

Configuring the RAID Array 7000 for Dual Controller Operation With NetWare 4



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Introduction

This application note describes how to load the Adaptec AIC7870.DSK driver in Netware 4 to take advantage of the RAID Array 7000 Dual-Controller functionality. To configure the dual-controller RAID Array 7000, refer to your *Getting Started, HSZ70 Solutions Software V7.1 for Novell Netware Installation Guide, AA-R8JUC-TE*. To take full advantage of the dual controller features of the RAID Array 7000, Adaptec driver AIC7870.DSK Version d4.10 S41 must be loaded in STARTUP.NCF with the following switches:

```
Load AIC7870.DSK lun_enable=ff multlun_targets=ff io_timeout=30 io_retries=10
```

The dual-controller failover capability must have the *io_timeout* and the *io_retries* values set. This value depends on the number and size of storagesets configured. If you are using a single controller RAID Array 7000, you do not need these two switches. The recommended values are *io_timeout=30 io_retries=10*. The *io_timeout* variable is a counter that is used to detect and retry/abort I/O requests that have either come back with an error or haven't come back at all (i.e. lost or not completed for some reason). Approximately every two seconds, the driver calls a timer routine that decrements the *io_timeout* counter of all I/O requests. When it reaches 0, the I/O request is either retried or aborted (depending on the *io_retries* variable). Therefore, *io_timeout * 2* is approximately the number of seconds the driver waits before retrying or aborting a given I/O command. Its primary purpose is to prevent the system from hanging while waiting for lost I/O requests.

The *io_retries* is a counter for how many times to retry a command before aborting it. Every time the *io_timeout* counter reaches 0, *io_retries* is decremented and the I/O request is retried. When *io_retries* reaches 0, the driver reports an error to the OS (i.e. the request is aborted). Note that if the request is retried, its *io_timeout* counter is reset to the user-specified value. Thus, if we had a time-out of 30 seconds and a retry count of 10, we could potentially wait five minutes before reporting the request's status back to the OS.

Mapping NetWare Partitions with Device ID's

The *lun_enable* and *multlun_targets* switches must be set for Netware to see multiple luns configured on the RAID Array 7000. If you do not use multiple LUNs, you do not need to enable these two switches.

<i>lun_enable</i> =	LUN scan enable mask on all targets	Hexadecimal 0 - FF	1 (Scan LUN 0 only)
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56. Device #48 DEC HSZ70 (5D020605)

57. Device #49 DEC HSZ70 (5D020705)

Device #49 DEC HSZ70 (5D020705) breaks down as:

5D	02	07	05
adapter device ID,	adapter number,	LUN number,	SCSI ID

This is the same device (as seen from the CLI):

DISK60200	disk	6 2 0	D507
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In this case, D5 is the SCSI ID and the 07 is the LUN.