

**Window**

<b>COLLABORATORS</b>
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	<i>TITLE :</i> Window		
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
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# Chapter 1

## Window

### 1.1 Window V1.00

PureBasic Window library V1.00

Windows are essentials component of modern interfaces. Pure Basic provide you a full access to them.

Commands summary:

- ActivateWindow
- BevelBox
- BusyPointer
- ChangeIDCMP
- CloseWindow
- DetachGadgetList
- DetachMenu
- EventCode
- EventGadget
- EventQualifier
- EventWindow
- InitWindow
- MoveWindow
- OpenWindow
- SizeWindow
- UseWindow
- WindowEvent
- WindowID
- WindowInnerHeight
- WindowInnerWidth
- WindowWidth
- WindowHeight
- WindowX
- WindowY
- WindowRastPort
- WindowMouseX
- WindowMouseY

Example:

Window

## 1.2 bevelbox

### SYNTAX

BevelBox(x, y, Width, Height, Style)

### COMMAND

Display a standard BevelBox (ie: 3D like box, with highlight and shadow borders based on the system colours) on the current window.

Two styles values are available:

- 0: Raised (Normal 3D look)
- 1: Recessed (3D Pushed look)

## 1.3 changeidcmp

### SYNTAX

ChangeIDCMP(NewIDCMP)

### COMMAND

Alter the PureBasic default IDCMP value for future opened window.  
For full description of IDCMPs click [here](#) .

## 1.4 eventcode

### SYNTAX

Code.1 = EventCode()

### COMMAND

After a WindowEvent() result, check this function to determine whether a gadtools gadget has been activated.

ie: If the Gadget is:

- + CheckBox: EventCode() returns 1 or 0, to reflect the checkbox state
- + Palette : EventCode() returns the colour number that has been checked
- + Integer : EventCode() returns the number contained by the gadget
- + Option : EventCode() returns the index of the selected option
- + ListView: EventCode() returns the index of the selected item
- + Slider : EventCode() returns the current position of the slider

## 1.5 eventgadget

## SYNTAX

```
#Gadget = EventGadget()
```

## COMMAND

After a `WindowEvent()` result, check this function to determine which gadget or menu has been pushed (return the gadget or menu number)

## 1.6 eventwindow

## SYNTAX

```
#Window = EventWindow()
```

## COMMAND

After a `WindowEvent()` result, check this function to determine on which window the event has occur.

## 1.7 waitwindowevent

## SYNTAX

```
IDCMP.l = WaitWindowEvent
```

## FUNCTION

## 1.8 windowevent

## SYNTAX

```
IDCMP.l = WindowEvent()
```

## FUNCTION

Check if an event has occur on any of the open windows. To get the window number in which the event occurred, you need to use the `EventWindowID()` function.

Most used IDCMP are: `#IDCMP_GADGETUP` (a gadget is pressed)  
`#IDCMP_CLOSEWINDOW` (window's closegadget is pushed)  
`#IDCMP_MENUPICK` (a menu has be chosen)

For a full list and definition of IDCMP, look here: `IDCMP`

Example:

```
InitWindow(0)  
InitTagList(2)
```

```
ResetTagList(#WA_IDCMP, #IDCMP_CLOSEWINDOW | #IDCMP_MENUPICK | #IDCMP_GADGETUP)
```

---

```

If OpenWindow(0, 100, 100, 100, 100, #WFLG_CLOSEGADGET, TagListID())

  Repeat

    Repeat
      VWait()
      IDCMP.l = WindowEvent()
    Until IDCMP

  Until IDCMP = #IDCMP_CLOSEWINDOW

Endif

End

```

## 1.9 detachgadgetlist

### SYNTAX

```
DetachGadgetList()
```

### STATEMENT

Detach the current window's gadgetlist (if any). Note that the window display isn't refreshed, so you can still see the gadgets, but you can't push them any more (it's only the imagery which is visible).

You can use a combination of DetachGadgetList()/AttachGadgetList() to change 'on the fly' a window gadgetlist.

