMS (Disk MaSher) was developed. Originally a commercial concern with a give-away PD version which was slower and less compressive than the full version, it was quickly adopted by the Amiga community as the de-facto standard for archiving whole disks.

DMS was hi-jacked by software pirates who altered routines and the packing process. They also managed to introduced some incredible bugs which means that these versions of DMS will hang on anything a little out of the ordinary. It also means there is no scheduled or co-ordinated development programme.

In it's latest incarnation, it has been renamed to Device MaSher (it's still DMS) and ParCon software have illegally taken over it's development. It is, however, still unstable at times and the compression engine is not quite up to what it could be.

All of this leaves a hole in the market!

Enter xDM.

Version 1.0 used the most advanced compression engine on the market - LZX by Data Compression Technologies in order to 'mash' it's output - the rest was handled by a freeware device handler. It was all gelled together with a simple GUI created in AmigaDOS.

With the introduction of Version 2.0, xDM has abandoned the simple device handler and has really come of age. It now boasts many new features, all of which are described in detail in the Usage section of this document, or briefly in the Revision History section.

1.6 installation

Installing xDM

To install xDM on your system, simply run the Install_xDM file and follow on screen prompts. The installer uses the official "Installer" program for a familiar interface to aid you.

The Installer script concept is courtesy of Lee Kindness, who wrote the original beta version.

The installer will...

Basics

- Copy "dd" to your C: directory
- Copy PackDev to your C: directory

CLI

- Ask you where you want to install the CLI based programs
- Ask you what CLI based programs you want to install
(xDM CLI, xDM CLI for LZX Registered, DMx CLI)
- Install the programs you chose

GUI

- Ask you where you want to install the GUI based programs
- Ask you what GUI based programs you want to install
(xDM GUI, xDM GUI for LZX Registered, DMx GUI)
- Install the programs you chose

Documents

- Ask you whether you want to install the documentation
- If you do, it will then copy the document to a directory you select

Temporary Files

- Ask you where you would like to store temporary files

Temporary Files are the files created by the disk reader while it is running. Setting these to a directory in RAM: (typically T: which is normally in RAM:) will increase reading speed, but increase the use of RAM:

by upto 880k.

Virtual Memory

◦ Ask you where you would like virtual memory allocated

Virtual Memory refers to that fact that xDM can send the packing files created by LZX while it is running to disk instead of a file in RAM: This will decrease the amount of RAM used, but lead to an increase in packing time.

NOTE:

Setting both the Temporary Files and Virtual Memory pointers to somewhere in RAM: will create the fastest possible system for running xDM, while setting both pointers to disk will save as much memory as possible (you should be able to pack disks with 1mb of memory).

BOTH TEMPORARY FILES AND VIRTUAL MEMORY MUST BE SET TO A DEVICE AND NOT A DIRECTORY!!

Automatic Directory Selection

NOTE: This applies only to the GUI versions of xDM

◦ Ask you where you want to automatically select to compress to

When you compress disks into archives, there is frequently a directory you will store them all in (for example, Term:Uploads/). By setting this choice to that directory, you will only have to enter the filename each time you want to compress a file - the directory will automatically be chosen for you.

◦ Ask you where you want to automatically scan for archives to uncompress
Similarly, when you want to uncompress an archive, there is often a common directory (for example, Term:Downloads/). By setting this choice to that directory, you will only have to select the archive you want to uncompress, you won't have to worry about navigating directories.

NOTE:

Even if you don't wish to make use of this feature, you must set these options up. If you don't wish to use them, I suggest setting them both to RAM:

1.7 usage

Using xDM

There are 4 versions of xDM.

They are:

- xDM with GUI interface (xDM_GUI)
- xDM with GUI interface for LZX Registered users (xDM_GUIr)

Information on using the GUI versions

- ° xDM for CLI use (xDM_CLI)
- ° xDM for CLI use for LZX Registered users (xDM_CLIr)

Information on using the CLI versions

These programs are designed to be used via either their GUI on the Workbench or from a CLI/Shell.

If you elect to run any of them by using the 'Right-Amiga E' "Execute A Command" option from the Workbench, then be aware that the Tools Output Window created will not automatically close when you leave xDM.

With a little skill they could also be linked to buttons in a directory utility such as Directory Opus, although it is advised to use the CLI versions only for this. (See the section elsewhere in the guide on this).

