

HARLEQUIN® multiRIP™

Release Notes



GLOBAL GRAPHICS®
software

v11.0r1—February 2016

Contents

| | | |
|------|---|----|
| 1 | New features and improvements | 4 |
| 1.1 | Quality | 4 |
| 1.2 | Speed | 6 |
| 1.3 | Memory | 6 |
| 1.4 | Variable data | 6 |
| 1.5 | Packaging and label | 7 |
| 1.6 | User interface | 7 |
| 1.7 | Maintenance and various fixes | 8 |
| 2 | Supported operating systems | 8 |
| 3 | Plugins and utilities | 8 |
| 4 | SOAR support | 9 |
| 5 | Notes about this release | 9 |
| 5.1 | Security | 9 |
| 5.2 | Naming and version numbering | 10 |
| 5.3 | Plugin kit v20.2r2 | 10 |
| 5.4 | DroidSansFallback font | 10 |
| 5.5 | Procset changes | 10 |
| 5.6 | RIP monitor messages | 10 |
| 5.7 | Auto mode for HVD—368049 | 11 |
| 5.8 | Screen selection for spot colors—372770 | 11 |
| 5.9 | OverprintBlack—373131 | 11 |
| 5.10 | Alternate color management (CMM) API—373152 | 12 |
| 5.11 | OptimizeSetPageDevice—373210 | 12 |
| 5.12 | New monitoruid files and csv—373382 | 12 |
| 5.13 | New PDF parameter to ignore page group—373571 | 12 |
| 5.14 | The Harlequin Contour Processor (HqnContour procset)—373840 | 13 |
| 5.15 | Brand color editor GUI and API—370903 | 13 |
| 5.16 | LDK runtime update—374262 | 14 |
| 5.17 | SetGold/SetGold pro v5.3 | 14 |
| 6 | Notes about v11.0r0 | 14 |
| 6.1 | AllowColorManagement key—372931 | 14 |
| 7 | Change details | 14 |
| 8 | Known issues | 17 |
| 8.1 | Separation omission fails on images if erase is not white—373385 | 17 |
| 8.2 | 6.1 Channel_id with HTM screens causes error—373363 | 17 |
| 8.3 | Incorrect output—373416 | 17 |
| 8.4 | Altona job appears to use more memory and causes a failure—374424 | 17 |

| | | |
|---|------------------------------------|----|
| 9 | Documentation change details | 17 |
|---|------------------------------------|----|

Harlequin® MultiRIP™ v11.0r1 Release notes

Global Graphics Software (GGSL) is pleased to announce the release of the Harlequin® MultiRIP™ v11.0r1 (HMR).

This Harlequin MultiRIP release is delivered under embargo and may not be delivered to customers or announced publicly until after the Global Graphics launch on 2nd March 2016. Beta sites under NDA are allowed.

This release note contains the following information:

- “[New features and improvements](#)” on page 4
- “[Supported operating systems](#)” on page 8
- “[Plugins and utilities](#)” on page 8
- “[SOAR support](#)” on page 9
- “[Notes about this release](#)” on page 9
- “[Notes about v11.0r0](#)” on page 14
- “[Change details](#)” on page 14
- “[Known issues](#)” on page 17
- “[Documentation change details](#)” on page 17.

I New features and improvements

Please note the following changes made to v11.0r0 and v11.0r1.

- “[Quality](#)” on page 4
- “[Speed](#)” on page 6
- “[Memory](#)” on page 6
- “[Variable data](#)” on page 6
- “[Packaging and label](#)” on page 7
- “[Maintenance and various fixes](#)” on page 8.

1.1 Quality

The following improvements are made to the correctness of rendering, color and screening:

1.1.1 Image snapping (v11.0r0)

Automated images snapping is added which recognizes incorrectly placed image tiles and automatically adjusts them so that they are aligned correctly. This prevents device pixel wide whites lines from appearing on the image.

1.1.2 PDF screening for flexographic printing(v11.0r0)

The PDF specification is unambiguous about which screen should be used for areas of a page that involve live PDF transparency. However, these rules are not appropriate for cases where it's important to apply the screen associated with each object in the PDF with that object. To overcome this a switch was added in v10.1r1 which allows the screen specified in the object to be used rather than following the PDF specification. From v11.0r1 this switch is added to the PDF options dialog.

This option chooses the screen selection to use for transparent regions.

| | |
|-------------|---|
| Default | Use the page default screen for non-fully opaque objects. |
| Use topmost | Use the screen from the top-most object for all objects. In all cases, fully transparent objects are ignored. |

The behavior when `Default` is selected is in-line with the PDF specification.

The `Use topmost` setting is of particular value in workflows where it is important to use the halftones specified in the supplied PDF file, such as in flexographic printing.

For more information see the *OEM manual—section 8.12.8.6 “Screening selection”*.

1.1.3 Brand color editing (v11.0r0)

The NamedColor mechanism has been available for some time to create databases specifying how brand colors should be converted when they are emulated in process colorants.

From v11.0r1 the Harlequin Color Editor user interface is provided to edit, add and delete named color lookup tables.

The Harlequin Color Editor communicates with the RIP using a new API. Therefore, if you are building an integrated system around the RIP, you may choose to use the API directly.

For more information see [“Brand color editor GUI and API—370903” on page 13](#).

1.1.4 Output CMYK spot emulations (v11.0r0)

One of the options that the NamedColor technology includes is to transform requested Spots to CMYK, but that resulting CMYK has always then been color managed if any other CMYK colors from the job are managed. An option is added allowing you to specify that “this is the final CMYK that should be used to print”. For more information see [“AllowColorManagement key—372931” on page 14](#).

