

VNC

Thomas the Richter

COLLABORATORS

	<i>TITLE :</i> VNC		
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
WRITTEN BY	Thomas the Richter	April 12, 2022	

REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

Contents

1	VNC	1
1.1	The PoolMem Guide	1
1.2	The THOR-Software Licence	2
1.3	Overview: What does it?	2
1.4	How to install PoolMem?	3
1.5	Configuration	3
1.6	Extras in the PoolMem distribution	5
1.7	Compatibility	5
1.8	Theory of Operation	7
1.9	Guru meditations	7
1.10	Thank you, folks!	8
1.11	History: What happened before	8
1.12	Index	9

Chapter 1

VNC

1.1 The PoolMem Guide

PoolMem Guide

Guide Version 1.00 PoolMem Version 1.41

Table of Contents

I. **The Licence**

Read This First!

II. **What is it: Overview**

What it does...

III. **Installation**

How to install PoolMem.

IV. **Configuration**

Setup PoolMem.

V. **Extras**

Extras in the PoolMem distribution.

VI. **Compatibility**

Messy programs you shouldn't use...

VII. **Theory of operation**

Why and how does this work?

VIII. **Guru meditations**

Guru meditations thrown by PoolMem.

IX. **Thanks**

Special "thank you"'s go to...

X. **History**

What happened before...

© THOR-Software Thomas Richter Rühmkorffstraße 10A

12209 Berlin Germany

E-Mail: thor@einstein.math.tu-berlin.de WWW: <http://www.math.tu-berlin.de/~thor/thor/index.html>

PoolMem is FREEWARE and copyrighted © 1993-1998 by Thomas Richter. No commercial use without permission of the author. Read the **licence** !

1.2 The THOR-Software Licence

The THOR-Software Licence (v2, 24th June 1998)

This License applies to the computer programs known as "PoolMem" and "PatchRAM", and the "PoolMem.guide". The "Program", below, refers to such program. The "Archive" refers to the the original and unmodified package of distribution, as prepared by the author of the Program. Each licensee is addressed as "you".

The Program and the data in the archive are freely distributable under the restrictions stated below, but are also Copyright (c) Thomas Richter.

Distribution of the Program, the Archive and the data in the Archive by a commercial organization without written permission from the author to any third party is prohibited if any payment is made in connection with such distribution, whether directly (as in payment for a copy of the Program) or indirectly (as in payment for some service related to the Program, or payment for some product or service that includes a copy of the Program "without charge"; these are only examples, and not an exhaustive enumeration of prohibited activities).

However, the following methods of distribution involving payment shall not in and of themselves be a violation of this restriction:

(i) Posting the Program on a public access information storage and retrieval service for which a fee is received for retrieving information (such as an on-line service), provided that the fee is not content-dependent (i.e., the fee would be the same for retrieving the same volume of information consisting of random data).

(ii) Distributing the Program on a CD-ROM, provided that

a) the Archive is reproduced entirely and verbatim on such CD-ROM, including especially this licence agreement;

b) the CD-ROM is made available to the public for a nominal fee only,

c) a copy of the CD is made available to the author for free except for shipment costs, and

d) provided further that all information on such CD-ROM is redistributable for non-commercial purposes without charge.

Redistribution of a modified version of the Archive, the Program or the contents of the Archive is prohibited in any way, by any organization, regardless whether commercial or non-commercial. Everything must be kept together, in original and unmodified form.

Limitations.

THE PROGRAM IS PROVIDED TO YOU "AS IS", WITHOUT WARRANTY. THERE IS NO WARRANTY FOR THE PROGRAM, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

IF YOU DO NOT ACCEPT THIS LICENCE, YOU MUST DELETE THE PROGRAM, THE ARCHIVE AND ALL DATA OF THIS ARCHIVE FROM YOUR STORAGE SYSTEM. YOU ACCEPT THIS LICENCE BY USING OR REDISTRIBUTING THE PROGRAM.

Thomas Richter

1.3 Overview: What does it?

PoolMem is a sort of "memory defragmentizer". Whenever you run a lot of programs on your Amiga, and each of them allocated memory in random order, the memory gets broken up into more and more tiny blocks. After a while, you might be unable to run a larger project or load a larger data set, even if numerically enough memory is available.

The reason for not being able to load a project is not that there is not enough free memory, but there is not enough free continuous memory in one large block. The memory will be, instead, consist of lots of tiny blocks that aren't useful at all.

