

HARLEQUIN® multiRIP™

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## HMR Release Notes



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# Harlequin® MultiRIP™ v12.0r2 Release Notes

Global Graphics Software Limited (GGSL) is pleased to announce the release of the Harlequin® MultiRIP™ v12.0r2 (HMR).

This release note contains the following information:

- [“New features and improvements” on page 3.](#)
- [“Notes about this release” on page 4.](#)
- [“Documentation change details” on page 7.](#)
- [“HxR 12.0r2 Change details” on page 8.](#)
- [“HMR 12.0r2 Change details” on page 10.](#)

## I Alerts and guidance

### I.1 Balancing font quality against speed

Harlequin 12.0r2 includes two changes that improve the quality and correctness of font rendering. Late in our testing we discovered that those two changes combine to cause a noticeable reduction in processing speed for some sub-optimally created PDF files. In particular, files that embed the same set of Type 1 (or CFF) fonts separately on each of many pages.

The two changes are:

- HQN-377336 (SWCall#125099): Do not act on UniqueID in Type 1 fonts; and
- HQN-379020 - Apply two-pass rendering for all cached glyphs below AccurateRender-Threshold

If you encounter problems caused by this combination of factors, the performance lost can be regained by setting:

```
<< /SuppressUniqueID false >> setuserparams
```

## 2 New features and improvements

For details regarding new features and improvements made to HMR v12.0r2, please see:

- [“Changes to font handling” on page 4.](#)
- [“Changes to the screen selection dialog” on page 4.](#)
- [“New parameters for Harlequin VariData in external mode” on page 5.](#)
- [“New parameters for HqnContour” on page 5.](#)
- [“New halftone type for non-monotonic screening” on page 5.](#)
- [“New procedures for ignoring spot separations” on page 5.](#)

## 3 Notes about this release

This section contains notes about the changes made to v12.0r2.

**The following procsets have been changed between HMR v12.0r1 and HMR v12.0r2:**

HqnColorDatabase, HqnConfigProvider, HqnPluginConf, HqnWhite

### 3.1 Changes to font handling

Two changes have been made to font handling in Harlequin 12.0r2:

- Harlequin has allowed the configuration of three different font rendering modes for different sizes of fonts for many years. As part of a program of changes to increase rendering quality in a variety of areas, this has now been simplified, and a slightly adjusted two-pass font rendering algorithm is now used for small characters, under the control of the `AccurateRenderThreshold` parameter. The `AccurateTwoPassThreshold` parameter is now ignored.
- The RIP no longer makes use of the Unique ID for Type 1 (and CFF) fonts in order to avoid issues where ID clashes triggered incorrect output. In some rare circumstances it may be desirable to undo this change by setting the new `SuppressUniqueID` user param to `false`.

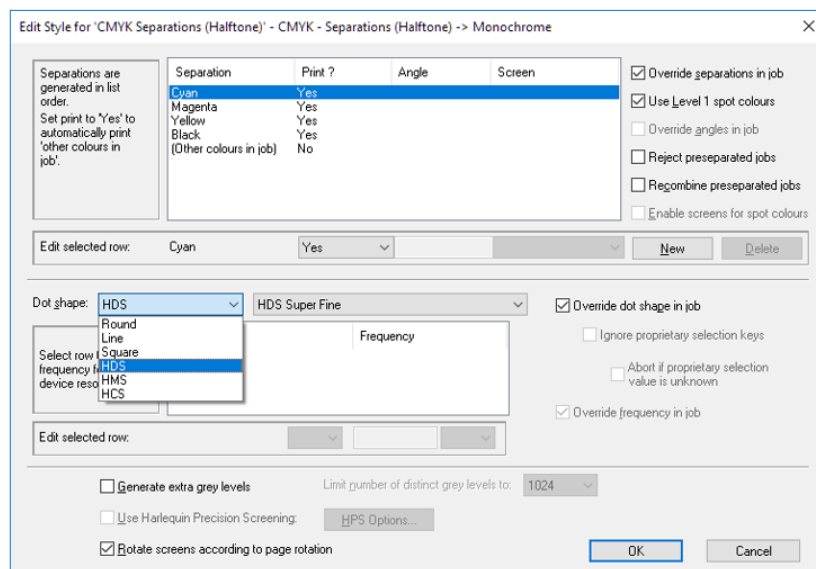
### 3.2 Changes to the screen selection dialog

The single drop-down menu for screen selection works well when only a relatively small number of dot shapes are available, but if a lot of screens are installed in Harlequin MultiRIP it was becoming unwieldy.