1.1.5 A DeviceN spot emulations (v11.0r0)

NamedColor support is extended to make it easy to add emulations in DeviceN color spaces, e.g. for specifying device colorants on an extended gamut press, or to map between spot colors. For more information see *Extensions manual—Appendix C9*.

1.1.6 Forcing black knockout (v11.0r1)

It has been common practise in offset printing to overprint black objects, especially small text, to avoid press mis-register. Because of this the “force black objects to overprint” option has been available in the RIP for some time.

Nowadays, however, digital presses, especially UV inkjet, can show a variety of artefacts arising from the physical and chemical interactions of the inks on the media when black objects are overprinted. Small black text is particularly badly affected. To overcome this v11.0r1 includes an option to force pure black objects to knock out. This is provided alongside the existing option to force them to overprint.

For more information see "[OverprintBlack—373131](#)" on page 11.

1.1.7 Enforcing ink limits with spot emulation (11.0r1)

Harlequin has some very powerful ways to emulate spots on a CMYK device, even when they overprint (or are overprinted by) process colors or are involved in PDF transparency. But those mechanisms have historically also bypassed the use of DeviceLink profiles for ink limiting. From v11.0r1 even the process ink contribution from spot emulation will be included in such ink limiting steps.

1.2 Speed

v11.0r1 shows the most significant speed improvements in the following areas:

- Image-heavy work such as photobooks and catalogs.
- Jobs with heavy use of live PDF transparency.
- PDF files containing a large number of pages where a large number of small ranges of pages are printed in a single request, such as when all odd or all even pages of a long job are output at one time.

1.3 Memory

Considerable work has been carried out to reduce the memory required for many RIP operations, and to improve the response when the RIP cannot access as much RAM as it would like to process the job at full speed. This means that you are much less likely to see VMerror messages.

1.4 Variable data

The following improvements and additions have been made to HVD.

1.4.1 Position-independence (v11.0r0)

The external mode of Harlequin VariData has now been extended to allow the same graphic to be rendered only once even if it's used in multiple different positions on pages throughout the document.

Position-independence is especially valuable:

- When a page layout "flexes" with the specific data included in each instance, e.g. a direct mail piece where graphics and images are moved down the page if one recipient's address is longer than others.
- When many instances of a direct mail piece or label are imposed together into a single PDF "page" representing an imposed sheet, and where significant graphics on each imposed instance are selected based on the recipient's metadata and therefore appear pseudo-randomly laid out when the sheets as a whole are viewed.

You should note the following:

- There is currently no limit to the size of elements cached when using position independent eHVD, and in some rare cases these elements can be much larger than the page. If this does occur you can workaround by turning off the position independent parameter.

- iHVD performance is a balance between memory use and speed and for v11.0r0 is not yet optimized. While many jobs are processed much faster a small number of jobs have been observed to process slower than previous versions. Work on improving performance is ongoing.

1.4.2 Specific use of PDF/VT hints (v11.0r0)

The Harlequin RIP has historically processed most PDF/VT files very quickly. v11.0r0 can now explicitly take advantage of the “hints” that can be included in a PDF/VT file, as specified in ISO 16612-2:2010.

1.4.3 Auto mode (v11.0r1)

For variable data printing (VDP) HVD works very well, but it does have a small negative effect on speed for jobs that are not optimized PDF. For this reason an “automatic” mode is added that quickly determines if a file is designed for VDP or not, and turns HVD on if it is. For more information see [“Auto mode for HVD—368049” on page 11](#).

1.5 Packaging and label

Harlequin v11.0r1 provides a number of items that are designed to support a move into printing packaging and labels.

1.5.1 Harlequin Contour Processor™ (11.0r1)

Many packaging and label jobs include die lines and other technical separations which often need to be printed for proofing, or for aligning prints and pre-cut media or post-print die cutting. But those separations need to be removed from the raster for production printing.

In some workflows the inclusion of a die line in a PDF is the definitive method for delivering the die line to the production workflow. In those cases the die line must be extracted from the PDF so it can be used to drive a cutter etc.

Harlequin v11.0r1 can suppress technical separations and can export them to either PostScript or HPGL. For more information see [“The Harlequin Contour Processor \(HqnContour procset\)—373840” on page 13](#).

1.5.2 Controlling overprints for white and varnish (11.0r1)

When printing designs that use opaque white colorants or varnish it's important to ensure that they overprint correctly. This is especially important ... and difficult ... when a job is constructed from multiple elements that are designed separately.

Harlequin 11.0r1 therefore includes configurations that allow you to specify:

- This colorant should never knock out other colorants, even if not set to overprint. This is likely to be most useful for varnishes.
- This colorant should never be knocked out by other colorants. This is most likely to be useful for white colorants, and some metallics.

This functionality will also be useful for graphic arts implementations especially for digital devices that include white or varnish colorants.

Note: It is anticipated that this will normally be controlled by plugin PostScript language setup code.

1.6 User interface

From v11.0r1 the Harlequin Color Editor is provided from the Color menu.

In HMR 11.0.r0 the output monitor window was made slightly larger, reflecting the use of significantly larger and/or higher resolution monitors over the last few years and allowing longer job names to be shown without being truncated.

In addition Select All, Select Page and Select Job buttons are added below both the Active and Held queues. These new options allow you to select one entry in the queue and then one button to select one of:

- All separations for that page/sheet.
- All page buffers for that job.
- All page buffers in the whole queue.

For more information see the OEM manual—section 4.3.1.1.

