SLES10 - Device ID mapping HOWTO

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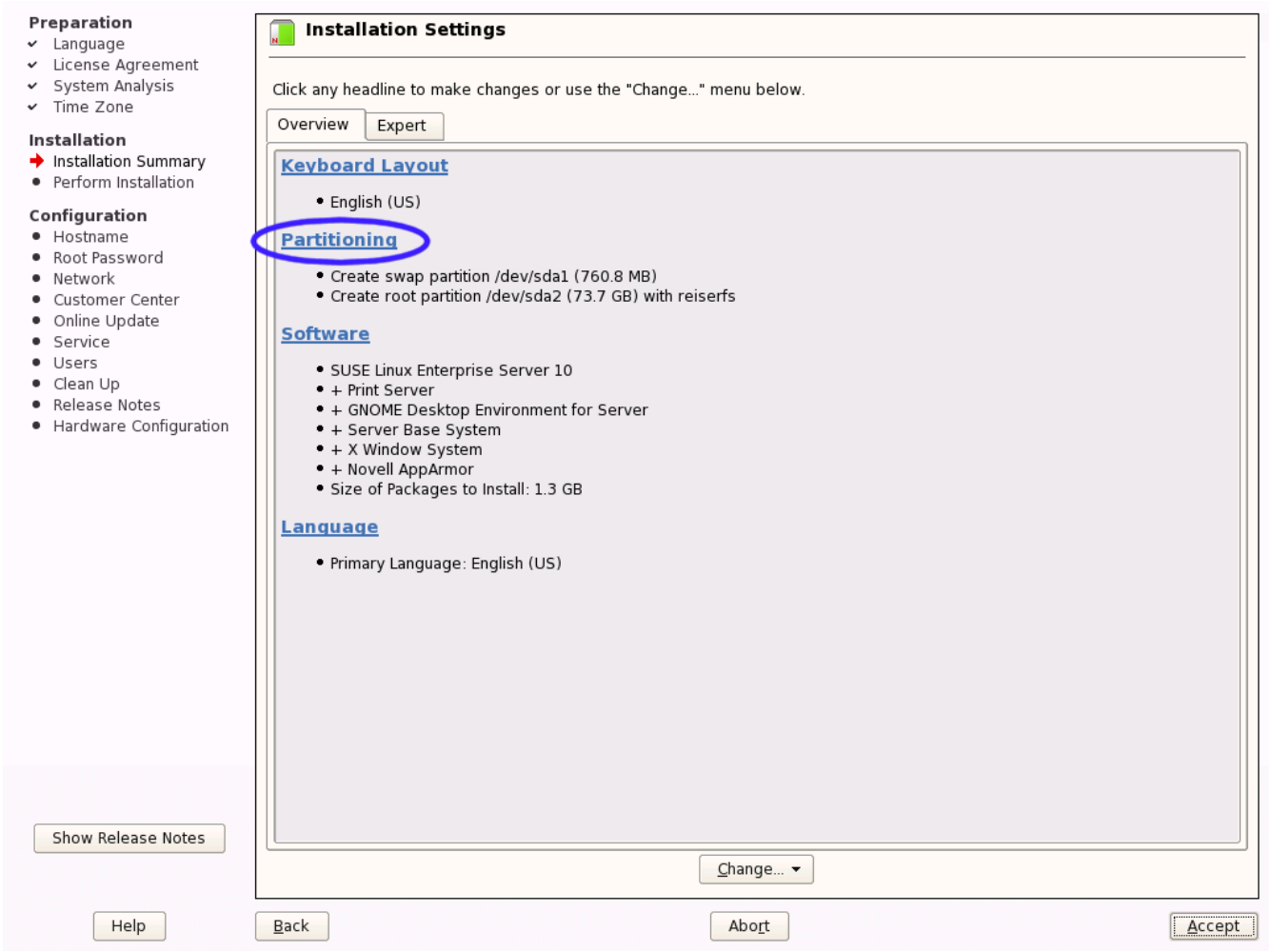
April 16, 2007

Overview:

