对于系统管理员而言，系统的服务管理是一件很日常和很重要的工作，而7在6的基础上有了很大的改变，就连命令都完全不一样了。所以要拥抱变化，学习7是如何进行服务的管理和控制的。

**system和systemctl的初探**

Systemctl是一个systemd工具，主要负责控制systemd系统和服务管理器。

Systemd是一个系统管理守护进程、工具和库的集合，用于取代System V初始进程。Systemd的功能是用于集中管理和配置类UNIX系统。

在Linux生态系统中，Systemd被部署到了大多数的标准Linux发行版中，只有为数不多的几个发行版尚未部署。Systemd通常是所有其它守护进程的父进程，但并非总是如此。

【第一步】

**查看systemd的版本**

# systemctl --version

systemd 219

+PAM +AUDIT +SELINUX +IMA -APPARMOR +SMACK +SYSVINIT +UTMP +LIBCRYPTSETUP +GCRYPT +GNUTLS +ACL +XZ -LZ4 -SECCOMP +BLKID +ELFUTILS +KMOD +IDN

**查看进程是否存在**

ps -ef | grep [s]ystemd

注意:systemd是作为父进程(pid=1)运行的

**分析systemd的启动进程**

# systemd-analyze

Startup finished in 639ms (kernel) + 931ms (initrd) + 12.432s (userspace) = 14.003s

**分析各个进程启动发费的时间**

#systemd-analyze blame

**分析启动时候的关键链**

systemd-analyze critical-chain

重要：Systemctl接受服务（.service），挂载点（.mount），套接口（.socket）和设备（.device）作为单元。

**列出所有服务可用单元**

systemctl list-unit-files

(200多个)

**列出所有运行中的单元**

systemctl list-units

**列出失败的单元？**

systemctl --failed

**列出某个单元是否启动**

# systemctl is-enabled crond.service

enabled

或者

# systemctl is-enabled crond

enabled

**检查某个单元或服务是否运行**

# systemctl is-active crond

active

或者

# systemctl status crond

这个信息更详细

############################# 控制服务  ############################

**列出所有服务（包括启用的和禁用的）**

systemctl list-unit-files  --type=service

(120+)

以httpd为例

yum install httpd

会生成以下文件

/usr/lib/systemd/system/httpd.service

**Linux中如何启动、重启、停止、重载服务以及检查服务（如 httpd.service）状态**

[root@Centos7-node2 ~]# systemctl status httpd

● httpd.service - The Apache HTTP Server

   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)

   Active: inactive (dead)

     Docs: man:httpd(8)

           man:apachectl(8)

[root@Centos7-node2 ~]# systemctl start httpd

[root@Centos7-node2 ~]# systemctl status httpd

● httpd.service - The Apache HTTP Server

   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)

   Active: active (running) since Sun 2016-10-23 00:48:43 CST; 3s ago

     Docs: man:httpd(8)

           man:apachectl(8)

 Main PID: 26811 (httpd)

   Status: "Processing requests..."

   CGroup: /system.slice/httpd.service

           ├─26811 /usr/sbin/httpd -DFOREGROUND

           ├─26812 /usr/sbin/httpd -DFOREGROUND

           ├─26813 /usr/sbin/httpd -DFOREGROUND

           ├─26814 /usr/sbin/httpd -DFOREGROUND

           ├─26815 /usr/sbin/httpd -DFOREGROUND

           └─26816 /usr/sbin/httpd -DFOREGROUND

Oct 23 00:48:17 Centos7-node2 systemd[1]: Starting The Apache HTTP Server...

Oct 23 00:48:33 Centos7-node2 httpd[26811]: AH00558: httpd: Could not reliably determine the server's fully qua...ssage

Oct 23 00:48:43 Centos7-node2 systemd[1]: Started The Apache HTTP Server.

Hint: Some lines were ellipsized, use -l to show in full.

[root@Centos7-node2 ~]# systemctl reload httpd

[root@Centos7-node2 ~]# systemctl stop httpd

注意:

Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)

在loader中第一个disabled表示系统启动是否自启动，为非自动。 第二个不知道干嘛

Active: active (running) since Sun 2016-10-23 00:48:43 CST; 3s ago

Active 表示服务是不是在运行

**如何激活服务并在启动时启用或禁用服务（即系统启动时自动启动服务）**

[root@Centos7-node2 ~]# systemctl enable httpd

Created symlink from /etc/systemd/system/multi-user.target.wants/httpd.service to /usr/lib/systemd/system/httpd.service.

禁用

systemctl disabled httpd

[root@Centos7-node2 ~]# systemctl disable httpd

Removed symlink /etc/systemd/system/multi-user.target.wants/httpd.service.