Dot shape selection in HMR 12.0r2 therefore divides screens into a small number of categories; the user needs to select a category and then select a screen within that category.

The categories are encoded as `ExternalGroup` in the `ScreenNames` file.

**Note:** OEMs should use the new HXM screen installers issued with 12.0r2 so that the HXM screens appear in their own categories correctly.



### 3.3 New parameters for Harlequin VariData in external mode

New PDF parameters have been added to specify the smallest Form and Image XObject that should be automatically regarded as significant by the scanner in external HVD. This avoids a slow-down in jobs with a huge number of very small Forms.

### 3.4 New parameters for HqnContour

The parameters are `OptimizedPDFFormThreshold` and `OptimizedPDFImageThreshold` and specify the minimum XObject size in bytes.

Two new parameters have been added for `HqnContour`, both related to PDF optional content (layers):

- `LayerComments` allows the caller to request that a comment be delivered with each path to report if that path is included in an optional content group, and what the name of that group is.
- `HiddenLayerAction` allows the caller to determine if contours inside optional content groups that are set not to render should be exported or not.

### 3.5 New halftone type for non-monotonic screening

A new halftone type, 116, has been added. This is a binary (1 bit), table-based screen type that enables the definition of non-monotonic screens; each pixel in the cell may be turned on, off and on again as the tone value grows from highlights to shadows.

### 3.6 New procedures for ignoring spot separations

A PDF or PostScript file may include spot separations that are not wanted on the final print, such as cut and fold lines, dimensions, etc. These spot colors can be completely ignored by aliasing them to `/None` using named color resources. New procedures have been added to the `HqnColorDatabase` procset to make this easier, such as:

```
[ /Cut /dieline ] /HqnColorDatabase /ProcSet findresource /AddToIgnoredSpots get exec
```

When a spot is ignored like this it will not leave any knockouts in other separations.

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

**Note:** An example call is also provided in the `ExampleIgnoreSpots` page feature in the *HHR SDK Developer's Guide*.

## 4 Updates to supported platforms and compilers

There are no changes to the supported platforms between 12.0r1 and 12.0r2.

### 4.1 Plugins and utilities

Build plugins for Harlequin MultiRIP v12.0r2 with MSVC 2015.

**Note:** In 2019, HMR 12.1 will switch to MSVC 2017.

Any plugins distributed with this release are supplied solely for use with the Harlequin MultiRIP v12.0r2.

**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 v12.0r2:

Availability	Plugin/Utility	v12.0r2	v12.0r1
Standard	Migrate	9.0r1	9.0r0
Standard	Genlin	3.1r1	3.1r1
Standard	SetGold	5.3r0	5.3r0
Standard	LDK utilities	1.8r0	1.8r0
Standard	Spro2ldk	2.0	2.0
Standard	LDK Runtime	7.81	7.63
Standard	Socket	3.2r3	3.2r3
Standard	Spool folder	3.6r3	3.6r3
Standard	PDF Raster	1.4r3	1.4r3
Standard	Testdev (none)	3.2r4	3.2r4
Standard	TIFF	4.5r0	4.5r0
Standard	CRD Generator plugin	60.0	60.0
Standard	XPS PrintTicket Device	12.0r2	12.0r1
Optional	CIP3	1.6r2	1.6r2
Optional	OKI PCL C9650 laser printer	1.7r2	1.7r2
Optional	OKI C931/C941/C942	2.4r3	2.4r3
Optional	NT Pipe	1.1r3	1.1r3
Optional	Plugin Kit	20.3	20.3

