5.5.7 GPT Partitioning Facts

GPT partitions are a new standard that are gradually replacing MBR partitions. GPT is associated with UEFI. GPT stands for GUID Partition Table. It's named for the fact that every partition on the drive has a globally unique identifier, or GUID. That means that each partition worldwide would have its own unique identifying number. A GPT disk:

- Can be basic or dynamic.
- Supports up to 128 partitions depending on space allocated for the partition table. There is no need for extended and logical partitions.
- Can support between 8 and 9.4 zettabytes depending on the sector size.
- Stores multiple copies of the partition table across the disk, so it's much more robust and can recover if the data is corrupted.
- Stores cyclic redundancy check (CRC) values to check that its data is intact. If the data is corrupted, GPT notices the problem and attempts to recover the damaged data from another location on the disk. MBR has no way of knowing if the data is corrupted. You would only see that there was a problem when the boot process failed or the partitions vanished.
- Includes a protective MBR. The protective MBR sees the GPT drive as a single partition that extends across the entire drive. If you try to manage a GPT disk with an old tool that can only read MBRs, it will see the GPT disk as a single partition that extends across the entire drive. The protective MBR makes sure that the old tools don't mistake the GPT drive for a non-partitioned drive and overwrite all your data.

When implementing GPT partitioning, be aware of the following:

- You'll probably want to use GPT when setting up a drive. However, if you need compatibility with old systems, like the ability to boot Windows off a drive on a computer with a traditional BIOS, you'll need to use MBR.
- Windows can only boot from GPT on UEFI-based computers running 64-bit versions of Windows 7, 8.x, 10, and the corresponding server versions. All versions of Windows 7 and later can read GPT drives and use them for data, but they cannot boot from them without UEFI.
- Because Windows 7 does not support UEFI on 32-bit platforms, you cannot boot from a GPT partition on Windows 7.
- Linux has built-in support for GPT. Apple's Intel Macs no longer use Apple's APT, or Apple Partition Table, scheme but uses GPT instead.