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RollNO:BSIT51F22S016

Subject : SNA

Topic : Multi-Level Security

```
centos@centosstream9:~$ sudo yum install selinux-policy-mls
CentOS Stream 9 - BaseOS                    5.2 kB/s | 6.6 kB      00:01
CentOS Stream 9 - AppStream                  4.4 kB/s | 6.7 kB      00:01
google-chrome                               1.3 kB/s | 1.3 kB      00:00
google-chrome                               1.9 kB/s | 4.4 kB      00:02
Dependencies resolved.

=====
Package                                Arch      Version      Repository    Size
=====
Installing:
selinux-policy-mls                     noarch    38.1.48-1.el9  baseos        4.5 M
Upgrading:
libsemanage                             x86_64    3.6-3.el9     baseos        118 k
policycoreutils                         x86_64    3.6-2.1.el9   baseos        242 k
policycoreutils-python-utils            noarch    3.6-2.1.el9   appstream     77 k
python3-libsemanage                     x86_64    3.6-3.el9     appstream     79 k
python3-policycoreutils                 noarch    3.6-2.1.el9   appstream     2.1 M
selinux-policy                          noarch    38.1.48-1.el9  baseos        48 k
selinux-policy-targeted                 noarch    38.1.48-1.el9  baseos        6.9 M
Installing dependencies:
mcstrans                                x86_64    3.6-1.el9     baseos        152 k
policycoreutils-newrole                  x86_64    3.6-2.1.el9   baseos        26 k
python3-distros                          noarch    1.5.0-7.el9   appstream     37 k
=====
```

```
centos@centosstream9:~ — sudo vi /etc/selinux/config

E325: ATTENTION
Found a swap file by the name "/etc/selinux/.config.swp"
  owned by: root   dated: Mon Nov 25 10:20:10 2024
  file name: /etc/selinux/config
  modified: no
  user name: root   host name: centosstream9.linuxvmimages.local
  process ID: 7543 (STILL RUNNING)
While opening file "/etc/selinux/config"
  dated: Sun Dec 05 00:26:44 2021

(1) Another program may be editing the same file.  If this is the case,
    be careful not to end up with two different instances of the same
    file when making changes.  Quit, or continue with caution.
(2) An edit session for this file crashed.
    If this is the case, use ":recover" or "vim -r /etc/selinux/config"
    to recover the changes (see ":help recovery").
    If you did this already, delete the swap file "/etc/selinux/.config.swp"
    to avoid this message.

Swap file "/etc/selinux/.config.swp" already exists!
[O]pen Read-Only, (E)dit anyway, (R)ecover, (Q)uit, (A)bort:
```

```
centos@centosstream9:~  
Transaction Summary  
=====
```

Install	4 Packages
Upgrade	7 Packages

```
=====
```

Total download size: 14 M
Is this ok [y/N]: y
Downloading Packages:

CentOS Stream 9 - Ba497%	[=====]
CentOS Stream 9 - Ba497%	[=====]
CentOS Stream 9 - Ap497%	[=====]
CentOS Stream 9 - Ap497%	[=====]

(1/11): policycoreutils-newrole-3.6-2.1.el9.x86_64.rpm	21 kB/s		26 kB	00:01
(2/11): mcstrans-3.6-1.el9.x86_64.rpm	74 kB/s		152 kB	00:02
(3/11): python3-distro-1.5.0-7.el9.noarch.rpm	29 kB/s		37 kB	00:01
(4/11): libsemanage-3.6-3.el9.x86_64.rpm	224 kB/s		118 kB	00:00
(5/11): selinux-policy-38.1.48-1.el9.noarch.rpm	92 kB/s		48 kB	00:00
(6/11): policycoreutils-3.6-2.1.el9.x86_64.rpm	78 kB/s		242 kB	00:03
(7/11): policycoreutils-python-utils-3.6-2.1.el9.noarch.rpm	190 kB/s		77 kB	00:00
(8/11): selinux-policy-mls-38.1.48-1.el9.noarch.rpm	736 kB/s		4.5 MB	00:06
(9/11): python3-libsemanage-3.6-3.el9.x86_64.rpm	288 kB/s		79 kB	00:00
(10/11): selinux-policy-targeted-38.1.48-1.el9.noarch.rpm	1.3 MB/s		6.9 MB	00:05
(11/11): python3-policycoreutils-3.6-2.1.el9.noarch.rpm	440 kB/s		2.1 MB	00:04

```
centos@centosstream9:~  
-----
```

