RK05 Utilities Quick Reference Manual

George Wiley's DEC RK05 disk drive emulator is using a microSD card to hold disk images compatible with PDP-8/e RK8-E controllers. The Windows or Linux based RK05 Utilities described in the manual provide the following functions to create and manipulate these disk images:

- Convert SIMH RK05 images to native emulator images (RK05Simh2Bin).
- Create freshly formatted native emulator images (RK05Simh2Bin).
- Convert native emulator images to SIMH RK05 images (RK05Bin2Simh).
- Print detailed information about a native emulator image and optionally check the header word and CRC of all sectors (RK05BinInfo).
- Update the native image's descriptive label – equivalent to peeling a paper label off a disk cartridge and replacing it with a new updated paper label (RK05BinRelabel).

On the microSD card the RK05 emulator locates the disk image by searching the directory for a file with the "*.rk05" extension. Don't put multiple images onto a microSD card otherwise it is unpredictable which image will be opened.

The utilities are written in a C and are provided in source form with Microsoft VS2008 Solutions and with a Linux CMake instruction file.

To build the four RK05 Utilities under Windows open each VS2008 Solution (double click on the "*.sln" file), select a "Release" build from the drop down menu and then click on "Build | Rebuild Solution". The "*.exe" file will be in the "Release" directory of the Solution.

To build under Linux perform the following in a Terminal command line window:

- cd RK05Utilities
- mkdir build
- cd build
- cmake ..
- make

The built utilities will be in the "build" directory.

See the following pages for a brief description of each of these utilities.

RK05Simh2Bin – RK05 Utilities manual pages

NAME:

RK05Simh2Bin - Convert SIMH RK05 images to native emulator images or create freshly formatted native emulator images.

SYNOPSIS:

RK05Simh2Bin [options] *<simh_image_file> <emulator_image_file>*

OPTIONS:

-n *<image_name>*   - Image name (max 10 characters).
-d ** - Image Description (max 199 characters).

DESCRIPTION:

This utility converts SIMH RK05 images to the native image format used by the RK05 emulator. For each sector it generates the header word and calculates the sector CRC as expected by RK8-E controller connected to the RK05 emulator.

Some SIMH images are not full-size disk images. The SIMH RK05 emulation automatically pads non-existing sectors with zero. RK05Simh2Bin will perform this "padding with zeros" during conversion.

By specifying a zero length *<simh_image_file>* this "zero padding" feature will create a freshly formatted native emulator image with all sectors containing zeroes.

The RK05 emulator's display will show the drive number, but will also show the optional *<image_name>* if specified. This is equivalent to a sticky paper label attached to a real RK05 disk cartridge.

A more detailed description of the image can be added by specifying the optional **.

The RK05BinInfo utility will print the *<image_name>* and ** if these were specified during the image creation as described above.

EXAMPLES:

RK05Simh2Bin -n "OS/8 v3d" -d "OS/8 from Warren Young" v3d_rk05.simh os8v3d.rk05

RK05Simh2Bin -n "Scratch" -d "Scratch disk" empty.txt scratch.rk05

RK05Bin2Simh – RK05 Utilities manual pages

NAME:

RK05Bin2Simh - Convert native emulator images to SIMH RK05 images.

SYNOPSIS:

RK05Bin2Simh [options] <*emulator_image_file*> <*simh_image_file*>

OPTIONS:

-f   Force conversion even if there are sector header or CRC errors.

DESCRIPTION:

This utility converts native disk images used by the RK05 emulator to SIMH RK05 images. During conversion the sector headers and CRCs are verified. If a corruption is detected, then the conversion is aborted with an error message identifying the problem.

If there is a sector header or CRC error, then the utility can be forced to complete the conversion using the "*-f*" option.

At the start of the conversion the utility will print the image name, image creation date and description.

EXAMPLES:

RK05Bin2Simh -f os8.rk05 os8.simh

RK05BinInfo – RK05 Utilities manual pages

NAME:

RK05BinInfo - Display RK05 Emulator image information.

SYNOPSIS:

RK05BinInfo [options] *<emulator_image_file>*

OPTIONS:

-l   Detailed output.
-v   Verify header word and CRC of all sectors.

DESCRIPTION:

Without any optional parameter this utility will print the image name, image creation date and description.

With the "-l" parameter the utility will additionally display detailed emulation parameters.

With the "-v" parameter the utility will additionally verify the header words and CRCs of all sectors.

EXAMPLES:

RK05BinInfo -l -v os8.rk05

RK05BinRelabel – RK05 Utilities manual pages

NAME:

RK05BinRelabel - Update RK05 Emulator disk image "name" and "description" in image header.

SYNOPSIS:

RK05BinRelabel [options] *<emulator_image_file>*

OPTIONS:

-n *<image_name>*   - Image name (max 10 characters).
-d ** - Image Description (max 199 characters).

DESCRIPTION:

Use this utility to update the *<image_name>* and/or the **. This is equivalent to peeling a paper label off a disk cartridge and replacing it with a new updated paper label.

The utility will print out the old and the new settings.

EXAMPLES:

RK05BinRelabel -n "OS/8 Adv" -d "OS/8 with Adventure" os8_with_adventure.rk05