RedBS

Clone software for data recovery

Program manual v5.10

PC カスタム

RedBS is developed as commercial software to create clone HDD (sector copy) from failed HDD for data rescue .

equipped with a function to strongly read bad sectors (bad magnetic material) .

RedBS is not a sector copy software that simply excludes bad sectors .
When a physical failure sector (magnetic material failure , error return for normal access) is detected during scanning , special processing (reading that is not a simple retry) is attempted.
Also, depending on the severity, the failed sector information is passed on to the next phase processing, and a stronger read is attempted.

commercially available file recovery software , if the HDD (clone) that operates normally is used, it will be possible to perform stable and long - term rescue and efficient work.
Performing directly on a failed HDD with file recovery software that repeats harsh access has the risk of rapidly worsening the deterioration state, and cloning is an essential task even for recovery companies.

Maximum sector reads >>> Maximum number of file rescues

[Features / Functions]

- We are trying to improve the efficiency of sector reading even with a large capacity HDD by processing up to 4 steps depending on the severity of the failure.
- When using a device that operates normally, Phase 1 functions as a high-speed cloning process.
- It does not depend on the OS type, format presence / absence, file system type, partitioning, data presence / absence, etc. on the failed HDD.
- Arbitrary sector processing range specification function
- Function to continue even after processing is interrupted
- PC automatic shutdown function after processing is completed
- List output function of console display
- Output function of unreadable sector list
- Execution program check function at startup(If it is changed due to virus infection etc., the program will not start)
- Hidden area (DCO, HPA) presence / absence display, area release / arbitrary size setting function
- The sector range covers all sectors (except when the range is specified), and the purpose is complete cloning without automatic change depending on the existence or range of user data partitions, etc.
- No OS required, so it can be started in a short time. In addition, since it is not necessary to support OS version upgrades , it can be used for a long time as it is until the PC hardware life .

[Operating environment]

- PC model : Desktop (assembly machine) recommended
- CPU : 64bit
- UEFI-equipped PC : Ver2.3.1 or later Text mode (upports 100 columns x 31 lines or more)
- Controller chip : Products that comply with the IDE, AHCI, and NVMe specifications
- OS : Unnecessary

[Supported media types]

- Serial ATA-HDD, parallel ATA-HDD (48Bit / 28Bit), SSD

[Compatible HDD / SSD controller]

・AHCI controller (for SATA) : Up to 4 units/PC, up to 6 ports/controller
・IDE controller (for PATA) : Up to 4 units/PC, up to 2 ports/controller (only for master connection)
・NVMe : Up to 4 units/PC
・USB2 : Maximum 2 units/PC (only support for specifying the save destination)

Transfer method(software)	Connection method(hardware)	Recording medium(hardware)
IDE (Intelligent Drive Electronics)	Parallel (cable)	PATA-HDD
IDE (Intelligent Drive Electronics)	Parallel (cable)	PATA-SSD
IDE (Intelligent Drive Electronics)	Serial (cable)	SATA-HDD
IDE (Intelligent Drive Electronics)	Serial (cable)	SATA-SSD
AHCI (Advanced Host Controller Interface)	Serial (cable)	SATA-HDD
AHCI (Advanced Host Controller Interface)	Serial (cable)	SATA-SSD
NVMe (Non-Volatile Memory Express)	PCIexpress(slot)	M.2-SSD
NVMe (Non-Volatile Memory Express)	PCIexpress(slot)	U.2-SSD
NVMe (Non-Volatile Memory Express)	PCIexpress(slot)	Express-SSD

[Display function]

・Device-specific information
Model name, serial number, firmware version, total number of sectors, total capacity, supported speed, ATA standard, presence / absence of hidden area (DCO, HPA), etc.
* " dco " displayed in red: DCO function cannot be operated due to DCO block (FREEZE LOCK) or non-compliance (existence of DCO hidden area is unknown)
* " hpa " displayed in red: HPA function cannot be operated due to non-compliance (existence of HPA hidden area is unknown)
・Processing progress information
Number of sectors (start of execution, number of rescues, number of skips, number of unreadable , number of warnings, number of remaining), transfer speed, estimated end date and time, estimated required time
・Various status registers of HDD / SSD controller

