BLACK HOLES FOR WINDOWS

Contents

This on-line document contains all the information you need to create, define and control your own Black Holes to suit your desktop and working environment.

Overview

Black Holes for Windows is special utility program from Datapath Limited, designed to make moving around multiple screen environments, like ***TWINdows***, easier - and fun too! Multi-screen systems allow you to see much more of your application, and many more simultaneously than ever before. However, this also means that during each day your mouse and wrist can travel many miles. Until now ... Black Holes allows you to set up warp features around the screen to move your cursor around the desktop without moving the mouse!

Black Holes has two main functions:

1. You can set up, define and control any number of Black Holes features around the screen to warp your cursor from one area to another in a flash, and

Intercept applications and system messages to appear on user defined screens, thus making ***TWINdows*** operation easier and more convenient.

Datapath

Datapath has a long and very successful history in the computer graphics industry. Founded in 1982, Datapath has been designing and supplying high performance, high quality graphics display systems to the worlds largest and most demanding companies and institutions.

Now using the very latest display technology Datapath offers graphics accelerators and solutions for ISA, MCA, VESA and PCI Local Bus architectures based on the worlds most powerful processors from S3 Inc., Weitek Corp., Texas instruments Inc., and Intel Corp.
As new technology advances, so we at Datapath improve the performance and functionality of both our hardware and software to give our customers more.
Following a continuous development program, we pride ourselves on our support and responsive nature towards all our customers and their changing needs. As more sophisticated equipment and techniques become readily available so we are there to exploit the power and potential that this technology presents.

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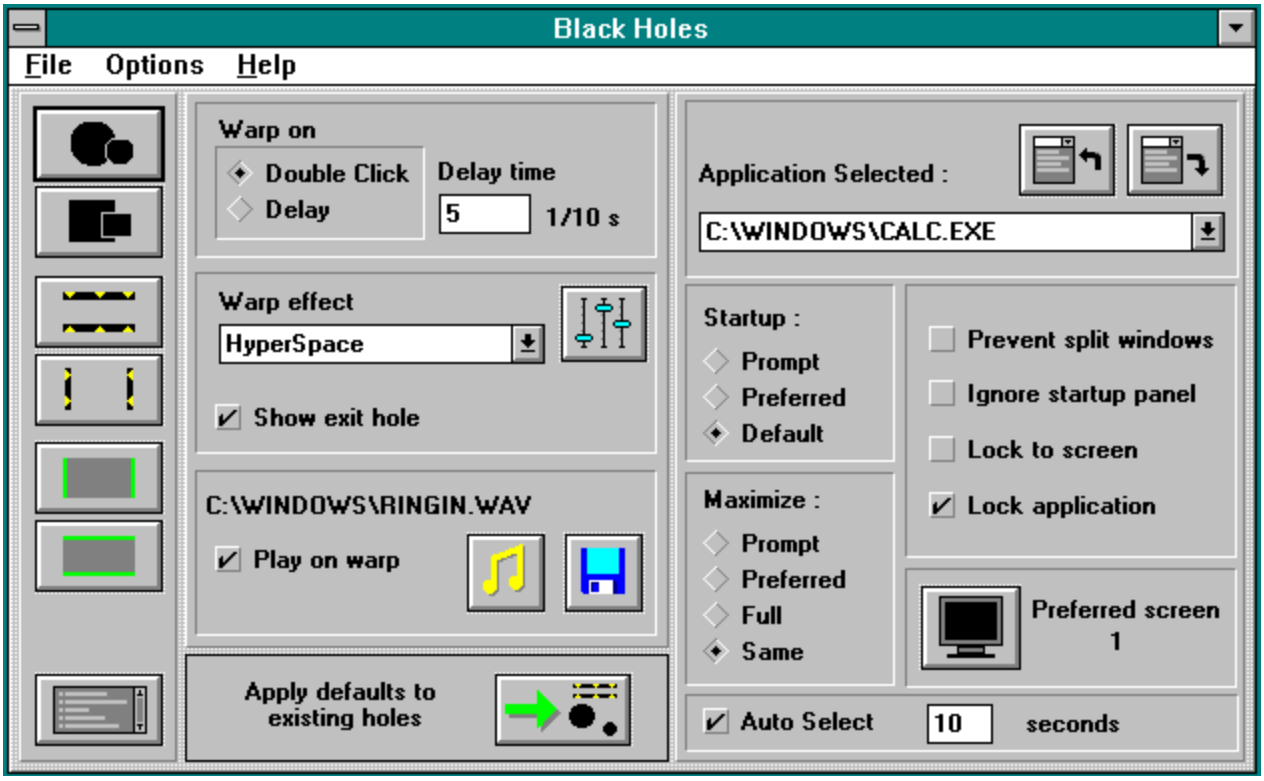
Using and Configuring Black Holes