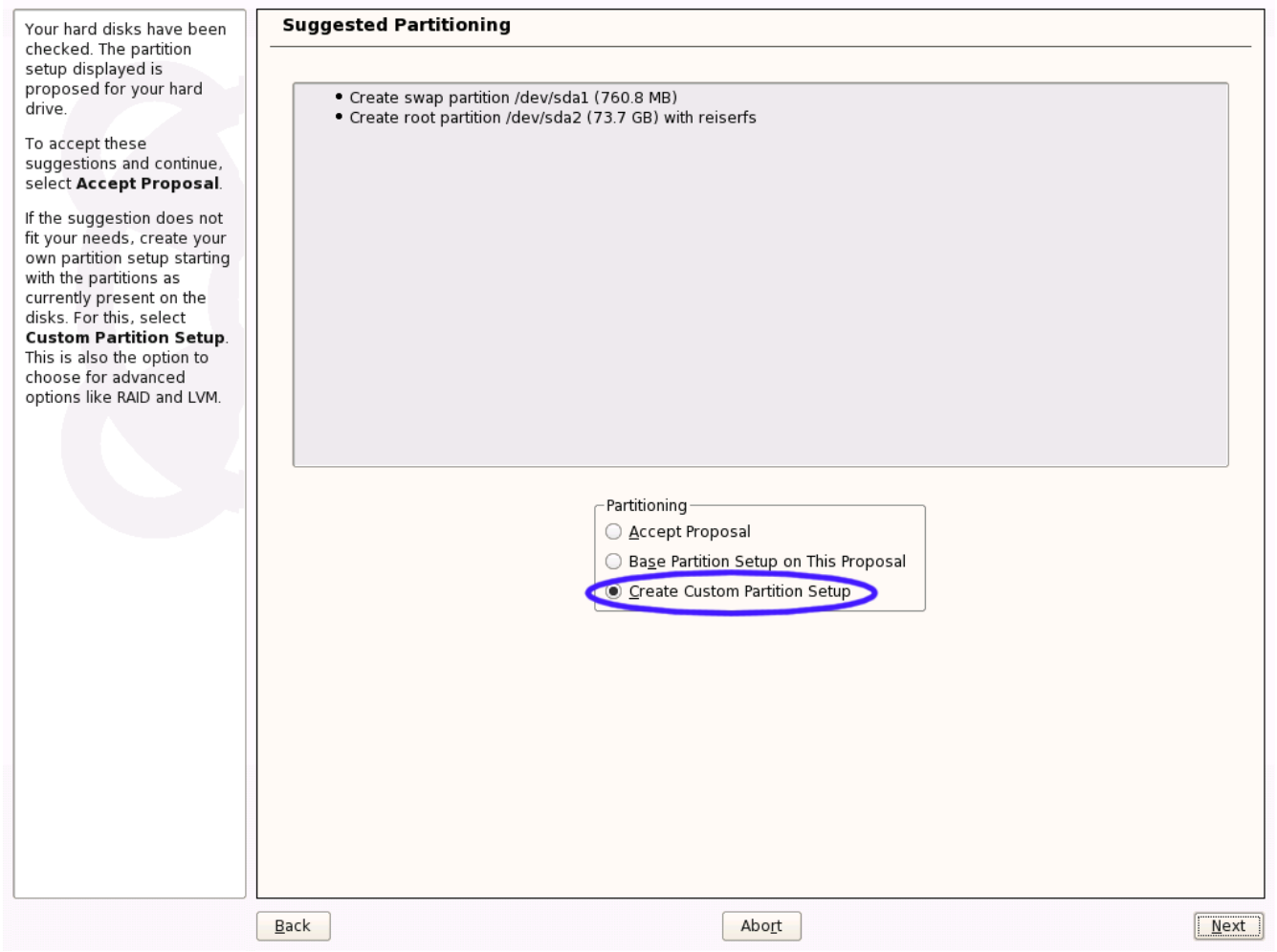
Device name mapping is default mechanism for SLES10 in describing which device is to be mounted in fstab. The fstab file can be found in /etc folder in Linux, and this configuration file defines which devices are to be mounted, its formated file system, and whether its read-only or have write permissions. Please refer to the manual page on fstab more info specific info that, as this is beyond the scope of this document. Device name mapping explicitly defines the device. An example is /dev/sda. The problem with device names is that they are not persistent between boot up in a hot plug environment. The way Linux works, is the first device that is reported to the block layer obtains /dev/sda, the next /dev/sdb, and so on. So if your installation was on a device at ID=3, and it was assigned /dev/sda, it would be possible that the device name could change on the next boot up if another device was added to an ID less than 3. So if fstab is using device names, and the installation was on /dev/sda, you wouldn't be able to mount your root partition when the other device was hot added prior to ID=3. The other device would end up with /dev/sda, and your installation disk would be on /dev/sdb.

Scope:

