NAME
xmemmon – display Icon allocation history under X-windows

SYNOPSIS
xmemmon [ options ] file

DESCRIPTION
xmemmon displays an allocation history file produced by the Icon interpreter. An animated window
representing the contents of memory shows the allocation and garbage collection actions recorded in
the file. The display is designed for a color screen but xmemmon uses textures to represent colors if run in
monochrome.

Action stops for acknowledgement at certain pausepoints. The RUN button on the display, the leftmost
mouse button, or a carriage return acknowledges a pause. A g typein clears all pausepoints.

The STOP button, the center mouse button, or the space bar causes xmemmon to pause at any time. During
a pause the STEP button, center mouse button, or space bar causes a “single-step” display of the next
memory block.

The RESTART button or an r typein rewinds the history file and pauses; then the history file is replayed
from the beginning.

The QUIT button or a q, DEL, or 'C exits xmemmon.

The rightmost mouse button pulls down a menu controlling the regions that are displayed and the
pausepoints that are active. Changes to the region list are not reflected until after the next garbage collec-
tion. loop mode and showMarking (both described below) can also be changed.

OPTIONS
xmemmon accepts the standard set of X-window command options such as -display, -geometry, and
-font. Colors are best controlled using a color specification file as described below.

Several additional options are particular to xmemmon. These may be abbreviated to a unique prefix or to
the single character indicated:

- regions regions (or -r)
  Display the indicated memory regions:
  f  static (fixed) region
  s  string region
  b  block region
  The default is -regions sb.

-pausePoints when (or -p)
Pause the display at the indicated points:
  f  memory full (beginning of garbage collection)
  a  showing active blocks after marking
  g  showing garbage remaining after marking
  c  after compaction (end of garbage collection)
  p  explicit mmpause() calls
  r  after a restart
  n  never
  The default is -pause fagcpr.

-showMarking (or -m)
Run through the marking phase even when not pausing to display the results. Normally, marking
is bypassed if neither g or a is selected as a pausepoint.

-loop (or -l)
Loop repeatedly through the history without pausing. This overrides other options to set -pause n
and -showMarking.

-title title (or -t)
Set the display title. The default is the input file name.

```
-colorSpec filename (or -c)
  Use an alternate color specification file (see below).

-width n (or -w)
  Set the width of the memory subwindow to n pixels.

-height n (or -h)
  Set the height of the memory subwindow to n pixels.

-granularity n (or -b)
  Represent n bytes of memory in each displayed pixel. The default is 4.

-textHeight n (or -L)
  Make the legend and status lines n pixels high.

-rowHeight n (or -M)
  Limit the memory region lines to a maximum of n pixels in height.

-skipGC n (or -g)
  Skip to the end of the n'th garbage collection before displaying anything.
```

RESOURCES

`xmemon` can be customized through the X Resource Manager, for instance by placing values in an `.Xdefaults` file. The most useful resources are those corresponding to command options, such as:

```
xmemon.colorSpec
xmemon.font
xmemon.geometry
xmemon.granularity
xmemon.pausePoints
xmemon.regions
```

COLOR SPECIFICATIONS

A `color specification` file changes some or all of the standard display colors. It is named by the MMCOLORS environment variable, `xmemon.colorSpec` resource, or `-colorSpec` command option.

Lines in the file contain two whitespace-separated fields: a label and a value. The label matches either a block type shown in the legend or one of these additional keywords:

```
background  background
bsep   block separator
sssep  string separator
marked  marked block
unmarked  unmarked block (when showing active data)
status  status message
prompt  prompt message
title  title field
regions region sizes
```

The value is a set of digits specifying a color; color names are not allowed. The possible formats are:

```
rgb          three octal digits
#rgb         three hexadecimal digits
#rrrgggb     three pairs of hexadecimal digits
rrrrrrggggggbbbb   three decimal values between 0 and 65535
```

The three components specify red, green, and blue values in that order; a minimum value is off and a maximum value is full on. Some examples:

```
000  #000  #000000  0,0,0  (black)
777  #FFF  #ffffff  65535,65535,65535  (white)
020  #040  #002c00  0,0,20000  (dark green)
447  #99f  #8f8fff  40000,40000,65535  (light blue)
```
Extra fields on a specification line are ignored and may be used for comments. Blank lines are ignored, as are lines beginning with '#'.

CAVEATS
If the colormap is not changeable, there can be no pause to show active data.
A few extra single-steps may be needed around pausepoints.
xmemmon is limited to three concurrent executions on typical 8-bit displays due to its need for private color cells.

SEE ALSO