Each Black Holes warp feature operates a mechanism that moves the cursor from one part of your Windows desktop to another automatically. To launch the Black Holes program, simply double click on the Black Holes icon, which will invoke the main window dialogue box.



This dialogue box is in three sections for creating, configuring and controlling Black Holes functions. The menu bar and the three dialogues arealways visible when the program is running maximised. The menu bar gives immediate access to the commands for Black Holes, as well as help and other functionality.

Types of Hole

Creating Black Holes

Hole Defaults

Configuring Hole Intercepts

Deleting Holes

Working with Black Holes

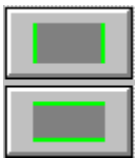
Types of Black Hole

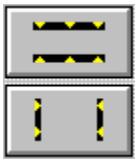
There are four different types of Black Holes for moving around the screen. Some jump the cursor from one part of the screen to another, others wrap the cursor from the right-most edge of the display to the left, or over the top so it appears at the bottom. You can select any type of hole, and in any quantity from the four types shown below.

Click on the icon for a description of how each type of hole can be used.

Round Holes 

Box Holes 

Screen Wraps 

Bars 

Creating Black Holes

Default Sound and Visual Effects

Configuring Intercept Options

Round Holes

These holes can be placed anywhere on the screen(s), and always move the cursor horizontally and vertically, i.e. the cursor moves from the entry hole to the middle of the exit hole, wherever it is on the screen. When the exit hole is visible you can also warp back from the exit hole to the centre of the entry hole.

Box Holes

These holes can also be placed anywhere on the screen(s), and can be resized - unlike round holes. To change the size of a box, click the left mouse button in one of the corners, keeping the button depressed move the mouse until it is the desired size, and then release the mouse button. The cursor moves from the entry hole to the centre of the exit hole wherever it is on the screen. When the exit hole is visible you can also warp back from the exit hole to the centre of the entry hole.

Screen Wraps

These provide a mechanism to wrap the cursor off the furthermost edge of the desktop to the other. A ***Left/Right*** wrap moves the cursor from the leftmost edge of the screen to the right (and visa versa), but does not change the vertical position of the cursor on the screen.
An ***Up/Down*** wrap moves the cursor from top to bottom (and vice versa), without changing the horizontal position of the cursor.
When you have both these wraps enabled, you can also move from one corner to its diagonal opposite and back.
The size and position of screen wraps are always fixed, so when you select to enable screenwraps they will automatically appear around the outermost edges of your desktop

We also recommend that you look at the Hints and Tips section for information on how to make best use of these type of holes.

Bars

Bars can appear anywhere on the screen, and their position and size can be altered.
A Horizontal Bar appears as a wide rectangular area only a few pixels in height. When activated, the cursor is moved vertically on the screen, with the horizontal position remaining constant.
A Vertical Bar appears as a tall thin area, and moves the lateral position of the cursor, but not its vertical position.
You can use Bars, for example, with an application where you need to rapidly move the cursor from one side of its window to another.
When you move or resize a Bar, the corresponding Bar is automatically changed to maintain the horizontal/vertical relationship.
The size of a Bar can be altered by clicking the left mouse button while the cursor is in one of the grey regions at each end of the bar, moving the mouse, and releasing the left button.

Creating Black Holes

Black Holes are created using the Create dialogue box in the main Black Holes screen. The dialogue box displays an icon for each type of hole or warp feature available (box, round, bars and wraps).

To create a hole ...

- Select the type of hole you want. Please note that if you select Screen Wraps then these will appear automatically around the edge of the desktop.

- When you select Round, Box, and Bar type holes you will need to specify the position of the entry and exit points. When you are prompted for the entry point, move the cursor to the position you want, and click the left mouse button. Select the exit point in the same way. (You can change these at anytime after a hole has been created.)