**Table. 1** Standard and optional plugins - Harlequin MultiRIP v12.0r2

**Note:** The following plugins for Epson are no longer available:

- vDot4 plugin (for Epson Stylus Pro 4900, 7890, 7900, 9890, 9900)
- vDot5 plugin (for Epson SC-P6000, SC-P8000, SC-P7000 (SE), SC-P7000 (CE), SC-P9000 (SE), SC-P9000 (CE))

## 5 Documentation change details

This section contains details of the various documents which have been created or updated for v12.0r2:

Document	Status	Format
<i>Release Notes</i> (this document)	Available November 2018	PDF
<i>Extensions Manual</i>	Available December 2018	PDF
<i>API Reference Manual</i>	Available December 2018	PDF
<i>OEM Manual</i>	Available December 2018	PDF
<i>Technical Note Cross-Reference List</i>	Available December 2018	PDF

**Table. 2** Documentation change details - Harlequin v12.0r2

**Note:** HMR documentation is available on the support FTP site at:  
<http://support.globalgraphics.com/login.html>. Go to: **/HQN\_Common/HMR\_Doc/**.

**Note:** All HMR technical notes are located at: **/HQN\_Common/HMR\_Doc/Technical\_Notes/**.



## 6 HxR 12.0r2 Change details

Reference	Description
HQN-313193, HHR Support #2635	Apply TransferFunction from sub-dictionaries of a HalftoneType 5 override screen.
HQN-318148	Correct Text Knockout (TK) mode in compositing.
HQN-371862	Add new halftone type for non-monotonic 1-bit screens; HalftoneType 116
HQN-375120, HHR Support #1888	Don't error if a TT font has a cmap with wrong Cmap Table version
HQN-376329	Tweaks to PDF 2.0 mask interaction
HQN-377071, SWCall #125045	composefont operator use of FontDirectory now respects priority of CID-Font over basic fonts.
HQN-377119, HHR Support #2268	Spots and process within a DeviceN can now use their own rendering intents
HQN-377336, SWCall #125099	UniqueID is now ignored for fonts embedded in print jobs.
HQN-377718, HHR Support #1934	Gouraud mesh smooth shades now work correctly when combined with bump-up curves
HQN-378132	HVD caches are now cleared more completely after each job/chunk.
HQN-378189, HHR Support #2430	Memory recycling from color conversion tables is now more efficient.
HQN-378215, HHR Support #2476	SpotsOnly no longer requires VirtualDeviceSpace to match the PCM
HQN-378417, HHR Support #2548	Color conversion tables can now be used with more spots as well as process colors
HQN-378445, HHR Support #2588	Improve glyph lookup for TrueType fonts with 3,0 cmap table.
HQN-378460	Correct handling of transparent text with PDF render mode 2
HQN-378485	Patterned text now always uses the right repro type for pattern DL objects
HQN-378494, HHR Support #2594	Don't rely on GTS_Encapsulated to decide whether an XObject is composited.
HQN-378501, HHR Support #2601	Rework handling of off-page, widely spaced pattern to avoid a very rare hang.
HQN-378526, HHR Support #2604	Support XObject stream lengths over 2GB
HQN-378616	Redefine PDF/VT tag usage and implement.

Table 6.1 HxR 12.0r2 Change details

Reference	Description
HQN-378760	Update RIP screens & logos to use official GGS Ltd shade of blue
HQN-378804, SWCall #125428	Don't trigger unmatchedmark error when an embedded Type1 font has no or zero Length3 but does include cleartomark
HQN-378813, HHR Support #2630	Improve handling of scaling and translation in complex compound glyphs in TrueType fonts
HQN-378847, HHR Support #2635	(HHR Support #2635) Halftone Dictionary TransferFunction not applied
HQN-378970	Two-pass rendering for text now avoids filling in occasional extra pixels
HQN-379020	Apply two-pass rendering for all cached glyphs below AccurateRender-Threshold
HQN-379022	Unify character Accurate Rendering method with RenderCenter sub-pixel rendering method
HQN-379051, HHR Support #2703	The count value for SubFileDecode filters can now be over 2GB
HQN-379052	Fix ioerror after aborting HVD on a page range chunk after earlier HVD chunk
HQN-379126	Add new calls in HqnColorDatabase procset to make it easy to ignore spots completely
HQN-379204, HHR Support #2756	Allow rendering of larger, more complex paths
HQN-379220, HHR Support #125520	Include new runtime in product builds & installers
HQN-379336	Correct handling of images in None color space
HQN-379356, HHR Support #2762	Improve speed and memory usage when using an alternate CMM to process spot colors
HQN-379395, HHR Support #2761	Only the page box in use is now taken into account for eHVD comparing equivalence of forms
HQN-379647	HVD caches are now cleared more completely after each pdfexecid chunk