## 1.10 openwindow

### SYNTAX

```
WindowID.l = OpenWindow(#Window, x, y, Width, Height, Flags, TagList)
```

### FUNCTION

Opens a new window according to the specified taglist. The new window becomes the used window. You don't need to use the UseWindow() command to set it. If the WindowID is NULL, the window can't be opened.

Available tags:

```

#WA_Left
#WA_Top
#WA_Width
#WA_Height
#WA_DetailPen    - NOTE: only overrides NewWindow.DetailPen of -1!
#WA_BlockPen     - NOTE: only overrides NewWindow.BlockPen of -1!
#WA_IDCMP
#WA_Flags        - initial values for Flags before looking at other
                  Boolean component Tag values
#WA_Gadgets
#WA_Title

```

```
#WA_CustomScreen - also implies CUSTOMSCREEN property
#WA_SuperBitMap  - also implies #WFLG_SUPER_BITMAP refresh mode.
#WA_MinWidth
#WA_MinHeight
#WA_MaxWidth
#WA_MaxHeight
```

These Boolean tag items are alternatives to the `NewWindow.Flags` Boolean attributes with similar names.

```
#WA_SizeGadget      - equivalent to #WFLG_SIZEGADGET
#WA_DragBar         - equivalent to #WFLG_DRAGBAR
#WA_DepthGadget     - equivalent to #WFLG_DEPTHGADGET
#WA_CloseGadget     - equivalent to #WFLG_CLOSEGADGET
#WA_Backdrop        - equivalent to #WFLG_BACKDROP
#WA_ReportMouse     - equivalent to #WFLG_REPORTMOUSE
#WA_NoCareRefresh   - equivalent to #WFLG_NOCAREREFRESH
#WA_Borderless      - equivalent to #WFLG_BORDERLESS
#WA_Activate        - equivalent to #WFLG_ACTIVATE
#WA_RMBTrap         - equivalent to #WFLG_RMBTRAP
#WA_WBenchWindow    - equivalent to #WFLG_WBENCHWINDOW
                    (system PRIVATE)
#WA_SimpleRefresh   - only specify if TRUE
#WA_SmartRefresh    - only specify if TRUE
#WA_SizeBRight      - equivalent to #WFLG_SIZEEBRIGHT
#WA_SizeBBottom     - equivalent to #WFLG_SIZEEBOTTOM
#WA_GimmeZeroZero   - equivalent to #WFLG_GIMMEZEROZERO
#WA_NewLookMenus    - equivalent to #WFLG_NEWLOOKMENUS
```

The following tag items specify new attributes of a window.

`#WA_ScreenTitle` - You can specify the screen title associated with your window this way, and avoid a call to `SetWindowTitles()` when your window opens.

`#WA_AutoAdjust` - a Boolean attribute which says that it's OK to move or even shrink the dimensions of this window to fit it on the screen, within the dimension limits specified by `MinWidth` and `MinHeight`. Someday, this processing might be sensitive to the currently visible portion of the screen the window will be opening on, so don't draw too many conclusions about the auto-adjust algorithms. (Normally, this attribute defaults to `FALSE`. However, if you call `OpeWindowTags()` or `OpeWindowTagList()` with a `NULL` `NewWindow` pointer, this attribute defaults to `TRUE`).

`#WA_InnerWidth`  
`#WA_InnerHeight` - You can specify the dimensions of the interior region of your window, independent of what the border thicknesses will be. You probably want to specify `#WA_AutoAdjust` to allow Intuition to move your window or even shrink it so that it is completely on screen.

Note: using these tags puts some reasonable restrictions on the gadgets you can specify as "border" gadgets when



you open your window. Since border gadgets determine the border dimensions and hence the overall dimensions of your window, those dimensions cannot be used calculating the position or dimensions of border gadgets.