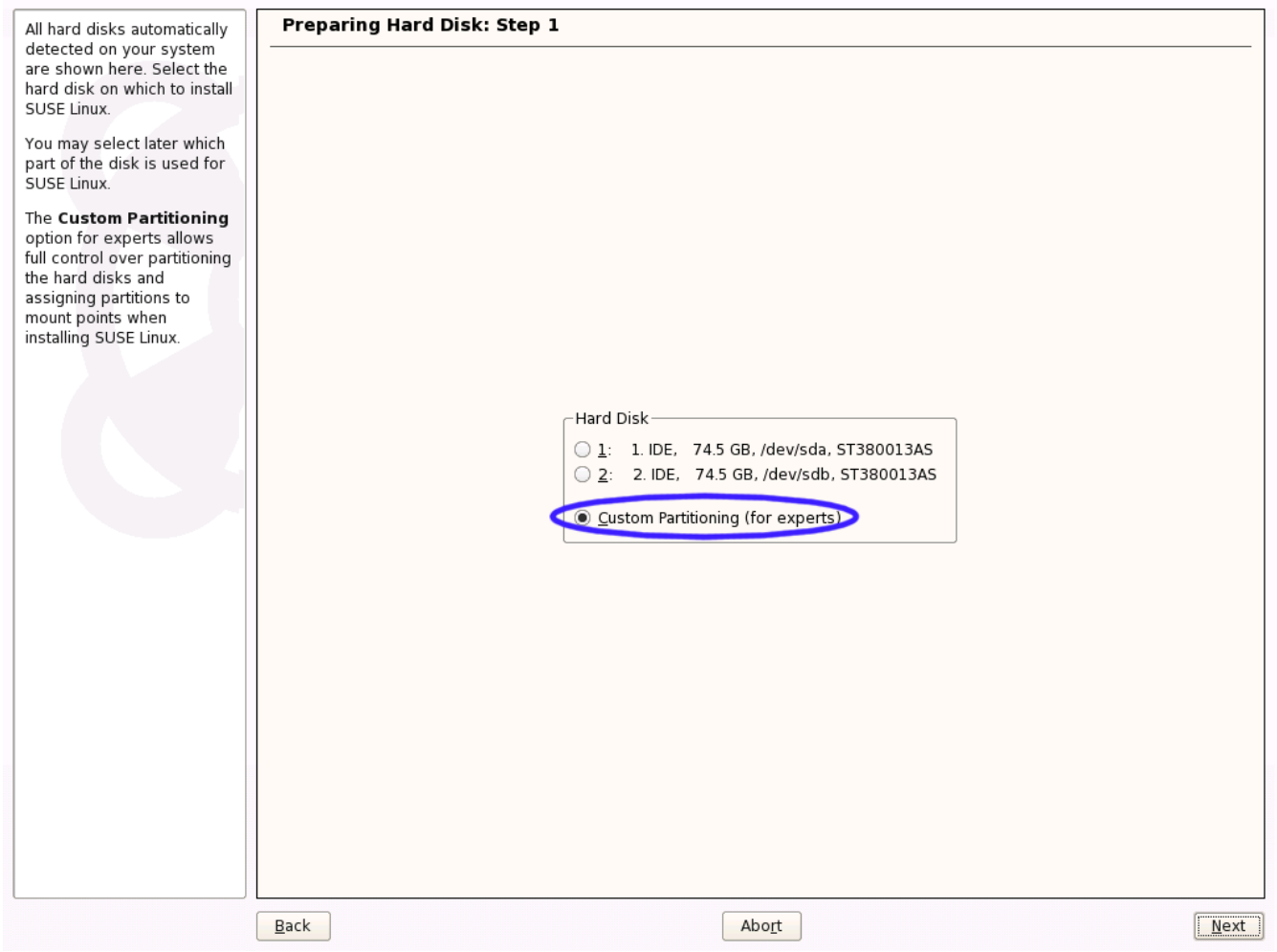
Linux has alternative. Instead of giving the device name explicitly, you can modify the fstab options during or after install using Yast, where the device that is mounted is defined using UID, Label Device ID, or Device path. All these are persistent to the device, so it doesn't matter where your device is in the topology, Linux will explicitly find and mount the correct device. Red Hat already uses Label's for their default, and its rumored that for SLES10 SP1, the default will be Device ID mapping. The nature of the document is to provide a HOWTO into convert device name to device id mapping. The following are snapshots taken during install.