Table 6.1 HxR 12.0r2 Change details (Continued)

## 7 HMR 12.0r2 Change details

Reference	Description
HQN-306630, SW Call #123842	Exclude LOGFILE from config backup
HQN-365090	Add UI selector for screen group
HQN-379013, HMR #125468	If inputs are running when the RIP is quit they will now re-start when the RIP is started again
HQN-379288, SW Call #125539	Fix hang for anti-aliasing in Multiple modes
HQN-379289, SW Call #125539	Prevent UTF-8 BOMs from Unicode file names being written into output file names

## 8 Historical information for changes made to Harlequin v12.0r1 HMR and HHR

### 8.1 Procset changes

The following procset have been changed between v12.0r0 and v12.0r1:

HqnContour, HqnImpose2, HqnMissingFonts, HqnNamedColor

The following procset has been added to HHR v12.0r1:

HqnScalableRIP

### 8.2 Implementor guide to using new versions of HHR SDK v12 - 376425

This new document for OEM developers:

- Describes what has changed from HHR SDK v11.0r6 (or later) to HHR SDK 12.0r0
- Explains what developers will or may need to do in response
- Enables developers to adopt a process management strategy for integrating SDK updates into their applications.

### 8.3 Pantone tables with M1 values instead of M2 values in the NamedColor DB files - 378099/HHR #2445

We provided additional Pantone NamedColor databases provided for all cases where Pantone have supplied color data using M1 measurement. These have the same name as the existing (M2) measurements, with “\_M1” appended.

### 8.4 Improved smoothness for wide strokes - 378247

For information see the *Extensions manual*, StrokeOffsetCurveWidth user parameter.

## 8.5 Licensing for Scalable RIP - 378248

Licensing for Scalable RIP has changed. For the technology preview in 12.0r0 the Scalable RIP controller used a regular RIP license. From 12.0r1 and onwards, Scalable RIP is a layered option.

## 8.6 Updates to TestConfigs - 378394

**Note:** Example TestConfigs for modular screening have been moved to a sub-directory called HTM.

Alongside v12.0r1, we also updated and extended sample TestConfigs in Advanced Inkjet Screens (AIS).

**Note:** If you've already downloaded the AIS package, please download a new copy when v12.0r1 is released. In the new AIS package, the screens themselves have not changed, but it will include some new example TestConfigs and halftone resources.

## 8.7 GGS operating subsidiary URW++ is now known as “URW Type Foundry”

## 9 Change details for v12.0r1

Reference	Description
374217	Correct handling of color management switches in named color support added in the HqnContour procset.
374728	Tune handling of shaded fills in HVD scanning to significantly reduce memory requirements
375320	Better default memory settings for HHR skinkit
376434	Revise cmyk to luminosity conversions for soft masks to match more completely specified requirements in PDF 2.0
376475/378009	(SW Call 124874) Don't reset colorant list if changing to dotshape of same type [HMR only]
376610	Productize HHR Scalable RIP
377023	Untiled patterns are now clipped automatically for memory savings
377140	Improve performance for groups with shfill patterns in them
377223	Make IgnorePSXObject also ignore XObjects where Subtype is /Form and Subtype2 is /PS
377235	(HHR #2286) Object based black point compensation - feature request
377399	Provide an option to change the orientation of a screen.
377472	(HHR #2309) Amend interpolation of ICC DeviceLink profiles with an RGB input color space to give smoother results.
377558	(HHR #2092) Memory use for combinations of complex clips with patterned object masks has been reduced.
377672	(HHR #2371) Define new render rule, AccurateRender
377732	Improve error message when trying to activate an HL product key as if it were an SL license
377933	(HHR #2404) Correct handling of text clips applied to images when using HVD
377947	(SW Call #125253) Various minor fixes for HqnContour
377955	(SW Call #125254) Support strings with Unicode BOMs in PDF FileSpecs. Those are not described in the PDF standard, but are used in files created by the customer's software
377982	Corrected missing fonts call in HqnMissingFonts procset
378022	Suppress unnecessary allocations in LIBTIFF