Here's the complete list of restrictions:

- #GACT\_LEFTBORDER gadgets cannot be GFLG\_RELWIDTH if #WA\_InnerWidth is ← used.
- #GACT\_RIGHTBORDER gadgets MUST be GFLG\_RELRIGHT if #WA\_InnerWidth is ← used.
- #GACT\_TOPBORDER gadgets cannot be GFLG\_RELHEIGHT if #WA\_InnerHeight is ← used.
- #GACT\_BOTTOMBORDER gadgets MUST be GFLG\_RELBOTTOM if #WA\_InnerHeight is ← used.

#WA\_PubScreenName - This tag item declares that you want your window to open as a visitor window on the public screen whose name is pointed to by (UBYTE \*) ti\_Data.

#WA\_PubScreen - Open as a visitor window on the public screen whose address is provided as (struct Screen \*) ti\_Data. To ensure that this screen remains open long enough, you must either:

- 1) Be the screen's owner
- 2) have another window already open on the screen
- 3) use LockPubScreen()

Using exec.library/Forbid() is not sufficient.

You can provide ti\_Data to be NULL (zero), without any of the above precautions, to specify the default public screen.

#WA\_PubScreenFallBack - This Boolean attribute specifies that a visitor window should "fall back" to opening on the default public screen if the explicitly specify public screen is not available.

#WA\_WindowName - this visionary specification of a window rendezvous name string is not yet implemented.

#WA\_Colors - this equally great idea about associating a palette specification with the active window may not ever be implemented.

#WA\_Zoom - ti\_Data points to an array of four WORD's to be used as the initial Left/Top/Width/Height of the "alternate Zoom position and dimensions." The presence of this tag item implies that you want a Zoom gadget, even though you might not have a sizing gadget.

New for V39: if the initial zoom-box left and top are both set to ~0, then Intuition will give your window "size-only" zooming, meaning that zooming the window will not affect the left/top unless the window needs to be moved on-screen.

#WA\_MouseQueue - This tag specifies a limit for the number of outstanding IDCMP\_MOUSEMOVE IntuiMessages that Intuition will send to your window. You can change the value of this limit after the window is open using SetMouseQueue().

#WA\_RptQueue - This tag specifies a limit for the number of outstanding repeated-IDCMP\_RAWKEY, repeated-IDCMP\_VANILLAKEY, and repeated-IDCMP\_IDCMPUPDATE IntuiMessages that Intuition will send to your window. Currently, there is no function to adjust the repeat-key queue.

#WA\_BackFill - ti\_Data is a pointer to a Hook structure that the Layers library will call when your window needs "backfilling." See layers.library/InstallLayerHook().

#WA\_MenuHelp - ti\_Data is a boolean. If true, enables the MenuHelp feature for this window. See IDCMP\_MENUHELP above. (V37)

#WA\_NotifyDepth - ti\_Data is a boolean. Set to true if you would also like IDCMP\_CHANGEWINDOW events sent to your window when it is depth-arranged. Normally, such events are only sent for movement or resizing of the window. IDCMP\_CHANGEWINDOW events originating from depth-arrangement have a Code equal to CWCODE\_DEPTH, as opposed to CWCODE\_MOVE\_SIZE. (V39)

#WA\_Checkmark - (ti\_Data is struct Image \*) Image to use as a checkmark in menus. Prior to V39, or if #WA\_NewLookMenus is not specified, the default will be the traditional checkmark in the original colors. Under V39 and higher, if you have requested #WA\_NewLookMenus then the default will be an appropriately colored checkmark scaled to the screen's font. Alternately, you can provide a custom one, which you can design yourself or get from sysclass (use this if your menu-font is different from the screen's font).