The List Holes button displays a list of currently defined holes in use and allows you to delete any pair of holes/bars/wraps. As you highlight each pair in turn, the holes will flash until you delete them or select another pair.

The visual, sound, and control functions of a new hole are set to match those on the Defaults dialogue box. You can change the configuration of the holes at any time:

To move a hole, place the cursor inside the hole, press the left mouse button and move the cursor and hole to the new position. Release the left mouse button to complete the move. Please note that Screen Wraps cannot be moved or resized.

To resize a Box Hole, place the cursor on the corner of the hole and (keeping the left mouse button depressed) resize the hole and release the mouse button. You can only alter the size of Box Holes.

Other Black Hole properties can be changed by pressing the right mouse button when the cursor is over the hole. A menu enabling you to change the effects of a hole will then pop-up. These dialogues are identical to those in the Defaults menu in the main Black Holes application. You can also delete the hole by selecting Close from the pop up menu.

IMPORTANT NOTE: If you have a time delay warp, you may find it difficult to pop up the menu before the cursor moves away! To prevent this, press the CONTROL key on the keyboard before moving the cursor over the hole. Keep this key pressed, and then pop up the menu by pressing the right mouse key.

Hole Defaults

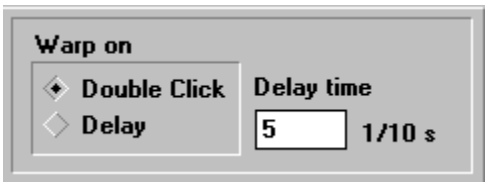
Hole Intercepts

Hints and Tips

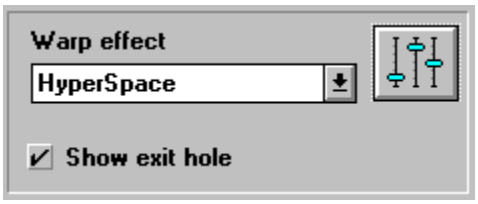
Working with Black Holes

Hole Defaults: Visual and Sound Effects

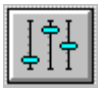
The second dialogue box which can be displayed at all times shows the default visual, sound and control settings for the holes. All holes are set up to match these settings by default.
You can warp through the holes in one of two ways:



Double-click the left mouse button over the hole, or enable the Delay feature which warps the cursor after the specified time delay. You can set the delay time is set in 1/10th second intervals.



Determine the visual effects associated with each Black Hole with the Warp Effects selector, which shows the effect currently in use. Change the effect with a click on the arrow to display a drop-down menu of the effects available.

Alter the speed using the slider accessed by the Setup icon 

Leave the Show exit Hole unchecked and only the Entry hole will be visible. When it is checked you can see both entry and exit points, so you can warp between both holes.

Similarly you can associate sounds with the warp feature, although your machine must be able to play **.wav** files to take advantage of this.
Clicking on the Play sound on warp will turn the selected sound file on and off, and you can load in and test files using the other icons. 

We would recommend that you try to use only short sounds, because Black Holes has to load in the sound file each time. So, if you have a long sound, Black Holes may well have warped the cursor before the sound has even started to play.

Creating Black Holes

Configuring Intercepts

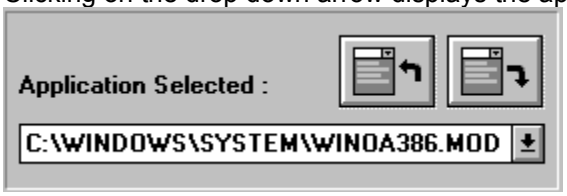
Configuring Intercepts

One of the main functions of Black Holes is to help make working in a multiple screen environment more convenient. Black Holes does this by intercepting applications at start up, and when they are maximized or moved.

The third section of the main dialogue window allows you set up the interceptions for applications so it happens automatically each time the application starts up.

This box allows you to set up the intercept options for any number of applications.

Clicking on the drop down arrow displays the applications that are intercepted or changed by Black Holes.



You can add applications from this list quickly and easily by clicking on the Add button.  and a standard Open file dialogue box will appear:

From here you can browse through your files and select the application you wish to setup. Click OK, and the application will be added to the list. You can now setup the individual startup and maximise options for that application. Each time you start the chosen application it will open up with this setting.

To remove an application from the list click on the Remove button  and a dialogue will appear, prompting you for confirmation.

You can configure the Intercept settings for any application, and the settings are saved automatically.

