Storage partitioning scheme in Red Hat Enterprise Linux (RHEL) and SUSE Linux Enterprise Server (SLES)

Snapdrive for Unix

NetApp
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On RHEL, SnapDrive for UNIX partitions the disks to provision host storage entities. However, SnapDrive for UNIX allows to provisioning and managing SnapDrive operations for both partitioning and non-partitioning devices on SLES 11, and only non-partitioning devices on SLES 10.

The Linux 2.2 and 2.4 kernel versions could not use raw disks for creating file-systems because historically all Microsoft x86 system architecture used the Windows operating system, and always partitioned the hard disks. Since the initial kernel was written to work on top of the Windows operating systems, the kernel was also written in such a way to expect partitions on the hard disk. Further partitioning was always done to create file-systems on raw devices. Partitioning is never done for LUNs part of a disk group and/or for raw LUNs. Hence, any change with respect to the partitioning scheme is restricted to the behavior in case of file-systems on raw devices only.

Supported partition devices

SnapDrive for UNIX 5.0 or later provides storage partitioning in Linux for multipathing and non-multipathing environment.

You must follow the guidelines to partition storage devices with SnapDrive for UNIX.

When you are using Logical Volume Manager with Linux, you must use non-partitioned LUNs.

The following tables provide partition information and how it can be enabled for different operating systems:

Operating system	Single partition	Multiple partition	Non-partition devices	File system or RAW devices
Red Hat Enterprise Linux 5x or Oracle Enterprise Linux 5x	Yes	No	No	ext3*
Red Hat Enterprise Linux 6x or Oracle Enterprise Linux 6x	Yes	No	No	ext3 or ext4*
SUSE Linux Enterprise Server 11	Yes	No	No	ext3*

Operating system	Single partition	Multiple partition	Non-partition devices	File system or RAW devices
SUSE Linux Enterprise Server 10	No	No	Yes	ext3***
Red Hat Enterprise Linux 5x or later or Oracle Enterprise Linux 5x or later	Yes	No	Yes	ASM with ASMlib**
SUSE Linux Enterprise Server 10 SP4 or SUSE Linux Enterprise Server 11	Yes	No	Yes	ASM with ASMlib**
SUSE Linux Enterprise Server 10 SP4 or later or SUSE Linux Enterprise Server 11	Yes	No	No	ASM without ASMlib**

*

For a non-MPIO environment, enter the following command: **`sfdisk -uS -f -L -q /dev/device_name`**

For an MPIO environment, enter the following commands:

- **`sfdisk -uS -f -L -q /dev/ device_name`**
- **`kpartx -a -p p /dev/mapper/ device_name`**

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- **`fdisk /dev/mapper/device_name`**
- **`kpartx -a -p p /dev/mapper/device_name`**

Operating system	Single partition	Multiple partition	Non-partition devices	File system or RAW devices
*** Not applicable.				
**** For an MPIO environment, enter the following command: • `kpartx -a -p p /dev/$kernel`				

General considerations

The Snapshot copies created in SnapDrive for UNIX 4.2 are based on partitioned devices. These Snapshot copies can be restored, connected, and supported in SnapDrive for UNIX 5.0 and later versions.