1.7 Maintenance and various fixes

- Added improvements for the handling of badly formed PDF files or embedded fonts that do not correctly follow their respective specifications.
- HMR is now fully compatible with GMG PDF files (v11.0r0).
- Vignette detection is now deprecated. Note that this might change the output of some very old PostScript language and PDF files (v11.0r0).

2 Supported operating systems

The Harlequin MultiRIP v11.0r1 is formally supported on the following operating systems:

Harlequin MultiRIP v11.0r1 Windows

| | |
|--------|---|
| 64-bit | Windows 7 SP1 (excludes Starter edition) |
| | Windows 8.1 SP1 (excludes Windows RT) |
| | Windows Server 2008 R2 |
| | Windows Server 2012 R2 |
| | Windows 10 workstation (excludes Windows Mobile and Mobile Enterprise, embedded and IoT Core) |

Table. I Supported operating systems

Note: HMR v11.0r0 (and later) is 64-bit only; it is not supplied as 32-bit.

Note: On Windows Server 2012 R2, if HMR is not installed in the default directory, but for example, on a second disk, you have to right-click the executable and select Run as Administrator in order for it to run.

Note: If you try to activate the LDK on Windows 7 without SP1 the error failed to setup extended errors is generated. It is recommended that you update the operating system by applying SP1. Alternatively, see <http://support.microsoft.com/kb/975858/en-us>. You could, if you wish, use a different machine for the activation. The same error is possible on Windows Server 2008 R2.

3 Plugins and utilities

Any plugins distributed with this release are supplied solely for use with the Harlequin MultiRIP v11.0r1.

The OKI C942 plugin for the OKI C942 color LED printer is new in v11.0r1.

The TIFF/IT output plugin is removed from the Additional plugins installer and is not supported in v11.0r0 (or later).

Note: The Harlequin MultiRIP will support OEM and third-party plugins using input and output, color management and screening APIs.

The following table lists the standard and optional plugins and the various utilities available with the Harlequin MultiRIP v11.0r1:

| Availability | Plugin/Utility | v11.0r1 | v11.0r0 | v10.1r2 |
|--------------|-----------------------------|---------|---------|---------|
| Standard | Migrate | 8.0r1 | 8.0r0 | 7.1r1 |
| Standard | Genlin | - | 3.1r0 | 3.0r1 |
| Standard | SetGold | 5.3r0 | - | 5.2r0 |
| Standard | LDK utilities | - | 1.5r0 | 1.4r0 |
| Standard | Socket | - | 3.2r2 | 3.2r1 |
| Standard | Spool folder | - | 3.6r2 | 3.6r1 |
| Standard | PDF Raster | - | 1.4r2 | 1.4r1 |
| Standard | Testdev (none) | - | 3.2r3 | 3.2r2 |
| Standard | TIFF | 4.3r3 | 4.3r2 | 4.3r1 |
| Standard | CRD Generator plugin | - | 50.0r0 | 40.1r0 |
| Standard | XPS PrintTicket Device | 11.0r1 | 11.0r0 | 10.1r2 |
| Optional | CIP3 | - | 1.6r0 | 1.5r1 |
| Optional | OKI PCL C9650 laser printer | - | - | 1.7r1 |
| Optional | OKI C931/C941/C942 | 2.3r0 | 2.2r0 | 2.0r15 |
| Optional | NT Pipe | - | 1.1r2 | 1.1r1 |
| Optional | Plugin Kit | 20.2r2 | - | 20.2r1 |

Table I Standard and optional plugins

Note: The list of plugin versions only show changes. Thus no entry (-)means the version number has not changed from the previous listed version.

4 SOAR support

HMR v11.0r0 (and later) supports the SOAR host, job-logger and ROAM server.

5 Notes about this release

This section contains more detailed notes about this release.

5.1 Security

HMR v11.0r0 (or later) does not support HLS security, and won't run with your existing SuperPro dongles.

Because v11.0r0 (or later) is a major upgrade it requires enabling in your RIP licenses.

All demo LDK licenses created from August 2015 automatically includes support for v11.0r0 (or later). Alternatively, you can upgrade your existing demo licenses.

5.1.1 Timed software licenses (demo RIPs)

A demonstration RIP can be supplied with a timed software license. Alternatively, a RIP can be supplied with a watermarked license, which is timed and has a watermark and drop-dead date. A RIP of this type is for evaluation purposes only.

The date at which a watermarked RIP will cease to work is 2nd March 2017.

5.2 Naming and version numbering

The installer announces itself as "Harlequin MultiRIP". In the logfile, the RIP announces itself as "RIP Version 50.0 Revision 1 64-bit Edition".

Note: v50.0 Revision 1 represents v5.0r1 of the core RIP library.

5.3 Plugin kit v20.2r2

To build plugins for use with HMR 11.0r1 you must use MSVC 2013.

APIs for controlling the processing of Brand Colors have been added. See the *API Reference manual*.

Note: Run Length Encoding (RLE) is not supported in v20.2r1 (or later) of the plugin kit.

5.4 DroidSansFallback font

The DroidSansFallback font is present in \SW\CIDFont but is not used by the SDK. This DroidSans-Fallback font is provided as a substitute fallback font and will be removed in a future release. Please inform Global Graphics if this will cause you an issue.

5.5 Procset changes

The following procsets have been changed between v11.0r0 and v11.0r1:

HqnCalibrate, HqnColorDatabase, HqnLocal and HqnTrap.

The following procsets are new in v11.0r1:

HqnContour, HqnHalftoneUtilities and HqnHVDPParams and HqnNamedColorAPI.