Configuring Intercepts: Startup

Configuring Intercepts: Maximise

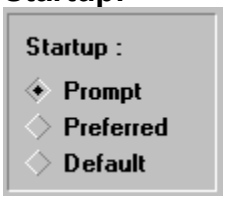
Configuring Intercepts: Window Control

See also
Setting up exclude and include cursor boxes

Intercept Options

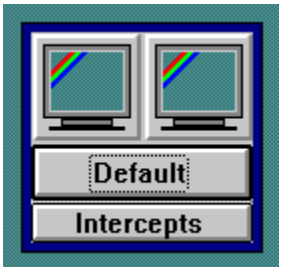
These options can be altered to affect the way each application starts up and which screen(s) is used. This dialogue also allows you to configure other aspects and select a preferred screen.

Startup:



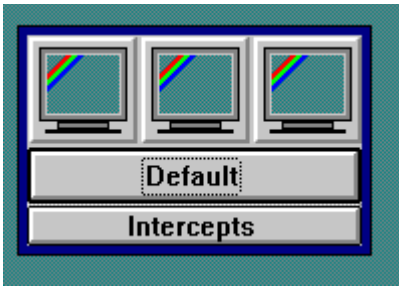
These determine the way an application starts up and the screen(s) used.

Prompt invokes the Screen Selector a small panel of buttons to determine which screen is used. The number of buttons displayed depends on your ***TWINdows*** configuration. Black Holes, being fully ***TWINdows*** aware knows exactly how many screens are being used, and their configuration arrangement. So if you have a standard twin screen ***TWINdows*** system then the following icon will appear.



Left Screen forces the window to be displayed only on left screen.
Right Screen forces the window to be displayed only on right screen.
Default displays the window across the screens

However, a three screen system will display an icon like this:



The screen selection works in exactly the same way, the screen icon will force the application to fill the screen you choose.

Preferred

You can configure Black Holes to intercept applications and force them to appear on the screen (s) of your choice. For example, you may want Excel to always appear on the left screen and Word always on the right. To do this simply check the box and then select the screen you wish to use in the Preferred screen dialogue box.

To select the preferred screen click on the raised button, and a small dialogue appears displaying the possible screens - Black Holes automatically knows the number of screens and the configuration of your system, and will display the options available.

Default
Selecting this has the same effect as hitting the default button on the screen selector, i.e. it will force the application to open across all the screens.

Configuring Intercepts: Maximise

Configuring Intercepts: Window Control

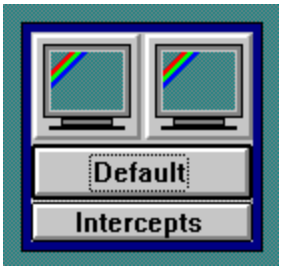
Hole Defaults

Creating Black Holes

Maximise Options

These options set up the way in which each application is maximised. The application associated with these settings will always maximise in the selected way.

The **Prompt** option works in the same way as at startup by displaying the Screen Selector when you maximise an application. As before the number of buttons displayed depends on your ***TWINdows*** configuration. So a standard twin screen system displays the following icon:



Left Screen forces the window to be displayed only on the left screen.

Right Screen forces the window to be displayed only on right screen.

Default displays the window across the screens

Intercepts displays the main intercept box to alter the configuration for the application on the fly.

The **Preferred** option is also the same as described previously. You can configure Black Holes to intercept applications and force them to appear on the screen (s) of your choice. For example, you may want Excel to always appear on the left screen and Word always on the right. To do this simply check the box and then select the screen you wish to use in the Preferred screen dialogue box.

Full forces the application to maximise across all screens.

Same maximises the application to fill the current screen, so if you are using the application on the left screen, maximising will force the app to fill that screen.

If you have the always prompt buttons checked, then Black Holes invokes the selection icon which remains on screen until you make a choice. However, setting the **AutoSelec**t option automatically selects the Default after a specified amount of time. This is useful for screen saver programs, which would otherwise never start up until a screen is selected . You can change the time-out delay time by typing in a new value.