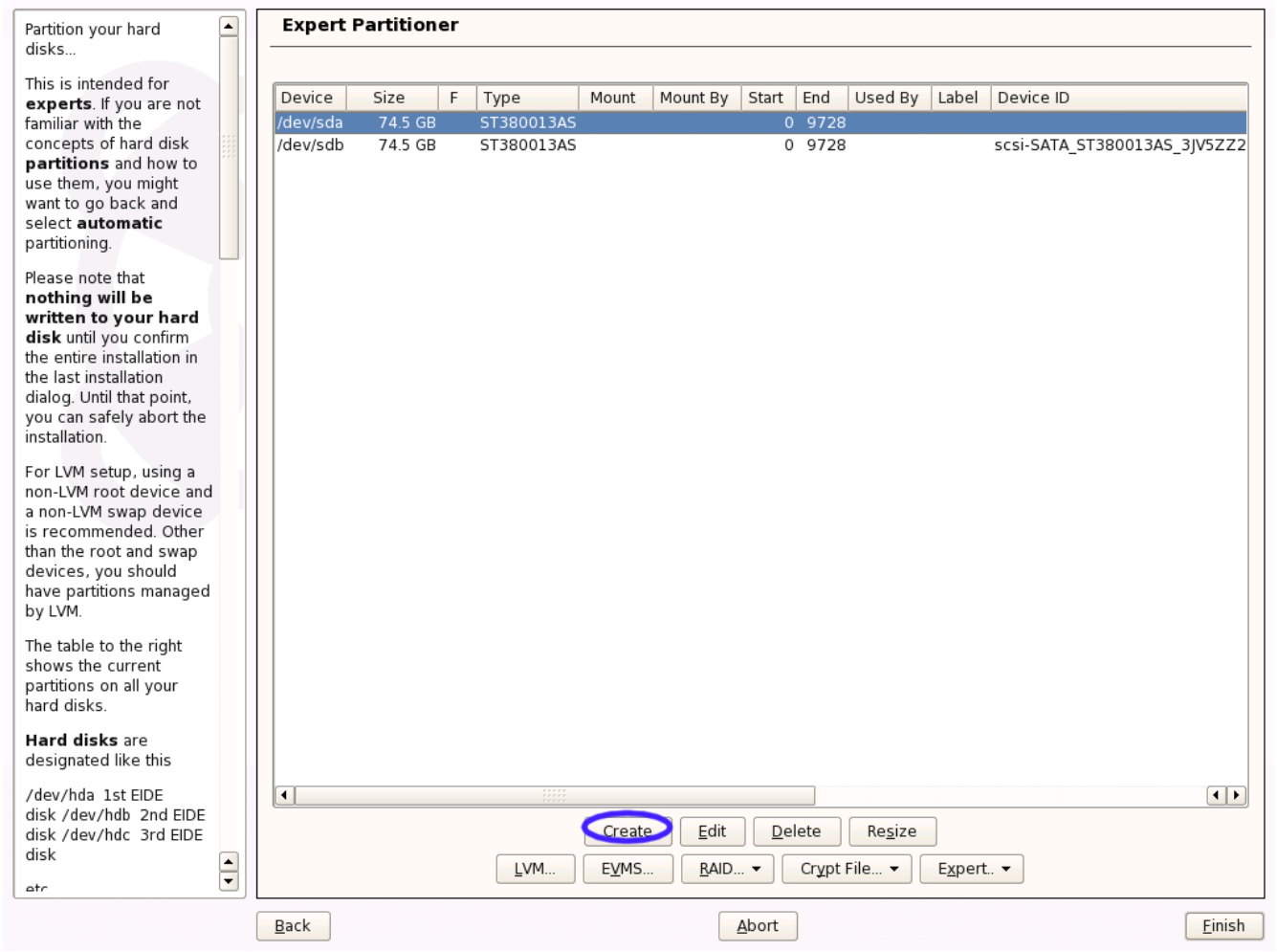
During a normal installation, you will need to select 'Partitioning' from the step above.



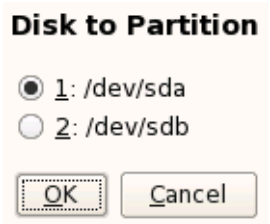
Select custom partitioning.



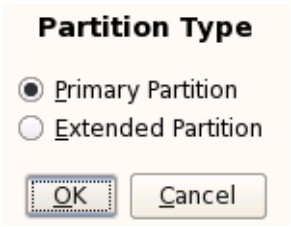
Select custom partitioning for experts.



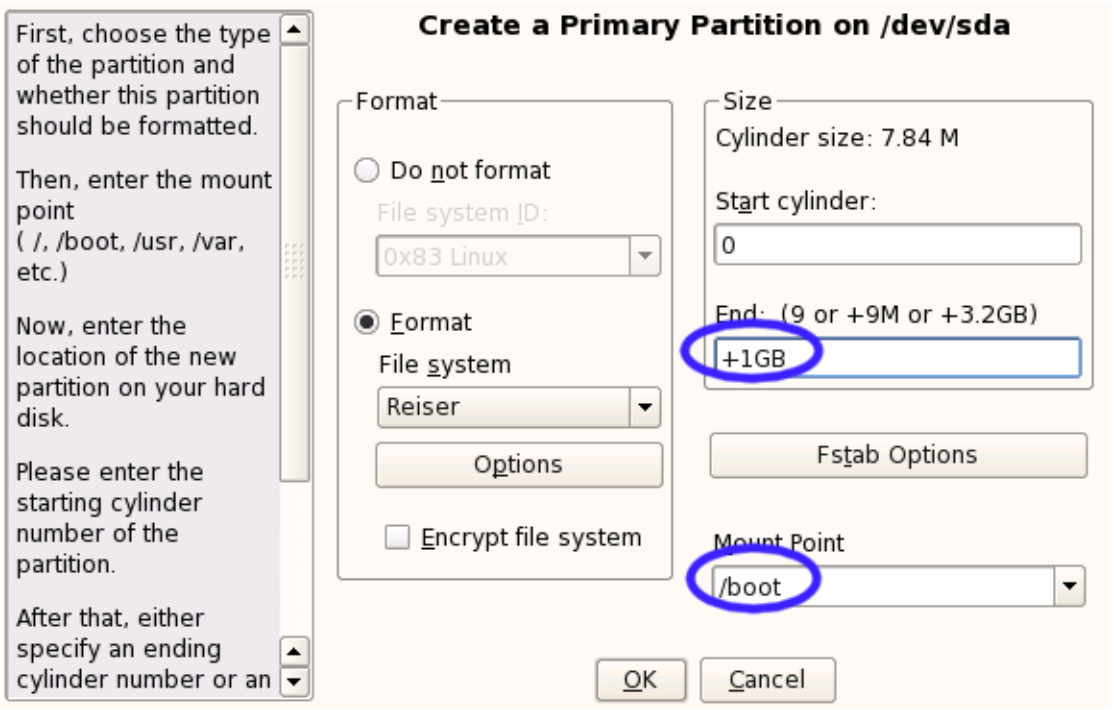
You will see all your device from this page. You could select any one, but typically most end users would select /dev/sda. You will need to create two or three partitions, at least a root “/” and swap, and perhaps a separate “/boot” partition. To create the partitions, select 'Create' at the bottom.