#WA\_AmigaKey - (ti\_Data is struct Image \*) Image to use as the Amiga-key symbol in menus. If #WA\_NewLookMenus is not specified, the default will be the traditional Amiga-key symbol in the original colors. If you've requested #WA\_NewLookMenus, then the default will be an appropriately colored Amiga-key scaled to the screen's font. Alternately, you can provide a custom one, which you can design yourself or get from sysclass (use this if your menu-font is different from the screen's font). (V39)

#WA\_Pointer - (APTR) The pointer you wish to associate with your window. If NULL, you are requesting the Preferences default pointer. Custom pointers should be allocated by performing a NewObject() on "pointerclass". (See <intuition/pointerclass.h>). Defaults to NULL. This tag is also recognized by SetWindowPointerA(). (V39)

#WA\_BusyPointer (BOOL) - Set to TRUE to request the Preferences busy-pointer. If FALSE, your pointer will be as requested by #WA\_Pointer. Defaults to FALSE. This tag is also recognized by SetWindowPointerA(). (V39)

#WA\_PointerDelay - (BOOL) Set to TRUE to defer changing your pointer for a brief instant. This is typically used along with setting the busy pointer, especially when the

application knows it may be busy for a very short while. If the application clears the pointer or sets another pointer before the delay expires, the pending pointer change is cancelled. This reduces short flashes of the busy pointer. This tag is also recognized by `SetWindowPointerA()`. (V39)

`#WA_HelpGroup` - (ULONG) Normally, only the active window can receive `IDCMP_GADGETHELP` messages. However, an application with multiple windows will want all its windows to be able to receive help when any of them are active. First obtain a unique help ID with `utility.library/GetUniqueID()`, then pass it as `ti_Data` of this tag to all your windows. See `HelpControl()`. (V39)

`#WA_HelpGroupWindow` - (struct Window \*) Instead of using `#WA_HelpGroup`, you can pass a pointer to another window whose `HelpGroup` you wish this window to belong to. (V39)

`#WA_TabletMessages` - (BOOL) Set to `TRUE` to request extended `IntuiMessages` for your window. If a tablet driver is generating `IESUBCLASS_NEWTABLET` input events, you will be able to receive extended tablet information with most `IntuiMessages`. See the `eim_TabletData` field of the `ExtIntuiMessage` structure. Defaults to `FALSE`. (V39)

## 1.11 windowmousex

SYNTAX

`x.w = WindowMouseX()`

FUNCTION

Returns the mouse position relative to the left of the current window. Values can be positive or negative.

## 1.12 windowmousey

SYNTAX

`y.w = WindowMouseY()`

FUNCTION

Returns the mouse position relative to the top of the current window. Values can be positive or negative.

## 1.13 windowwidth

SYNTAX

`width.w = WindowWidth()`

FUNCTION

Return the width, in pixels, of the current window.

---

## 1.14 windowheight

### SYNTAX

```
height.w = WindowHeight()
```

### FUNCTION

Returns the height, in pixels, of the current window.

## 1.15 windowx

### SYNTAX

```
x.w = WindowX()
```

### FUNCTION

Returns the left position, in pixels, of the current window.

## 1.16 windowy

### SYNTAX

```
y.w = WindowY()
```

### FUNCTION

Returns the top position, in pixels, of the current window.

## 1.17 windowrastport

### SYNTAX

```
rastport.l = WindowRastPort()
```

### FUNCTION

Returns the rastport of the current window.

## 1.18 movewindow

### SYNTAX

```
MoveWindow(x,y)
```

### STATEMENT

Move the window to the specified coordinates.

## 1.19 sizewindow

---

## SYNTAX

```
SizeWindow(width, height)
```

## STATEMENT

Resize the window to the given dimensions.

## 1.20 activatewindow

## SYNTAX

```
ActivateWindow()
```

## STATEMENT

Activate the current window.

## 1.21 usewindow

## SYNTAX

```
UseWindow(#Window)
```

## STATEMENT

Make the given window, the currently-used window.

## 1.22 closewindow

## SYNTAX

```
CloseWindow(#Window)
```

## STATEMENT

Close the given window.

## 1.23 initwindow

## SYNTAX

```
result.l = InitWindow(#NumWindowMax)
```

## FUNCTION

Init all the Window environments for later use. You must put this function at the top of your source code if you want to use the Window commands. You can test the result to see if the Window environment is correctly initialized.

#NumWindowMax : Maximum number of windows to handle.

