



Rocky Enterprise Linux 9.2 Manual Pages on command 'bitmap.1'

C:\>man bitmap.1

BITMAP(1) General Commands Manual BITMAP(1)

NAME

bitmap, bmtoa, atobm - bitmap editor and converter utilities for the X Window System

SYNOPSIS

```
bitmap [ -options ... ] [ filename ] [ basename ]
bmtoa [ -chars ... ] [ filename ]
atobm [ -chars cc ] [ -name variable ] [ -xhot number ] [ -yhot number ] [ filename ]
```

DESCRIPTION

The bitmap program is a rudimentary tool for creating or editing rectangular images made up of 1's and 0's. Bitmaps are used in X for defining clipping regions, cursor shapes, icon shapes, and tile and stipple patterns.

The bmtoa and atobm filters convert bitmap files (FILE FORMAT) to and from ASCII strings. They are most commonly used to quickly print out bitmaps and to generate versions for including in text.

COMMAND LINE OPTIONS

Bitmap supports the standard X Toolkit command line arguments (see X(7)). The following additional arguments are supported as well.

-size WIDTHxHEIGHT

Specifies size of the grid in squares.

-sw dimension

Specifies the width of squares in pixels.

-sh dimension

Specifies the height of squares in pixels.

-gt dimension

Grid tolerance. If the square dimensions fall below the specified value, grid will be automatically turned off.

-grid, +grid

Turns on or off the grid lines.

-axes, +axes

Turns on or off the major axes.

-dashed, +dashed

Turns on or off dashing for the frame and grid lines.

-stippled, +stippled

Turns on or off stippling of highlighted squares.

-proportional, +proportional

Turns proportional mode on or off. If proportional mode is on, square width is equal to square height. If proportional mode is off, bitmap will use the smaller square dimension, if they were initially different.

-dashes filename

Specifies the bitmap to be used as a stipple for dashing.

-stipple filename

Specifies the bitmap to be used as a stipple for highlighting.

-hl color

Specifies the color used for highlighting.

-fr color

Specifies the color used for the frame and grid lines.

filename

Specifies the bitmap to be initially loaded into the program. If the file does not exist, bitmap will assume it is a new file.

basename

Specifies the basename to be used in the C code output file. If it is different than the basename in the working file, bitmap will change it when saving the file.

Bmtoa accepts the following option:

-chars cc

This option specifies the pair of characters to use in the string version of the bitmap. The first character is used for 0 bits and the second character is used for 1 bits. The default is to use dashes (-) for 0's and sharp signs (#) for 1's.

Atobm accepts the following options:

-chars cc

This option specifies the pair of characters to use when converting string bitmaps into arrays of numbers. The first character represents a 0 bit and the second character represents a 1 bit. The default is to use dashes (-) for 0's and sharp signs (#) for 1's.

-name variable

This option specifies the variable name to be used when writing out the bitmap file. The default is to use the basename of the filename command line argument or leave it blank if the standard input is read.

-xhot number

This option specifies the X coordinate of the hotspot. Only positive values are allowed. By default, no hotspot information is included.

-yhot number

This option specifies the Y coordinate of the hotspot. Only positive values are allowed. By default, no hotspot information is included.

USAGE

Bitmap displays grid in which each square represents a single bit in the picture being edited. Actual size of the bitmap image, as it would appear normally and inverted, can be obtained by pressing Meta-I key. You are free to move the image popup out of the way to continue editing. Pressing the left mouse button in the popup window or Meta-I again will remove the real size bitmap image.

If the bitmap is to be used for defining a cursor, one of the squares in the images may be designated as the hot spot. This determines where the cursor is actually pointing. For cursors with sharp tips (such as arrows or fingers), this is usually at the end of the tip; for symmetric cursors (such as crosses or bullseyes), this is usually at the center.

Bitmaps are stored as small C code fragments suitable for including in applications. They provide an array of bits as well as symbolic constants giving the width, height, and hot spot (if specified) that may be used in creating cursors, icons, and tiles.

EDITING

To edit a bitmap image simply click on one of the buttons with drawing commands (Point, Curve, Line, Rectangle, etc.) and move the pointer into the bitmap grid window. Press one of the buttons on your mouse and the appropriate action will take place. You can either set, clear or invert the grid squares. Setting a grid square corresponds to setting a bit in the bitmap image to 1. Clearing a grid square corresponds to setting a bit in the bitmap image to 0. Inverting a grid square corresponds to changing a bit in the bitmap image from 0 to 1 or 1 to 0, depending what its previous state was. The default behavior of mouse buttons is as specified below.

| | |
|--------------|--------|
| MouseButton1 | Set |
| MouseButton2 | Invert |
| MouseButton3 | Clear |
| MouseButton4 | Clear |
| MouseButton5 | Clear |

This default behavior can be changed by setting the button function resources. An example is provided below.

```
bitmap*button1Function: Set  
bitmap*button2Function: Clear  
bitmap*button3Function: Invert  
etc.
```

The button function applies to all drawing commands, including copying, moving and pasting, flood filling and setting the hot spot.