**Table 3** Changes made for Harlequin MultiRIP v12.0r1

Reference	Description
378036	Ensure that uniXXXX style glyph names are re-mapped when used in combination with a Differences array in a TrueType font.
378053	Improve memory handling for large images with soft masks, reducing likelihood of triggering VM errors.
378145	(HHR #2476) Prevent configuration errors when using ID with a DeviceGray named color
378201/378331	Correct plugin kit examples to re-enable output to separations
378226	(SW Call #125312) Correct handling of spots with non-empty halftone transfer functions
378247	Improved smoothness for wide strokes. For information see the <i>Extensions manual</i> StrokeOffsetCurveWidth user parameter
378319	(HHR #2496) Don't apply stroked text rendering mode to Type 3 fonts in PDF
378483/378521	(SW Call #125389) Correct handling of modular screening plugin versions
378484	For PDF ICC color spaces, test profile and /N agree and if they don't choose the N value
378501	(HHR #2601) Revise re-positioning of off-page, widely spaced pattern
378519	Add new Pantone databases based on the M1 illuminant
378598	(HHR #2612) Add support for individual content streams over 2GB long, compressed

**Table. 3** Changes made for Harlequin MultiRIP v12.0r1

## 10 Historical information for changes made to Harlequin v12.0r0 HMR and HHR

### 10.1 Procset changes

The following procsets have been changed between HHR v11.0r6 and v12.0r0:

DCSCCommentParser, GGFonEmulation, HqnAssert, HqnColorDatabase, HqnControl, HqnGIF, HqnHtm, HqnHVDPParams, HqnICCBased, HqnImage, HqnImportICC, HqnImpose2, HqnLayout, HqnLocal, HqnMissingFonts, HqnOPICCommon, HqnParseComments, HqnPDFPages, HqnPushCalibration, HqnUNC, HqnXPRPrintTicket

The following procsets have been added to HHR v12.0r0:

HqnConfigProvider, HqnCSV, HqnScalableRIP

The following procsets have been removed from HMR v12.0r0:

HqnBlob, HqnPSToCORBA, SOARInFlight

## 10.2 PDF 2.0 support

The latest iteration of the PDF standard was published by ISO as ISO 32000-2 in August 2017. It's the first new version of PDF since ISO 32000-1 was published in 2008.

Harlequin 12 supports all of the features of PDF 2.0 that are relevant for production printing at least as far as the standard requires, and beyond in some cases:

- AES-256 encryption
  - Note that this is the new AES-256 encryption specified in PDF 2.0; it is not the same as that documented in Adobe's ExtensionLevel 3, which is sufficiently flawed that its use is prohibited in a PDF 2.0 file.
- Unicode passwords
  - In previous versions of PDF the encoding used for encryption passwords was undefined, which could lead to what appeared to be the same password working on one platform and not working on others.
- Zero-length axial blends (where both ends of the blend are at the same location) are now not drawn at all, even if they define extensions colors. This is to match a clarification in PDF 2.0.
- The HTO graphics state key is supported to define halftone offsets. It can be very useful when imposing for very large format output to ensure that halftone registration doesn't drift across the sheet.
- The UseBlackPtComp graphics state key is supported, to control the use of black point compensation.
- "Text strings" in PDF files may now use any of PDFDocEncoding, UTF-16 or UTF-8.
- Output Intents may now be used at the page level as well as at the document level.
  - PDF 2.0 defines how these should be encoded into the PDF file, but does not provide guidance on when and how to use them. Harlequin will use them if the file is PDF 2.0 and if the output intent self-identifies as a PDF/X intent.
  - Some of the samples that we have seen so far do not conform to the PDF/X requirements around output intents, so we are keen to investigate with real-world files as they start to become available. We have ensured that files that don't fully conform will process in a reasonable way, but will show a warning.
- Device color spaces as transparency group blending color spaces are now replaced with an equivalent CIE-based color space from an ancestor, if present.
- Equivalent inheritance is applied for graphics defined in device color spaces when the current blending color space, or that of an ancestor group, is an equivalent device-independent color space.
- The value of SpotFunction in a halftone may now be an array instead of a name or function. When an array is specified (and Harlequin has not been configured to ignore screens defined in the job) then the first one supported by the RIP will be used.
- PDF 2.0 also removes the restriction that only SpotFunction name values defined in the PDF specification itself can be used. Harlequin has not enforced that restriction for several years.
- PDF metadata reported in the RIP log and used for page annotations etc is now taken from the file's document-level XMP metadata stream, if present, instead of the info dictionary.

- PDF 2.0 also includes a number of clarifications, especially around when the color of graphical objects should be transformed into a blending color space for transparency. In the vast majority of cases Harlequin was already aligned with the clarified text and did not need to be changed.

And PDF 2.0 deprecates a number of features of older versions of PDF, meaning that an application creating a PDF 2.0 file should not write them and that an application reading the file “should ignore them”. We have taken the decision that, at least for Harlequin 12, they will be acted on as if they were not deprecated because Harlequin is a tool for production, not a preflight or validation application. Examples include all encryption methods other than AES-256.

You can find additional information that may be useful in preparing your own team and your sales channels at:

- White paper: <https://www.globalgraphics.com/globalgraphics-software/impact-of-pdf-2-0-on-print-production>
- Webinar: <https://www.youtube.com/watch?v=anhTN7FI1Ow>

If you feel you need access to the PDF 2.0 standard itself it can be obtained from <https://www.iso.org/standard/63534.html>. Alternatively you may find it cheaper to purchase from your own national standards body (e.g., NPES in the USA, BSI in the UK, DIN in Germany, etc).

PDF 2.0 will be included in your standard product automatically as long as your contract includes PDF support. The special PDF 2.0 preview licenses provided for Harlequin 11 RIPs are no longer required.

### 10.3 ColorPro included with all Harlequin MultiRIP 12 licenses (HMR only)

As from Harlequin MultiRIP version 12 ColorPro will be bundled in all MultiRIP licenses. This doesn't mean that we're immediately removing the capability of using “no color management” color setups; those will be retained for the foreseeable future and setups migrated from older versions will continue to use them.

You don't need to do anything special to get ColorPro; we will add it into the LDK licenses for both new orders and upgrades automatically.

### 10.4 Harlequin Barcode Generator™

A new PostScript operator has been added to draw barcodes. It allows the symbology, colors, size, etc. to be selected and the specific data to be represented to be supplied in a simple configuration dictionary.

Symbologies supported include:

- 1D symbologies such as EAN, UPC, ISBN, etc. Note that the automatic addition of associated text is *not* included.
- Postal barcodes such as those used in the US, UK, Germany, Korea, Japan, Australia, etc.
- 2D codes such as data matrix, Aztec, QR Code, etc.

Barcodes can be configured to automatically snap to a size that ensures consistent module widths to maximize the likelihood of readability even at relatively low resolutions for digital printing.

Initial use of the Harlequin Barcode Generator is most likely to be added to output in combination with HqnImpose2.

Harlequin Barcode Generator support is a new layered option. Please ask your account manager if you'd like to include it in your RIP licenses.

For more information see the *Extensions Manual*, Appendix C, ScriptWorks barcode PS operator.



## 10.5 Dynamic overlays for variable data printing

Over the last few years we've put a lot of effort into increasing the speed of PDF/VT and optimized PDF files using Harlequin VariData. But there are still some opportunities that are a better fit for a simpler approach to variable data.