The following procsets have been changed between HMR v10.1r2 and v11.0r0:

HqnCalibrate, HqnColorBar, HqnColorDatabase, HqnControl, HqnErrorHandler, HqnExternalFile, HqnFontConverter, HqnImpose2, HqnInputTypes, HqnLayout, HqnLocal, HqnMedia, HqnMissingFonts, HqnNamedColor, HqnPageSetupConf, HqnParseComments, HqnPDFPages, HqnPushCalibration, HqnUNC.

The following procset is removed from v11.0r0:

HqnFilterPipeline.

5.6 RIP monitor messages

You may notice that the RIP monitor messages change depending on the type of job being processed. This is because of internal optimizations.

The RIP analyses the graphics on the page to determine whether single-pass or two-pass rendering would be faster and automatically switches the rendering mode. Single-pass rendering combines compositing and opaque rendering into one pass which optimizes a write/read of all the composited data. For single-pass rendering the print time includes the compositing time.

5.7 Auto mode for HVD—368049

From v11.0r1 both internal and external HVD optimizations can benefit from running in auto mode.

From v11.0r1 `/EnableOptimizedPDFScan` can be used as a tri-state parameter allowing: `/Always`, `/Never` or `/Auto` while also retaining the boolean options of `true` and `false` for backwards compatibility where `/Always` is the same as `true` and `/Never` is the same as `false`.

When in auto mode a procset called **HqnHVDParams** contains a procedure `/SetFromInfoAndMetadata` which sets `/EnableOptimizedPDFScan` based, for example, on any of the following:

- PDF/VT tags in the metadata dictionary,
- Creator or Producer key in the info dictionary,
- CreatorTool or Producer key in metadata dictionary.

When set to automatic mode and a PDF file is submitted the RIP will:

- Scan the document-level metadata and determine if the file is tagged as a PDF/VT file. If so it will process the file as if it had been set to `true`.
- Look at the producer and creator strings in the document info dictionary and their equivalents in the document-level metadata and compare those with values in a look-up table of strings used by common VDP composition tools. If the strings match then the file is processed as if `/EnableOptimizedPDFScan` had been set to `true`; if they don't, it acts as if `/EnableOptimizedPDFScan` had been set to `false`.

The producer/creator look-up table in **HqnHVDParams** can be edited to add extra creators and change the hooks. The current hooks are examples.

For more information see the *Extensions manual—Chapter 14*.

Note: The `/EnableOptimizedPDFScan` PDF parameter can only be set in the call to `setpdfparams`.

5.8 Screen selection for spot colors—372770

Before v10.0r1 only the Default screen was available for spot colors. From v11.0r1 you can select either a C, M, Y, K or the Default screen.

The Enable screens for spot colors option only becomes available when HDS and Threshold screens (such as HXM) are selected and when a spot color is added as a color separation by using the New button. The Screen drop-down menu is only enabled when the spot color is selected in the dialog and now contains a Default screen as well as the process colors.

When **Enable screens for spot colors** is unchecked the RIP reverts to its previous operation. That is, only the Default screen is used for a spot color.

Because this only applies to Threshold and HDS screens, it does not apply to Core Module screens. If a modular screen is selected for a spot color, the RIP ignores the selection.

For more information see the *OEM manual section 3.7.2 and 6.11.4*.

5.9 OverprintBlack—373131

The application of `OverprintBlack` is based on input color values. Output colors that are 100% black after color management but do not have 100% black input values are not affected by `OverprintBlack`.

When `/true`, any solid black object (except solid black pixels of images) will be overprinted, regardless of the whether overprinting is turned on. When `/false`, overprinting will only occur as for any other process color.

/Knockout is the same as true except that the /Knockout parameter forces objects to knockout regardless of the setting of the overprint flag at the time an object is created.

See the *Extensions manual*—section 5.6.3.1 for more information.

5.10 Alternate color management (CMM) API—373152

A change has been made to custom CMM color spaces. An issue was found in the implementation of `open_transform()`, leading to the profiles parameter now being interpreted as an array of `sw_cmm_profile`, which matches the API. It was previously interpreted as simply `sw_cmm_profile`. The alternate CMM example for custom CMM color spaces has been updated. This was also fixed in v10.1r2.

5.11 OptimizeSetPageDevice—373210

A new PDF parameter, `/OptimizeSetPageDevice`, has been added to control how the PDF interpreter issues `setpagedevice` calls. The values this parameter can take are:

| | |
|-------|---|
| true | The PDF interpreter will not issue a <code>setpagedevice</code> call between pages if no relevant parameters change (e.g., page size, rotation, etc.). This is the default value, and matches the behavior of previous RIP versions. |
| false | The PDF interpreter will always issue a <code>setpagedevice</code> call between pages. Setting this option will be slower, but also allows the <code>SensePageDevice</code> hooks to be run on every page to modify the page or media handling. |

5.12 New monitoruid files and csv—373382

Improved reporting of errors with unique IDs using monitor events has been implemented.

Two files are supplied: `\doc\monitoruids.html` and `\doc\monitoruids.csv` which provide additional detail about the meaning of each error report. Note that not all errors are documented and work in this area is ongoing.

5.13 New PDF parameter to ignore page group—373571

A change is made in v11.0r1 to the RIP's handling of PDF/X files to improve the way the RIP handles the output intent in files that do not contain a page group. This change means that the output color may change slightly, that implicit overprinting may no longer happen in some cases, and that more transparency compositing may be used. The last of these means that RIP speed is reduced for some jobs, including for PDF/VT jobs, because PDF/VT files are always also PDF/X compliant. The change can be disabled by setting the `IgnorePageGroup` PDF parameter to `/ProcessColorModel`.

The `IgnorePageGroup` PDF parameter (a string) controls whether to honour or ignore a page group within the job (the page group is optional and defined by the PDF specification).