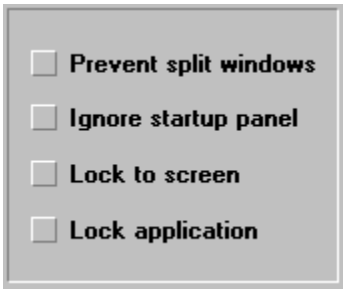
Configuring Intercepts: Startup

Configuring Intercepts: Window Control

Hole Defaults

Creating Black Holes

Window control intercepts



Prevent split windows forces the application onto one screen, rather displaying it as split across the screens when it is picked up and moved. The application window will be displayed on the screen containing the greater part of the window.
NB: This option only affects windows that are explicitly moved by a user or application program, and applications which can fit onto one screen.

Ignore start up panel assumes that the first window displayed is a startup panel and ignores it - not trying to position it to match the intercept specifications. (Typically start up panels contain a bitmap before opening the main application window - Black Holes is an example.)

Lock to screen locks the application window to one screen. It may be moved around that screen or resized but cannot across to any other screen by mouse movement or minimising.

Lock application locks the application window to one spot - it cannot be moved anywhere within the desktop space. If you attempt to move the application a message appears. To move the application again, simply run up black holes and un-check the box.

Setting Maximise options

Setting Startup options

Hole Defaults

Creating Black Holes

Deleting Holes

Holes can be deleted in any of the following ways:

- Closing down the Black Holes application
- Selecting File followed by New
- Selecting the Close option from the Hole pop-up menu
- Using the List option in the main Hole Creation dialogue box

  When you select List a dialogue box appears containing a list of the names of all existing holes. Simply click on the hole name you wish to delete. The name will be highlighted and the Black Hole to be deleted will flash. Press the Delete button and the Black Hole will disappear.

NB: The screen wraps can be toggled on and off with the buttons on the Create dialogue box.

TWINdows

TWINdows is Datapaths amazing multi-screen environment for Windows. Designed to give you more desktop work space, ***TWINdows*** allows you to view multiple applications simultaneously, or two or more applications full size, at high resolution - each one on its own screen!

First available using the Datapath Orion range of graphics cards, ***TWINdows*** is ideal for demanding applications where additional accelerated screen space is needed.
Each screen is controlled by its own graphics processor, whether it is on an additional card, or a twin headed solution, to give faster clearer graphics, higher resolutions and more colours. So now you can work in an application at an actual resolution of 2048 x 768 with 16.7 million True Colours!

Unrivalled in the marketplace, ***TWINdows*** is completely flexible.... start with dual screen today, and move up in size, screen by screen as your budget and physical environment allows. With Black Holes functionality, ***TWINdows*** is as simple to move around as a single screen system with the added advantages of more high resolution, colourful and accelerated screens.

Benefits of Black Holes?

The Windows environment is very convenient, using the mouse and a point-and-click mechanism to invoke applications and operations.
When displays were limited to VGA resolution (640 x 480), you could move your mouse from one part of the screen to another in one movement. However, since most Windows users today have a display of at least 1024 x 768, this means that your mouse has to cover a greater distance than before, with several pick-ups and put downs to move across the screen.

Even more recently, with multiple-screen Windows drivers such as ***TWINdows***, you may find yourself requiring a larger mouse mat, or a repeatedly picking up and putting down the mouse as you try to move around the screens! Similarly, you may often need to move the mouse up to an area of the screen to carry out commands (such as Print, Save, or Edit). Because this is nearly always at the opposite side of the screen to the real work area, using Black Holes means you can zoom from one area to another very quickly.

Although many applications have hot key sequences to help, there is no real standard - each application often has its own unique short-cuts which make them harder to remember.

For these reasons we have developed Black Holes to help reduce the mileage on your mouse, and strain on your wrist.

There are also added features in the form of visual and sound effects to enhance cursor warping making it fun to use. These effects can altered or disabled if and when required.

All the features available with Black Holes are described in more detail in this document and there is also extensive on-line help with information on each aspect of Black Holes.

This section of the manual provides all you need to know about creating and using the Black Holes utility software under ***TWINdows***.

Black Holes functionality can be divided into two distinct parts:
1. The definition and control of Black Holes which warp your Windows cursor from one pre-determined part of the screen to another.

2. Intercepting certain Windows applications and dialogue boxes so that they appear on at a user defined point rather than split across the screens, thus making ***TWINdows*** operation easier and convenient.

Commands

The commands are accessed from the main menu bar which is constant and contains three pull down menu areas: File, Options and Help

File

New

Deletes all existing Black Holes on screen, giving you the option to save the holes first.