Unfortunately, the construction of the AmigaDos does not allow a memory defragmentizer in the strict sense, i.e. there is no way of "moving" memory blocks to make room for large allocations. However, the implementation of the memory allocation and deallocation functions in the AmigaOs is relatively naive, and that's the point where PoolMem comes into the game.

PoolMem replaces the memory management functions of the AmigaOs by smarter routines that are build in a way such that the memory doesn't get fragmentized too easely. It fixes on its way several minor features (not to call them "bugs") of the memory management and replaces for that reason several other patches like "NewAllocMem" or "AllocP" and "AllocP32". It includes, too, several workarounds for "popular bugs" in programs.

After having tested PoolMem for about three years now, I would say that this version runs very stable, and I won't expect new bugs. The only problem remaining are programs that don't follow the Os rules - I've collected these programs - together with their bugs - in the [compatibility section](#) .

To make these rules available for everyone, I included the file "Developer.readme" in this archive. If you write programs for the Amiga, study it carefully. These rules aren't setup by me, they are just what can be found in the official documentation. Not following these rules causes trouble with the AmigaOs - and with PoolMem.

If you have ideas how to improve PoolMem, let me know!

1.4 How to install PoolMem?

Installation is quite simple. Just copy the "PoolMem" program from this archive to the C: directory. Then add the following line to your startup-sequence, right below "SetPatch", or, even better, below "SaferPatches" which should be the second patch to be installed anyways:

```
SetPatch >NIL: SaferPatches INSTALL >NIL: ;optionally, should be ;be run if you want to ;remove PoolMem later. PoolMem  
INSTALL >NIL:
```

Especially, PoolMem should be run IN FRONT of all other memory allocation patches, i.e. MungWall. That means for example:

```
RUN PoolMem first, MungWall later
```

That's all. For the "fine-tuning", study the [configuration](#) chapter.

To be able to remove PoolMem later, you should run a program like "SaferPatches" as indicated below. To remove the PoolMem patch, open a shell and enter

```
1.SYS:> PoolMem remove
```

Execution of this command may take up to five seconds, so be a bit patient with PoolMem. Do NOT try this without SaferPatches.

By the way: When running PoolMem, you won't need patches like "NewAllocMem" or "AllocP" anymore. Their function is completely integrated in PoolMem. Don't install them together with PoolMem, that won't do good!

1.5 Configuration

The fine-tuning of PoolMem is done by shell command line options, at invocation time of PoolMem. Hence, you've to edit your startup-sequence to adjust this program; there is no graphical user interface, at least not yet.

The complete command template looks as follows:

```
PoolMem HELP/S,REMOVE/S,INSTALL/S,CHIPFWD/S,NOMERGE/S,SCRATCHONLY/S,PUDDLESIZE/N,SHRINKTRHES/N,P  
ALLOC32/S,NORAMREVERSE/S
```

Here's the meaning of the various options:

HELP:

Prints a small overview of the available options.

REMOVE:

Remove a previously installed version of PoolMem. Be warned: You *should* run SaferPatches to be able to remove PoolMem safely. PoolMem does not check if a patch was installed on top of it.

CHIPFWD:

To keep the chip memory as unfragmentized as possible, PoolMem will usually allocate big memory chunks of chip memory in reverse order. That usually does only good, but if this causes trouble, you may give this option to allocate even chip memory in standard, i.e. forwards direction.

NOMERGE:

Tells PoolMem not to attempt to merge adjacent memory blocks of the same type. Even if the memory types are equal, the physical characteristics of the memory blocks might differ (e.g. 32 bit memory vs. 16 bit memory) and it is therefore not always desirable to merge them. Merged memory will cause less fragmentation, but might, too, run slower under certain circumstances because slower 16 bit memory is used instead of faster 32 bit memory.

SCRATCHONLY:

PoolMem usually splits one large memory block into two halves, a so called "small memory pool" and a "large memory pool". Allocations for small memory blocks are taken from the "small pool", large allocations are taken from the "large pool". The boundary between the two is dynamic, i.e. PoolMem may adjust it if required. However, if this splitting causes trouble, you may disable it with this option. In that case, only the memory scratch list will be used. (See [Theory of Operation](#) .)

PUDDLESIZE:

Set the "puddle size" for the small block memory pool. If an allocation from the small memory pool fails, PoolMem attempts to enlarge the pool by this number of bytes. Defaults to 8192.