It can take the following values:

| | |
|--------------------|--|
| /None | (the default). Behave as now. |
| /All | Ignore all page groups in the job. |
| /ProcessColorModel | Ignore those page groups in the job whose CS entry matches the process color model. The process color model can only be device spaces, that means that group color spaces of ICCBased will not be ignored. |

This parameter may also be specified in the parameter dictionary to `pdfexec` and `pdfexecid`.

5.14 The Harlequin Contour Processor (`HqnContour procset`)—373840

The Harlequin Contour Processor can be configured to identify certain colors or color spaces within a PostScript language file or PDF job submitted to the RIP, and to export contours painted in those colors or color spaces to a separate file.

From Harlequin v11.0r1 the Harlequin Contour Processor can suppress technical separations and export them to either PostScript language files or HPGL.

Harlequin Contour Processor is an extra cost layered option. It also requires a license for HDLT (Harlequin Display List Technology), which is automatically included in LDK license parts for the Harlequin Contour Processor.

This functionality is also be useful for wide format plotter/cutters, and for any other environment where custom cutting is required.

For more information see the *Extensions manual—Appendix C.10*.

5.15 Brand color editor GUI and API—370903

When a job containing a spot color is printed on a CMYK device—or to CMYK or CMYKOG (for example) including spots as well as process separations for something like an offset press—the appropriate equivalent CMYK values are obtained from either:

- the alternate space in the spot color definition in the PostScript language or PDF
- a NamedColor lookup table.

For commonly used colors the NamedColor route is preferred, because many tables are provided for a lot of Pantone colors in XYZ, meaning that they can be transformed through the output profile for the device/media resulting in a better match to the “real” Pantone inks than a CMYK value calculated for some (more or less) random printing condition.

There are, however, certain instances where perhaps the match from the RIP is not quite as good as it might be on some media or you don't actually want an accurate match for other design reasons.

To facilitate this the Harlequin Color Editor and API is added to the RIP to allow modification (or to override), the spot color lookup tables to achieve a more desirable result.

For more information see the *OEM manual section—13.1.4*.

Note: The Harlequin Color Editor is an extra cost layered option. It has been added to all HMR OEM LDK demo licences created from Jan 2016 onwards.

Note: The Use Pantone PLUS option is removed from the ColorPro user interface and the `\SW\NamedColorOrder\PantonePLUS` and `\SW\NamedColorOrder\PantoneStandard` files are removed from the distribution as part of the implementation of Harlequin Color Editor. You now control this option by using the Harlequin Color Editor to add or remove the Pantone PLUS databases from the Intercept Named Color Order list.

5.16 LDK runtime update—374262

v11.0r1 is supplied with an updated LDK runtime (v7.41) which should be installed. Note that the LDK runtime version for v11.0r0 was v7.32.

5.17 SetGold/SetGold pro v5.3

From v5.3 the golden state target (**Golden.PS**) uses 100 patches and has four pages. It is recommended that SetGold/SetGoldPro v5.3 is used with HMR v11.0r1.

6 Notes about v11.0r0

This section contains notes about the changes made for v11.0r0.

6.1 AllowColorManagement key—372931

The values used in NamedColor databases defined in DeviceCMYK has always been interpreted as matching the CMYK input characterisation identified in ColorPro and has therefore been color managed as such. In v11.0r0 a new optional key, `/AllowColorManagement` is added to the named color database dictionary. This key controls whether color management may be applied to spot colors converted to their alternate space by a named color interception. The key is optional and if not present defaults to `true`.

Note that defining a NamedColor database using a DeviceN color space containing four channels matching CMYK could be used in HMR v10.0 and earlier to avoid color management of the database results. From v11.0r0 those DeviceN values would be color managed in the same way as DeviceCMYK.

If your named color database uses `HqnColorDatabase`, you should add a new optional key, `/AllowColorManagement false`. Similarly, if your named color database is defined directly as a PostScript language resource, the same optional key should be added to the resource dictionary.

For more information see *Extensions manual—Appendix C9*.

7 Change details

Below is a list of the changes made between HMR v11.0r0 to HMR v11.0r1. The table is uncategorized, in numerical order:

| Reference | Description |
|-----------|---|
| 367245 | <p>Add interfaces to enable the modular screening API implementation to multi-thread (SW Call #122571).</p> <p>Changes made to the RIP binaries.</p> |
| 368049 | <p>Add “auto” mode for HVD. For more information see “Auto mode for HVD—368049” on page 11.</p> <p>Changes made to the RIP binaries.</p> |
| 368271 | <p>Implement a fix which prevents a blank page from causing a premature Flat output in Imposition (SW Call #122893).</p> <p>Changes made to the RIP binaries.</p> |