DRAWING COMMANDS

Here is the list of drawing commands accessible through the buttons at the left side of the application's window. Some commands can be aborted by pressing A in? side the bitmap window, allowing the user to select different guiding points where applicable.

Clear

This command clears all bits in the bitmap image. The grid squares will be set to the background color. Pressing C inside the bitmap window has the same effect.

Set This command sets all bits in the bitmap image. The grid squares will be set to the foreground color. Pressing S inside the bitmap window has the same effect.

Invert

This command inverts all bits in the bitmap image. The grid squares will be inverted appropriately. Pressing I inside the bitmap window has the same effect.

Mark

This command is used to mark an area of the grid by dragging out a rectangular shape in the highlighting color. Once the area is marked, it can be operated on by a number of commands (see Up, Down, Left, Right, Rotate, Flip, Cut, etc.) Only one marked area can be present at any time. If you attempt to mark another area, the old mark will vanish. The same effect can be achieved by pressing Shift-MouseButton1 and dragging out a rectangle in the grid window. Pressing Shift-MouseButton2 will mark the entire grid area.

Unmark

This command will cause the marked area to vanish. The same effect can be achieved by pressing Shift-MouseButton3.

Copy

This command is used to copy an area of the grid from one location to another. If there is no marked grid area displayed, Copy behaves just like Mark described above. Once there is a marked grid area displayed in the highlighting color, this command has two alternative behaviors. If you click a mouse button inside the marked area, you will be able to drag the rectangle that represents the marked area to the desired location. After you release the mouse button, the area will be copied. If you click outside the marked area, Copy will assume that you wish to mark a different region of the bitmap image, thus it will behave like Mark again.

Move

This command is used to move an area of the grid from one location to another.

Its behavior resembles the behavior of Copy command, except that the marked area will be moved instead of copied.

Flip Horizontally

This command will flip the bitmap image with respect to the horizontal axes.

If a marked area of the grid is highlighted, it will operate only inside the marked area. Pressing H inside the bitmap window has the same effect.

Up This command moves the bitmap image one pixel up. If a marked area of the grid is highlighted, it will operate only inside the marked area. Pressing UpArrow inside the bitmap window has the same effect.

Flip Vertically

This command will flip the bitmap image with respect to the vertical axes. If a marked area of the grid is highlighted, it will operate only inside the marked area. Pressing V inside the bitmap window has the same effect.

Left

This command moves the bitmap image one pixel to the left. If a marked area of the grid is highlighted, it will operate only inside the marked area. Pressing LeftArrow inside the bitmap window has the same effect.

Fold

This command will fold the bitmap image so that the opposite corners become adjacent. This is useful when creating bitmap images for tiling. Pressing F inside the bitmap window has the same effect.

Right

This command moves the bitmap image one pixel to the right. If a marked area of the grid is highlighted, it will operate only inside the marked area. Pressing RightArrow inside the bitmap window has the same effect.

Rotate Left

This command rotates the bitmap image 90 degrees to the left (counter clockwise.) If a marked area of the grid is highlighted, it will operate only inside the marked area. Pressing L inside the bitmap window has the same effect.

Down

This command moves the bitmap image one pixel down. If a marked area of the grid is highlighted, it will operate only inside the marked area. Pressing DownArrow inside the bitmap window has the same effect.

Rotate Right

This command rotates the bitmap image 90 degrees to the right (clockwise.) If a marked area of the grid is highlighted, it will operate only inside the marked area. Pressing R inside the bitmap window has the same effect.

Point

This command will change the grid squares underneath the mouse pointer if a mouse button is being pressed down. If you drag the mouse button continuously, the line may not be continuous, depending on the speed of your system and frequency of mouse motion events.

Curve

This command will change the grid squares underneath the mouse pointer if a mouse button is being pressed down. If you drag the mouse button continuously, it will make sure that the line is continuous. If your system is slow or the bitmap receives very few mouse motion events, it might behave quite strangely.

Line

This command will change the grid squares in a line between two squares. Once you press a mouse button in the grid window, bitmap will highlight the line from the square where the mouse button was initially pressed to the square where the mouse pointer is located. By releasing the mouse button you will cause the change to take effect, and the highlighted line will disappear.

Rectangle

This command will change the grid squares in a rectangle between two squares. Once you press a mouse button in the grid window, bitmap will highlight the rectangle from the square where the mouse button was initially pressed to the square where the mouse pointer is located. By releasing the mouse button you will cause the change to take effect, and the highlighted rectangle will disappear.