(4/11): libsemanage-3.6-3.el9.x86_64.rpm	224 kB/s		118 kB	00:00
(5/11): selinux-policy-38.1.48-1.el9.noarch.rpm	92 kB/s		48 kB	00:00
(6/11): policycoreutils-3.6-2.1.el9.x86_64.rpm	78 kB/s		242 kB	00:03
(7/11): policycoreutils-python-utils-3.6-2.1.el9.noarch.rpm	190 kB/s		77 kB	00:00
(8/11): selinux-policy-mls-38.1.48-1.el9.noarch.rpm	736 kB/s		4.5 MB	00:06
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(10/11): selinux-policy-targeted-38.1.48-1.el9.noarch.rpm	1.3 MB/s		6.9 MB	00:05
(11/11): python3-policycoreutils-3.6-2.1.el9.noarch.rpm	440 kB/s		2.1 MB	00:04

```
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```

Total	1.0 MB/s		14 MB	00:13
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```
Running transaction check  
Transaction check succeeded.  
Running transaction test  
Transaction test succeeded.  
Running transaction
```

Running scriptlet:	selinux-policy-mls-38.1.48-1.el9.noarch	1/1
Running scriptlet:	selinux-policy-targeted-38.1.48-1.el9.noarch	1/1
Preparing	:	1/1
Upgrading	: libsemanage-3.6-3.el9.x86_64	1/18
Upgrading	: policycoreutils-3.6-2.1.el9.x86_64	2/18
Running scriptlet:	policycoreutils-3.6-2.1.el9.x86_64	2/18
Installing	: policycoreutils-newrole-3.6-2.1.el9.x86_64	3/18
Upgrading	: python3-libsemanage-3.6-3.el9.x86_64	4/18
Installing	: python3-distro-1.5.0-7.el9.noarch	5/18

```
centos@centosstream9:~  
Transaction test succeeded.  
Running transaction  
  Running scriptlet: selinux-policy-mls-38.1.48-1.el9.noarch      1/1  
  Running scriptlet: selinux-policy-targeted-38.1.48-1.el9.noarch 1/1  
  Preparing         :                                           1/1  
  Upgrading         : libsemanage-3.6-3.el9.x86_64              1/18  
  Upgrading         : policycoreutils-3.6-2.1.el9.x86_64        2/18  
  Running scriptlet: policycoreutils-3.6-2.1.el9.x86_64        2/18  
  Installing        : policycoreutils-newrole-3.6-2.1.el9.x86_64 3/18  
  Upgrading         : python3-libsemanage-3.6-3.el9.x86_64      4/18  
  Installing        : python3-distro-1.5.0-7.el9.noarch          5/18  
  Upgrading         : python3-policycoreutils-3.6-2.1.el9.noarch 6/18  
  Installing        : mcstrans-3.6-1.el9.x86_64                 7/18  
  Running scriptlet: mcstrans-3.6-1.el9.x86_64                 7/18  
  Upgrading         : selinux-policy-38.1.48-1.el9.noarch        8/18  
  Running scriptlet: selinux-policy-38.1.48-1.el9.noarch        8/18  
  Running scriptlet: selinux-policy-mls-38.1.48-1.el9.noarch    9/18  
  Installing        : selinux-policy-mls-38.1.48-1.el9.noarch    9/18  
  Running scriptlet: selinux-policy-mls-38.1.48-1.el9.noarch    9/18  
  Running scriptlet: selinux-policy-targeted-38.1.48-1.el9.noarch 10/18  
  Upgrading         : selinux-policy-targeted-38.1.48-1.el9.noarch 10/18  
  Running scriptlet: selinux-policy-targeted-38.1.48-1.el9.noarch 10/18
```

```
centos@centosstream9:~  
./  
:  
[  
[[  
]]  
{  
}  
ab  
ac  
accessdb  
accton  
aconnect  
adcli  
addgnupghome  
addpart  
addr2line  
adduser  
agetty  
airscan-discover  
alias  
_allowed_groups  
_allowed_users  
alsactl  
--More--
```

```
centos@centosstream9:~  
usage: restorecon [-i] [-m] [-p] [-v] [-x] [-c] [-e] [-f] [-n] [-r] [-s] [-t] [-u] [-z] [-Z] [-h] [-H] [-V] [-v] [-x] [-c] [-e] [-f] [-n] [-r] [-s] [-t] [-u] [-z] [-Z] [-h] [-H] [-V]  
[centos@centosstream9 ~]$ sudo semanage login -m -r s1 example_user  
ValueError: Login mapping for example_user is not defined  
[centos@centosstream9 ~]$ sudo chcon -R -l s1 /home /example_user  
chcon: failed to change context of '{ec8030f7-c20a-464f-9b0e-13a3a9e97384}' to 'unconfined_u:object_r:mozilla_home_t:s1': Invalid argument  
chcon: failed to change context of 'extensions' to 'unconfined_u:object_r:mozilla_home_t:s1': Invalid argument  
chcon: failed to change context of 'plugins' to 'unconfined_u:object_r:mozilla_home_t:s1': Invalid argument  
chcon: failed to change context of 'times.json' to 'unconfined_u:object_r:mozilla_home_t:s1': Invalid argument  
chcon: failed to change context of '.parentlock' to 'unconfined_u:object_r:mozilla_home_t:s1': Invalid argument  
chcon: failed to change context of 'lock' to 'unconfined_u:object_r:mozilla_home_t:s1': Invalid argument  
chcon: failed to change context of 'compatibility.ini' to 'unconfined_u:object_r:mozilla_home_t:s1': Invalid argument  
