Tape Drive Densities and Special Files

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About This Document

This document addresses some common questions about tape drives, densities, and rmtX.Y special files. This document is applicable to AIX versions 3.2 and 4.1. For detailed information concerning all supported tape drives, see Chapter 10 of the IBM RISC System/6000 System Management Guide, SC23-2457.

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Densities and Tapes

The following table lists tapes that can be used with the IBM 7207-001 (QIC-150), 7207-011 (QIC-525), and 7207-012 (QIC-1000) tape drives.

Tape Type	Model 001	Model 011	Model 012
DC300XLP	R	R	R
DC600A	R/W (15)	R *	R *
DC6150	R/W (15,16)	R/W (15,16)	R/W (15,16)
DC6250	R/W (15,16)	R/W (15,16)	R/W (15,16)
DC6037	R/W (15,16)	R/W (15,16)	R/W (15,16)
DC6320	R/W (15,16)	R/W (15,16)	R/W (15,16)
DC6525	R **	R/W (15,16,17)	R/W (15,16,17)
DC9100	N/A	N/A	R/W (21)
DC9120	N/A	N/A	R/W (21)

Note:

R Read only
R/W Read and write
N/A Not compatible

***** Not recommended -- will cause excessive wear to read/write head
****** Not recommended -- will clog read/write head

( ) Numbers in parenthesis are allowable density settings. For greatest capacity, use the highest number.

Density Setting	Tape Format
15	QIC 120
16	QIC 150
17	QIC 525
21	QIC 1000

You can predefine two writing-density settings which you can later choose by specifying the "Y" extension of the rmtX.Y special file. If you do not define the settings, the default settings for the tape drive will be used.

The following charts in the left-hand column show possible values for the density settings with various tape drives. The charts in the right-hand column show the tapes that can be used with the drives.

7206 Model 001 4mm, 7206 Model 005 4mm, 2mm Tape Drives

Density Setting	Description
19	Writes in DDS (Digital Data Storage) format (not modifiable for 4mm)
00	Factory power-on default of DDS format (not modifiable for 4mm)

Note: Less than 324 listed as "other SCSI Tape Drive". 324 and greater: 4mm listed as either 2.0 GB 4mm tape drive or 4.0 GB 4mm tape drive.

Note: The drive is always in compression mode.

Part Number	Cartridge Type 4mm	Usage
21F8758	Data	
21F8763	Cleaning	50 cleanings

Note: Be sure to use data dat tapes instead of voice dat tapes with the 7206 4mm tape drive. Voice tapes will not work. Data dat tapes are marked "DDS ||||" on the cartridge.

7207 Model 001 1/4" Internal and External Tape Drives, QIC-150

Density Setting	Description
16	Writes in QIC 150 format
15	Writes in QIC 120 format
00	Factory power-on default for QIC 150 or last saved permanent MODE select density as set by using system

Part Number	Cartridge Type 1/4"	Usage
21F8588	Data	QIC-150 or QIC-120
21F8570	Cleaning	50 cleanings

7207 Model 011 1/4" Tape Drive, QIC-525

Density Setting	Description
17	Writes in QIC 525 format
16	Writes in QIC 150 format
15	Writes in QIC 120 format
00	Factory power-on default for QIC 525 or last saved permanent MODE select density as set by using system

Part Number	Cartridge Type 1/4"	Usage
21F8587	Data	QIC-525
21F8588	Data	QIC-150 or QIC-120
21F8570	Cleaning	50 cleanings

7207 Model 012 1/4" Tape Drive, QIC-1000

Density Setting	Description
21	Writes in QIC 1000 format
17	Writes in QIC 525 format
16	Writes in QIC 150 format
15	Writes in QIC 120 format
00	Factory power-on default for QIC 1000 or last saved permanent MODE select density as set by using system

Part Number	Cartridge Type 1/4"	Usage
21F8732	Data	QIC-1000
21F8587	Data	QIC-525
21F8588	Data	QIC-150 or QIC-120
21F8570	Cleaning	50 cleanings

7208 Model 001 8mm External and 2.3GB Internal Drive

Density Setting	Description
00	Drive is single density – 2.3GB; There is no Density 1 and 2 for this drive.
00	Factory power-on default

Part Number	Cartridge Type 8mm	Usage
21F8595	Data	2.3 GB
21F8593	Cleaning	12 cleanings

7208 Model 011
012 8mm External and 5.0GB; 7.0 Internal Drive

Density Setting	Description
140	Writes in 5.0GB mode and will enable data compression; also, to do compression you must use "DATA COMPRESSION = yes"
21	Writes in 5.0GB mode and will NOT do data compression
20	Writes in 2.3GB mode and will NOT do data compression
00	Factory power-on default for 5.0GB data compression mode

Part Number	Cartridge Type 8mm	Usage
21F8595	Data	2.3 & 5.0 GB, 112M length
21F8593	Cleaning	35 cleanings
	Data	7.0 GB 160m length

9348 Model 012 9-Track

Density Setting	Description
2	Writes in 1600 bits per inch
3	Writes in 6250 bits per inch

How to Change the Density Settings

For a listing of possible values for the density settings for various tape drives see "Densities and Tapes".

1. At the command line, type the following:

   ```
   smit tape
   ```

2. Select `Change/Show Characteristics of a Tape Drive`.
3. Look for the name of your tape drive.
4. If you see the name of the tape drive, determine its rmt numeric identifier, and select it.
5. If you do not see the name of your drive, look for "Other SCSI Tape Drive," determine its rmt identifier; then select it.
6. At the bottom of the menu, you will see:

```
DENSITY setting #1  {  }
DENSITY setting #2  {  }
```

To select a writing density, type in the number which corresponds to the desired density for the tape drive model you have.

Notes:

a. Do not type in the QIC number or gigabyte number. Enter instead the corresponding number as shown in "Densities and Tapes".

b. Do not use leading 0s. `015` **is not** the same as `15`

Using the rmtX.Y Special Files

The rmtX.Y file is used in commands, such as backup, to specify the tape drive device. For example,

```
backup -0 -u / /dev/rmt0
```

The "X" part of the rmtX.Y file name specifies which tape drive is used. The first tape drive connected is `rmt0`, the second is `rmt1`, etc. The "Y" extension on the file name specifies the tape drive action and writing density as shown in the following chart:

Special File	Retension	Rewind	Density Setting
rmtX	no	yes	1
rmtX.1	no	no	1
rmtX.2	yes	yes	1
rmtX.3	yes	no	1
rmtX.4	no	yes	2
rmtX.5	no	no	2
rmtX.6	yes	yes	2
rmtX.7	yes	no	2

An Example

Suppose you have a 7207 1/4" tape drive and you have set Density #1 = 16 and Density #2 = 15.

If you use special file `rmt0.3`, the drive will write in QIC 150 density, will not rewind, and will retension.

If you use special file `rmt0.6`, the drive will write in QIC 120 density, rewind, and retension.

Media Supplies

Purchase supplies and accessories from IBM's authorized distributors, or call 1-800-IBM-2468 for purchasing information.

Cleaning Recommendations

- Clean your tape drive at the recommended interval.
- Clean your tape drive more frequently if it is used in a harsh environment. Refer to your tape drive documentation.
- Clean your tape drive with the correct cleaning cartridge before calling for service.
- Use the correct media for your drive. Not all media can support all writing densities because the type of media determines the writing density.

Warranty Information

If you use unsupported media, including unsupported cleaning media, you will void your warranty. Video grade tapes are **not** supported.

Reader's Comments

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