Table 2 Changes made for Harlequin MultiRIP v11.0r1

| Reference | Description |
|-----------|---|
| 368968 | <p>Extend NamedColor resource handling to support known colors in CMYKOG, CMYKOGV.</p> <p>Changes made to the HqnColorDatabase procset.</p> |
| 370080 | <p>Build Brand color editing API.</p> <p>Changes made to the RIP binaries.</p> |
| 370581 | <p>Implement a fix to the basic trap rule to correct a regression from HMR10.0rx (SW Call #122826, #121973, #122756).</p> <p>Changes made to the RIP binaries.</p> |
| 370903 | <p>Create Harlequin Color Editor to adjust NamedColor databases and NamedColor-Order resources.</p> <p>Changes made to the RIP binaries.</p> |
| 371483 | <p>Implement a fix so that a spot color overprint preview honours the ink limits in a final-stage device-link (HHR Support #1356, SW Call #123755).</p> <p>Changes made in the RIP binaries and HqnColorDatabase procset.</p> |
| 371774 | <p>Implement a fix for a crash with screenforall /HalftoneColor key (SW Call #123827).</p> <p>Changes made to the RIP binaries.</p> |
| 372218 | <p>Provide way to control overprints for White and Varnish.</p> <p>Change made to the RIP binaries.</p> |
| 372770 | <p>Allow threshold screens to use a the default halftone for spot colors. (SW Call #124028). For more information see "Screen selection for spot colors—372770" on page 11.</p> <p>Changes made to the RIP binaries.</p> |
| 372933 | <p>Implement a check to cope with malformed PDF files with TrueType fonts embedded using FontFile, and not FontFile2. This prevents Error: unmatchedmark; OffendingCommand: TJ(PDF) on a customer supplied file (SW Call #124050).</p> <p>Changes made to the RIP binaries.</p> |
| 373061 | <p>Update Japanese localization. HMR 11.</p> <p>Changes made to the localization files.</p> |
| 373131 | <p>Provide option to force knockout for black objects. For more information see "OverprintBlack—373131" on page 11.</p> <p>Changes made to the RIP binaries.</p> |
| 373134 | <p>Extract the leafname from the calibration group filename so that the group name is reported in the RIP log (SW Call ##124078).</p> <p>Changes made to the RIP binaries.</p> |
| 373210 | <p>Make PDF setpagedevice optimization optional by making OptimizeSetPageDevice a pdffexec parameter as well as a PDF parameter.</p> <p>Changes made to the RIP binaries.</p> |

Table 2 Changes made for Harlequin MultiRIP v11.0rl

| Reference | Description |
|-----------|--|
| 373363 | <p>Make a change to retain channel numbers for modular screening. This overcomes a customer reported issue in the modular screening interface that occurs when separations are omitted (SW Call 124127).</p> <p>Changes made to the RIP binaries.</p> |
| 373382 | <p>Extend coverage of core RIP errors with unique IDs for Monitor Events. For more information see "New monitoruid files and csv—373382" on page 12.</p> <p>Changes made to the RIP binaries.</p> |
| 373393 | <p>To overcome an undefined resource issue implement a change to cope with CID Type 0 embedded fonts where the font CMapName does not match the CMapName defined in the embedded CMap file (SW Call #124134).</p> <p>Changes made to the RIP binaries.</p> |
| 373571 | <p>Add a new PDF parameter to ignore the page group. For more information see "New PDF parameter to ignore page group—373571" on page 12.</p> <p>Changes made to the RIP binaries.</p> |
| 373683 | <p>Pad eHVD raster elements to GridX, GridY on all sides.</p> <p>Changes made to the RIP binaries.</p> |
| 373711 | <p>Parse document metadata which is written in abbreviated XML.</p> <p>Changes made to the RIP binaries and HqnHVDParams procset.</p> |
| 373840 | <p>Add the Harlequin Contour Processor. See "The Harlequin Contour Processor (HqnContour procset)—373840" on page 13.</p> <p>Changes made to the build system and HqnContour procset.</p> |
| 373931 | <p>Implement a fix so that a customer supplied file with knockout white text prints correctly with an eHVD workflow (SW Call #124235).</p> <p>Changes made to the RIP binaries.</p> |
| 373933 | <p>Provide a PGB parameter "OptimizedPDFPositionIndependent" indicating that position independent HVD is active. TRUE for nearly every job when the configuration includes "/OptimizedPDFPositionIndependent true" but FALSE for jobs where the core is forced to turn off position independence.</p> <p>Changes made to the RIP binaries.</p> |
| 374096 | <p>Update OKI plugin version in additional plugins installer</p> |
| 374147 | <p>Make changes to improve HVD performance.</p> <p>Change made to the RIP binaries.</p> |
| 374262 | <p>Use a version of the LDK runtime which formally supports Windows 10 (v7.41).</p> <p>Changes made to the build system.</p> |
| 374385 | <p>Implement a change so that HPS is disabled when modular screening is selected (SW Call #124298).</p> <p>Changes made to the RIP GUI.</p> |

Table 2 Changes made for Harlequin MultiRIP v11.0rl

8 Known issues

This section details known issues.

8.1 Separation omission fails on images if erase is not white—373385

When using separation omission the images are checked, but if the erase color is not white it fails. That is, the RIP will not omit separations containing images.

8.2 6.1 Channel_id with HTM screens causes error—373363

An issue has been found in the halftone modular screening interface (HTM) that happens when separations are omitted; the channel IDs might be incorrect. This can cause problems for customers using Auraia screening who are omitting separations. The work around is to set Print? to Yes for all colortants (or at least K) and so produce blank plates. Alternatively, you could check in the output monitor and delete the unwanted plates.

8.3 Incorrect output—373416

Internal testing has revealed that a test job is output incorrectly when multithreading, parallel pages and OverprintPreview SpotsOnly are activated. This issue also affects PDF/X-4 files.

8.4 Altona job appears to use more memory and causes a failure—374424

Internal testing has reported that an Altona test job using a specific customer configuration, with an example Alternate CMM integration based on LittleCMS, appears to use significantly more memory than a previous release and causes the RIP to fail if not enough memory is available. This is caused by littlecms code not checking error returns from memory allocation and a fix for this will be implemented in v11.0r2.