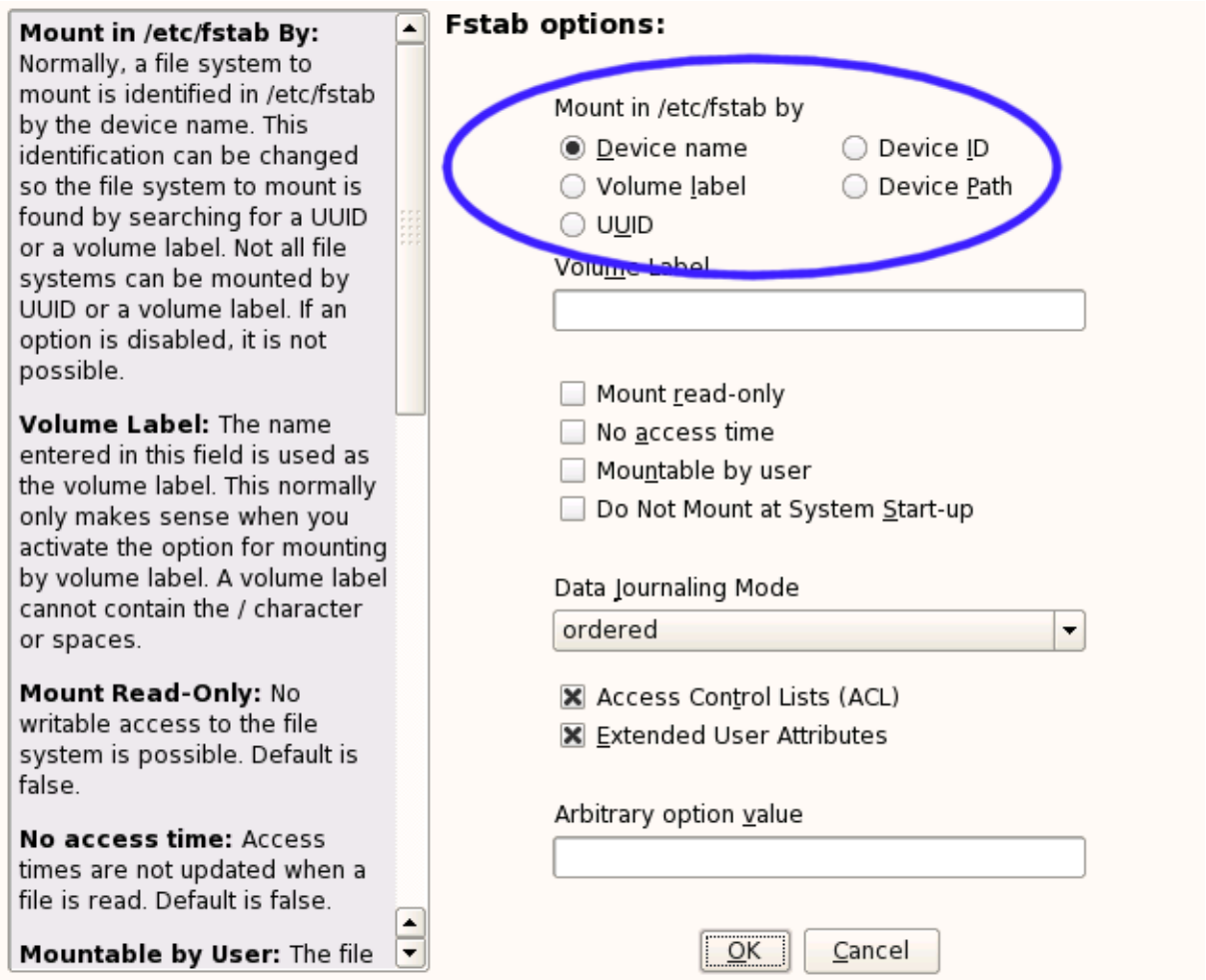
Select '/dev/sda'



