RP-Image Reference

Overview

RP-Image is a packaging format used to define "RetroPlatform Image Templates" largely compliant with the format endorsed by the W3C for web applications. "RP" comes from RetroPlatform, the technology used in Amiga Forever and C64 Forever, and "Image" refers to the ability of describing and enabling the building of functional "images" (bootable or non-bootable ISO, directories, etc.) based on a combination of RetroPlatform data (e.g. ROM and OS files) and custom content (contained in the RP-Image file).

In its simplest form, an RP-Image file is a ZIP archive (.zip renamed to .rp-image) compressed using the "deflate" method and containing an XML manifest (rp-image-manifest.xml) plus optional additional content files.

RP-Image files were introduced in Amiga Forever and C64 Forever 2013, where they were used to replace the former dual-format download (installer plus ISO image and printable artwork) with a single installer. The ISO image is built from within the player, via the new Build Image option.

Benefits of the new functionality that can be shared by both third parties and users include:

- Content creators can offer easy-to-use .rp-image downloads to create bootable emulation discs and runtime environments

- Content creators can preconfigure optimal options (configuration information is included in the XML manifest)

- Cover and media artwork can be included in the same file

- Users only need to open the file, and RetroPlatform player adds it to the collection that is accessible from Tools/Build Image...

- Users can create compilations with their own content sets (game compilations, etc.)

- Natively compressed format (additional ZIP is not necessary)

This document describes the tags used in the XML manifest and the related package content.

Sample Package Content

The following example illustrates the content of an .rp-image file with three files at the root level, plus three directories.

```
cover −121x119mm−133 ppi . png
disc −120x120mm−133 ppi . png
rp−image−manifest . xml
/ autorun /
/ boot /
/ shared /
```

Sample Manifest

The following example illustrates a sample XML manifest to match the previous sample package content.

```xml
<?xml version=" 1 . 0 "  encoding="UTF−8" ?>
<rp−image>

    <requirements>
        <host>Cloanto (R)  RetroPlatform  Player (TM)</host>
        <playerversion>3 . 4 . 0 . 0</playerversion>
    </requirements>

    <uuid>83ea95c4 −9632−11e2−b989−0050c2490000</uuid>
    <version>3 . 4 . 0 . 0</version>
    <platform>amiga</platform>

    <title>
        <language>en</language>
        <text>My  Fantasy  DVD</text>
    </title>

    <configuration>
        <output−iso −volume−name>
            <default>MyFantasyDVD</default>
            <editable>true</editable>
        </output−iso −volume−name>

        <output−iso −file −name>
            <default>MyFantasy−DVD. iso</default>
        </output−iso −file −name>
```

```xml
<output-directory-name>
    <default>MyFantasyPE</default>
</output-directory-name>

<content-demoscene>
    <default>true</default>
    <editable>true</editable>
</content-demoscene>

<content-gallery>
    <default>false</default>
    <editable>true</editable>
</content-gallery>

<content-games>
    <default>true</default>
    <editable>true</editable>
</content-games>

<content-shared>
    <default>true</default>
    <editable>false</editable>
</content-shared>

<content-systems>
    <default>true</default>
    <editable>true</editable>
</content-systems>

<content-videos>
    <default>false</default>
    <editable>true</editable>
</content-videos>

<option-output>
    <default>iso</default>
    <alternate>directory</alternate>
</option-output>

<option-boot>
    <default>true</default>
    <editable>true</editable>
</option-boot>

<option-autorun>
    <default>true</default>
    <editable>true</editable>
</option-autorun>

<option-installer>
```

```xml
                <required>false</required>
                <type>msi</type>
                <destination>Private/Windows/Setup</
                    destination>
                <rename>MyFantasySetup.msi</rename>
            </option-installer>
        </configuration>

        <merge-shared>shared</merge-shared>
        <merge-boot>boot</merge-boot>
        <merge-autorun>autorun</merge-autorun>

        <build-iso>
            <executable>mkisofs.exe</executable>
            <boot>-d -D -r -full-iso9660-filenames -J -joliet
                -long -N -V %3 -A "Fantasy" -relaxed-filenames
                -allow-leading-dots -allow-multidot -allow-
                lowercase -no-iso-translate -exclude Thumbs.db
                -exclude desktop.ini -p EXAMPLE -publisher
                EXAMPLE -o %2 -b boot/isolinux/isolinux.bin -c
                boot/isolinux/boot.cat -no-emul-boot -boot-
                load-size 4 -boot-info-table %1</boot>
            <noboot>-d -D -r -full-iso9660-filenames -J -
                joliet-long -N -V %3 -A "Fantasy" -relaxed-
                filenames -allow-leading-dots -allow-multidot
                -allow-lowercase -no-iso-translate -exclude
                Thumbs.db -exclude desktop.ini -p EXAMPLE -
                publisher EXAMPLE -o %2 %1</noboot>
            <artwork>
                <type>jewel-box</type>
                <file>cover-121x119mm-133ppi.png</file>
                <size-unit>mm</size-unit>
                <size-x>121</size-x>
                <size-y>119</size-y>
                <ppi>133</ppi>
            </artwork>
            <artwork>
                <type>disc-dvd</type>
                <file>disc-120x120mm-133ppi.png</file>
                <size-unit>mm</size-unit>
                <size-x>120</size-x>
                <size-y>120</size-y>
                <ppi>133</ppi>
            </artwork>
        </build-iso>
    </rp-image>
```

XML Manifest

The manifest file must be named "rp-image-manifest.xml" and is the only file in the RP-Image package that is not optional. All other files are ignored unless they are referenced in the manifest.