---

## 1.24 windowid

### SYNTAX

```
WindowID.l = WindowID()
```

### FUNCTION

Returns the Intuition Window pointer.

## 1.25 busypointer

### SYNTAX

```
BusyPointer(State)
```

### FUNCTION

State = 0 or 1. If State = 1 a busypointer will be displayed for the current window, otherwise the normal pointer will be displayed.

## 1.26 windowinnerheight

### SYNTAX

```
Result.w = WindowInnerHeight()
```

### FUNCTION

Returns the current window's inner-height, in pixels, (window's height without the top and bottom border heights)

## 1.27 windowinnerwidth

### SYNTAX

```
Result.w = WindowInnerWidth()
```

### FUNCTION

Returns the used window's inner-width, in pixels, (window's width without the left and right border widths)

## 1.28 detachmenu

### SYNTAX

```
DetachMenu()
```

### STATEMENT

Detach the menu from the currently used window. It's often used to change the menu layout and re-attach the new menu (AttachMenu()).

---

## 1.29 eventqualifier

### SYNTAX

```
Qualifier = EventQualifier()
```

### STATEMENT

Get the 'Qualifier' from the last keypress. The Qualifier is the alternate keys you press while you press a key (ie: shit, control..).

## 1.30 idcmp

IDCMP is an acronym for : 'Intuition Direct Communication Message Port'

**Background:** The Amiga interface system (called Intuition) communicates with the rest of the Amiga libraries through the message ports. All Windows opened have a message port which recieves all the information needed.  
For example, when you press the mouse button on a gadget, a message is sent to the window stating: 'A gadget has been pushed'. This is the role of the IDCMPs, which are constants, and each one corresponds to a different action. Here is the list of all the events that can happen in your window.

**Note:** to recieve the messages, you need to say it when you open your window (with the #WA\_IDCMP, <Your IDCMP you want to recieve here> inside the taglist)

All these constants are in the AmigaLibs.res file.

### IDCMP Description:

- #IDCMP\_NEWSIZE is the flag that tells Intuition to send an IDCMP message to you after the user has resized your window. At this point, you could examine the size variables in your window structure to discover the new size of the window. See also the #IDCMP\_CHANGEWINDOW IDCMP flag.
- #IDCMP\_REFRESHWINDOW when set will cause a message to be sent whenever your window needs refreshing. This flag makes sense only with #WFLG\_SIMPLE\_REFRESH and #WFLG\_SMART\_REFRESH windows.
- #IDCMP\_MOUSEBUTTONS will get reports about mouse-button up/down events broadcast to you (Note: only the ones that don't mean something to Intuition. If the user clicks the select button over a gadget, Intuition deals with it and you don't find out about it through here).
- #IDCMP\_MOUSEMOVE will work only if you've set the #WFLG\_REPORTMOUSE flag above, or if one of your gadgets has the #GACT\_FOLLOWMOUSE flag set. Then all mouse movements will be reported here, providing your window is active.

- #IDCMP\_GADGETDOWN means that when the User "selects" a gadget you've created with the #GACT\_IMMEDIATE flag set, the fact will be broadcast through the IDCMP.
- #IDCMP\_GADGETUP means that when the user "releases" a gadget that you've created with the #GACT\_RELVERIFY flag set, the fact will be broadcast through the IDCMP. This message is only generated if the release is "good", such as releasing the select button over a Boolean gadget, or typing ENTER in a string gadget.
- #IDCMP\_MENUPICK selects that menu number data will be sent via the IDCMP.
- #IDCMP\_CLOSEWINDOW means broadcast the #IDCMP\_CLOSEWINDOW event through the IDCMP rather than the console.
- #IDCMP\_RAWKEY selects that all #IDCMP\_RAWKEY events are transmitted via the IDCMP. Note that these are absolutely RAW keycodes, which you will have to translate before using. Setting this and the MOUSE flags effectively eliminates the need to open a Console device to get input from the keyboard and mouse. Of course, in exchange you lose all of the console features, most notably the "cooking" of input data and the systematic output of text to your window.
- #IDCMP\_VANILLAKEY is for developers who don't want the hassle of #IDCMP\_RAWKEYS. This flag will return all the keycodes after translation via the current country-dependent keymap. When you set this flag, you will get IntuiMessages where the Code field has a decoded ANSI character code representing the key struck on the keyboard. Only codes that map to a single character are returned: you can't read such keys as HELP or the function keys with #IDCMP\_VANILLAKEY.