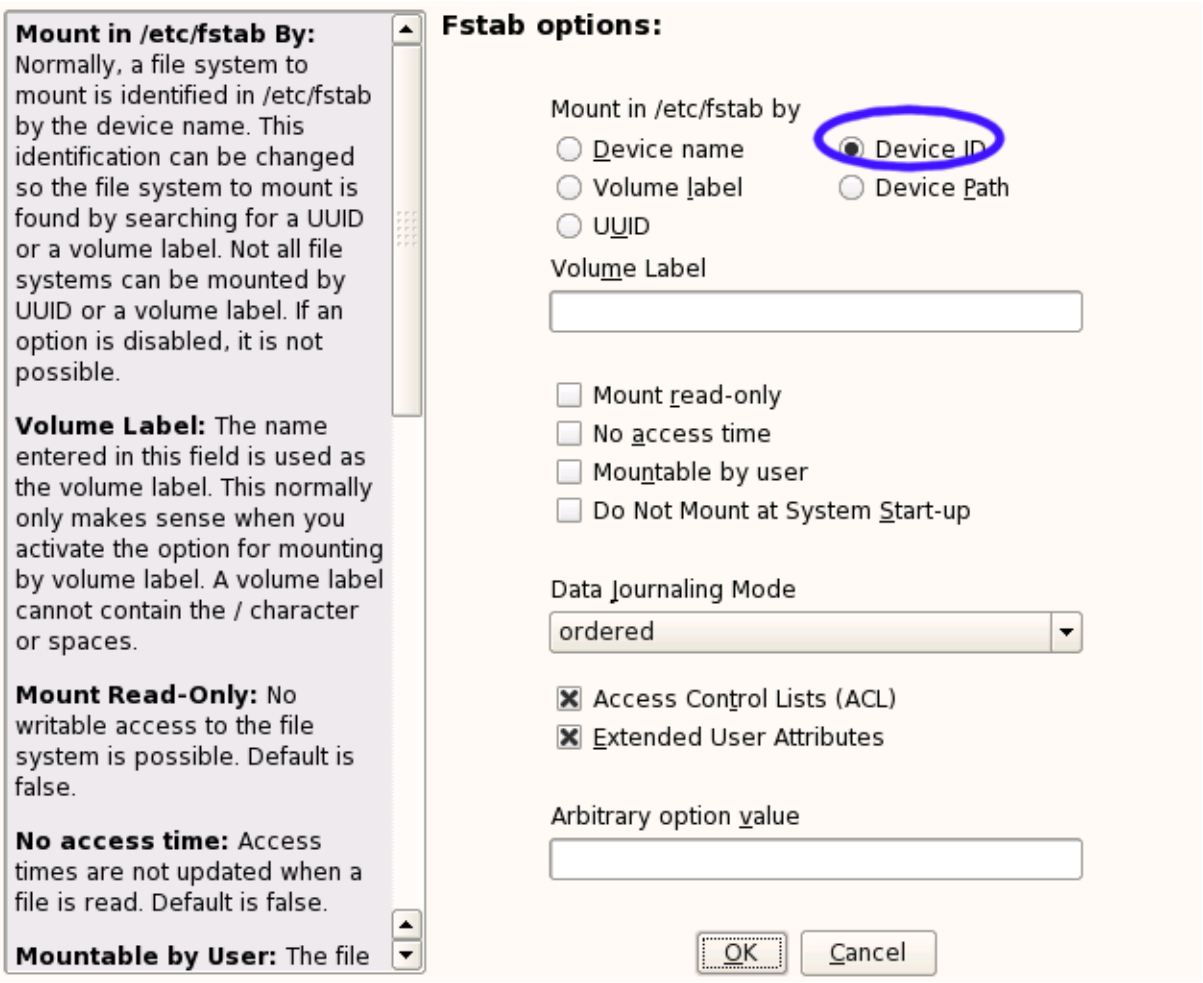
Select 'Primary Partition' if you think you will need 4 or less partitions. If you need more, then select 'Extended Partition'



