

**Screen**

<b>COLLABORATORS</b>
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# Chapter 1

## Screen

### 1.1 Screen

PureBasic - Screen guide

'Screen' signifie 'écran' et c'est une particularité de l'AmigaOS par rapport aux autres systèmes d'exploitation. En effet, chaque application peut avoir son propre écran avec ses propres caractéristiques (nombre de couleurs, taille, mode...) en fonction de ses besoins. Que ce soit pour un jeu ou une application, les écrans utilisés restent les mêmes. Ce sont eux la base du système d'affichage sur Amiga.

Commandes disponibles:

- CloseScreen
- CreateDualPlayField
- FindScreen
- FindFrontScreen
- FlashScreen
- HideScreen
- InitScreen
- OpenScreen
- RemoveDualPlayField
- ScreenBarHeight
- ScreenDepth
- ScreenFontHeight
- ScreenHeight
- ScreenID
- ScreenMouseX
- ScreenMouseY
- ScreenRastPort
- ScreenViewPort
- ScreenWidth
- ShowScreen
- UseScreen

Exemple:

Open screens

## 1.2 createdualplayfield

### Syntaxe

```
CreateDualPlayField(BitMapID)
```

### Résumé

Crée un deuxième 'PlayField' sur l'écran courant avec le 'BitMapID' spécifié. Du coup, l'écran est divisé en 2 parties totalement indépendante l'une de l'autre. Une se trouve à l'avant plan de l'écran, l'autre à l'arrière plan (dans le fond). Chacune des 2 parties a ses propres 'BitMaps' et ses propres couleurs. La couleur 0 est considérée comme transparente, donc l'arrière plan n'est visible que si l'avant plan contient un peu de couleur 0. L'avantage d'un dualplayfield est multiple: premièrement on double le nombre de couleur affiché simultanément à l'écran (chaque plan a ses propres couleurs); plus besoin se sauvegarder le fond d'écran quand on déplace des sprites car le fond n'est jamais détruit. Cependant, le nombre de couleurs de l'écran ne peut dépasser 8 sur les Amiga ECS/OCS et 16 sur les Amigas AGA (donc, 8 ou 16 couleurs par plan, ce qui fait respectivement 16 et 32 couleurs simultanément affichées à l'écran).

Note: Pour changer le BitMap d'arrière plan, vous devez utiliser la commande 'ShowBackBitMap()'.

Vous devez appeler la commande 'RemoveDualPlayFiled()' avant de fermer un écran ! Cette commande n'est pas appelée automatiquement.

## 1.3 removedualplayfield

### SYNTAX

```
RemoveDualPlayField()
```

### COMMAND

Enlève le 'DualPlayfield' de l'écran courant. Cet écran doit être un écran 'DualPlayfield' !

Vous devez appeler la commande 'RemoveDualPlayFiled()' avant de fermer un écran ! Cette commande n'est pas appelée automatiquement.

## 1.4 findscreen

### Syntaxe

```
ScreenID.1 = FindScreen(#Screen, ScreenName$)
```

### Résumé

Trouve un écran publique grâce à son nom et l'attache à l'identifiant donné. Si la valeur retournée 'ScreenID' est NULLE, alors l'écran est introuvable.

#Screen: Identifiant numérique de l'écran trouvé.

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ScreenName\$: Nom de l'écran à trouver. Si vous spécifiez un nom nul ("") alors l'écran public par défaut sera retourné. Pour capturer l'écran du 'Workbench' il suffit de mettre "Workbench" pour le nom de l'écran.

## 1.5 findfrontscreen

### Syntaxe

```
ScreenID.l = FindFrontScreen(#Screen)
```

### Résumé

Trouve l'écran se trouvant à l'avant plan de l'affichage et l'attache à l'identifiant donné. Si la valeur retournée 'ScreenID' est NULLE, alors aucun écran est ouvert sur le système.

#Screen = Identifiant numérique de l'écran trouvé.

## 1.6 openscreen

### Syntaxe

```
ScreenID.l = OpenScreen(#Screen, Width, Height, Depth, TagListID)
```

### Résumé

Ouvre un nouvel écran en accord avec les paramètres donnés. Si la valeur retournée 'ScreenID' est NULLE, alors l'écran n'a pas été ouvert. Un fois ouvert, il devient l'écran courant.