In Harlequin 12 we've added support for adding overlays on top of a single page PDF file. A configuration file specifies where marks should be added, and what form they should be in, and the data itself is either supplied in a CSV file or as automated counters.

The mark types available in Harlequin 12 are:

- Text, with control over font, size, color, alignment etc
- Graphics, with control over scaling, rotation etc
- Barcodes, with control over which symbology to use, color, size etc

Example use cases run from simple serial numbers on labels to QR Codes for personalized URLs to postal barcodes and addresses on envelopes.

The configuration file format is documented - see the *Extensions Manual* - but Global Graphics is not producing any tools to create such files at this time.

We're describing these as "overlays" because that's how we expect them to be used most often. But they can also be used to generate pages from scratch (e.g., for simple labels) or for imprinting over pre-printed backgrounds.

The dynamic overlays are included in the Simple Imposition layered option. You will need the new barcode layered option as well to use the Harlequin Barcode Generator in dynamic overlays.

For more information see the *Extensions Manual*, Chapter 7 - Simple imposition.

## 10.6 Run Length Encoding (RLE) and Object Map delivery

Harlequin Host Renderer up to v3 included support for two different methods of delivering additional metadata about individual pixels in the output alongside the raster data itself. Neither of these were supported in v4 or v11, but they have both been reinstated in Harlequin v12.

For more information see the *SDK Developer's Guide*, Chapter 4 - Capabilities.

### 10.6.1 RLE output delivery

RLE output can deliver 10- or 12-bit color contone data (or 8-bit mono) in a proprietary compressed form, rather than the 8- or 16-bit uncompressed contone data that is normally made available. More than 8-bit (256 levels) is especially useful in avoiding stepping/banding if post-RIP processing adjusts tone-values, but regular 16-bit contone can be very large. RLE is usually much more compact than delivering 16-bit contone data.

RLE can also encapsulate the object type and other gstate data from which each output pixel is derived for use in post-RIP processing. But RLE needs an RLE-specific consumer to process it; it is no longer "just" a raster.

If you have used RLE in the past, please note that the "transparency" RLE mode for post-RIP transparency blending has not been re-instated for v12.

## 10.6.2 Object type map delivery

An object type map is an additional channel that is delivered alongside the colorant channels in the raster data. It can be used to inform post-RIP processing what the original object type was for each pixel in the raster (e.g., to trigger different post-RIP screening).

The configuration structures for object maps have been completely reworked for v12 and it can now be used with any interleaving rather than only with band.

## 10.7 Server mode, multiple configurations and hot folder support

The Harlequin RIP core was designed for server-mode operation: a persistent process accepting input from multiple sources, rasterizing and sending output to different destinations. In Harlequin 12 Global Graphics have added production-ready code to support server configurations both in the `clrip` test harness executable and for tighter integration into OEM code.

Great care has been taken to ensure that the default behavior of both `clrip` and the SDK is unchanged if you do not make use of the new functionality.

For more information see the *SDK Developer's Guide*, Chapter 13 - New input methods for HHR.

The work falls into several parts:

### 10.7.1 Configuration

To date `clrip` has enabled a single configuration file to be loaded and that file must be stored in `SW/TestConfig`. From v12 multiple layered configuration files (or, more accurately, a configuration file and additional features) may be applied. Those configuration files may now be in any location on any accessible drive.

### 10.7.2 Automatic identification of input file types

Harlequin 12 will now automatically identify the type of any supported file when submitted. Post-Script input streams will also now be seekable and will report the "real" file name on disk rather than being described as `%config%`.

### 10.7.3 Persistent input sources (including hot folders)

HHR now has support for persistent input sources. One such source, for hot folders, is included in the SDK. If a persistent input source is available, HHR will stay active when it has processed any command-line jobs, waiting for new input to be available from the input source. A special "quit job" must be sent to the RIP (e.g., written into a hotfolder) to cause the RIP to quit, or the persistent input sources must be withdrawn programmatically, using new SDK APIs.