9 Documentation change details

This section contains details of the various documents which have been created or updated for HMR v11.0r0 and v11.0r1:

| Document | Status | Format |
|--|---------|---------|
| OEM Manual | Updated | PDF/MIF |
| Extensions Manual | Updated | PDF |
| API Reference Manual | Updated | PDF |
| Localization Release Notes | Updated | PDF |
| Installation Guide | Updated | PDF |
| Hqn 061—Using Threshold Screens | Updated | PDF |
| Hqn 077—HXM Screening Module | Updated | PDF/MIF |
| Hqn 089—Securing Multiple RIPs using the LDK | Updated | PDF |
| List of Technical Notes | Updated | PDF |
| Harlequin ColorPro | Updated | PDF/MIF |

Table 3 Documentation changes

| Document | Status | Format |
|--|---------|---------|
| Harlequin LDK Ordering | Updated | PDF |
| OKI printer plugin for OKI C9650 | Updated | PDF/MIF |
| OKI printer plugin for OKI C941, C942 and C931 | Updated | PDF/MIF |
| SetGold/SetGoldPro | Updated | PDF/MIF |
| SetGold/SetGoldPro Release Note | Updated | PDF/MIF |

Table 3 Documentation changes

Documentation is available on the support FTP site at: <http://support.globalgraphics.com/login.html>. Go to: **/HQN_Common/HMR_Doc/**.



Copyright and Trademarks

Harlequin® MultiRIP™ –v11.0r1

February 2016

HMR-Release Note-OEM

Document issue: 518

Copyright © 2016 Global Graphics Software Ltd and its licensors. All Rights Reserved.

Global Graphics Software Ltd. Confidential Information.

Certificate of Computer Registration of Computer Software.

Registration No. 2006SR05517

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of Global Graphics Software Ltd.

The information in this publication is provided for information only and is subject to change without notice. This publication could contain technical inaccuracies, typographical errors and out-of-date information. Use of the information is therefore at your own risk. Global Graphics Software Ltd and its affiliates shall not be responsible or liable for any loss or damage that may arise from the use of any information in this publication.

The software described in this publication is furnished under license and may only be used or copied in accordance with the terms of that license. Global Graphics Software Ltd accepts no responsibility or liability for any special, punitive, incidental, indirect or consequential damages of any kind, or any damages whatsoever, including, without limitation, those resulting from loss of use, data or profits, whether or not Global Graphics Software has been advised of the possibility of such damages, and on any theory of liability, arising out of or in connection with the use of this software.

Protected by U.S Patents 5,862,253; 6,343,145; 6,330,072; 6,483,524; 6,380,951; 6,755,498; 6,624,908; 6,809,839; 6,755,498; 6,624,908; 6,809,839; 6,996,284; 7,298,526; 7,359,530; 8,749,813; 8,823,982.

Other U.S. Patents Pending

Portions Type 1 font renderer contains licensed third party software

Portions copyright 1991 International Business Machines, Corp.,

Portions copyright 1991 Lexmark International, Inc.

Portions Adobe Glyph List. Copyright 1990-2007 Adobe Systems Incorporated.

Portions Adobe Cmaps. Copyright 1990-2009 Adobe Systems Incorporated

Portions TrueType® font renderer copyright 1997 Bitstream, Inc.

Portions developed using the Kakadu software. Copyright 2001 David Taubman, The University of New South Wales (Unisearch Ltd)

The ECI and FOGRA ICC color profiles supplied with this Harlequin RIP are distributed with the kind permission of the ECI (European Color Initiative) and FOGRA respectively, and of Heidelberger Druckmaschinen AG (HEIDELBERG).

The IFRA ICC profiles supplied with this Harlequin RIP are distributed with the kind permission of IFRA and of GretagMacbeth.

Harlequin and the Harlequin RIP are trademarks of Global Graphics Software Ltd, which may be registered in certain jurisdictions. Harlequin ColorPro, Harlequin Dispersed Screening (HDS), Harlequin Precision Screening (HPS), TrapPro, SetGold, SetGoldPro, Harlequin MultiRIP, Harlequin Host Renderer, Harlequin Parallel Pages, Harlequin VariData, Harlequin Contour Processor and the Harlequin Screening Engine are all trademarks of Global Graphics Software Ltd. Other brand or product names are the registered trademarks or trademarks of their respective holders.

TrueType is a registered trademark of Apple Computer, Inc.

Microsoft, Win32, Windows, Windows NT, Windows Server, Windows Vista, Windows 7, Windows 8 and WinFX are either registered trademarks or trademarks of the Microsoft Corporation in the United States and/or other countries.

PANTONE® Colors displayed herein may not match PANTONE-identified standards. Consult current PANTONE Color Publications for accurate color.

PANTONE® and other Pantone trademarks are the property of Pantone LLC. © Pantone LLC, 2014.

Font data copyright 1991 -1995 Linotype Hell Corp.

Fonts copyright © 2000-2004 Timo Lehtinen. All Rights Reserved. <http://www.timolehtinen.com/type/>.

Adobe, Adobe Photoshop, Adobe Type Manager, Acrobat, Display PostScript, Adobe Illustrator, PostScript, Distiller and PostScript 3 are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries which may be registered in certain jurisdictions.

Portions include software licensed under the following terms:

OpenSSL - general purpose cryptography library

Copyright © 1998-2011 The OpenSSL Project. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgment: "This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)"
4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact openssl-core@openssl.org.
5. Products derived from this software may not be called "OpenSSL" nor may "OpenSSL" appear in their names without prior written permission of the OpenSSL Project.
6. Redistributions of any form whatsoever must retain the following acknowledgment: "This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>)".

THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT "AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

Copyright © 1995-1998 Eric Young (eay@cryptsoft.com)

All rights reserved.

This package is an SSL implementation written by Eric Young (eay@cryptsoft.com). The implementation was written so as to conform with Netscapes SSL.

