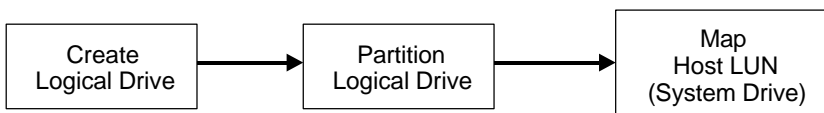


## Chapter 6 Configuring RAID

### 6.1 Starting to Build a RAID System Drive

The following figure is a basic flowchart when configuring a RAID system. Hardware installation must be completed before any configurations take place.



When power is turned on, the DA-3000 RAID controller scans all the hard drives that are on all the drive channels. If a hard drive was connected after the controller completes initialization, use the “SCAN SCSI DRIVE” function to let the controller recognize the newly added hard drive and configure it as a member of a logical drive or a spare drive.

In accordance to your requirement, configure a logical drive to contain one or more hard drives based on the desired RAID level, and partition the logical drive into one or several partitions. Map each partition as one system drive (LUN). The host SCSI adapter will recognize the system drives after re-scanning the host SCSI bus.

Since the controller is totally operating system independent, the operating system of the host computer will not be able to find out whether the attached devices are physical hard drives or virtual system drives created by the RAID controller.

#### **NOTE:**

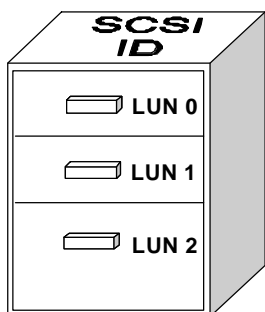


A “Logical Drive” is a set of drives grouped together to operate under a given RAID level and appears as a single contiguous drive. The DA-3000 controller is capable of grouping connected drives to as many as 8 logical drives, each configured on the same or different RAID levels. A logical drive can be further divided into a maximum of 8 “Partitions”. During operation, the host sees an unpartitioned logical drive or a partition of a partitioned logical drive as one single physical drive.

## 6.2 *How the RAID Controller Works?*

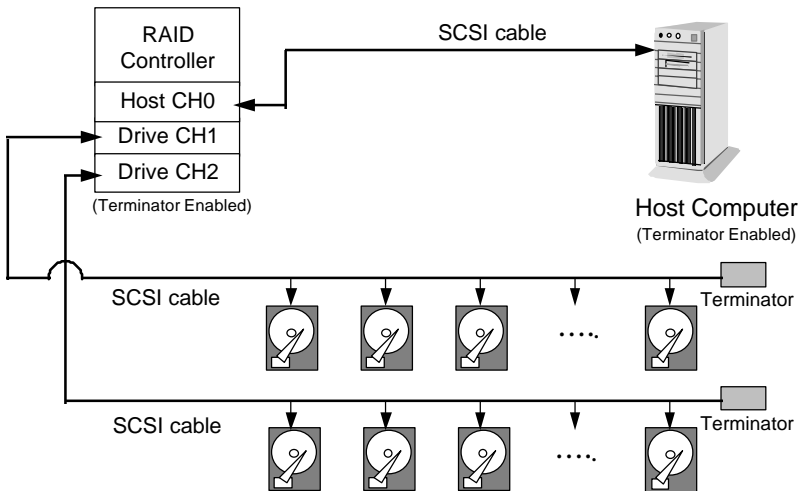
### 6.2.1 SCSI Channel, SCSI ID and LUN

A SCSI channel (SCSI bus) can connect up to 15 devices (the SCSI controller itself excluded) when the Wide function is enabled (16-bit SCSI). It can connect up to 7 devices (the SCSI controller itself excluded) when the Wide function is disabled (8-bit SCSI). Each device has one unique SCSI ID. Two devices owning the same SCSI ID is not allowed.



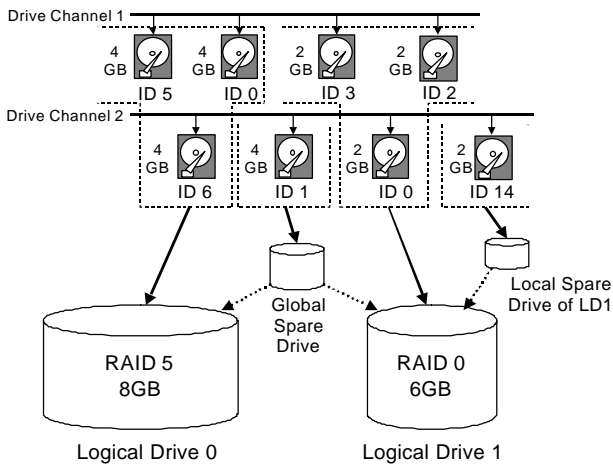
The figure on the left is a very good example. If you are to file document into a cabinet, you must put the document into one of the drawer. From a SCSI point of view, a SCSI ID is like a cabinet, and the drawers are the LUNs. Each SCSI ID can have up to 32 LUNs (Logical Unit). Data can be stored into one of the LUNs of the SCSI ID. Most SCSI host adapters treat a LUN like another SCSI device.

## 6.2.2 Understanding Step by Step



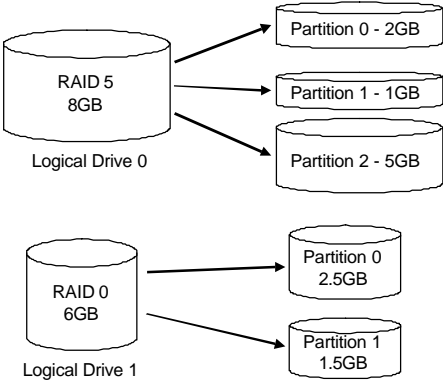
Physical connection should look similar to the figure shown on the previous page. The channel connected to the host adapter is the host channel, and the channels connected to the drives are the drive channels.

A Logical Drive consists of a group of SCSI drives. Drives in one logical drive do not have to come from the same SCSI channel. Also,

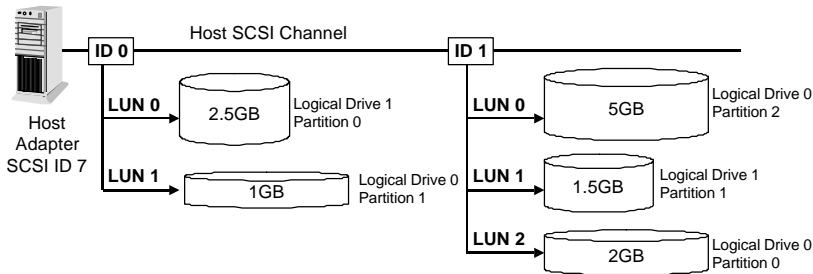


each logical drive can be configured a different RAID level.

A drive can be assigned as the Local Spare Drive of one specified logical drive, or as Global Spare Drive.



You may divide a logical drive into several partitions, or use the entire logical drive as one single partition.



Map each partition to a host LUN. The LUN will then virtually appear to the host SCSI adapter as an individual hard drive.