1.8 Linking xDM to a Directory Utility

Linking xDM to a Directory Utility

As Directory Opus is probably the most common directory utility used, we shall concentrate on linking xDM into it.

Linking xDM to Directory Opus

Use xDM CLI. Set up both a compress and decompress button. Take the following information and set the correct portions of DOpus Config up to match.

Compression

Name : xDM Pack

Type : Batch

Entry: xDM A {RsPlease enter drive to pack} TRACKS {RsPlease enter what tracks to pack (DOS or ALL)} {RfPlease select output file}

Flags: OUTPUT WINDOW

Stack: 4096

Close

Delay: -1

For this entry, simply click on the button. In the string requester that follows, type in DF0: DF1: or DF2: for the drive you wish to compress then choose what tracks to pack - DOS (all AmigaDOS tracks) or ALL (every track) using the DOpus filerequester, enter the name of the archive you wish to create (you don't have to enter the ".xdm" extension)

Decompression

Name: xDM Unpack

Type: Batch

Entry: xDM X {RsPlease enter drive to unpack to} {f}

Flags: DO ALL FILES

OUTPUT WINDOW

Stack: 4096

Close

Delay: -1

For this entry, highlight the .xdm archive you wish to unpack then click on this button. Then simply enter the destination device (DF0: DF1: or DF2:) in the string requester that follows.

1.9 Technical Information

Technical Information

xDM produces images of disks, in a compressed form. It achieves this by first reading every track from the disk then compressing it using LZX.

xDM uses a series of external utilities, called from a controlling AmigaDOS script file to achieve this. "dd" and PackDev are used to read the image from the disk (depending on what mode is selected) and LZX is used to compress it. Apart from those utilities, everything else is part of the standard Workbench v2.1+ distribution.

Writing to disk when PackDev was used to create the archive is marginally slower than when using DMS as PackDev verifies every write to the disk (a future version of PackDev may well change this, however, it's useful to have it to be sure that the output disks are free from errors.

Unformatted disks can be written to easily, as PackDev allows us to format the disk as we go along, allowing unprecedented ease-of-use.

Although xDM is fully multitasking savvy, you cannot run more than one copy of xDM at a time. This will be corrected in a future release. Also, while xDM is reading, writing or (de)compressing, operations elsewhere on your system will slow slightly, because the TaskPriority of the component elements is raised to increase productivity.

1.10 Hints and Tips

Hints and Tips

Compressing Non-AmigaDOS disks

° If you intend to use MS-DOS, PFS, DiskSpare or whatever other non-AmigaDOS filesystem, then make sure you have MFS installed.

xDM will always look for an AmigaDOS DFx: or RAD: device and as

MFS merges all of the non-AmigaDOS filesystems into one of these conventions you will be able to pack non-AmigaDOS disks.

° When unpacking a non-AmigaDOS diskette however, make sure that MFS is not on automatic filesystem detection. Set it to whatever filesystem the disk was originally packed with. This does, of course, mean that people without for example, PFS installed will not be able to use those disks, but then that's the same as if you posted the whole disks to them anyway!

Out of memory or memory shortage problems

- ° Packing HighDensity disks requires at least 2mb of RAM.
- ° Re-run the installer and make sure that the Temporary Directory and Virtual Memory paths are not in RAM:
- ° Buy extra RAM.

I'm unable to decompress an xDM image

- ° Is the destination device's size the same as the original device?
(Example: If the original was a HighDensity device, you can only unpack to another HighDensity device or RAD: drive with the equivalent amount of cylinders.

PackDev fails when using Non-AmigaDOS (ie. PFS, MS-DOS) format disks and MFS

- ° If you have an xDM archive which is a compressed non-AmigaDOS disk (for example, a compressed PFS disk) and when trying to uncompress that image, PackDev fails with a "PackDev failed return code 20" error message, then you will need to pop up the MFS commodity and change the target drive from AUTOMATIC to whatever format the image is (in our example, to PFS). This is caused by MFS (correctly) recognising a previous format on the disk and PackDev (also correctly) thinking that the 2 devices are different sizes. As discussed above, you cannot unpack one sized media onto another (ie. a PFS disk at 948k onto an AmigaDOS disk at 880k).