This library is free for commercial and non-commercial use as long as the following conditions are adhered to. The following conditions apply to all code found in this distribution, be it the RC4, RSA, lhash, DES, etc., code; not just the SSL code. The SSL documentation included with this distribution is covered by the same copyright terms except that the holder is Tim Hudson (tjh@cryptsoft.com).

Copyright remains Eric Young's, and as such any Copyright notices in the code are not to be removed. If this package is used in a product, Eric Young should be given attribution as the author of the parts of the library used. This can be in the form of a textual message at program startup or in documentation (online or textual) provided with the package.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement: "This product includes cryptographic software written by Eric Young (eay@cryptsoft.com)". The word 'cryptographic' can be left out if the routines from the library being used are not cryptographic related:-).
4. If you include any Windows specific code (or a derivative thereof) from the apps directory (application code) you must include an acknowledgement: "This product includes software written by Tim Hudson (tjh@cryptsoft.com)".

THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The licence and distribution terms for any publicly available version or derivative of this code cannot be changed. i.e. this code cannot simply be copied and put under another distribution licence [including the GNU Public Licence].

ICU - IBM library providing Unicode and Globalization support

Copyright © 1995-2003 International Business Machines Corporation and others All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, provided that the above copyright notice(s) and this permission notice appear in all copies of the Software and that both the above copyright notice(s) and this permission notice appear in supporting documentation.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

Expat - XML parser library

Copyright © 1998, 1999, 2000 Thai Open Source Software Center Ltd and Clark Cooper

Copyright © 2001, 2002 Expat maintainers.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

pthreads-win32 - a POSIX threads library for Microsoft Windows

This file is Copyrighted

This file is covered under the following Copyright:

Copyright © 2001,2006 Ross P. Johnson All rights reserved.

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Pthreads-win32 is covered by the GNU Lesser General Public License

Pthreads-win32 is open software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation version 2.1 of the License.

Pthreads-win32 is several binary link libraries, several modules, associated interface definition files and scripts used to control its compilation and installation.

Pthreads-win32 is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

A copy of the GNU Lesser General Public License is distributed with pthreads-win32 under the filename: COPYING.LIB

You should have received a copy of the version 2.1 GNU Lesser General public License with pthreads-win32; if not, write to:

Free Software Foundation, Inc.

59 Temple Place

Suite 330

Boston, MA02111-1307

USA

The contact addresses for pthreads-win32 is as follows:

Web:<http://sources.redhat.com/pthreads-win32>

Email: Ross Johnson

Please use: Firstname.Lastname@homemail.com.au

Pthreads-win32 copyrights and exception files

With the exception of the files listed below, Pthreads-win32 is covered under the following GNU Lesser General Public License copyrights: threads-win32 - POSIX Threads Library for Win32:

Copyright© 1998 John E. Bossom

Copyright© 1999,2006 Pthreads-win32 contributors

The current list of contributors is contained n the file CONTRIBUTORS included with the source code distribution. The current list of CONTRIBUTORS can also be seen at the following WWW location:

<http://sources.redhat.com/pthreads-win32/contributors.html>

Contact Email: Ross Johnson

Please use: Firstname.Lastname@homemail.com.au

These files are not covered under one of the Copyrights listed above:

COPYING

COPYING.LIB

tests/rwlock7.c

This file, COPYING, is distributed under the Copyright found at the top of this file. It is important to note that you may distribute verbatim copies of this file but you may not modify this file.

The file COPYING.LIB, which contains a copy of the version 2.1 GNU Lesser General Public License, is itself copyrighted by the Free Software Foundation, Inc. Please note that the Free Software Foundation, Inc. does NOT have a copyright over Pthreads-win32, only the COPYING.LIB that is supplied with pthreads-win32.

The file tests/rwlock7.c is derived from code written by Dave Butenhof for his book 'Programming

With POSIX® Threads'. The original code was obtained by free download from his website <http://home.earthlink.net/~anneart/family/Threads/source.html> and did not contain a copyright or author notice. It is assumed to be freely distributable.

In all cases one may use and distribute these exception files freely. And because one may freely distribute the LGPL covered files, the entire pthreads-win32 source may be freely used and distributed.

General Copyleft and License info

For general information on Copylefts, see: <http://www.gnu.org/copyleft/>

For information on GNU Lesser General Public Licenses, see: <http://www.gnu.org/copyleft/lesser.html>
<http://www.gnu.org/copyleft/lesser.txt>

zlib - general purpose compression library

Copyright © 1995-2013 Jean-loup Gailly and Mark Adler

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

Copyright © 2005-2008, The Android Open Source Project

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License.

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License

Version 2.0, January 2004

<http://www.apache.org/licenses/>

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct

or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

“You” (or “Your”) shall mean an individual or Legal Entity exercising permissions granted by this License.

“Source” form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

“Object” form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

“Work” shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

“Derivative Works” shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

“Contribution” shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, “submitted” means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as “Not a Contribution.”

“Contributor” shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a “NOTICE” text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Deriva-

tive Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

US Government Use

Harlequin RIP software is a computer software program developed at private expense. If the Harlequin Host Renderer software is acquired under the terms of a proposal or agreement with the United States Government or any contractor therefor, the software is subject to the following restricted rights notice: "This Software is commercial computer software provided with RESTRICTED RIGHTS. Use, duplication, or disclosure by the U.S. Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013, FAR 52.227-17 Alternate III (g)(3), or subparagraphs (c)(1) and (2) of the Commercial Computer Software - Restricted Rights at 48 CFR 52.227-19, as applicable, and their successor provisions. Contractor/Manufacturer is Global Graphics Software Incorporated, Waltham, MA 02451."