Main Structure

The following generic elements are used in all RP-Image packages.

rp-image: Root element.

requirements

> **host:** Set to "Cloanto(R) RetroPlatform Player(TM)".
>
> **playerversion:** Set to 3.4.0.0 or higher.

uuid: Universally Unique Identifier, identifies RP-Image packages independently of the file name or textual title, and is combined with the version element to determine identity and succession. Use cloanto.com/uuid/ if you need to generate a UUID.

version: Package version number in the major.minor[maintenance[.build]] format (e.g. 1.0 or 1.2.3 or 1.2.3.4).

platform: Set to "amiga" or "cbm". Determines which player installs or opens the package. If more than one platform is defined via multiple elements, the behavior is currently undefined.

title

> **language:** Set to "en" or other lowercase ISO 639-2 language code to indicate the language of the title text.
>
> **text:** Package title for display in the list of titles.

The Configuration Element

The configuration element describes the availability and default values of the image creation options.

Some tags are shared. For example:

default: Sets the default value of the element.

editable: Determines whether the default value is user-editable (e.g. in the Build Image dialog) or not. If not specified, the default Boolean value is true.

The following elements may be included in the configuration element.

output-iso-volume-name: Determines the ISO volume name (in ISO output mode), as inserted at the %3 location in the <boot> and <noboot> elements.

output-iso-file-name: Determines the name of the ISO image file (in ISO output mode), as inserted at the %2 location in the <boot> and <noboot> elements. This must be editable, if ISO output is an option.

output-directory-name: Determines the name of the output directory (in directory output mode). This must be editable, if directory output is an option.

content-<name>: Determines whether the named directory (containing RP9 files) should be included in the data directory of the output. The name of the data directory itself is set by the platform (e.g. "Amiga Files", "CBM Files"). <name> may be one of applications, demoscene, gallery, games, shared, systems, videos, xxx.

option-output: Determines the default output format, and whether alternate formats may be selected. Valid values are: iso-cd, iso-dvd and directory.

option-boot: Boolean value, used to enable merge of merge-boot files into destination, and selection of boot variant of build-iso (if ISO output is set).

option-autorun: Boolean value, used to enable merge of merge-autorun files into destination.

option-installer: Determines whether the user can or must select an installer file from the Build Image dialog. For reasons of recursion, the installer itself may not be included in the default .rp-image file that is part of the installed package. If the element is missing, no option is presented to the user.

> **required:** If set, then the installer file must be selected.
>
> **type:** Determines the file type (e.g. used by the file selection dialog). Use without leading period. Examples: "msi", "exe".
>
> **destination:** Path, within the destination, using "/" as separators and without trailing "/". If the element is not present, the file is copied to the root of the destination.
>
> **rename:** Optionally sets how the chosen installer file should be named in the destination. Useful to normalize the name after a file download where the user may have changed the name.

Additional considerations for content-<name> elements:

- If at least one directory is selected, then the whole set of player files is copied to the destination as well, including the RetroPlatform Library, and cache files for both RetroPlatform Library and RP9 files.

- If a directory is missing (i.e. not listed in the player) it is neither listed in the Build Image options nor included in the output.

- If content-gallery is copied, the player additionally copies the ancillary files from the Gallery data set (e.g. "C:\Program Files (x86)\Cloanto\Amiga Forever\Gallery", if present) to the root of the target.

- If content-videos is copied, the player additionally copies the ancillary files from the Videos data set (e.g. "C:\Program Files (x86)\Cloanto\Amiga Forever\Videos", if present) to the root of the target.

Merge Elements

The following elements set if and how data from the package is to be merged into the output. Player-sourced files are copied to the destination after the merge directories have been copied.

merge-shared: If set, defines the name of a directory in the package the content of which is always merged with the player-sourced files in the output. This is the first directory to be copied.

merge-boot: If set, defines the name of a directory in the package the content of which which is merged with the player-sourced files in the output if a bootable output was set. This is the second directory to be copied.

merge-autorun: If set, defines the name of a directory in the package the content of which which is merged with the player-sourced files in the output if the Autorun option was set. This is the third directory to be copied.

ISO Build Elements

The following elements set ISO generation and cover printing features. If the output is set to directory, then this element is ignored. If however the output is set to be an ISO image, then the temporary output directory becomes the source argument (%1) for the ISO-generating executable.

build-iso: Root element.

executable: Sets the name of the linked executable. Currently must be set to "mkisofs.exe".

boot: Sets the command-line arguments for the ISO-generating executable. Used if the boot option is present and set.

  %1: Insertion point for source folder.

  %2: Insertion point for destination file name.

  %3: Insertion point for ISO volume name.

noboot: Same as boot, but used if the boot option is not present or not set.

artwork: Identifies a PNG file at the root of the package that may be used (opened, saved, etc.) for display or printing purposes.

type: Currently must be set to "jewel-box", "keep-case", "disc-cd" or "disc-dvd"

file: File name.

size-unit: Unit used for the size values. Currently must be set to "mm".

size-x: Describes the target width in size-unit unit values. Currently must be an integer value.

size-y: Describes the target height in size-unit unit values. Currently must be an integer value.

ppi: Describes the target image density, in pixels-per-inch. Currently must be an integer value.

Recommended artwork sizes:

- Jewel box: 121x119 mm

- Keep case: 273x183 mm

- CD or DVD discs: 120x120 mm

The recommended density is 133 ppi or higher.