



- [Home](#)
- [Free eBook](#)
- [Start Here](#)
- [Contact](#)
- [About](#)

Safe Reboot Of Linux Using Magic SysRq Key

by Ramesh Natarajan on December 11, 2008



Photo courtesy of [KCIvey](#)

This is a guest post written by Lakshmanan G.

If you are working on kernel development, or device drivers, or running a code that could cause kernel panic, SysRq key will be very valuable. The magic SysRq key is a key combination in the Linux kernel which allows the user to perform various low level commands regardless of the system's state.

It is often used to recover from freezes, or to reboot a computer without corrupting the filesystem. The key combination consists of **Alt+SysRq+commandkey**. In many systems the SysRq key is the printscreen key.

First, you need to **enable the SysRq key**, as shown below.

```
echo "1" > /proc/sys/kernel/sysrq
```

List of SysRq Command Keys

Following are the command keys available for **Alt+SysRq+commandkey**.

- 'k' – Kills all the process running on the current virtual console.

- 's' – This will attempt to sync all the mounted file system.
- 'b' – Immediately reboot the system, without unmounting partitions or syncing.
- 'e' – Sends SIGTERM to all process except init.
- 'm' – Output current memory information to the console.
- 'i' – Send the SIGKILL signal to all processes except init
- 'r' – Switch the keyboard from raw mode (the mode used by programs such as X11), to XLATE mode.
- 's' – sync all mounted file system.
- 't' – Output a list of current tasks and their information to the console.
- 'u' – Remount all mounted filesystems in readonly mode.
- 'o' – Shutdown the system immediately.
- 'p' – Print the current registers and flags to the console.
- '0-9' – Sets the console log level, controlling which kernel messages will be printed to your console.
- 'f' – Will call oom_kill to kill process which takes more memory.
- 'h' – Used to display the help. But any other keys than the above listed will print help.

We can also do this by **echoing the keys to the /proc/sysrq-trigger file**. For example, to re-boot a system you can perform the following.

```
echo "b" > /proc/sysrq-trigger
```

Perform a Safe reboot of Linux using Magic SysRq Key

To perform a safe reboot of a Linux computer which hangs up, do the following. This will avoid the fsck during the next re-booting. i.e Press Alt+SysRq+letter highlighted below.

- un**R**aw (take control of keyboard back from X11,
- t**E**rminate (send SIGTERM to all processes, allowing them to terminate gracefully),
- **k**ill (send SIGILL to all processes, forcing them to terminate immediately),
- **S**ync (flush data to disk),
- **U**nmount (remount all filesystems read-only),
- re**B**oot.

This article was written by Lakshmanan G. He is working in [bk Systems \(p\) Ltd](#), and interested in contributing to the open source. The Geek Stuff welcomes your tips and [guest articles](#).



8

Tweet

5

Like

2

> [Add your comment](#)