

**The 'scrn' Resource** Screen configuration information for a multiscreen system.

### The short description...

The 'scrn' screen resource type describes the setup of graphics devices. Its ID is 0, it's called by InitGraf and created through the control panel. 'scrn' has 14 records--each one describing a single screen device:

The 'scrn' describes a single display. A new 'scrn' is required for each display in your setup. **InitGraf** checks your video cards, compares them with the descriptors in 'scrn', and uses 'scrn' to initialize the monitors--but only if the spDrvHw, slot, and dCtlDevBase fields match for every monitor. If they don't, 'scrn' doesn't do anything. Moving a card from one slot to another will invalidate one 'scrn' resource.

typedef struct {		<u>Size</u>	<u>Offset</u>	<u>Description</u>
<u>short</u>	ScrCount	4	0	Total devices
<u>short</u>	spDrvHw	4	4	Slot Manager ID
<u>short</u>	slot	4	8	Number of slot
<u>long</u>	dCtlDevBase	4	12	Start of device's address space
<u>short</u>	mode	4	16	screen characteristics
<u>short</u>	flagMask	4	20	Which flag bits are used
<u>short</u>	flags	4	24	device state: bit 0 = 0 = mono; bit 0 = 1 = color; bit 11 = 1 = startup device; bit 15 = 1 = active
<u>short</u>	colorTable	4	28	'clut' id, default = -1
<u>short</u>	gammaTable	4	32	Selects color intensity, default (MacII) = -1
<u>Rect</u>	globalRect	8	40	global rectangle, main device topLeft = 0,0
<u>short</u>	ctlCount	4	44	total control calls
<u>short</u>	csCode	4	48	control code
<u>short</u>	length	4	52	total parameter block bytes
length	param block	<i>n</i>	56	control call data
56+ <i>n</i>				

### The longer description...

The user can use the Monitors control panel to set the desired depth of each screen, whether it displays color or black-and-white, and its position relative to the main screen. All of this information is stored in a resource of type 'scrn' in the System File.

Only the 'scrn' resource whose ID is 0 is used by the system. Normally your application won't have to alter or examine this resource. It's created by the Monitors control panel and used by **InitGraf**. When **InitGraf** initializes QuickDraw, it checks the System file for the 'scrn' resource. If the 'scrn' resource is found and it matches the hardware, **InitGraf** organizes the screens according to the contents of this resource; if not, then only the startup screen is used.

The 'scrn' resource consists of a sequence of records, each describing one screen device. The first word in an 'scrn' resource is the number of devices in the resource. Following that is information about each screen device. For each screen device, the resource contains the following fields:

Name	Size(in bytes)	Description
spDrvHw	2	<b>Slot Manager</b> hardware ID

slot	2	Slot number
dCtlDevBase	4	dCtlDevBase from <u>DCE</u>
mode	2	<b>Slot Manager</b> ID for screen's mode
flagMask	2	Has the value 0x77FE
flags	2	Indicates device state bit 0 = 0 if b&w, 1 if color bit 11 if device is main screen bit 15 if device is active
colorTable	2	Resource ID of desired ' <u>clut</u> '
gammaTable	2	Resource ID of desired ' <u>gama</u> '
globalRect	8	Device's global rectangle
ctlCount	2	Number of control calls

For each control call of the screen device, the resource contains the fields:

Name	Size	Description
csCode	2	Control code for this call
length	2	Number of bytes in parameter block
param blk	[variable]	Data to be passed to control call

The records in the 'scrn' resource must be in the same order as the video cards in the slots (starting with the lowest slot). **InitGraf** scans through the video cards in the slots and compares them with the descriptors in the 'scrn' resource. If the spDrvHw, slot and dCtlDevBase fields (see above) all match for every screen device in the system, **InitGraf** uses the 'scrn' resource to initialize the screens. Otherwise it ignores the 'scrn' resource. Thus if you move, add, or remove a video card, the 'scrn' resource becomes invalid until the next time the system starts up.

The spDrvHw field is a **Slot Manager** field that identifies the type of hardware on the card. The spDrvSw field on the card must identify it as an Apple compatible video driver. The slot field is the number of the slot containing the card. The dCtlDevBase field is the beginning of the device's address space, taken from the device's DCE structure.

If all screen devices match, the rest of the information in the 'scrn' resource is used to configure the screens. The mode field is actually the **Slot Manager** ID designating the descriptor for that mode. This same mode number is passed to the video driver to tell it which mode to use.

The flags bits in the 'scrn' resource determine whether the device is active (that is, whether it will be used), whether it's color or black-and-white, and whether it's the main screen. The flagMask field tells which bits in the flags word are used.

To use the default color table for a device, set the colorTable field to -1. To use the default gamma table for a device, set the gammaTable field to -1. (Gamma correction is a technique used to select the appropriate intensities of the colors sent to a screen device).

The globalRect field specifies the coordinates of the device relative to other devices. The main device must have the top-left corner of the rectangle set to (0,0). The coordinates of all otehr devices are specified relative to this device.

Devices may not overlap, and must not share at least part of an edge with another device.

The union of all active screens (minus the menu bar and the rounded corners of the outermost screens) is a region that is stored in the global variable GrayRgn. It defines the area on which windows can be dragged.