#Screen: Identifiant numérique pour l'écran qui vient d'être ouvert.

Width: Largeur de l'écran.

Height: Hauteur de l'écran.

Depth: Profondeur de l'écran (nombre de couleurs)

TagListID: Identifiant de la taglist à utiliser. Pour obtenir cet identifiant ↔ facilement,  
il est conseillé d'utiliser la fonction TagListID() .

### Tags disponibles

#SA\_Left

#SA\_Top

#SA\_Width

#SA\_Height

The defaults for the #SA\_Left, #SA\_Top, #SA\_Width, and #SA\_Height tags end up being a bit complex. If none of these tags are specified, and no NewScreen structure is used, then the left/top/width/height correctly match the display clip of your screen (see #SA\_DClip and #SA\_Overscan).

The difficulty comes with overscanned screens, because the normal value of #SA\_Left or #SA\_Top for such a screen may be non-zero. If a NewScreen structure is supplied, then the left/top/width/height come originally from there. If no NewScreen structure is supplied, but a non-default #SA\_Width (#SA\_Height) is specified, then #SA\_Left (#SA\_Top) defaults to zero instead. In these cases, the left and top edge may not be what you want.

If you need to specify explicit width or height, or supply a NewScreen, you must supply correct values for #SA\_Left and #SA\_Top. The correct normal values are the display clip rectangle's MinX and MinY values respectively. If you are using the #SA\_DClip tag, then you already have a rectangle to consult for these values. If you are using #SA\_Overscan to get one of the standard overscan types, you may use QueryOverscan() to get a rectangle for that overscan type.

#SA\_Depth (defaults to 1)  
#SA\_DetailPen (defaults to 0)  
#SA\_BlockPen (defaults to 1)  
#SA\_Title (defaults to NULL)  
#SA\_Font (defaults to NULL, meaning user's preferred monospace font)  
#SA\_BitMap (whose existence also implies CUSTOMBITMAP).

Several tags are Booleans, which means that depending on whether their corresponding ti\_Data field is zero (FALSE) or non-zero (TRUE), they specify Boolean attributes. The ones corresponding to Boolean flags in the NewScreen.Type field are:

#SA\_ShowTitle (defaults to TRUE)  
#SA\_Behind (equiv. to SCREENBEHIND) (defaults to FALSE)  
#SA\_Quiet (equiv. to SCREENQUIET) (defaults to FALSE)

The following tags provide extended information to Intuition when creating a screen:

#SA\_Type: ti\_Data corresponds to the SCREENTYPE bits of the NewScreen.Type field. This should be one of PUBLICSCREEN or CUSTOMSCREEN. The other bits of the NewScreen.Type field must be set with the appropriate tags (#SA\_Behind, #SA\_Quiet, etc.)

#SA\_DisplayID: ti\_Data is a 32-bit extended display mode ID, as defined in the <graphics/modeid.h> include file (V39 and up) or in <graphics/displayinfo.h> (V37 and V38).

#SA\_Overscan: ti\_Data contains a defined constant specifying one of the system standard overscan dimensions appropriate for the display mode of the screen. Used with the Width and Height dimensions STDSCREENWIDTH and STDSCREEN, this makes it trivial to open an overscanned or standard dimension screen. You may also hand-pick your various dimensions for overscanned or other screens, by specifying screen position and dimensions explicitly, and by using #SA\_DClip to explicitly

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specify an overscanned DisplayClip region.

The values for ti\_Data of this tag are as follows:

OSCAN\_TEXT - Text Overscan region. A region which is completely on screen and readable ("text safe"). A preferences data setting, this is backward equivalent with the old MoreRows, and specifies the DisplayClip and default dimensions of the Workbench screen. This is the default.

OSCAN\_STANDARD - Also a preferences setting, this specifies a rectangle whose edges are "just out of view." This yields the most efficient position and dimensions of on-monitor presentations, such as games and artwork.

OSCAN\_MAX - This is the largest rectangular region that the graphics library can handle "comfortably" for a given mode. Screens can smoothly scroll (hardware pan) within this region, and any DisplayClip or Screen region within this rectangle is also legal. It is not a preferences item, but reflects the limits of the graphics hardware and software.

