
RC5000 File System

FSFORMAT

Operator's Guide

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Abstract:

This manual contains detailed information on how to format winchester discs installed on RC5000.

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1. INTRODUCTION

Purpose

The FSFORMAT program is used to initialize a harddisk in such a way that it can be used by the File System used in RC5000 system. The program writes (or reads) the volume description file.

The program may be used to check read a disk too.

Prerequisites

The standard RC5000 Running System (SW50020) and the File System (SW50220) must be loaded and started before FSFORMAT is started.

File System Concepts

Every disk contains a special system file: the volume description file ("voldescr"). This file holds data concerning the status of the volume (volumename, files, used areas, etc).

Furthermore it contains the Slice Allocation Table, the Malfunctions Bit Table, and the File Location Table.

A volume consists of a number of pages (often called sectors). Each page contains 512 bytes.

Pages are not allocated (reserved) individually: the smallest unit of allocation is a slice (consisting of number of consecutive pages). The slice size may vary from volume to volume.

Operation

First the program must be loaded into the memory.

If you are using the TOP35 system then the fsformat program is included in the bootfile, so it is in the memory already. In other configurations the program must be loaded via LAN or disk,

e.g. "from lan in 16 server gaucha4 user cp9 load fsformat".

The program is started by giving the command "run fsformat" to opsys.

If disk formatting is wanted, FSFORMAT must be the only user of the filesystem, i.e. "top" (TOP35 main program) and "fp" must be removed and you must "run fs" after removal of "top".

If the program is used for check reading only, it may run together with other file system programs, but never with "top" because "top" has exclusive access to the disk.

The program identifies itself by writing:

FSFORMAT version <release> <data>

where <release> is 2.15 or more
and <data> is 91.05.22 or later.

Please note that physical formatting of a 20Mbyte disk takes about 20 minutes.

2. PHYSICAL CONFIGURATION

The program asks for parameters for the controller and the disk. Parameters are:

Controller types:

The program writes: `contr type (0..2) = 2 ?`

Where "contr type" is the parameter name, "0" is the low limit, "2" is the high limit, "= 2" is designates the default value, i.e. the value given if no new value is typed in.

The answer may be:

- | | |
|---|--|
| 0 | for WDD202, 203, 204
using DTC 510B, DTC 510DB, OMTI 5100 |
| 1 | for WDD207, WDD208
using WD1002SHD |
| 2 | for WDD209
using MICROPOLIS 1684-7 |

Default value is 2.

Volume types:

The answer may be:

- | | |
|---|------------------|
| 0 | for 10 Megabytes |
| 1 | for 20 Megabytes |

Default value is 1.

NB for WDD209 the volume type is preset to 2 (336 Megabytes).

- 1 **deviceno:** (only for systems with more than one disk)
(the number is used to identify the drive for the saidriver program)

Answers may be 1, 2, 3

- **cu:**
(controller unit no on SCSI bus)

The answer must be between 0 and 7.
Default value is 0.

Now the system is ready to write address marks on all sectors. (Physical formatting).

(The disk on WDD209 is formatted by delivery).

If physical formatting is done all information (all files) will be destroyed.

The formatting takes one minute per Megabyte.

Max. slices:

(Amount of bits in the slice allocation table)

The answer must be between 2048 and 32767.

Default value for 10 and 20 Megabytes is 2048.

Default value for 336 Megabytes is 32767.

pages: ○

(Amount of pages (= segments) on the disk)

The answer must be between 0 and maxpages where maxpages depends on the controller.

For WDD202	:	22320
For WDD208	:	41820
For WDD209	:	656744

Default value is maxpages.

The value zero means a very large value.

Slice size:

(Amount of pages per slice)

10 mb slice size 240
20 mb - - 220

The answer must be between 1 and 128.

Default value is number of pages divided by number of slices plus one.

Files:

(Amount of files in the file loaction table)

The answer must be between 24 and number of slices.

Default value is number 2048 for 10 Mbyte and 20 Mbyte disks and 8191 for the 336 Mbyte disk.

Check dist:

(distance between pages to be checked)

The answer must be between 0 and 32767.

Default value is number of sectors per track.

If distance is zero then no check is done else the whole disk is checked.

one	:	all sectors are read
default	:	one reading per track

maxint : very few readings.

After the check the program writes:

Volumesize: NN slices of NN pages of 512 bytes = NNN.N mbytes.

3. LOGICAL CONFIGURATION

Now the program may write the volume descriptor file (with slice tables and file table), and the root directory on the disk.

Initialize of volume wanted (y/n) :

y: for write volume descriptor and delete all existing files.
n: for no write

Parameters for volume descriptor are:

volumename:

The name may consist of up to 16 characters, e.g. RC test17 SN:33

root files:

(Amount of files in the root catalog)

The answer must be between 4 and 128.
Default value is 20.

4. DEFECTIVE LIST

If the disk has some bad areas by delivery (see defective list from manufacturer) these areas should be described in the slice table.

This is done by answering yes to
Mark bad tracks from defective list:

y:	make list of bad areas
n:	make no list

For each bad area cylinder and head are input.

If a disk gets a bad area you may use FSFORMAT to update the bad area list (without initializing the whole disk).

If the file system discovers a bad area during normal operation this area will be marked in the slice table automatically.

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