**使用systemctl命令杀死服务**

[root@Centos7-node2 ~]# systemctl kill httpd

[root@Centos7-node2 ~]# systemctl status httpd

● httpd.service - The Apache HTTP Server

   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor preset: disabled)

   Active: failed (Result: exit-code) since Sun 2016-10-23 00:56:59 CST; 1s ago

     Docs: man:httpd(8)

           man:apachectl(8)

  Process: 26901 ExecStop=/bin/kill -WINCH ${MAINPID} (code=exited, status=1/FAILURE)

 Main PID: 26869 (code=exited, status=0/SUCCESS)

   Status: "Total requests: 0; Current requests/sec: 0; Current traffic:   0 B/sec"

Oct 23 00:51:38 Centos7-node2 systemd[1]: Starting The Apache HTTP Server...

Oct 23 00:51:53 Centos7-node2 httpd[26869]: AH00557: httpd: apr\_sockaddr\_info\_get() failed for Centos7-node2

Oct 23 00:51:53 Centos7-node2 httpd[26869]: AH00558: httpd: Could not reliably determine the server's fully qua...ssage

Oct 23 00:52:03 Centos7-node2 systemd[1]: Started The Apache HTTP Server.

Oct 23 00:56:59 Centos7-node2 kill[26901]: kill: cannot find process ""

Oct 23 00:56:59 Centos7-node2 systemd[1]: httpd.service: control process exited, code=exited status=1

Oct 23 00:56:59 Centos7-node2 systemd[1]: Unit httpd.service entered failed state.

Oct 23 00:56:59 Centos7-node2 systemd[1]: httpd.service failed.

Hint: Some lines were ellipsized, use -l to show in full.

注意:Active: failed (Result: exit-code) since Sun 2016-10-23 00:56:59 CST; 1s ago

这个的failed表示的是kill掉的？

##########################  使用Systemctl控制并管理挂载点 #################3

[root@Centos7-node2 ~]# systemctl list-unit-files --type=mount

UNIT FILE                     STATE

dev-hugepages.mount           static

dev-mqueue.mount              static

proc-sys-fs-binfmt\_misc.mount static

sys-fs-fuse-connections.mount static

sys-kernel-config.mount       static

sys-kernel-debug.mount        static

tmp.mount                     disabled

**挂载、卸载、重新挂载、重载系统挂载点并检查系统中挂载点状态**

systemctl start tmp.mount

systemctl status tmp.mount

systemctl reload tmp.mount

**在启动时激活、启用或禁用挂载点（系统启动时自动挂载）**

# systemctl is-active tmp.mount

# systemctl enable tmp.mount

# systemctl disable tmp.mount

在Linux中屏蔽（让它不能启用）或可见挂载点

# systemctl mask tmp.mount

ln -s '/dev/null''/etc/systemd/system/tmp.mount'

# systemctl unmask tmp.mount

rm '/etc/systemd/system/tmp.mount'

####################　　控制系统运行等级　　##################

**启动系统救援模式**

# systemctl rescue

Broadcast message from root@tecmint on pts/0(Wed2015-04-2911:31:18 IST):

The system is going down to rescue mode NOW!

**进入紧急模式**

# systemctl emergency

Welcome to emergency mode!After logging in, type "journalctl -xb" to view

system logs,"systemctl reboot" to reboot,"systemctl default" to try again

to boot intodefault mode.

**列出当前使用的运行等级**

注意:init 1也是可以使用的

# systemctl get-default

multi-user.target

注意:who -r 也是可以查看的

**启动运行等级5，即图形模式**

# systemctl isolate runlevel5.target

或

# systemctl isolate graphical.target

**启动运行等级3，即多用户模式（命令行）**

# systemctl isolate runlevel3.target

或

# systemctl isolate multiuser.target

**设置多用户模式或图形模式为默认运行等级**

# systemctl set-default runlevel3.target

# systemctl set-default runlevel5.target

**重启、停止、挂起、休眠系统或使系统进入混合睡眠**

# systemctl reboot

# systemctl halt

# systemctl suspend

# systemctl hibernate

# systemctl hybrid-sleep

对于不知运行等级为何物的人，说明如下。

Runlevel 0 : 关闭系统

Runlevel 1 : 救援？维护模式

Runlevel 3 : 多用户，无图形系统

Runlevel 4 : 多用户，无图形系统

Runlevel 5 : 多用户，图形化系统

Runlevel 6 : 关闭并重启机器

注意:在centos7 中仍然可以使用init 0 关机 init 6 启动。