SysV: Location of System Initialization Files

The location of files for user space initialization, local customization, and for the user space services that a SysV-based or compatible system provides varies among vendors and Linux distributions. Notable differences include, but are not limited to, the directory structure under /etc where scripts containing instructions to start or stop services are stored (/etc/rc.d/init.d/ versus /etc/init.d/) and the directory structure under /etc where scripts, or links to scripts, that should be executed when a system moves from one level to another are identified (/etc/rc.d/rcX.d/ versus /etc/rcX.d/, where "X" represents a specific runlevel).

The Red Hat family, which includes CentOS and Fedora, places files in subdirectories of /etc/rc.d/ as shown in the chart below.

Solaris and Debian derivatives, including Ubuntu and Kali Linux, omit the rc.d subdirectory, placing the rcX.d and init.d subdirectories directly in /etc, as shown in the following chart:

Red Hat	Solaris and Other Linux
`/etc/rc.d/rcX.d` (where X = runlevel number) `/etc/rc.d/init.d`	`/etc/rcX.d (where X = runlevel number)` `/etc/init.d`
Soft links: /etc/rc0.d -> rc.d/rc0.d /etc/rc1.d -> rc.d/rc1.d /etc/rc2.d -> rc.d/rc2.d /etc/rc3.d -> rc.d/rc3.d /etc/rc4.d -> rc.d/rc4.d /etc/rc5.d -> rc.d/rc5.d /etc/rc6.d -> rc.d/rc6.d	

Note that Red Hat family systems provide soft links in /etc to enable users and software to reference the rcX.d and init.d directories in the same way as Solaris and other Linux distributions.

RHEL_rc.d

```
[root@localhost ~]#
[root@localhost ~]# ls -ld /etc/rc.d/*
drwxr-xr-x. 2 root root 4096 Oct 10 09:53 /etc/rc.d/init.d
drwxr-xr-x. 2 root root  111 Oct 10 09:53 /etc/rc.d/rc0.d
drwxr-xr-x. 2 root root  111 Oct 10 09:53 /etc/rc.d/rc1.d
drwxr-xr-x. 2 root root  111 Oct 10 09:53 /etc/rc.d/rc2.d
drwxr-xr-x. 2 root root  111 Oct 10 09:53 /etc/rc.d/rc3.d
drwxr-xr-x. 2 root root  111 Oct 10 09:53 /etc/rc.d/rc4.d
drwxr-xr-x. 2 root root  111 Oct 10 09:53 /etc/rc.d/rc5.d
drwxr-xr-x. 2 root root  111 Oct 10 09:53 /etc/rc.d/rc6.d
-rw-r--r--. 1 root root  477 Apr  2  2014 /etc/rc.d/rc.local
[root@localhost ~]#
[root@localhost ~]# ls -ld /etc/rc?.d
lrwxrwxrwx. 1 root root 10 Oct 10 09:50 /etc/rc0.d -> rc.d/rc0.d
lrwxrwxrwx. 1 root root 10 Oct 10 09:50 /etc/rc1.d -> rc.d/rc1.d
lrwxrwxrwx. 1 root root 10 Oct 10 09:50 /etc/rc2.d -> rc.d/rc2.d
lrwxrwxrwx. 1 root root 10 Oct 10 09:50 /etc/rc3.d -> rc.d/rc3.d
lrwxrwxrwx. 1 root root 10 Oct 10 09:50 /etc/rc4.d -> rc.d/rc4.d
lrwxrwxrwx. 1 root root 10 Oct 10 09:50 /etc/rc5.d -> rc.d/rc5.d
lrwxrwxrwx. 1 root root 10 Oct 10 09:50 /etc/rc6.d -> rc.d/rc6.d
[root@localhost ~]#
[root@localhost ~]# ls -l /etc/rc.d/init.d
total 48
-rw-r--r--. 1 root root 13430 Apr  2  2014 functions
-rwxr-xr-x. 1 root root  2256 Mar  7  2014 iprdump
-rwxr-xr-x. 1 root root  2247 Mar  7  2014 iprinit
-rwxr-xr-x. 1 root root  2269 Mar  7  2014 iprupdate
-rwxr-xr-x. 1 root root  2989 Apr  2  2014 netconsole
-rwxr-xr-x. 1 root root  6354 Apr  2  2014 network
-rw-r--r--. 1 root root  1160 Apr  2  2014 README
-rwxr-xr-x. 1 root root  2857 Jun 17  2013 rhnsd
[root@localhost ~]# 
```

Solaris_rc.d

```
-bash-3.2#
-bash-3.2# ls -ld /etc/rc?.d
drwxr-xr-x   2 root       sys            512 Mar   2  2015 /etc/rc0.d
drwxr-xr-x   2 root       sys            512 Mar   2  2015 /etc/rc1.d
drwxr-xr-x   2 root       sys            512 Mar   2  2015 /etc/rc2.d
drwxr-xr-x   2 root       sys            512 Mar   2  2015 /etc/rc3.d
drwxr-xr-x   2 root       sys            512 Mar   2  2015 /etc/rcS.d
-bash-3.2# ls -l /etc/init.d
total 130
-rwxr--r--   2 root       sys            256 Jun 28  2011 PRESERVE
-rw-r--r--   1 root       sys           2483 Jun 28  2011 README
-rwxr--r--   1 root       sys            625 Jun 28  2011 acct
-rwxr--r--   1 root       sys            397 Jun 28  2011 acctadm
-rwxr--r--   6 root       sys           2452 Jun 23  2010 apache
-rwxr--r--   5 root       sys            824 Mar 26  2004 appserv
-rwxr-xr-x   2 root       other         1558 Jan   9  2005 autoinstall
-rwxr--r--   6 root       sys            474 Jan 21  2005 boot.server
-rwxr--r--   2 root       sys           1262 Jun 28  2011 cachefs.daemon
-rwxr--r--   2 root       sys            733 Jun 28  2011 deallocate
-rwxr--r--   1 root       sys            904 Jun 28  2011 devlinks
-rwxr--r--   1 root       sys            718 Jan 21  2005 dhcp
-rwxr--r--   2 root       sys           1028 Jan 21  2005 dodatadm.udaplt
-rwxr--r--   1 root       sys            469 Jun 28  2011 drvconfig
-rwxr--r--   1 root       sys           3003 Oct 14  2010 dtlogin
-rwxr--r--   6 root       sys           5840 Jun 19  2006 imq
-rwxr--r--   1 root       sys            373 Dec 21  2006 init.dmi
-rwxr-xr-x   1 root       sys            569 Jun   7  2011 init.sma
-rwxr--r--   1 root       sys            382 Dec 21  2006 init.snmpdx
-rwxr--r--   1 root       sys           3513 Nov 18  2008 init.wbem
-rwxr--r--   1 root       sys            578 Jan 21  2005 ldap.client
-rwxr--r--   5 root       sys            359 Jan 21  2005 llc2
-rwxr--r--   4 root       sys           1151 Jan 10  2005 lu
-rwxr--r--   6 root       sys            344 Jan 21  2005 mipagent
-rwxr--r--   1 root       sys            491 Jun 28  2011 mkdtab
-rwxr--r--   2 root       sys           2304 Jan 21  2005 ncakmod
-rwxr--r--   5 root       sys           2329 Jan 21  2005 ncalogd
-rwxr--r--   1 root       sys            494 Jan 21  2005 nfs.server
```