Filled Rectangle

This command is identical to Rectangle, except at the end the rectangle will be filled rather than outlined.

Circle

This command will change the grid squares in a circle between two squares. Once you press a mouse button in the grid window, bitmap will highlight the

circle from the square where the mouse button was initially pressed to the square where the mouse pointer is located. By releasing the mouse button you will cause the change to take effect, and the highlighted circle will disappear.

Filled Circle

This command is identical to Circle, except at the end the circle will be filled rather than outlined.

Flood Fill

This command will flood fill the connected area underneath the mouse pointer when you click on the desired square. Diagonally adjacent squares are not considered to be connected.

Set Hot Spot

This command designates one square in the grid as the hot spot if this bitmap image is to be used for defining a cursor. Pressing a mouse button in the desired square will cause a diamond shape to be displayed.

Clear Hot Spot

This command removes any designated hot spot from the bitmap image.

Undo

This command will undo the last executed command. It has depth one, that is, pressing Undo after Undo will undo itself.

FILE MENU

The File menu commands can be accessed by pressing the File button and selecting the appropriate menu entry, or by pressing Ctrl key with another key. These commands deal with files and global bitmap parameters, such as size, basename, filename etc.

New This command will clear the editing area and prompt for the name of the new file to be edited. It will not load in the new file.

Load

This command is used to load a new bitmap file into the bitmap editor. If the current image has not been saved, user will be asked whether to save or ignore the changes. The editor can edit only one file at a time. If you need interactive editing, run a number of editors and use cut and paste mechanism as described below.

Insert

This command is used to insert a bitmap file into the image being currently edited. After being prompted for the filename, click inside the grid window and drag the outlined rectangle to the location where you want to insert the new file.

Save

This command will save the bitmap image. It will not prompt for the filename unless it is said to be <none>. If you leave the filename undesignated or -, the output will be piped to stdout.

Save As

This command will save the bitmap image after prompting for a new filename. It should be used if you want to change the filename.

Resize

This command is used to resize the editing area to the new number of pixels. The size should be entered in the WIDTHxHEIGHT format. The information in the image being edited will not be lost unless the new size is smaller than the current image size. The editor was not designed to edit huge files.

Rescale

This command is used to rescale the editing area to the new width and height. The size should be entered in the WIDTHxHEIGHT format. It will not do anti-aliasing and information will be lost if you rescale to the smaller sizes. Feel free to add your own algorithms for better rescaling.

Filename

This command is used to change the filename without changing the basename nor saving the file. If you specify - for a filename, the output will be piped to stdout.

Basename

This command is used to change the basename, if a different one from the specified filename is desired.

Quit

This command will terminate the bitmap application. If the file was not saved, user will be prompted and asked whether to save the image or not. This command is preferred over killing the process.

EDIT MENU

The Edit menu commands can be accessed by pressing the Edit button and selecting the appropriate menu entry, or by pressing Meta key with another key. These commands deal with editing facilities such as grid, axes, zooming, cut and paste, etc.

Image

This command will display the image being edited and its inverse in its actual size in a separate window. The window can be moved away to continue with editing. Pressing the left mouse button in the image window will cause it to disappear from the screen.

Grid

This command controls the grid in the editing area. If the grid spacing is below the value specified by gridTolerance resource (8 by default), the grid will be automatically turned off. It can be enforced by explicitly activating this command.

Dashed

This command controls the stipple for drawing the grid lines. The stipple specified by dashes resource can be turned on or off by activating this command.

Axes

This command controls the highlighting of the main axes of the image being edited. The actual lines are not part of the image. They are provided to aid user when constructing symmetrical images, or whenever having the main axes highlighted helps your editing.

Stippled

This command controls the stippling of the highlighted areas of the bitmap image. The stipple specified by stipple resource can be turned on or off by activating this command.

Proportional

This command controls the proportional mode. If the proportional mode is on, width and height of all image squares are forced to be equal, regardless of the proportions of the bitmap window.

Zoom

This command controls the zoom mode. If there is a marked area of the image

already displayed, bitmap will automatically zoom into it. Otherwise, user will have to highlight an area to be edited in the zoom mode and bitmap will automatically switch into it. One can use all the editing commands and other utilities in the zoom mode. When you zoom out, undo command will undo the whole zoom session.

Cut This command cuts the contents of the highlighted image area into the internal cut and paste buffer.

Copy

This command copies the contents of the highlighted image area into the internal cut and paste buffer.

Paste

This command will check if there are any other bitmap applications with a highlighted image area, or if there is something in the internal cut and paste buffer and copy it to the image. To place the copied image, click in the editing window and drag the outlined image to the position where you want to place it, and then release the button.