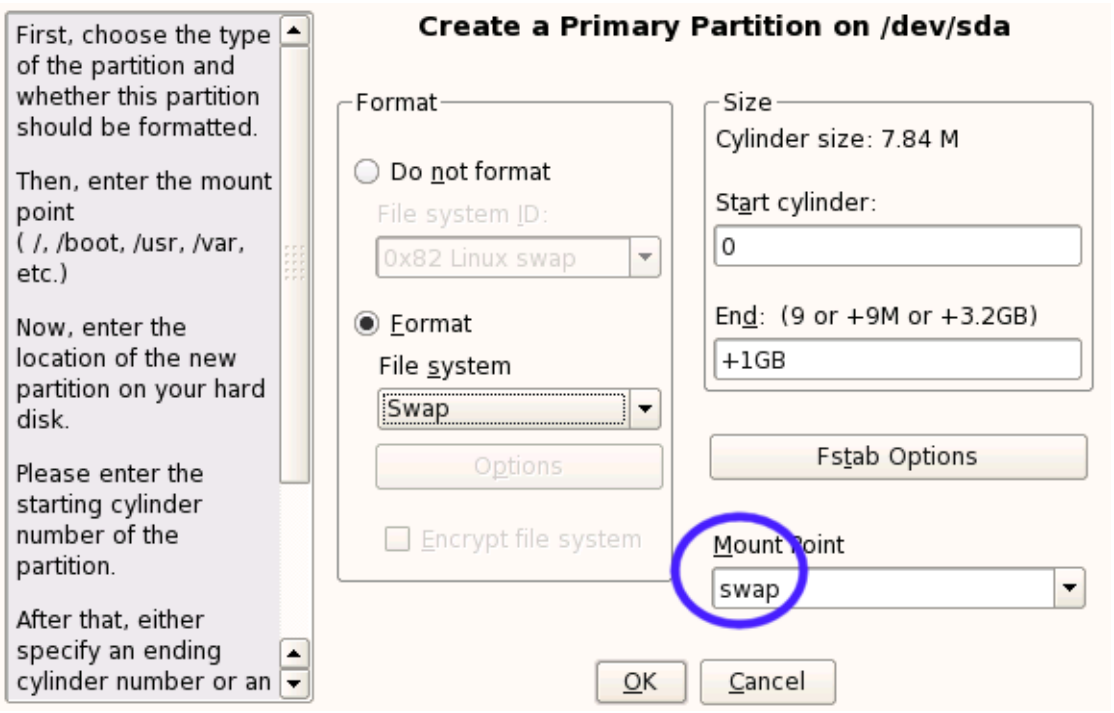
For a 'boot' partition, you will need to fill in the 'Mount Point' with '/boot', as above. In addition, you will need to enter the size of the partition. In my example, I set it to '+1GB', which is plenty. Then select the tab 'Fstab Options'



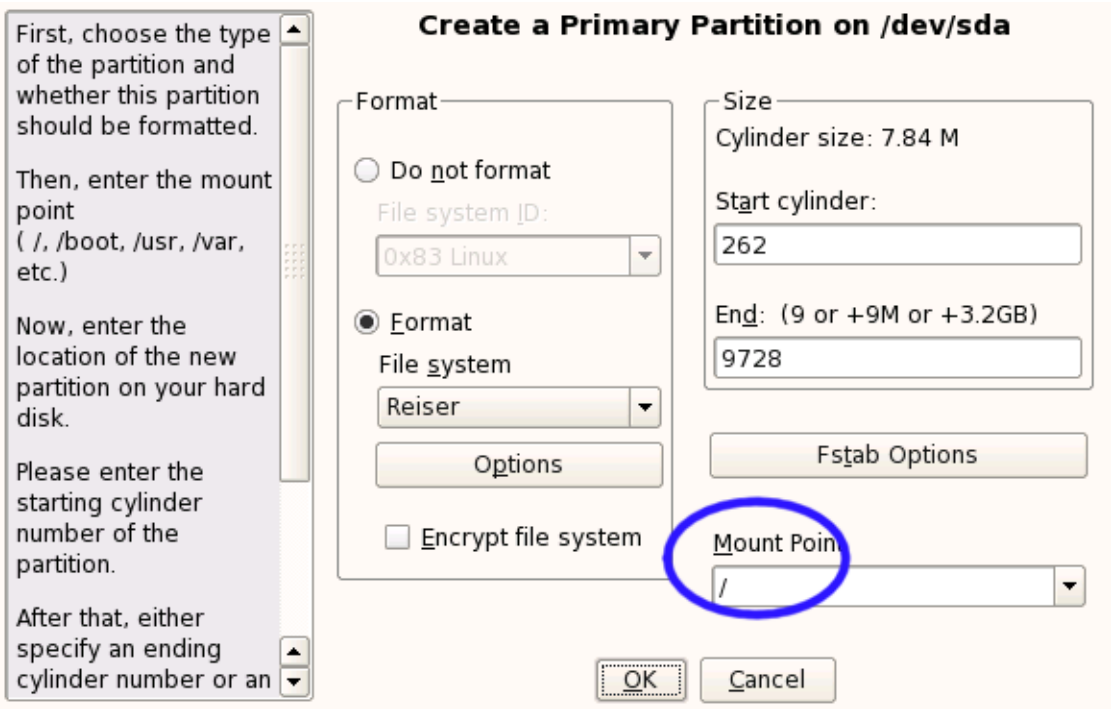
Here is the 'Fstab Options' tab. In the section labeled 'Mount in /etc/fstab by', you see that the default is 'Device Name'.