Open

Opens a previously saved .BKH file and restores a Black Holes configuration to screen.

Save

Saves the current set of Black Holes to the filename open. This saves all visual and sound effects as well as the intercepts you have set for individual applications. If there is no filename open you will be promoted to supply one.

Save As

Saves the current set of holes to a new filename. You can also configure Black Holes to open a particular filename automatically at start up by checking the option in the Save As dialogue.

Quit

Exits Black Holes, giving you the option to save your current holes first.

Options

The **Options** pull down displays the following options

1. **Alt-Tab Interception**
   Intercepts the boxes displayed as you use the Alt-Tab command, forcing them onto the screen where the cursor is positioned.

2. **Always on top**
   Always keeps the Black Holes dialogue on top of all other applications

3. **Cursor Finder**
   Displays a pop-up box to select hot keys to help find the cursor around the screen, Choose from a cross hair or radial flash.

Help

The **Help** pull down accesses the help files, as well as giving direct access to the help for the dialogue boxes. You can also view the About... box which gives the software version number and the registration information.

Working with Black Holes

Each Black Hole carries a mechanism for moving the cursor from one part of your Windows desktop automatically, without having to physically move the mouse there.
We have developed different types of Black Hole - some let you jump from one specific place to another, others automatically wrap the cursor from the left edge of the screen to the right or visa versa.

Position the entry hole near your work area (e.g. the bottom of the page in a word processor), and the exit hole near an area you need to access regularly. For example under TWINdows you may want an entry hole to be in one application and an exit hole in another.

Move the cursor into the entry hole, and either through double clicking or waiting a definable period of time, the cursor magically appears where you want it!

(You can define how Black Holes are activated by changing the Control values - full details on how to do this follow)

There are many ways of using Black Holes - we suggest that you experiment a little to find a setup to suit you.

Hints and Tips

This section has been devised to give some general hints about ways to make best use of Black Holes. Datapath is always interested in any feedback from customers, so if you have some further tips that you feel may be useful to other users, please contact us and we will add them to this section of the manual and the on-line help.

Screen Wraps

Screen wraps work best when you the activation control is set to Delay, and the delay time is set to zero. Moving the cursor to the left edge of the screen cause the cursor to automatically appear in at the right edge - assuming you keep moving the mouse.

Zero or very short delays

Zero-length delays can cause problems if you want to use the pop up menu, normally activated by the right mouse button, to change the properties of a hole. You will find it very difficult to move the cursor into the hole and click the right mouse button quickly enough!
There is a simple way around this. Before moving the cursor into the Black Hole, press the <CONTROL> key on the keyboard, and keep it pressed while you move the cursor over the hole. This has the effect of suppressing any cursor warps, so you can press the right mouse button to pop up the control menu.

Use with CorelDRAW! and other graphical programs

CorelDRAW! has a menu bar down the left hand side containing all of the drawing tools on buttons. In a typical drawing session, you will find that you are moving the mouse continuously between this bar and the section of the drawing you are currently working on. A suitably placed Black Hole can save your mouse and wrist some wear and tear...
Create a Box type hole, with the entry points just to the right of the vertical toolbar. Place the exit point of the hole somewhere on your drawing. Resize the entry hole to be around the same vertical dimension as the toolbar buttons.
By moving the exit hole to the particular region of the drawing you are working on, you can quickly move to the area of the toolbar buttons just by moving the cursor into the exit hole and double clicking. It can come right back to the drawing region by activating the entry hole after you have selected a toolbar option.
Changing the activation control to do a warp on a delay of, say, 5 tenths of a second may also improve things.

Working with Black Holes

Configuring and Using Black Holes

Screen Wraps

Screen wraps work best when you the activation control is set to Delay, and the delay time is set to zero. Moving the cursor to the left edge of the screen cause the cursor to automatically appear in at the right edge - assuming you keep moving the mouse.

Creating Your Own Warp Visual Effects

You can personalise your copy of Black Holes, with your own visual warp effects. These are created using the Black Holes Visual Effects Application Programming Interface (API) to create a separate Dynamic Link Library or DLL file which is then stored in an appropriate directory for use by Black Holes.

The code below shows how the DLL should be laid out, and each line is then explained thoroughly.