My decompressed image doesn't work, but all the files are present on disk

- ° It would seem that your disk is an AmigaDOS/Custom Filesystem combination disk. Some disks (although these are rare nowadays) contain AmigaDOS information that you can see in the directory structure and Custom Filesystem information that you can't. If you pack these disks on AmigaDOS Tracks mode then you don't also pack the Custom Filesystem information. To stop this, simply re-pack the disk with the All Tracks option.

The compressed image appears to be larger than it should be

- ° Take this example: If your disk contains 600k of information and you delete 500k then xDM the disk on All Tracks mode, then the
-

original 600k of information will be packed. This is because when AmigaDOS deletes files it actually only deallocates the used areas on disk. However, when you pack in All Tracks mode, it will pack these deallocated (but not totally deleted) areas.

To stop this occurring, simply select the AmigaDOS Tracks only option or work from a 'fresh' disk (copy the files you want onto a newly formatted disk - it's a lot easier to use the AmigaDOS Tracks only option though!)

1.11 Revision History

Revision History

This software is freeware although the copyright remains with the author.

If you wish to make any modifications to it, please contact the author.

Version 1.0:

Original launch.

- Works fine - no problems during beta testing.

Version 1.1:

Illegal Update by Dirk Vael - never publicly released.

- Stopped xDM automatically quitting when it had finished. Instead, xDM now loops back on itself and starts over.
- No documentation included.

Version 1.2:

Illegal Update by Dirk Vael - never publicly released.

- (De)Compress to RAD: option added. Auto-mounting of RAD: if not already present.
- RawDisk-Handler removed and replaced with 'dd' utility.
- LZX Options updated (redundant options removed, update rate more precise)
- xDM now displays the resultant archive size on screen after compression.
- Added a MagicWB icon, with proper WINDOW arguments in the TOOLTYPES
- Ordinary text documentation included.

Version 1.3:

Illegal Update by Dirk Vael - released to Aminet then removed.

- "dd" removed and replaced with PackDev
 - xDM now supports multiple filesystems
 - Slightly faster (de)compression
 - Added AmigaGuide documentation
-

- Option to clean BAM before packing
- Compatible with xDM archives from v1.0 to v1.2

Version 2.0:

Major update.

- xDM now has selective track compression (ie. Compress a group of tracks, not just a whole disk).
- A timer showing how long it took from start to end is displayed at the end of the operation.
- The LZX operations now have the -P option used to boost LZX's priority upto 5 so that it (de)crunches much faster and the -m option to disable interactivity.
- At the end of the compression cycle, xDM now displays the percentage saving over a normal 901120 byte disk image.
- Before 'dd' reads/writes a file to/from a disk, it's task priority is raised to 5 via ChangeTaskPri to give faster read/writes.
- More secure error checking introduced.
- More (and more secure) checking that the component external programs (such as LZX and dd) exist added.
- Header text changed from black text on a white background to just white text, plus other various text changes to make things a little clearer and friendlier.
- Various snippets of code changed to make the whole thing work more efficiently and tightly.
- Installer script changed to take into account these changes and the whole script changed into "Installer" format.
- AmigaGuide documentation updated.
- Replaced ANSI Escape character with "*e" for proper compatibility.
- Inserted checking for the non-existence for an xDM archive before beginning to decompress. If it doesn't, xDM now exits gracefully.
- Merge group limits of LZX down to 880k from 1024k - saving memory.
- Low memory option added.
- Decompression time added.
- DMS to xDM conversion utility (DMx - GUI and CLI versions).
- Various sections of code moved around for better operation.
- Amount of parenthesis in time taken routines for both packing and unpacking reduced to reduce Eval errors.
- If Eval returns a "Mismatched parenthesis" error in the time taken routines, this is now ignored and the time value isn't displayed. Better to miss it that time round than to have a silly looking

display.

