## NAME

XAllocSizeHints, XSetWMNormalHints, XGetWMNormalHints, XSetWMSizeHints, XGetWMSizeHints, XSizeHints – allocate size hints structure and set or read a window's WM\_NORMAL\_HINTS property

# SYNTAX

XSizeHints \*XAllocSizeHints(void);

void XSetWMNormalHints(Display \*display, Window w, XSizeHints \*hints);

Status XGetWMNormalHints(Display \*display, Window w, XSizeHints \*hints\_return, long \*supplied\_return);

void XSetWMSizeHints(Display \**display*, Window w, XSizeHints \**hints*, Atom property);

Status XGetWMSizeHints(Display \**display*, Window *w*, XSizeHints \**hints\_return*, long \**supplied\_return*, Atom *property*);

### ARGUMENTS

display	Specifies the connection to the X server.	
hints	Specifies the size hints for the window in its normal state.	
hints	Specifies the <b>XSizeHints</b> structure to be used.	
hints_return	Returns the size hints for the window in its normal state.	
property	Specifies the property name.	
supplied_return	Returns the hints that were supplied by the user.	
w	Specifies the window.	

# DESCRIPTION

The **XAllocSizeHints** function allocates and returns a pointer to a **XSizeHints** structure. Note that all fields in the **XSizeHints** structure are initially set to zero. If insufficient memory is available, **XAllocSize-Hints** returns NULL. To free the memory allocated to this structure, use **XFree**.

The **XSetWMNormalHints** function replaces the size hints for the WM\_NORMAL\_HINTS property on the specified window. If the property does not already exist, **XSetWMNormalHints** sets the size hints for the WM\_NORMAL\_HINTS property on the specified window. The property is stored with a type of WM\_SIZE\_HINTS and a format of 32.

XSetWMNormalHints can generate BadAlloc and BadWindow errors.

The **XGetWMNormalHints** function returns the size hints stored in the WM\_NORMAL\_HINTS property on the specified window. If the property is of type WM\_SIZE\_HINTS, is of format 32, and is long enough to contain either an old (pre-ICCCM) or new size hints structure, **XGetWMNormalHints** sets the various fields of the **XSizeHints** structure, sets the supplied\_return argument to the list of fields that were supplied by the user (whether or not they contained defined values), and returns a nonzero status. Otherwise, it returns a zero status.

If **XGetWMNormalHints** returns successfully and a pre-ICCCM size hints property is read, the supplied\_return argument will contain the following bits:

(USPosition | USSize | PPosition | PSize | PMinSize | PMaxSize | PResizeInc | PAspect)

If the property is large enough to contain the base size and window gravity fields as well, the supplied\_return argument will also contain the following bits:

PBaseSize PWinGravity

XGetWMNormalHints can generate a PN BadWindow error.

The **XSetWMSizeHints** function replaces the size hints for the specified property on the named window. If the specified property does not already exist, **XSetWMSizeHints** sets the size hints for the specified

property on the named window. The property is stored with a type of WM\_SIZE\_HINTS and a format of 32. To set a window's normal size hints, you can use the **XSetWMNormalHints** function.

XSetWMSizeHints can generate BadAlloc, BadAtom, and BadWindow errors.

The **XGetWMSizeHints** function returns the size hints stored in the specified property on the named window. If the property is of type WM\_SIZE\_HINTS, is of format 32, and is long enough to contain either an old (pre-ICCCM) or new size hints structure, **XGetWMSizeHints** sets the various fields of the **XSizeHints** structure, sets the supplied\_return argument to the list of fields that were supplied by the user (whether or not they contained defined values), and returns a nonzero status. Otherwise, it returns a zero status. To get a window's normal size hints, you can use the **XGetWMNormalHints** function.

If **XGetWMSizeHints** returns successfully and a pre-ICCCM size hints property is read, the supplied\_return argument will contain the following bits:

(USPosition | USSize | PPosition | PSize | PMinSize | PMaxSize | PResizeInc | PAspect)

If the property is large enough to contain the base size and window gravity fields as well, the supplied\_return argument will also contain the following bits:

PBaseSize PWinGravity

XGetWMSizeHints can generate BadAtom and BadWindow errors.

## PROPERTIES

WM\_NORMAL\_HINTS

Size hints for a window in its normal state. The C type of this property is XSizeHints.

# STRUCTURES

The **XSizeHints** structure contains:

/* Size hir	nts mask bits */				
#de-	USPosition	(1L << 0)	/* user specified x, y */		
fine					
#de-	USSize	(1L << 1)	/* user specified width, height */		
fine					
#de-	PPosition	(1L << 2)	/* program specified position */		
fine					
#de-	PSize	(1L << 3)	/* program specified size */		
fine					
#de-	PMinSize	(1L << 4)	/* program specified minimum size */		
fine					
#de-	PMaxSize	(1L << 5)	/* program specified maximum size */		
fine		(17			
#de-	PResizeInc	(1L << 6)	/* program specified resize increments */		
fine	<b>DA</b> 4				
#de-	PAspect	(IL << /)	/* program specified min and max aspect ratios */		
nne #1	DD C!	$(1\mathbf{I} < < 0)$			
#de-	PBaseSize	(1L < < 8)			
iine #do	DW:nCnovity	(11 < < 0)			
fine	r will Gravity	$(1L \times 9)$			
#de	<b>PAllHints</b>	(PPosition)			
fine	I Ammus	PSizel			
lille		PMinSizel			
		PMaxSize			
		PResizeIncl			
		PAspect)			
/* Values */					

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```
typedef struct {
                     /* marks which fields in this structure are defined */
       long flags;
                      /* Obsolete */
       int x, y;
                            /* Obsolete */
       int width, height;
       int min_width, min_height;
       int max_width, max_height;
       int width_inc, height_inc;
       struct {
              int x; /* numerator */
              int y; /* denominator */
        } min_aspect, max_aspect;
       int base_width, base_height;
       int win_gravity;
       /* this structure may be extended in the future */
} XSizeHints;
```

The x, y, width, and height members are now obsolete and are left solely for compatibility reasons. The min\_width and min\_height members specify the minimum window size that still allows the application to be useful. The max\_width and max\_height members specify the maximum window size. The width\_inc and height\_inc members define an arithmetic progression of sizes (minimum to maximum) into which the window prefers to be resized. The min\_aspect and max\_aspect members are expressed as ratios of x and y, and they allow an application to specify the range of aspect ratios it prefers. The base\_width and base\_height members define the desired size of the window. The window manager will interpret the position of the window and its border width to position the point of the outer rectangle of the overall window specified by the win\_gravity member. The outer rectangle of the window includes any borders or decorations supplied by the window manager. In other words, if the window manager decides to place the window where the client asked, the position on the parent window's border named by the win\_gravity will be placed where the client window would have been placed in the absence of a window manager.

Note that use of the PAllHints macro is highly discouraged.

#### DIAGNOSTICS

**BadAlloc** The server failed to allocate the requested resource or server memory.

BadAtom A value for an Atom argument does not name a defined Atom.

**BadWindow** A value for a Window argument does not name a defined Window.

#### SEE ALSO

XAllocClassHint(3), XAllocIconSize(3), XAllocWMHints(3), XFree(3), XSetCommand(3), XSetTransientForHint(3), XSetTextProperty(3), XSetWMClientMachine(3), XSetWMColormapWindows(3), XSetWMIconName(3), XSetWMName(3), XSetWMProperties(3), XSetWMProtocols(3), XStringListTo-TextProperty(3)

*Xlib – C Language X Interface*, O'Reilly and Associates,