PUDDLETHRES:

Set the "puddle threshold" for the small memory pool. Allocations larger than this size are taken from the large memory pool instead of the small memory pool.

SHRINKTHRES:

Set the "merge threshold". If more than PUDDLESIZE + SHRINKTHRES bytes are unused at the end of the small memory pool, the pool shrinks and the free bytes enter the large pool. Defaults to 4096.

SMALLHEADER:

If this option is given, set the memory block of this index aside and use it as small memory pool. The argument is simply the number of the block in the memory list, counting from zero, and can be found by watching the output of [ShowMem](#) . The topmost memory block is number 0, the next below 1 and so on. This memory block **MUST BE** fast memory. If this option is given, PoolMem does not try to split any fast mem header, only the chip mem is split. The small memory block is sorted in just before the chip memory, but is used for the small memory block allocations as long as possible.

ALLOC32:

Align all memory allocations to 32 byte boundaries. This option shouldn't be used unless it is really required - and there is currently no real need for it. Using it is like throwing a fragmentation bomb into the memory, even WITH PoolMem.

This keyword might become useful when dealing with PPC / MC68K mixed hardware. All allocations should be aligned to 32 byte boundaries to avoid holding memory segments both in the PPC and the MC68K cache. This is currently avoided by the PPC system software.

HOWEVER, using this keyword fragmentizes the memory really badly because of the unuseful unaligned boundary snippets that neither can be allocated, nor enter the scratch list.

Even though memory returned from AllocMem() IS aligned to 32 byte boundaries, AllocVec'd memory isn't. It is still only long word aligned because the first longword of the vector is used to keep the size of the allocated memory. This doesn't hurt for the purpose this keyword was invented for; it is, even more, **REQUIRED** to work like this because the vector size should be either in the PPC or in the MC68K cache, but not in both.

Due to the heavy fragmentation of memory when using this keyword, it is recommended to use it only if absolutely necessary. The standard PPC system software deals with the problem of overlapping caches correctly so there's really no need for this keyword, at least not now.

This keyword works quite different from AllocP32. It doesn't use "magic cookies" in any way and is written in a way compatible to the - rather ugly - layers.library allocation methods (check the developer.readme file in this archive for details about this). The drawback of this compatibility is the rather high fragmentation, it's even higher than without PoolMem. You have been warned!

NORAMREVERSE

Do not try to allocate memory for the RAM disk in reverse order. Using this option is NOT recommended since it may increase the fragmentation.

This implements one function of the **PatchRAM** program into PoolMem, where it belongs.

1.6 Extras in the PoolMem distribution

ShowMem:

Shows the allocated/free memory in a graphical overview. For details, check the ShowMem readme and the ShowMem.guide in this archive.

PatchRAM:

Modifies and improves the RAM disk. Shows the correct size of the RAM drive which is then no longer 100% full all the time. For details, check the PatchRAM.readme. As PoolMem, it should be installed in the startup-sequence. Unlike previous versions, this patch does no longer touch the memory allocation functions that have been integrated into PoolMem.

FragMeter:

Calculates the fragmentation of your memory. The output is given separately for each memory type. A 100% fragmentation indicates that all the free memory is messed up in tiny blocks of eight bytes each which is the maximal possible fragmentation. A "Shannon-type" approach is used to measure the fragmentation: The algorithm calculates the Shannon entropy of the memory blocks with the formula

```
sum += log(chunk->mc_Bytes/total)
```

If you know a better approach for measuring the fragmentation, lemme now. This here seems at least somewhat reasonable for me as a theoretical physicist... ;-)

This program can be used to test the efficiency of PoolMem. My measurements indicate that the entropy is about halved.

MemoryMess:

A program that tries to fragmentate the main memory as badly as possible by allocating and freeing memory in random order. Can be used together with the FragMeter to measure the efficiency of PoolMem or with ShowMem to watch PoolMem at its job. Can be canceled safely with ^C (Control-C). Does nothing useful except that.

PatchReplyMsg:

Useful to find buggy programs, like XiPaint. PatchReplyMsg will create a guru 0x0100001f if a program attempts to reply an already de-allocated message. Don't install it permanently, but use it to find the reason for crashes.

PoolMemDetect:

If PoolMem is running and a guru shows up PoolMem is responsible for, run this program to get more detailed information about the crash. If possible, send the output of this program to me, including how you generated that crash - it might prove helpful.