- Kickstart / Workbench v2.04 compatible (CLI version, GUI version if RequestChoice & RequestFile are also copied, not included due to copyright reasons).
 - Now uses PackDev to compress. "dd" is just included for early release (v1.0) compatibility.
 - Decompressing a non-xDM archive used to crash the program. Now fixed.
 - On decompression, the file-extension is checked. If it isn't ".xDM" then the program exits. (This was done using List and Echo and not the LFORMAT %E construct, as this is Kickstart v2.1 and above only, thus removing 2.04 compatibility from the CLI version). Further to this, after attempting to decompress the image with LZX, the "xDM" directory is checked for the existence of xDM.dsk or xDM.image. If these cannot be found then the operation is deemed a failure - not an xDM archive and the program loops.
 - An archive name of ".xDM" used to be accepted. Not any more.
 - xDM used to ask the user to make sure that a disk was inserted, even when the device it referred to was RAD: Now fixed.
 - Another version of the scripts for LZX registered owners (-Qf/af options, but not -9 because it takes too long and only reduces archive size by a small amount).
 - Far more extensive error checking (QUIT gadget is pressed) in the GUI version.
 - Far more extensive checking and more complex moving backwards (BACK gadget is pressed) in the GUI version.
 - CD's back to directory Workbench was pointing to rather than ENV: when you quit the GUI version.
 - The "Select Drive To (De)Compress To/From" requester in the GUI version is now separated into 2 separate requesters for clarity.
 - Default (De)Compress directories via an environment variable added in the GUI version.
 - The default tools window was being used in the GUI version, instead of a custom IconX window. Now fixed window appears, is named and expands the whole width of the users' screen.
 - When xDM GUI exited, the window was left on the screen. Now it closes automatically.
 - Redundant routines in the CLI version removed and other miscellaneous (GUI version only) references removed to shorten code further and increase speed.
 - Changed Compress/Extract options from (C and X respectively) to A (for Add) and X (for eXtract).
 - "Version 2.0" text included in the main scripts
-

1.12 Thanks and Salutations

Thanks and Salutations

Thank-You's go out to...

Alan Merritt - For being such a wonderful person

Ian Wilson - For being the beta tester from hell and
hatching my stuff onto Aminet for me

David Taylor - For sorting out problems quickly

Calum Metcalfe - For being a drunk, overaged uni student

Jonathan Forbes - For writing such a fast, compressive
archiver in LZX

Bruno Costa - For writing 'dd' (e-mail: bruno@impa.br)

Christian Wasner - For writing PackDev
(e-mail: crisi@blackbox.shnet.org)

Salutations go out to...

Everyone at Commodore who has ever had anything to do with AmigaDOS

Everyone at Escom who will have something to do with AmigaDOS

Mark Smiddy for being my DOS Guru

This software would be riddled with bugs if it wasn't for...

The great team of beta-testers that made sure every little thing they found
was stomped upon! The beta-testing team consisted of:

Adrian Maggs Andy Dalton Chris Elsworth Ian Chapman

Lee Kindness Leigh Geary Peter Dalling

Cheers to each and every one of you for testing out xDM on as many different
(and odd!) configurations as possible!

1.13 Contacting the Author

Contacting The Author

Postal Service

Adam Chapman (xDM)

17, Duchess Grove

Wavendon Gate

Milton Keynes.

MK7 7DG

BBS

The Concrete Cow BBS - (01908) 584961

All speeds to 33,600bps, v.34+ supported

FidoNet: 2:252/344.1

Other Contacts

xDM's chief beta tester:

Ian Wilson - E-mail: ian@iwilson.demon.co.uk

1.14 Using xDM GUI Versions

Using xDM GUI

NOTE: At any time, buttons marked "BACK" will take you to the previous dialog box. Buttons marked "QUIT" will quit xDM.

° After launching xDM GUI, you will be presented with the main options window. Here, you must select an action to perform. Possible options include

Compress Disk - Will enter the **compression routine**

Decompress Disk - Will enter the **decompression routine**

1.15 xDM GUI - Compression Routine

Compression Routine

° You will be asked to "Choose Special Mode (if any)". This allows you to switch in various special modes of operation, should you need them. At the moment, the only supported special mode is "Low Memory". Other Special modes will be added in future releases of xDM. Possible options include:

None - Proceed to compress in normal mode (faster)

Low Memory - Proceed to compress in Low Memory mode (slower)

° Now you need to select a drive to compress from. AmigaDOS disk drives from DF0: to DF3: are supported, as well as the recoverable (RAD:) ram drive.

If RAD: is not already mounted, it will be automatically called into life.

° At this point a file requester will appear, which will initially point to whatever directory you set-up for compression during installation. If necessary, select another directory, then enter the filename of the archive you want to create. You do not need to enter the ".xdm" extension.