OSCAN\_VIDEO - This is the largest region that the graphics library can display, comfortable or not. There is no guarantee that all smaller rectangles are valid. This region is typically out of sight on any monitor or TV, but provides our best shot at "edge-to-edge" video generation.

Remember, using overscan drastically effects memory use and chip memory bandwidth. Always use the smallest (standard) overscan region that works for your application.

#SA\_DClip: ti\_Data is a pointer to a rectangle which explicitly defines a DisplayClip region for this screen. See QueryOverscan() for the role of the DisplayClip region.

Except for overscan display screens, this parameter is unnecessary, and specifying a standard value using #SA\_Overscan is normally an easier way to get overscan.

#SA\_AutoScroll: this is a Boolean tag item, which specifies that this screens is to scroll automatically when the mouse pointer reaches the edge of the screen. The operation of this requires that the screen dimensions be larger than its DisplayClip region.

#SA\_PubName: If this field is present (and ti\_Data is non-NULL), it means that the screen is a public screen, and that the public screen name string is pointed to by ti\_Data. Public screens are opened in "PRIVATE" mode and must be made public using PubScreenStatus( screen, 0 ).

#SA\_Pens: The ti\_Data field (if non-NULL) points to a UWORD array of pen specification, as defined for struct DrawInfo. This array will be used to initialize the screen's DrawInfo.dri\_Pens array.



#SA\_Pens is also used to decide that a screen is ready to support the full-blown "new look" graphics. If you want the 3D embossed look, you must provide this tag, and the ti\_Data value cannot be NULL. If it points to a "minimal" array, containing just the terminator ~0, you can specify "new look" without providing any values for the pen array.

The way the DrawInfo pens are determined is Intuition picks a default pen-array. Then, any pens you supply with #SA\_Pens override the defaults, up until the ~0 in your array.

If the screen is monochrome or old-look, the default will be the standard two-color pens.

If the screen is two or more planes deep, the default will be the standard four-color pens, which now include the new-look menu colors.

If the screen has the #SA\_LikeWorkbench property, the default will be the user's preferred pen-array, changeable through preferences.

The following two tag items specify the task and signal to be issued to notify when the last "visitor" window closes on a public screen. This support is to assist envisioned public screen manager programs.

#SA\_PubTask: Task to be signalled. If absent (and #SA\_PubSig is valid), use the task which called OpenScreen() or OpenScreenTagList()).

#SA\_PubSig: Data is a UBYTE signal number (not flag) used to notify a task when the last visitor window closes on a public screen.

#SA\_Colors: ti\_Data points to an array of ColorSpec structures (terminated with ColorIndex = -1) which specify initial values of the screen's color palette.

#SA\_FullPalette: this is a Boolean attribute. Prior to V36, there were just 7 RGB color values that Intuition maintained in its user preferences (playfield colors 0-3, and colors 17-19 for the sprite). When opening a screen, the color map for the screens viewport is first initialized by graphics (graphics.library/GetColorMap()) then these seven values are overridden to take the preferences values.

In V36, Intuition maintains a full set of 32 preferences colors. If you specify TRUE for #SA\_FullPalette, Intuition will override ALL color map entries with its full suite of preferred colors. (Defaults to FALSE).

#SA\_ErrorCode: ti\_Data points to a ULONG in which Intuition will stick an extended error code if OpenScreen[TagList]() fails. Values are of this include 0, for success, and:  
OSERR\_NOMONITOR - monitor for display mode not available.  
OSERR\_NOCHIPS - you need newer custom chips for display mode.

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OSERR\_NOMEM - couldn't get normal memory  
OSERR\_NOCHIPMEM - couldn't get chip memory  
OSERR\_PUBNOTUNIQUE - public screen name already used  
OSERR\_UNKNOWNMODE - don't recognize display mode requested  
OSERR\_TOODEEP - screen too deep to be displayed on  
this hardware (V39)  
OSERR\_ATTACHFAIL - An illegal attachment of screens was  
requested (V39)

NOTE: These values are not the same as some similar return values defined in graphics.library/ModeNotAvailable().

#SA\_SysFont: ti\_Data selects one of the system standard fonts specified in preferences. This tag item overrides the NewScreen.Font field and the #SA\_Font tag item.

Values recognized in ti\_Data at present are:  
0 - old DefaultFont, fixed-width, the default.  
1 - Workbench screen preferred font. You have to be very font sensitive to handle a proportional or larger than traditional screen font.