1. Once you have created the DLL you will need to associate it with Black Holes.

All the required structures and function headers can be found in the file BHEFFECT.H in the directory C:\BLACKOLE\FX_API. This directory also includes an example that changes the cursor to an arrow pointing in the direction of the exit hole, and warps it across the screen from entry to exit. This directory contains all the files you will need as well as a compiled version.

Visual Effect Creation Code

Each DLL should provide the following functions :

```
unsigned short CALLBACK EXPORT_FN BHGetNumberOfEffects (void);
```

This tells Black Holes how many visual effects are contained within the DLL (you can assign multiple effects to each DLL).

```
void CALLBACK EXPORT_FN BHGetEffectsDetails(PTBHEffectDetails details);
```

The second function fills in an array of **TBHEffectDetails** functions with all the details of the effects in the DLL.

Each **TBHEffectDetails** structure contains the details of an effect stored in the DLL:

```
#define MAX_EFFECTNAME_LENGTH    20
  typedef struct
  {
      void  (*Configure)      (TConfigData FAR *, HWND);
      void  (*InitialiseEffect)(void);
      void  (*BeginEffect)    (PTWarpPoints, HWND, TConfigData, LPDWORD);
      void  (*DoEffect)       (PTWarpPoints, HWND, TConfigData, LPDWORD);
      void  (*EndEffect)      (PTWarpPoints, HWND, TConfigData, LPDWORD);
      unsigned short    (*LoadCursors)  (HCURSOR far *);
      unsigned short    (*SelectCursor) (PTWarpPoints);
      TConfigData       init_config_data;
      BOOL              is_configurable;
      unsigned short    number_of_cursors;
      char              effect_name[MAX_EFFECTNAME_LENGTH];
  } TBHEffectDetails, FAR * PTBHEffectDetails;
```

Where:

(*Configure)

points to a function which alters the config data for the particular effect

TConfigData

is a data type for holding configuration data for the warp effect. It provides 4 bytes for the developer to store whatever configuration data is relevant to the warp effects.

NB: DO NOT use **TConfigData** to store pointer values as this value is written into **.BKH** files, and the **BLACKOLE.INI** file. If you used a pointer value it would cause a crash when Black Holes is run for a second time, since the value is no longer valid. Therefore, this effectively restricts the configuration data to 4 bytes.
Datapath Limited reserves the right to change the **TConfigData** type to allow more information to be stored in the future.

BeginEffect, DoEffect, EndEffect
routines are responsible for warping the cursor from hole to hole. They are called in sequence and have the same parameters.

(*BeginEffect)
is called immediately before a cursor warp happens, allowing any setting up to be done.
(*DoEffect)
warps the cursor between the start and points supplied in `PTWarpPoints`.
(*EndEffect)
is called immediately after the warp has been completed and allows any tidying up to be done.

The parameters that these routines are called with, are described in full below:
PTWarpPoints
points to a structure containing the warp start and end points.(**pts**) given in screen coordinates.
HWND
identifies the Window handle (**hwnd)** of the Black Hole located at the entry point. If, during your warp effect you create a window then use this value for its parent.

TConfigData
determines the configuration value (**config)** to be used for the warp

LPDWORD
points to a `DWORD`, where a developer can store extra data (**user_data**). The same value is passed to `BeginEffect, DoEffect & EndEffect` by Black Holes.
The value of `user_data` is not stored in the **.BKH** or **.INI** files.

(*LoadCursor)
loads the cursors required for the effect into an array of HCURSORs, the size of which is defined by the `number_of_cursors` field. Returns the number of cursors loaded.

(*SelectCursor)
is called when the mouse cursor moves over a Black Hole. Given the start and end warp points, this routine returns the index of the cursor to display. The index should be an integer between 0 and the number given by `number_of_cursors` minus 1 (see above).

init_config_data
holds the initial 'config' value of the effect

is_configurable
specifies whether it is possible to change any effect parameters. If this is set to TRUE, then the field '**Configure**' must not be NULL

number_of_cursors
holds the number of different cursors used by the effect

effect_name

is the name of effect as presented to user

(*Initialise Effect)

is called once at Black Holes start up. This allows a one-time initialisation i.e. only at start up rather than whenver the effect is used, or popping up a splash panel with the author of the new effects.

(*FreeEffect)

is called once, as Black Holes is closes down.

TWarpPoints

is a structure holding the start and end points (in screen coordinates) for a cursor warp :

```
typedef struct { POINT start;  POINT end;    }   TWarpPoints;
```

The `POINT` structure is the standard Windows structure, defined in **WINDOWS.H**.