The new option `-H` identifies a hot folder location in the command line to `clrip`:

```
clrip -c CMYKComposite300dpi -f output/%J-%p.%o -C -H C:\inputs\hotfolder
```

### 10.7.4 Job and skin timelines

New timelines have been added for the skin overall and for each job, allowing clean, thread-safe access to contextual information (e.g., to determine when the RIP is processing a particular job submitted by the skin).

### 10.7.5 Input queue API

The HHR SDK now includes an input queue API. The API is used for both jobs submitted from the command line and for jobs submitted from persistent sources such as hot folders. The API supports job addition and deletion, pausing and resuming, iteration of configuration names, and notifications of queue changes through events.

## 10.8 Monitor information output

Monitor information output from both the core and the skin is now routed through monitor events. Monitor events carry metadata about the monitor information, including a related timeline, the output channel, and the monitor information type (including an error code and in many cases a machine-parsable unique ID for the message). This is mostly useful for OEMs performing complex integrations. Individual messages can be diverted, suppressed, or used to trigger warnings or alerts in the OEM's DFE or GUI.

For more information see the *SDK Developer's Guide*, Chapter 13 - New input methods for HHR.

## 10.9 New skin devices

### 10.9.1 Union file system

Harlequin Host Renderer 12 may use a union file system to access the SW directory. This means that the RIP can use multiple directory structures on disk, some of which are writable and some of which are not, but it sees the combination as a single directory tree.

The same SW directory can be used by multiple RIP instances. The SW directory itself is read-only. All files written by the RIP ostensibly into its SW directory are actually written into a writable directory that's specific to that one RIP instance, so there is no risk of temporary files from one RIP interfering with the activity of another RIP.

In Harlequin 12 the union file system is either on or off, meaning that the shared SW cannot be updated (e.g., with additional fonts) while the RIPs are all running. Your input on preferences as to future work in this area would be very welcome.

### 10.9.2 Prefix device

The prefix device allows for more efficient access to file system devices other than %os% that are mounted as subdirectories of the SW directory.

## 10.10 Emulation of Esko RIP rendering weights

In the labels and package printing sectors Esko is an important supplier and we take care to ensure that Harlequin can process PDF files generated by the Esko creation workflows.

But Esko also sell their RIPs for use in plate setting (especially for flexography) and in digital front ends for inkjet and toner presses. The original Esko RIP (called the FlexRIP in the flexo world) would render small vector graphics much lighter than Harlequin does by default. More recently Esko have switched to a different RIP based on APPE which now renders heavier/darker than Harlequin.

The differences are very subtle at the high resolutions used for a high quality flexo plate-making, but at resolutions below 1000dpi, common for digital presses, they can be quite significant.

There are some new configurations available in Harlequin 12 that can be used to match the rendering of vector graphics in either of those Esko RIPs. Note that this affects vector graphics rather than text, but a lot of text in labels and packaging is converted to vector outlines before the job reaches the RIP.

## 10.11 URW++ fonts to replace Linotype

Global Graphics acquired the URW++ font foundry (urwpp.de) in 2015, but to date has continued to ship fonts from Linotype with Harlequin RIPs. As from Harlequin 12 we will be switching to supply URW fonts with Harlequin instead of Linotype fonts. If your licenses include the Linotype option that will enable the 35 base URW fonts instead. If you're using the alternative "Shiva" fonts, those will be unaffected.

The URW fonts are significantly higher quality than the Linotype fonts, and this switch allow us to offer an additional pack of 101 fonts to provide the standard 136 "PostScript 3" font set.

It also means that we can offer more fonts, such as non-Latin fonts to help you break into new markets. More information on the URW++ products is available at <https://www.urwpp.de/en/>, but of course that site doesn't provide full information about OEM deals.

Please contact your account manager if you would like more information on options for extra fonts.

## 10.12 SOAR NX

The functionality previously provided by SOAR in Harlequin MultiRIP up to version 11 has been removed in HMR v12. Please contact Martin Bailey if you wish to discuss routes forward.



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Harlequin® MultiRIP™ — v12.0r2

16 November 2018

HMR Release Notes-OEM

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