[Restrictions on Free (Demo) version and current version]

・Rescue target area : From sector 0 to 38GB position (Product version is unlimited)
・USB2 interface : Only support for specifying the save destination
・RAID controller interface : Not supported
・Advertisement display at startup : No product version display
・Hidden area (DCO, HPA) release/setting : Release only (arbitrary size setting/release is possible for the product version)

[Setup procedure]

1. Format the boot device (USB-HDD / USB memory) (file system: FAT32)
2. Copy the expanded folder ("EFI") directly under the drive of the boot device (USB-HDD / USB memory)
3. Connect only two devices, the failed device and the clone destination device, to the PC (motherboard)
   * When using a USB device, turn it on if there is a USB device cable connection and device power supply.
4. Various UEFI settings (reference)
   ・Secure Boot : Disable
   ・Fast Boot : Disable
   ・CSM : Enable * Use of extended I/F card (IDE, AHCI)

[Usage procedure]

1. Set the boot device of the PC to USB-HDD or USB memory in UEFI mode and boot the PC
   * PC power ON → Startup menu display (PF key repeated press) → UEFI xxx (xxx: above boot device name) selection

2. After displaying the prompt "Startup Parameter>", specify the following parameters arbitrarily and press the Enter key.
   ・CAN : Program execution cancellation
   ・USB : Device search including USB connection HDD (rescue data storage destination)
   ・EXP : Device search including PCI express connection SSD (M.2 etc.)
   * When the device is recognized normally, a list of connection port numbers and device information is displayed.

3. After displaying the prompt "Parameter>", specify the following execution parameters and press the Enter key. (No distinction between upper and lower input characters)
   -Mandatory designation
   ・RRnn nn: failed device port number (clone source)
   ・WWnn nn: save destination port number (clone destination)

   -Optional (additional) specification
   ・LSn～n n～n: Starting sector number of the failed device. Default: zero.
   Capacity unit designation character (arbitrary): k, m, g, t
   ・LEn～n n～n: End sector number of the failed device. Default: Last sector.
   Capacity unit designation character (arbitrary): k, m, g, t
   ・LLn～n n～n: The number of sectors from the start sector of the failed device.
   Capacity unit designation character (arbitrary): k, m, g, t
   ・PAD0xnn When the sector cannot be read, the area for one sector is written to the clone destination with a nn value.
   nn: 1-byte hexadecimal designation (00-ff). Default for "0xnn": 0x00 value
   ・FOR,FOR2,FOR3 Bad sector strong read (strong to strongest, increased processing time)
   ・DCOR,DCOW,DCOB Release the hidden area setting by DCO and make it the processing target area
   (DCOR: Scan device, DCOW: Storage device, DCOB: Both devices)
   When the HPA hidden area exists, it will be released including the HPA hidden area.
   ・DCORn～n,DCOWn～n, DCOBn～n When the number of sectors is specified (n～n), set the hidden area by DCO.
   Capacity unit specification character (optional)：k,m,g,t
   ・HPAR,HPAW,HPAB When DCOx is not specified, the HPA hidden area is released and used as the processing target area.
   (HPAR: Scan device, HPAW: Storage device, HPAB: Both devices)
   ・HPARn～n,HPAWn～n, HPABn～n When the number of sectors is specified (n～n), set the hidden area by HPA.
   Capacity unit specification character (optional)：k,m,g,t
   ・LST Unreadable sector list output (up to 10000)
   ・SHD PC automatic shutdown after processing

   -Optional (single) designation
   ・CAN Cancel program execution
   ・CON Continue the stopped processing

4. After displaying the prompt “Start Yes / No / Cancel?>”, Specify the execution confirmation parameter (y / n / c) and press the Enter key.