Associating visual effects

Associating your Visual Effect with Black Holes

When you have created the required effect, you will need to place DLL in the `[DLLs]` section of the Black Holes INI file (**BLACKOLE.INI** which is located in the Windows directory).

For example:

```
[DLLs]
;list of visual effects dll's
bheffect.dll
bhdemofx.dll
your_dll.dll
```

The actual DLL should be placed in one of the following directories :

1. The Black Holes directory (e.g. C:\BLACKOLE)
2. The Windows directory (e.g. C:\WINDOWS)
3. The Windows System directory (e.g. C:\WINDOWS\SYSTEM)

The above structures and function headers are defined in the file **BHEFFECT.H**, which is included in the C:`\BLACKOLE\FX_API` directory, along with the files**: BHDEMOFX.C, BHDEMOFX.RC & BHDEMOFX.DEF**

These give a simple example warp effect, which turns the cursor into an arrow pointing in the general direction of the exit hole, and then warps it by moving it in a straight line from the entry hole to the exit hole.

A compiled version (**BHDEMOFX.DLL**) is also included for you to use.

See also
Creating your own visual effect

Working with Black Holes

Black Holes Cursor Boxes

Black Holes has a special feature which allows you to exclude the cursor from a predetermined area of the screen, or limiting cursors to one particular area. This functionality could be used on a system where one screen is a monitor and other(s) are smaller panels. The undisplayed section of screens could then be excluded from cursor movement.

Once you have set up these Cursor Boxes Black Holes will prevent the cursor from entering the invalid areas of the screen.
To enable cursor boxes type the commands '`CURBOX`' and '`NOTCURBOX`' in the `[CursorBox]` section of the BLACKOLE.INI file, usually located in the \WINDOWS directory :

```
[CursorBox]
; cursor box commands should be of the form
; CURBOX l,t,r,b
; NOTCURBOX l,t,r,b
; with a single space after CURBOX or NOTCURBOX
; and no spacing between l,t,r,b
```

NB: All lines starting with a semicolon (;) represent comments, and are ignored by Black Holes.

Limiter Cursor Boxes

To set up a limiting cursor box, where the cursor is restricted to a determined box, place the follwing commands string in the [CursorBox} section:

```
CURBOX l,t,r,b
```

where the parameters `l, t, r and b` represent the left, top, right and bottom edges of the box respectively - the bottom and right edges are included in the box.

Exclude Cursor Boxes

To set up a limiting cursor box, where the cursor is restricted to a determined box, place the follwing commands string in the [CursorBox} section:

```
NOTCURBOX l,t,r,b
```

where the parameters `l, t, r and b` represent the left, top, right and bottom edges of the box respectively - the bottom and right edges are included in the box.

It is possible to set up multiple cursor boxes under one session.
For example, if you are running on a 2560 x 1024 desktop, you could set up the following :

```
[CursorBox]
; cursor box commands should be of the form
; CURBOX l,t,r,b
; NOTCURBOX l,t,r,b
; with a single space after CURBOX or NOTCURBOX
; and no spacing between l,t,r,b
CURBOX 30,30,2530,994
```

```
NOTCURBOX 100,100,200,200
NOTCURBOX 2360,100,2460,200
```

which would set a limiting box that prevents the cursor reaching the edge of the screen, then sets up two 100 x 100 exlusion boxes in the top-left and top right corners of the screen.

To help with the setup of cursor boxes, you can place the command

```
show_cursor_boxes=1
```

in the **[CursorBox**] section. This paints the valid areas of the screen in green, and the invalid areas in red. This option is included as an aid to setting up cursor boxes, and is not intended to be left on after the setup is correct. The constant redrawing of the background on every mouse move slows down system performance, as well as being unpleasant on the eyes !!!

To disable the option, either delete the line, or change it to a comment, by placing a semi-colon in front of it

```
;show_cursor_boxes=1
```

Odds and Ends

{Default icon here} The Defaults button is only available when the Defaults dialogue is hidden. Click on this button to display a pop-up dialogue box with the default creation settings.

. **Hole Create**, **Hole Defaults**, **Hole Intercepts**
Selecting a combination of these dialogues determines which of the three main menus will appear in the main dialogue box during Black Holes operation. You can have any combination visible. These settings can also be saved.