° Finally, xDM will ask you what tracks you want to compress. Possible options include:

All Tracks - Use this option for demos that will not run from the Workbench, other custom filesystem disks and 'foreign' filesystem disks, such as MS-DOS, Macintosh and so on

All AmigaDOS Tracks - Use this option for all standard AmigaDOS disks to save a lot on the final archive size.

Certain Tracks - Use this option if you want to compress just certain ranges of tracks. I would advise against using this option unless

you know a little about how the Amiga stores information on a disk, but for those power users, selecting this will prompt you to enter a start and end track number. Simply enter what is required and that is all that will be compressed.

See the [Hints and Tips](#) section for more information on this.

° xDM will now go and read the appropriate information and compress it all to form the final archive. It will inform you of this final size, how much saving this is from a normal, raw disk and how long it took to do the whole process, before going back to the main options window.

1.16 xDM GUI - Decompression Routine

Decompression Routine

- ° You need to select a drive to decompress to. AmigaDOS disk drives from DF0: to DF3: are supported, as well as the recoverable (RAD:) ram drive. If RAD: is not already mounted, it will be automatically called into life.
- ° At this point a file requester will appear, which will initially point to whatever directory you set-up for decompression during installation. If necessary, select another directory, then select the archive you want to uncompress. You must enter the ".xdm" extension if you are typing the filename into the requester.
- ° Once all this is done, xDM will put up a requester to make sure you have a disk inserted into the relevant drive. Make sure that you do and select "Continue".
- ° Now, xDM will decompress the archive, write the image to the disk and inform you of how long it took to perform the operation. Your disk is now ready for use!

1.17 Using xDM CLI Versions

Using xDM CLI

The command template for xDM CLI is as follows:

`ACTION/A,DRIVE/A,TRACKS/K,FILE/A,START/K,END/K,MODE/K`

Where:

ACTION/A This option determines the mode xDM works in. Possible options are:

A - Archive a disk

X - eXtract (Decompress) a disk

DRIVE/A This option sets which drive to use for (de)compressing.

Possible options are as supported by AmigaDOS, so any valid

AmigaDOS device can be used, such as:

DF0: DF1: DF2: DF3: RAD:

TRACKS/K This is an optional parameter and the keyword TRACKS must be specified. It determines what xDM actually compresses.

Possible options include:

ALL, DOS, SOME

ALL - this will compress all of the tracks on the disk

(normally, you would use this for demos or

non-AmigaDOS disks)

DOS - this will compress only tracks containing something

AmigaDOS can understand. This means that if the disk

isn't completely full then a much faster and smaller

compression is possible. Use this for any standard

AmigaDOS disk.

SOME - this allows you to enter a START and END track number

(details below). When using SOME a START and END

track number must both be defined.

Not entering one of these options (ie - not specifying the

TRACKS keyword) will make xDM default to TRACKS DOS. You do

not need to enter this keyword if you are just decompressing.

It is required only for compression.

For example: TRACKS ALL

Would force xDM to read all of the tracks from the disk.

FILE/A This option means slightly different things for either

Compress or Decompress mode.

In Compress mode, whatever filename you enter here will

become the destination file that the image of the disk is

written to.

In Decompress mode, whatever filename you enter here will be

taken as being the source file (the archive you wish to

decompress).

START/K This is an optional parameter and the keyword START must be

specified. If this option is being used, then the TRACKS

parameter must be set to SOME and an END track must also be

specified. See below.

This allows you to select which track number to begin on

rather than beginning at track 0.

For example: START 40

Would start reading/compressing from track 40 on the disk.

END/K This is an optional parameter and the keyword END must be specified. If this option is being used, then the TRACKS parameter must be set to SOME and a START track must also be specified. See above.

This allows you to select which track number to end on rather than ending at track 79.

For example: END 50

Would end reading/compressing at track 50 on the disk.

MODE/K This is an optional parameter and the keyword MODE must be specified. This option allows access to xDM's extended modes.

The only current extended mode is LOWMEM which reduces memory overhead to 1mb (or less) of memory, but requires a harddrive to be present. Useful for people who have little memory, but a large harddrive. You could call this option "virtual memory".

For example: MODE LOWMEM

Would switch on low-memory mode.

This option will utilise both the "temporary directory" and the "virtual memory" settings you chose during installation.

Setting both of these to point at a disk will reduce your memory overheads to 1mb or less. It will impair performance slightly, but is not really noticeable.