5. Stop operation during execution After pressing the'Esc'key to display the following prompt (it may take some time) “Interrupt Command[Stop/shutsDown(s/d/n)] ?>”
   s:Stop d:PC shutdown after processing is completed n:Enter stop release (process continuation)

[Specification example]

Startup Parameter ＞ * Press the Enter key without input (normal)

Startup Parameter ＞ USB * Search specification including USB-connected HDD

== After displaying the device list ==

Parameter > rr1 ww0

* Clone processing from the failed device on port 1 to the device on port 0

Parameter > rr1 ww0 ls1234 le123456 pad

* Clone from the failed device of port 1 to the device of port 0 from the start sector 1234 position to the end sector 123456 position, and write the unrescuable sector with 0x00 value.

Parameter > rr1 ww0 ls10m le15g

* Clone from the failed device on port 1 to the device on port 0 from the start sector 10MB position to the end sector 15GB position.

Parameter > rr1 ww0 pad0xff shd

* Clone processing is performed from the failed device on port 1 to the device on port 0, the unrescuable sector is written with a 0xFF value, and the PC is automatically shutdown after the processing is completed.

Parameter > rr1 ww0 ls10m le15m for

* From the failed device on port 1 to the device on port 0 Bad sector strong read from the start sector 10MB position to the end sector 15MB position

Parameter > rr1 ww0 hpar

* From the failed device on port 1 to the device on port 0, the HPA hidden area of the Scan device is released and cloned as the processing target area.

Parameter > rr1 ww0 dcor

* From the failed device on port 1 to the device on port 0, the DCO hidden area of the Scan device is released and cloned as the processing target area.

Parameter > rr1 ww0 dcor123m

* Set 123 Mbytes as the DCO hidden area on the Scan device, and perform cloning processing by removing the hidden area from the failed device on port 1 to the device on port 0.

Parameter > can

* Cancellation of processing execution

Parameter > con

* Continue the process stopped by pressing the'Esc'key while the process is being executed.

There are sites that publish, sell, and download programs developed by "PC カスタム" without permission.
The programs we are developing are published (including free downloads) only on our site and the " Vector " site.
Please be careful not to be damaged by fraud .

Note 1)
・We do not support failures other than defective magnetic materials (failures such as boards, motors, heads, etc.)
・The UEFI standard is multifunctional, but not all functions are built into the ROM chip, and the motherboard (firmware manufacturer) It may not work due to differences in specifications.
(Actually, only the minimum required UEFI functions are built in, and many UEFI functions are not built in.)
・When connecting to the IDE (parallel HDD), slave connection is not recognized. Please try another port (master) connection. (HDD jumper PIN To the master)
・If a log write error occurs on the USB memory, try "CHKDSK drive: /r" for the USB memory.
・In any case, the user is responsible for the results obtained by using this program.
In addition, we do not take any responsibility for warranty or defect. please note that.

Note 2)
・The DCO / HPA function is a setting function that makes the remaining area (rear part) a hidden area (inaccessible / invisible from the OS) by setting the user capacity size of the HDD small (changing the position of the last sector). (Please search the internet for details) .
・DCO and HPA (white) display in the device list information line means that a hidden area is set .
・If "dco" (red) is displayed , the following operations are required because the DCO block cannot handle it (if the hidden area is excluded from the processing target, the following operations are not required).
・Two trial methods to lift the prohibition of DCO operation by DCO block
Part 1.
1) PC power off
2) Remove the power connector from the connected HDD (maintain the connection of the communication cable) and start the PC (RedBS).
3) After displaying the prompt " Startup Parameter> " , plug the power connector into the HDD and press the ENTER key.
Part 2.
Use with extended I/F card connection

・The DCO block (capacity change prevention function) is realized by issuing a FREEZE LOCK command from the BIOS to the HDD when the PC power is turned on.
Therefore, the FREEZE LOCK command can be avoided by connecting with an extended I/F controller that is not under the direct control of the BIOS or the HDD is turned off when the PC power is turned on .
・Some HDDs do not support DCO and HPA functions.

* Reading bad sectors
Generally, the manufacturer 's driver software specifications (built into the OS for direct I/O with the hardware) are not access specifications that assume faulty media .
It is created for the purpose of high-speed , large-capacity access to normally operating media .
Therefore, no matter how much you access on the OS (via the driver software), the reading ability is limited .
”RedBS“ scans sectors directly with a special algorithm without using driver software such as OS / BIOS / UEFI .

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