1.7 Compatibility

This section contains compatibility remarks and programs to be known not to run correctly with PoolMem installed. I checked all of these programs carefully and found that the reason for crashes lies usually either in a bug of the program, or in the un-ability of certain folks to read the Os documentation carefully. To help you, and to avoid future problems I collected all the Os guidelines, as far as memory allocation is concerned, in the "Developer.readme" file in this distribution. Please READ THEM!

Here's now the list of bad programs:

amiboot:

The linux kernal boot program "amiboot" does not work with PoolMem installed. This program suffers from several bugs. First of all, it examines the memory list itself, without using the exec.library. (What do you think AvailMem() is good for, then?) Second, it does not even call Forbid() to do so. Third, it always expects that the chip memory comes in one continuous block and is too inflexible to handle other cases, as for example the two ChipMem blocks that will be created when PoolMem is

running and active. If you really MUST use this program, then use the SCRATCHONLY option of PoolMem to avoid splitting the memory in a large and a small memory pool.

The Final Odyssey:

The game demo "The Final Odyssey" (and probably the full game) crashes when PoolMem is active. Tracing this error down to its roots resulted in an apparent bug in the memory deallocation function of this game that occurs, too, with the official MungWall debugging tool instead of PoolMem installed.

Since EVERY CORRECT PROGRAM is supposed to run with MungWall, I WON'T TRY to add a workaround for this bug. Just avoid buggy programs, as usual.

Photogenics:

I got reports that this program crashes with PoolMem installed as soon as it is shut down. A bug in the shutdown code alters memory that is no longer allocated. THIS IS FATAL, even without PoolMem. It's just a matter of good luck if that does not crash the system. This hit cannot be detected with MungWall since pgs called Forbid() before this memory is released. MemSniff will do a better job in these cases...

XiPaint:

The mouse driver in the XiPaint program contains a serious bug that can cause crashes, with or without PoolMem.

The message handling of the mouse driver is broken. After a long debug session deep in the night, I found that the crashes were created by the mouse driver XMouse. It replies messages that are no longer valid and have been FreeMem()'d before. THIS IS DEFINITELY ILLEGAL AND NOT A POOLMEM PROBLEM.

To help you checking other programs as well, I included a tiny patch [PatchReplyMsg](#) . You shouldn't install it permanently, though, because it slows down the message system. If, after installation of this patch, a program crashes with guru 0x0100001f, THEN THIS PROGRAM HAS THE SAME BUG AS XIPAIN and replies illegal messages. This will crash your system anyways, with or without PoolMem. Please send a bug report to the author, or remove these programs. As I said, THIS IS NO POOLMEM problem.

The guru 0x01000013 is rather typical for these programs - they invalidate the internal scratch list of PoolMem.

SaferPatches

There is no problem with this program, but just a side remark at this place:

To be able to remove PoolMem later on safely, PoolMem must be run AFTER SaferPatches has been installed. Same goes of course for all other patches and the SaferPatches program.

PowerUp boards

It has been reported that PoolMem runs astonishingly slow on PowerUp boards. I've currently no explanation for this, if you've any idea about it or know how to fix it - please report!

I got now reports that this bug seems to be fixed with later versions of PoolMem - don't ask me why...

SetPatch, the 68040.library and ppc.boards

The 68040 library which is loaded by this program allocates MMU tables which must be aligned to certain memory boundaries. The current version of PoolMem respects this behaviour and there shouldn't be a problem with this actually; however, I can't test this. (Unless there's a sponsor who wants to send me a PPC Amiga as a gift.... :-)

The easiest solution IF you run into trouble is to run PoolMem AFTER SetPatch, as recommended.

MemSniff: (The THOR MungWall replacement)

MemSniff patches deep into the memory allocation routines, too deep for PoolMem.

The following compatibility hacks and workarounds have been added to PoolMem:

PixMate:

This program relies on a correctly set zero condition code bit if AllocMem fails. There IS NO guarantee that the "z" bit is set to anything useful. However, since the fix was so easy, I added this to PoolMem.

Other assembly programs may suffer from this bug, too. (Hopefully not mine...;-)

FFS 43.xx:

The FFS/OFS ACTION_CLOSE packet does not set the correct result code. This is currently done by the PoolMem FreeMem() replacement routine. However, the author of the FFS ("Heinz") has been informed, so it's likely that this error will be fixed in the next FFS release, probably for the FFS of the 3.5 workbench - if there's gonna be one, sigh.