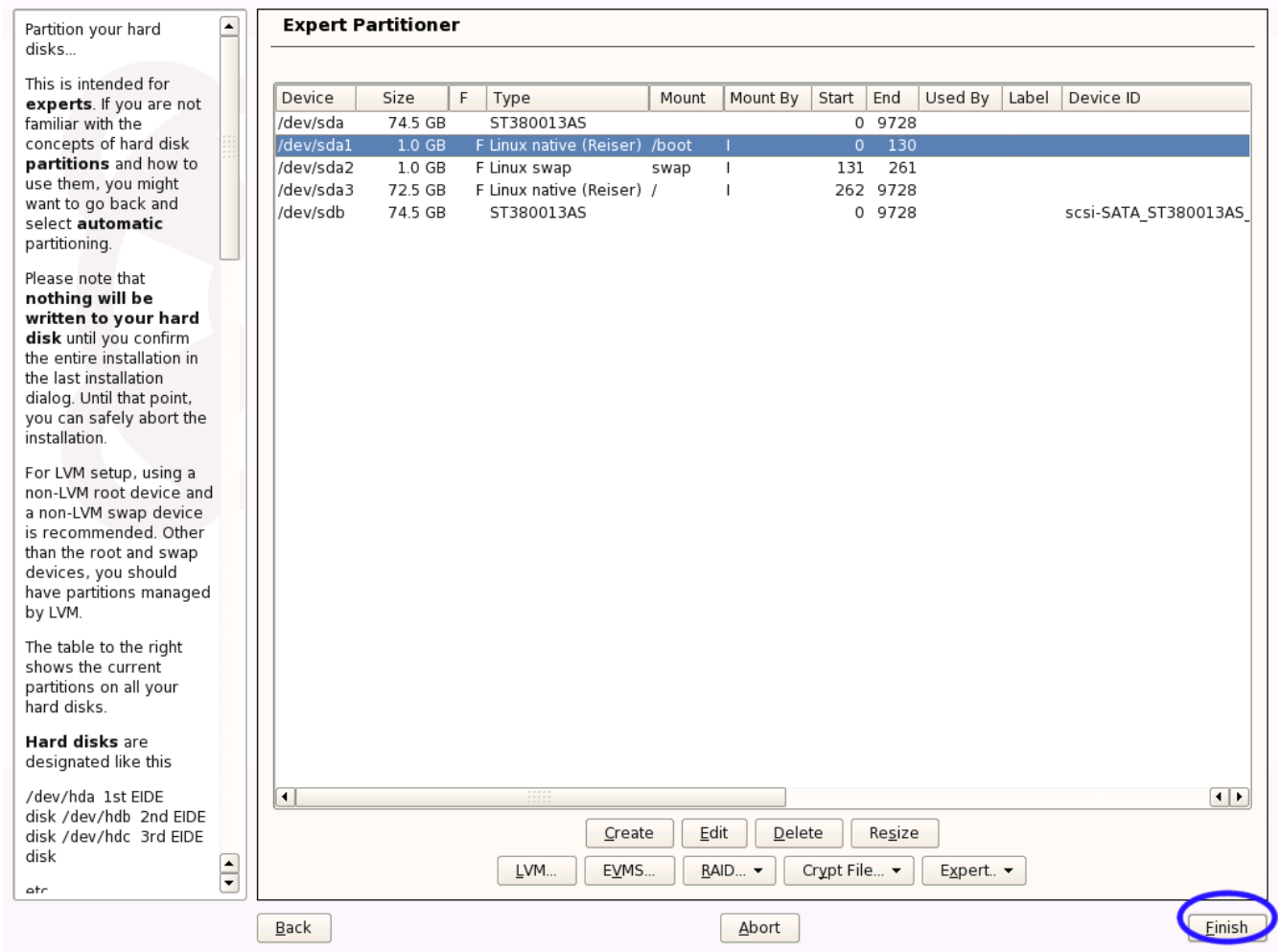
You will need to change 'Device name' to 'Device ID', as shown above, then select 'OK' at the bottom. Repeat this steps with the “/” and swap partitions.



In creating the SWAP partition, please follow steps described on pages 6 - 10. The typical size of the partition is '+1GB', as seen above.



In creating the root partition “/”, please follow steps described on pages 6 - 10. You will probably want to use the rest of available drive space for this. In the case above, the field 'End' is left unmodified.



Once all the partitions are created, you can select 'Finish', and proceed with normal installation.