NOTE WELL: if you select sysfont 1, windows opened on your screen will not inherit the screen font, but rather the window RastPort will be initialized to the old-style DefaultFont (sysfont 0).

Attached screen tags: V39 supports attached screens, where one or more child screens can be associated with a parent screen. Attached screens depth-arrange as a group, and always remain adjacent depth-wise. Independent depth-arrangement of child screens is possible through the V39 ScreenDepth() call. If a child screen is made non-draggable through {#SA\_Draggable, FALSE}, then it will drag exclusively with the parent. Normal child screens drag independently of the parent, but are pulled down when the parent is. Use the #SA\_Parent, #SA\_FrontChild, and #SA\_BackChild tags to attach screens.

#SA\_Parent: If you wish to attach this screen to an already-open parent screen, use this tag and set ti\_Data to point to the parent screen. See also #SA\_FrontChild and #SA\_BackChild. (V39).

#SA\_FrontChild: If you wish to attach an already-open child screen to this screen, set ti\_Data to point to the child screen. The child screen will come to the front of the family defined by the parent screen you are opening. See also #SA\_Parent and #SA\_BackChild. (V39)

#SA\_BackChild: If you wish to attach an already-open child screen to this screen, set ti\_Data to point to the child screen. The child screen will go to the back of the family defined by the parent screen you are opening. See also #SA\_Parent and #SA\_FrontChild. (V39)

#SA\_BackFill: ti\_Data is a pointer to a backfill hook for

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the screen's Layer\_Info.  
(see layers.library/InstallLayerInfoHook()). (V39).

#SA\_Draggable: ti\_Data is a boolean. Set to FALSE if you wish your screen to be non-draggable. This tag should be used very sparingly!. Defaults to TRUE. For child screens (see #SA\_Parent, #SA\_FrontChild, and #SA\_BackChild) this tag has a slightly different meaning: non-draggable child screens are non-draggable with respect to their parent, meaning they always drag exactly with the parent, as opposed to having relative freedom. Also see ScreenPosition(). (V39)

#SA\_Exclusive: ti\_Data is a boolean. Set to TRUE if you never want your screen to share the display with another screen. This means that your screen can't be pulled down, and will not appear behind other screens that are pulled down. Your screen may still be depth arranged, though. Use this tag sparingly! Defaults to FALSE. Starting with V40, attached screens may be #SA\_Exclusive. Setting #SA\_Exclusive for each screen will produce an exclusive family. (V39).

#SA\_SharePens: For those pens in the screen's DrawInfo->dri\_Pens, Intuition obtains them in shared mode (see graphics.library/ObtainPen()). For compatibility, Intuition obtains the other pens of a public screen as PENF\_EXCLUSIVE. Screens that wish to manage the pens themselves should generally set this tag to TRUE. This instructs Intuition to leave the other pens unallocated. Defaults to FALSE. (V39).

#SA\_Colors32: Tag to set the screen's initial palette colors at 32 bits-per-gun. ti\_Data is a pointer to a table to be passed to the graphics.library/LoadRGB32() Résumé. This format supports both runs of color registers and sparse registers. See the autodoc for that Résumé for full details. Any color set here has precedence over the same register set by #SA\_Colors. (V39).

#SA\_Interleaved: ti\_Data is a boolean. Set to TRUE to request an interleaved bitmap for your screen. Defaults to FALSE. If the system cannot allocate an interleaved bitmap for you, it will attempt to allocate a non-interleaved one (V39).

#SA\_VideoControl: ti\_Data points to a taglist that will be passed to VideoControl() after your screen is open. You might use this to turn on border-sprites, for example. (V39).