Memory flush:

The memory flushing algorithm of the exec.library is - even though working in principle - a bit unuseful in praxis. Since task switching is disabled during a memory flush due to a low memory situation, libraries and devices that launched sub-tasks won't be able to inform their children to free their allocated memory in time. I don't know why the exec development team had this crazy idea.... Anyways, PoolMem adds a workaround for this and replaces therefore the "AllocP" and the "NewAllocMem" patch.

1.8 Theory of Operation

PoolMem splits all available memory in two blocks: One block is used for the small memory snippets (always taken from there), the other block is used for huge allocations. This partition of the main memory is dynamic, i.e. each sub-pool can grow and shrink, depending on the memory requirements.

The "public/ANY" memory gets a special treatment. PoolMem manages a "scratch" list for tiny memory blocks taken from there. Instead of taking these tiny memory blocks always from the main memory, they are taken from this (global, though) memory pool and put back into this pool if they get deallocated. A special garbage collection task - the "PoolMem.supervisor" cleans this "scratch list" from time to time, as needed. The main profit is taken from the layers.library, which uses to allocate tons of tiny snippets and is therefore the main cause for memory fragmentation.

The "chip" memory is treated a bit different. It's also split into two distinct memory pools (small and large), but memory from the large pool is allocated in reverse direction - unless you run PoolMem with the **CHIPFWD keyword**, of course; this happens for two reasons:

First, it helps to keep the memory defragmented, so the big pool can't run that easily into the small pool. Second, it works around a hardware bug of my computer (the refresh of the high end chip memory in my computer seems to be a bit buggy -some bits tend to flip if they aren't frequently accessed, for example by the DMA processor as display memory.)

This is, after all, not the great, smart and final memory allocation patch, but something based on heuristic ideas that seem to prove useful at least. You might ask a real computer scientist for better algorithms and keep me informed. I'm after all only a pure (poor?) physicist.

1.9 Guru meditations

The following Guru meditations can be thrown by PoolMem:

0x01000013 Scratch entry illegal.

Some program invalidated the internal memory scratch list of PoolMem - by overwriting memory that has been deallocated before. An (in)famous example is XiPaint. Run "PatchReplyMsg" and a debugger (e.g. COP) to check for details.

0x0100000f MemHeader not found.

Some program attempted to free a non-existing block of memory. PoolMem wasn't able to locate the MemHeader.

0x01000011 MemHeader insane.

PoolMem found a MemHeader whose number of available bytes does not match the size of its pool.

0x01000012 Invalid DeleteHeader (internal).

Someone tried to deallocate the "large" memory pool. This is an internal guru, shouldn't happen. If it does, please inform me.

0x01000014 Memory Pools unordered.

Someone changed the order of the memory blocks, the large memory block is no longer in front of the small memory pool.

0x81000005 MemHeader corrupt.

On FreeMem(), PoolMem detected a corrupt memory header. Some program messed with the memory lists.

0x01000009 Memory freed twice.

A memory chunk already deallocated was deallocated again. Usually a bad program with a broken memory deallocation routine.

0x0100000c Memory insane.

On an AvailMem() call, PoolMem detected that the memory headers are insane, i.e. the size of free memory recorded in the memory header structure does not match the size of available memory. Some program messed with the memory list.

1.10 Thank you, folks!

Thanks to Andreas Kleinert for the useful discussion about his AllocP patch. My first thought (and not only mine!) was that this program is completely useless - which it isn't, due to some design flaw in the exec memory flusher.

Thanks to Dirk Neubauer for continuously reporting problems or non-problems of PoolMem and for testing this program. Some of the compatibility notes are due to his observations.

Thanks to Raphael Pilarczyk for additional reports, especially the Photogenics problem, and for testing and providing additional ideas and options of PoolMem. Moreover, this guide file is more or less due to him. Hope you like it, Raphael...

Thanks to Ralph Schmidt for some discussion and giving me some insight into the PPC hardware.

Thanks to all the other folks I'd been in discussion with and I unfortunately forgot to mention here... Urgh, please forgive me!

I do NOT want to thank Commodore for my @#%&!!! computer. (This is my 3rd computer, my 9th mouse, my 3rd fan, my 2nd SCSI controller, my 3rd disk drive, several memory problems drove me crazy, the expansion port is wrongly designed... Which idiot designed this crap? When I found out that commodore went out of business, I really ENJOYED it.)