CUT AND PASTE

Bitmap supports two cut and paste mechanisms; the internal cut and paste and the global X selection cut and paste. The internal cut and paste is used when executing copy and move drawing commands and also cut and copy commands from the edit menu. The global X selection cut and paste is used whenever there is a highlighted area of a bitmap image displayed anywhere on the screen. To copy a part of image from another bitmap editor simply highlight the desired area by using the Mark command or pressing the shift key and dragging the area with the left mouse button. When the selected area becomes highlighted, any other applications (such as xterm, etc.) that use primary selection will discard their selection values and highlight the appropriate information. Now, use the Paste command for the Edit menu or control mouse button to copy the selected part of image into another (or the same) bitmap application. If you attempt to do this without a visible highlighted image area, the bitmap will fall back to the internal cut and paste buffer and paste whatever was there stored at the moment.

WIDGETS

Below is the widget structure of the bitmap application. Indentation indicates hi?

erarchical structure. The widget class name is given first, followed by the widget instance name. All widgets except the bitmap widget are from the standard Athena widget set.

Bitmap bitmap

TransientShell image

Box box

Label normallImage

Label invertedImage

TransientShell input

Dialog dialog

Command okay

Command cancel

TransientShell error

Dialog dialog

Command abort

Command retry

TransientShell qsave

Dialog dialog

Command yes

Command no

Command cancel

Paned parent

Form formy

MenuButton fileButton

SimpleMenu fileMenu

SmeBSB new

SmeBSB load

SmeBSB insert

SmeBSB save

SmeBSB saveAs

SmeBSB resize

SmeBSB rescale

SmeBSB filename

SmeBSB basename

SmeLine line

SmeBSB quit

MenuButton editButton

SimpleMenu editMenu

SmeBSB image

SmeBSB grid

SmeBSB dashed

SmeBSB axes

SmeBSB stippled

SmeBSB proportional

SmeBSB zoom

SmeLine line

SmeBSB cut

SmeBSB copy

SmeBSB paste

Label status

Pane pane

Bitmap bitmap

Form form

Command clear

Command set

Command invert

Toggle mark

Command unmark

Toggle copy

Toggle move

Command flipHoriz

Command up

Command flipVert

Command left

Command fold

Command right

Command rotateLeft
Command down
Command rotateRight
Toggle point
Toggle curve
Toggle line
Toggle rectangle
Toggle filledRectangle
Toggle circle
Toggle filledCircle
Toggle floodFill
Toggle setHotSpot
Command clearHotSpot
Command undo

COLORS

If you would like `bitmap` to be viewable in color, include the following in the `#ifdef COLOR` section of the file you read with `xrdb`:

```
*customization:          -color
```

This will cause `bitmap` to pick up the colors in the `app-defaults/color` customization file:

```
/etc/X11/app-defaults/Bitmap-color
```

BITMAP WIDGET

`Bitmap widget` is a stand-alone widget for editing raster images. It is not designed to edit large images, although it may be used in that purpose as well. It can be freely incorporated with other applications and used as a standard editing tool. The following are the resources provided by the `bitmap widget`.

Bitmap Widget

Header file `Bitmap.h`

Class `bitmapWidgetClass`

Class Name `Bitmap`

Superclass `Bitmap`

All the Simple Widget resources plus ...

| Name | Class | Type | Default Value |
|------|-------|------|---------------|
|------|-------|------|---------------|

| | | | |
|-----------------|-----------------|-----------------|---------------------|
| foreground | Foreground | Pixel | XtDefaultForeground |
| highlight | Highlight | Pixel | XtDefaultForeground |
| framing | Framing | Pixel | XtDefaultForeground |
| gridTolerance | GridTolerance | Dimension | 8 |
| size | Size | String | 32x32 |
| dashed | Dashed | Boolean | True |
| grid | Grid | Boolean | True |
| stippled | Stippled | Boolean | True |
| proportional | Proportional | Boolean | True |
| axes | Axes | Boolean | False |
| squareWidth | SquareWidth | Dimension | 16 |
| squareHeight | SquareHeight | Dimension | 16 |
| margin | Margin | Dimension | 16 |
| xHot | XHot | Position | NotSet (-1) |
| yHot | YHot | Position | NotSet (-1) |
| button1Function | Button1Function | DrawingFunction | Set |
| button2Function | Button2Function | DrawingFunction | Invert |
| button3Function | Button3Function | DrawingFunction | Clear |
| button4Function | Button4Function | DrawingFunction | Invert |
| button5Function | Button5Function | DrawingFunction | Invert |
| filename | Filename | String | None ("") |
| basename | Basename | String | None ("") |

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BITMAP(1)