

Subject: Using SCSI Tape Drives with the IBM RS/6000 System	Initial Release Date: 4/1/91	Revision Date: 4/15/93	Revision: E
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1. Purpose and Scope

This application note provides the information necessary to allow the system integrator to interface the Qualstar 1054, 1260S, or 34XXS tape drive to the IBM RS/6000. A working knowledge of the IBM RS/6000 (hereafter referred to as the system) and of the AIX operating system is assumed. For detailed information regarding the operation and use of Qualstar tape drives, refer to the User's Guide which came with the tape drive.

Because the 9348 tape system does not support 800 and 3200 cpi operation, a Qualstar tape drive which has been configured to emulate the IBM Model 9348 tape drive will not read or write tapes at those densities. This is a limitation of the 9348 tape system, not of the Qualstar tape drive.

2. Configuring the Tape Drive

Qualstar SCSI tape drives are nine-track, half-inch tape drives configured as SCSI sequential access devices and as such, are to be connected to the SCSI port of the RS/6000. Complete instructions for connecting and configuring the tape drive are given in the User's Guide which came with the tape drive. While connecting the tape drive, the following requirements must be met:

- The tape drive is shipped from the factory with internal terminators installed. If the tape drive is not physically located at one end of the SCSI cable or the other, these terminators must be removed. If this is not done, improper system operation may result.
- Before attempting to connect the tape drive to the system, verify that the default drive configuration settings given in the *Supplemental SCSI Drive Information* chapter of the User's Guide are set in the tape drive. Failure to do so may result in improper operation.
- To enable communications between the tape drive and the system, the tape drive must be told to emulate an IBM Model 9348 tape drive by setting its Inquiry parameter to **IBM 9348**.
 - a) On 1054 and 1260S tape drives, this is done by setting switches on the SCSI-2 Adapter board on the rear of the drive.

On 34XXS drives, this is done by accessing the SCSI Configuration menu via the front panel.
 - b) The procedure for changing the Inquiry parameter, and all other SCSI parameters as well, is given in the *Supplemental SCSI Drive Information* chapter of the User's Guide.

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- If the Inquiry parameter is not correct, the system will not be able to communicate with the tape drive. The remainder of the SCSI Configuration parameters should be left at their factory defaults.

3. Bringing Up the System

Once the hardware connection has been made and the tape drive has been correctly configured, the system is ready to be brought up. The tape drive should be powered up before the system, allowing the system to recognize the tape drive as a nine-track, half-inch tape device (subsequently referred to in this document as *the tape device*) and to make it available.

4. Configuring the Tape Special Device File

Use `smit` to configure the tape device. Once the tape device has been configured, the system will always look for the tape drive. If the tape drive is not powered up when the system is booted, the system will display a message indicating that a configured device was not found and the tape device will not be made available. The tape device can subsequently be made available, when required, by using `smit`. In this case, the system does not need to be rebooted.

The tape device must be set (using `smit`) for the variable length block mode in order to read ANSI or IBM Standard labeled or unlabeled tapes using `dd`; `tar` and `cpio` can be used in either the variable or fixed length block modes.

The tape device is available as **rmtX** or as **rmtX.Y**, where **X** is the logical device number and **Y** is the SCSI Device ID as set in the tape drive.

- **rmtX** is a rewind device, and will always write tapes at 6250 cpi (GCR).
- **rmtX.Y** is a no-rewind device and will always write tapes at 1600 cpi (PE). **rmtX.Y** will write one filemark at the end of each file. To generate logical EOT, the user must use the `tctl` utility to write the second filemark.
- Neither **rmtX** nor **rmtX.Y** will write 3200 cpi tapes, but both will read tapes recorded at any density.

5. Examples

- **rmt1.5** - This is a no-rewind tape device at SCSI ID 5.
- **rmt1** - This is a rewind device.