#SA\_ColorMapEntries: ti\_Data is the number of entries that you wish Intuition to allocate for this screen's ColorMap. While Intuition allocates a suitable number for ordinary use, certain graphics.library features require a ColorMap which is larger than default. (The default value is 1<<depth, but not less than 32). (V39)

#SA\_LikeWorkbench: ti\_Data is boolean. Set to TRUE to get

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a screen just like the Workbench screen. This is the best way to inherit all the characteristics of the Workbench, including depth, colors, pen-array, screen mode, etc. Individual attributes can be overridden through the use of tags. (#SA\_LikeWorkbench itself overrides things specified in the NewScreen structure). Attention should be paid to hidden assumptions when doing this. For example, setting the depth to two makes assumptions about the pen values in the DrawInfo pens. Note that this tag requests that Intuition ATTEMPT to open the screen to match the Workbench. There are fallbacks in case that fails, so it is not correct to make enquiries about the Workbench screen then make strong assumptions about what you're going to get. (Defaults to FALSE). (V39)

#SA\_MinimizeISG: ti\_Data is boolean. For compatibility, Intuition always ensures that the inter-screen gap is at least three non-interlaced lines. If your application would look best with the smallest possible inter-screen gap, set ti\_Data to TRUE. If you use the new graphics VideoControl() VC\_NoColorPaletteLoad tag for your screen's ViewPort, you should also set this tag. (V40)

## 1.7 screenmousex

Syntaxe

x.w = ScreenMouseX()

Résumé

Retourne la position de la souris par rapport au coté gauche de l'écran courant.

## 1.8 screenmousey

Syntaxe

y.w = ScreenMouseY()

Résumé

Retourne la position de la souris par rapport au haut de l'écran courant.

## 1.9 screendepth

Syntaxe

Result.w = ScreenDepth()

Résumé

Retourne la profondeur de l'écran courant.

---

## 1.10 screenwidth

Syntaxe

```
width.w = ScreenWidth()
```

Résumé

Retourne la largeur de l'écran courant.

## 1.11 screenheight

Syntaxe

```
height.w = ScreenHeight()
```

Résumé

Retourne la hauteur de l'écran courant.

## 1.12 showscreen

Syntaxe

```
ShowScreen()
```

STATEMENT

Fait passer l'écran courant à l'avant plan.

## 1.13 hidescreen

Syntaxe

```
HideScreen()
```

STATEMENT

Fait passer l'écran courant à l'arrière plan.

## 1.14 usescreen

Syntaxe

```
UseScreen(#Screen)
```

STATEMENT

Change l'écran courant par l'écran spécifié.

#Screen: Identifiant numérique de l'écran.

---

## 1.15 screenviewport

Syntaxe

```
Result.l = ScreenViewPort()
```

Résumé

Retourne la valeur du 'ViewPort' de l'écran courant. Cette fonction a été écrite uniquement pour les programmeurs expérimentés.

## 1.16 screenbarheight

Syntaxe

```
Result.b = ScreenBarHeight()
```

Résumé

Retourne la hauteur de la barre de menu de l'écran courant. Utile pour ouvrir les fenêtre juste en dessous, par exemple.

## 1.17 screenfontheight

Syntaxe

```
Result.b = ScreenFontHeight()
```

Résumé

Retourne la hauteur de la police par défaut de l'écran courant.

## 1.18 closescreen

Syntaxe

```
CloseScreen(#Screen)
```

STATEMENT

Ferme l'écran spécifié.

#Screen: Identifiant numérique de l'écran à fermer.

## 1.19 initscreen

Syntaxe

```
Résultat = InitScreen(#NumScreenMax)
```

Résumé

Initialise l'environnement nécessaire à la gestion des futurs écrans. Vous devez appeler cette fonction avant les autres fonctions de cette bibliothèque. Si le 'Résultat' est NUL, alors l'environnement n'a pu être initialisé.

#NumScreenMax: Nombre maximal d'écrans à gérer ultérieurement.

---

## 1.20 screenid

### Syntaxe

```
ScreenID.l = ScreenID()
```

### Résumé

Retourne l'identification de l'écran, nécessaire pour quelques fonctions des autres bibliothèques PureBasic comme `Fade()` , `GetScreenPalette` ...

## 1.21 screenrastport

### Syntaxe

```
RastPort.l = ScreenRastPort()
```

### Résumé

Retourne la valeur du 'RastPort' de l'écran courant, principalement utilisé par la fonction `DrawingOutput()` de la bibliothèque '2D Drawing'.

### Exemple

```
DrawingOutput(ScreenRastPort()) ; Defini l'écran courant comme sortie graphique ←  
    pour les  
                                ; fonctions de dessin 2D.  
BoxFill(10, 10, 100, 100)      ; Dessine une boîte sur l'écran courant.
```

## 1.22 flashscreen

### Syntaxe

```
FlashScreen()
```

### Résumé

Emet un flash sur l'écran courant.