NEW FOR V36: If you have both #IDCMP\_RAWKEY and #IDCMP\_VANILLAKEY set, Intuition will send an #IDCMP\_RAWKEY event for those \*downstrokes\* which do not map to single-byte characters ("non-vanilla" keys). In this way you can easily detect cursor keys, function keys, and the Help key without sacrificing the convenience of #IDCMP\_VANILLAKEY. NB: A side-effect of having both #IDCMP\_RAWKEY and #IDCMP\_VANILLAKEY set is that you never hear #IDCMP\_RAWKEY upstrokes, even for keys that caused #IDCMP\_RAWKEY downstrokes.

- #IDCMP\_INTUITICKS gives you simple timer events from Intuition when your window is the active one; it may help you avoid opening and managing the timer device. With this flag set, you will get only one queued-up INTUITICKS message at a time. If Intuition notices that you've been sent an #IDCMP\_INTUITICKS message and haven't replied to it, another message will not be sent. Intuition receives timer events and considers sending you an #IDCMP\_INTUITICKS message approximately ten times a second.
  - #IDCMP\_DELTAMOVE gives raw (unscaled) input event delta X/Y
-



values. This is so you can detect mouse motion regardless of screen/window/display boundaries. This works a little strangely: if you set both #IDCMP\_MOUSEMOVE and #IDCMP\_DELTAMOVE. IDCMPFlags, you will get #IDCMP\_MOUSEMOVE messages with delta x/y values in the MouseX and MouseY fields of the IDCMPMessage.

- #IDCMP\_NEWPREFS indicates you wish to be notified when the system-wide Preferences changes. For V36, there is a new environment mechanism to replace Preferences, which we recommend you consider using instead.
  - Set #IDCMP\_ACTIVEWINDOW and #IDCMP\_INACTIVEWINDOW to get messages when those events happen to your window. Take care not to confuse this "ACTIVEWINDOW" with the familiar sounding, but totally different "WINDOWACTIVE" flag. These two flags have been supplanted by "#IDCMP\_ACTIVEWINDOW" and "#WFLG\_WINDOWACTIVE". Use the new equivalent terms to avoid confusion.
  - Set #IDCMP\_DISKINSERTED or #IDCMP\_DISKREMOVED to learn when removable disks are inserted or removed, respectively.
  - #IDCMP\_IDCMPUPDATE is a new class for V36 which is used as a channel of communication from custom and boopsi gadgets to your application.
  - #IDCMP\_CHANGEWINDOW is a new class for V36 that will be sent to your window whenever its dimensions or position are changed by the user or the functions SizeWindow(), MoveWindow(), ChangeWindowBox(), or ZipWindow().
  - #IDCMP\_MENUHELP is new for V37. If you specify the #WA\_MenuHelp tag when you open your window, then when the user presses the HELP key on the keyboard during a menu session, Intuition will terminate the menu session and issue this even in place of an #IDCMP\_MENU PICK message.
  - NEVER follow the NextSelect link for MENUHELP messages.
  - You will be able to hear MENUHELP for ghosted menus. (This lets you tell the user why the option is ghosted.)
  - Be aware that you can receive a MENUHELP message whose code corresponds to a menu header or an item that has sub-items (which does not happen for MENU PICK). The code may also be MENUNULL.
  - LIMITATION: if the user extend-selects some checkmarked items with the mouse, then presses MENUHELP, your application will only hear the MENUHELP report. You must re-examine the state of your checkmarks when you get a MENUHELP.
  - Availability of MENUHELP in V36 is not directly controllable. We apologize...
  - #IDCMP\_GADGETHELP is new for V39. If you turn on gadget help for your window (using the HelpControl()) function, then Intuition will send #IDCMP\_GADGETHELP messages when the mouse passes over certain gadgets or your window. The IntuiMessage->Code field is normally ~0, but a boopsi gadget can return any word value it wishes.
-

