vImage Decompression Filtering Reference

Performance > Graphics & Imaging

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vImage Decompression Filtering Reference

Framework:	Accelerate/vImage
Companion guide	vImage Programming Guide
Declared in	BasicImageTypes.h

Overview

The vImage framework provides one function for filtering data prior to decompression.

Functions

vImagePNGDecompressionFilter

Performs PNG decompression filtering.

```
vImage_Error  vImagePNGDecompressionFilter( const vImage_Buffer *buffer,
   vImagePixelCount    startScanline,
   vImagePixelCount    scanlineCount,
   uint32_t   bitsPerPixel,
   uint32_t  filterMethodNumber,
   uint32_t  filterType,
   vImage_Flags flags)
```

Parameters

buffer

On input, the image data to filter. On output, the filtered data. The filtering is always applied in place.

startScanline

The starting scanline.

scanlineCount

The number of scanlines in the buffer.

bitsPerPixel

The bits per pixel.

filterMethodNumber

The filter method number. You must pass `0`, because this is the only filtering method offered by this function.

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filterType

The filtering algorithm to apply to the image data. For filter method `0`, you can pass any of the constants described in "PNG Filter Types" (page 6).

flags

The options to use when performing this operation. Set the `kvImageDoNotTile` flag if you plan to perform your own tiling or use multithreading. See *vImage Data Types and Constants Reference* for a complete description of vImage processing flags.

Discussion

This function implements PNG decompression filtering for filter method `0` of the PNG standard, section 9.2, as described in: http://www.w3.org/TR/PNG-Filters.html. When a pixel that is needed for a filtering calculation falls outside the source buffer, its value is presumed to be `0`.

Availability

Available in Mac OS X v10.4 and later.

Declared In

`BasicImageTypes.h`

Constants

PNG Filter Types

Filtering algorithms to apply to image data before compressing the data.

```
enum
{

    kvImage_PNG_FILTER_VALUE_NONE  = 0,
    kvImage_PNG_FILTER_VALUE_SUB   = 1,
    kvImage_PNG_FILTER_VALUE_UP    = 2,
    kvImage_PNG_FILTER_VALUE_AVG   = 3,
    kvImage_PNG_FILTER_VALUE_PAETH = 4
};
```

Constants

`kvImage_PNG_FILTER_VALUE_NONE`

No filtering.

Available in Mac OS X v10.4 and later.

Declared in `BasicImageTypes.h`.

`kvImage_PNG_FILTER_VALUE_SUB`

A filter that computes the difference between each byte of a pixel and the value of the corresponding byte of the pixel located to the left.

Available in Mac OS X v10.4 and later.

Declared in `BasicImageTypes.h`.

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`kvImage_PNG_FILTER_VALUE_UP`

A filter that computes the difference between each byte of a pixel and the value of the corresponding byte of the pixel located above.

Available in Mac OS X v10.4 and later.

Declared in `BasicImageTypes.h`.

`kvImage_PNG_FILTER_VALUE_AVG`

A filter that predicts a pixel value from the average of the pixels to the left and above the predicted pixel location.

Available in Mac OS X v10.4 and later.

Declared in `BasicImageTypes.h`.

`kvImage_PNG_FILTER_VALUE_PAETH`

A filter that predicts a pixel value by applying a linear function to the pixels located to the left, above, and to the upper left of the predicted pixel location.

Available in Mac OS X v10.4 and later.

Declared in `BasicImageTypes.h`.

Declared In

`BasicImageTypes.h`

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Document Revision History

This table describes the changes to *vImage Decompression Filtering Reference*.

Date	Notes
2007-07-12	New document that describes the programming interface for decompression filtering operations.

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