

Linux Kernel Version Numbering

Because there are numerous revisions and releases of the Linux kernel and new ones are developed at frequent intervals, it is important to have a system for clearly identifying them.

A kernel is a program that constitutes the central core of a computer operating system and which has complete control over everything that occurs in the system. The Linux kernel was originally developed by Linus Torvalds, who based it on (but did not copy) both UNIX and MINIX (an open source clone of UNIX).

The initial Linux kernels had a very simple numbering system. The first, which was released by Torvalds in September 1991, was designated 0.01. This was followed the next month by the 0.02 kernel. The current version numbering system began with the kernel 1.0, which was released in March 1994.

Linux kernels are now identified by a set of four numbers, sometimes supplemented by several additional characters. The first number denotes the kernel version. It is changed least frequently, and only when truly major changes in the concept and the code of the kernel occur. In fact, it has been changed only twice in the history of the kernel: in 1994 with version 1.0 and in 1996 with version 2.0.

The second number denotes the major revision of the kernel version. It was formerly the case that even numbers indicated a stable release, that is, one that was deemed fit for production use (i.e., use in a non-experimental environment), such as 1.2, 2.4 or 2.6. Likewise, odd numbers, such as 1.1 or 2.5, have historically represented development releases. They were for testing new features and device drivers until they became sufficiently stable to be included in a stable release. However, this has changed starting with the Linux 2.6.x series, and new feature development now takes place in the same revision number.

The third number indicates the minor revision of the kernel. It is only changed when new features or new drivers are added. The fourth number represents corrections, such as security patches and bug (i.e., error) fixes.

Sometimes the four numbers will be followed by several letters, such as rc1, ac, ck and mm. The letters rc (followed by a number) refer to a release candidate and thus indicate a non-official release. Other letters usually indicate the person responsible for that release, such as Alan Cox, Con Kolivas and Andrew Morton.

As of May 29, 2006 the newest release was 2.6.16.18, which was released on May 22. This superseded 2.6.16.17, which was released on May 20. The first version of the 2.6 kernel, 2.6.0, was released on December 18, 2003, and the current 2.6.16 minor revision was released on March 20, 2006.

There are several ways to determine which release of the kernel is being used on any particular system. Perhaps the easiest is to use the `uname` command (which reports basic information about a system's hardware and software) with its `-r` option, that is,

```
'uname -r'
```

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