I do NOT want to thank Gateway for trying to turn the Amiga into an ix-based machine. No folks, not this way. \backslash begin{sarcastic} While Commodore just dig the grave for Amiga, Gateway is turning it into a zombie. \backslash end{sarcastic}

1.11 History: What happened before

Version 1.19

After about three years of (interrupted) development and various ideas about PoolMem and its memory organization, and after two years of running it in my system without problems, I finally decided to publish this version in the AmiNet.

Version 1.19.1

Changed the name of the DefragMeter to FragMeter because that makes more sense. Added a chunk count to this program. PoolMem itself unchanged.

Version 1.20

Added the CHIPFWD command. Works like INSTALL but allocates chip mem in standard (forwards) mode instead of backwards mode. Might solve strange compatibility problems. Added more sanity checks, included PatchReplyMsg to create warnings for broken programs.

Version 1.21

PoolMem flushes now the memory as it should if called by AllocMem(-1,...). Except that, nothing changed.

Version 1.21.1

Included a new version of PatchRAM (check PatchRAM.readme for details), and a new version of the FragMeter program.

Version 1.22

PoolMem merges now automatically all adjacent memory lists of the same type.

Version 1.30

This version introduces a major rewrite of all critical routines, especially the replacement AllocMem() and FreeMem() routine. This might mean that either old bugs have been fixed or new bugs have been introduced. Anyways, check out for possible bugs since this is a release with a "0" in the version. This version might be much faster than the 1.2x version, due to some optimizations. WARNING: Since the new 1.30 release of PoolMem replaces the Exec memory functions completely, YOU MUST RUN POOLMEM IN FRONT OF OTHER MEMORY PATCHES. ESPECIALLY, RUN POOLMEM FIRST, MUNGWALL AFTERWARDS or Mungwall will be nonfunctional.

Version 1.31

PoolMem includes a patch for AllocAbs() to be able to allocate absolute memory from the scratch list. This *should* help to make PoolMem working with the 68040/68060/ppc library, thus, it should be possible to run PoolMem IN FRONT of these libraries, i.e. "SetPatch". Would be nice if somebody could sent me a report whether this works now or not.

Additionally, new versions of the FragMeter and ShowMem program are included.

Version 1.32

Rewrote the startup segment completely. All 1.2 compatible code, argument parser etc... removed. Added a proper version check: PoolMem requires OS 3.0. Added the NOMERGE option to avoid merging of FastMem of different speed. As a result of the new argument parser, the CHIPFWD option DOES NO LONGER include the "INSTALL" option, both arguments should be given. The PoolMem algorithms hasn't been changed, though. Included new versions of PatchRAM and ShowMem. PoolMem 1.31 and above works fine on PowerUp-Systems. Thanks to Andreas Kleinert for testing! However, the current version does not yet adjust memory correctly for the PowerUp system, that's still left to the ppc.lib and AllocP32. Might change in the future, though.

Version 1.33

Removed a bug in the PoolMem shutdown code. The pre-1.33 releases did not free the scratch list completely. Added the SCRATCHONLY keyword, it installs only the "scratchlist" of PoolMem, not the dynamic pools. Added the PUDDLESIZE, PUDDLETHRES and SHRINKTHRES keywords to make the parameters of the small memory pool adjustable. Rewrote a lot of the kernal routines, mostly for optimizations.

Version 1.34

Added the SMALLHEADER keyword. A selected memory block can be set aside for the small memory blocks explicitly. Fixed a documentation error in the Developers.readme. Thanks, Dave!

Version 1.35

Added a patch for the AvailMem() function to include the bytes in the scratch list. Added the ALLOC32 keyword. Check for **caveats**. You usually DO NOT want this!

Version 1.40

Integrated partially the PatchRAM AllocVec() patch. Memory requests by the RAM disk are now allocated in reverse order. This feature can be turned off explicitly by the NORAMREVERSE option, see below. Thanks to Raphael Pilarczyk for testing.

Version 1.41

Added an API for the PoolMemDetect program that extracts more information of the last guru due to PoolMem. Added the PoolMemDetect program itself.

1.12 Index

C...

[Compatibility Configuration](#)

E...

[Extras in the PoolMem distribution](#)

G...

[Guru meditations](#)

H...

History: What happened before How to install PoolMem?

O...

Overview: What does it?

T...

Thank you, folks! The THOR-Software Licence Theory of Operation