Ordinarily, gadget help is only processed for the active window. When Intuition has determined that the mouse is pointing at a gadget which has the `GMORE_GADGETHELP` property, you will be sent an `#IDCMP_GADGETHELP` message whose `IAddress` points to the gadget. When the mouse is over your window but not over any help-aware gadget, you will be sent a message whose `IAddress` is the window itself. When the mouse is not over your window, Intuition sends a message whose `IAddress` is zero.

A multi-window application can use the `#WA_HelpGroup` or `#WA_HelpGroupWindow` tags to indicate that all its windows belong in a group. (The help group identifier should be obtained with `utility.library/GetUniqueID()`.) This makes Intuition test gadget help in all windows of the group when any one of them is the active one. Inactive windows whose `#WA_HelpGroup` matches the active window's receive `#IDCMP_GADGETHELP` messages when the mouse is over that window or any of its help-aware gadgets. The `GADGETHELP` message with an `IAddress` of zero means the mouse is not over the active window or any other window of the same group. It is always sent to the active window (which is not necessarily the window in your group that last got a message).

To maximize performance, gadget help is not checked while the mouse is travelling quickly, or if it has not moved at all since the last test. As well, if Intuition discovers that the mouse is still over same gadget and that gadget does not wish to send a different `IntuiMessage->Code` from the last message, no new `IntuiMessage` is sent.

- `#IDCMP_REQVERIFY` is the flag which, like `#IDCMP_SIZEVERIFY` and ...
  - `#IDCMP_MENUVERIFY` (see immediately below), specifies that you want to make sure that your graphical state is quiescent before something extraordinary happens. In this case, the extraordinary event is that a rectangle of graphical data is about to be blasted into your Window. If you're drawing directly into its screen, you probably will wish to make sure that you've ceased drawing before the user is allowed to bring up the `DMRequest` you've set up, and the same for when system has a request for the user. Set this flag to ask for that verification step.
  - `#IDCMP_REQCLEAR` is the flag you set to hear a message whenever a requester is cleared from your window. If you are using `#IDCMP_REQVERIFY` to arbitrate access to your screen's bitmap, it is safe to start your output once you have heard an `#IDCMP_REQCLEAR` for each `#IDCMP_REQSET`.
  - `#IDCMP_REQSET` is a flag that you set to receive a broadcast for each requester that is opened in your window. Compare this with `#IDCMP_REQCLEAR` above. This function is distinct from `#IDCMP_REQVERIFY`. This functions merely tells you that a
-

requester has opened, whereas #IDCMP\_REQVERIFY requires you to respond before the requester is opened.

- #IDCMP\_MENUVERIFY is the flag you set to have Intuition stop and wait for you to finish all graphical output to your window before rendering the menus. Menus are currently rendered in the most memory-efficient way, which involves interrupting output to all windows in the screen before the menus are drawn. If you need to finish your graphical output before this happens, you can set this flag to make sure that you do.
- #IDCMP\_SIZEVERIFY means that you will be doing output to your window which depends on a knowledge of the current size of the window. If the user wants to resize the window, you may want to make sure that any queued output completes before the sizing takes place (critical text, for instance). If this is the case, set this flag. Then, when the user wants to size, Intuition will send you the #IDCMP\_SIZEVERIFY message and Wait() until you reply that it's OK to proceed with the sizing. NOTE: when we say that Intuition will Wait() until you reply, what we're really saying is that user will WAIT until you reply, which suffers the great negative potential of User-Unfriendliness. So remember: use this flag sparingly, and, as always with any IDCMP Message you receive, reply to it promptly! Then, after user has sized the window, you can find out about it using #IDCMP\_NEWSIZE.