chcon: failed to change context of 'permissions.sqlite' to 'unconfined_u:object_r:mozilla_home_t:s1': Invalid argument  
chcon: failed to change context of 'cookies.sqlite' to 'unconfined_u:object_r:mozilla_home_t:s1': Invalid argument  
chcon: failed to change context of 'prefs.js' to 'unconfined_u:object_r:mozilla_home_t:s1': Invalid argument  
chcon: failed to change context of 'sessioncheckpoints.json' to 'unconfined_u:object_r:mozilla_home_t:s1': Invalid argument
```

```
centos@centosstream9:~  
e_t:s1': Invalid argument  
chcon: failed to change context of 'DawnWebGPUCache' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'index' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'data_0' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'data_1' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'data_2' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'data_3' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'DawnGraphiteCache' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'Cookies' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'Cookies-journal' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'Web Data' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'Web Data-journal' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'LOG' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument
```

```
centos@centosstream9:~  
chcon: failed to change context of '192.png' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of '256.png' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'Icons' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'Icons Monochrome' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'Icons Maskable' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'fhihpiojkbmbpdjeoajapmgkhlnakfjf' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of '32.png' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of '48.png' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of '64.png' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of '96.png' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of '128.png' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of '192.png' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument
```

```
centos@centosstream9:~  
chcon: failed to change context of 'bv.svg' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'bw.svg' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'by.svg' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'bz.svg' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'ca.svg' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'cc.svg' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'cd.svg' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'cf.svg' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'cg.svg' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'ch.svg' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'ci.svg' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument  
chcon: failed to change context of 'ck.svg' to 'unconfined_u:object_r:config_home_t:s1': Invalid argument
```



```
centos@centosstream9:~  
  
^Z  
  
[6]+ Stopped                                sudo chcon -R -l s1 /home /example_user  
[centos@centosstream9 ~]$  
[centos@centosstream9 ~]$  
[centos@centosstream9 ~]$  
[centos@centosstream9 ~]$ sudo setenforce 1  
[centos@centosstream9 ~]$ sudo semanage login -l  
  
Login Name          SELinux User          MLS/MCS Range          Service  
__default__         unconfined_u          s0-s0:c0.c1023        *  
root                unconfined_u          s0-s0:c0.c1023        *  
[centos@centosstream9 ~]$ & id -Z  
bash: syntax error near unexpected token `&'  
[centos@centosstream9 ~]$ $ id -Z  
bash: $: command not found...
```

```
centos@centosstream9:~  
  
root                unconfined_u          s0-s0:c0.c1023        *  
[centos@centosstream9 ~]$ & id -Z  
bash: syntax error near unexpected token `&'  
[centos@centosstream9 ~]$ $ id -Z  
bash: $: command not found...  
[centos@centosstream9 ~]$ $ id -Z  
bash: $: command not found...  
[centos@centosstream9 ~]$ sudo $ id -Z  
sudo: $: command not found  
[centos@centosstream9 ~]$ $ id -Z  
bash: $: command not found...  
[centos@centosstream9 ~]$  
[centos@centosstream9 ~]$ $ newrole -l s1  
bash: $: command not found...  
[centos@centosstream9 ~]$ ` /etc/selinux/mls/contexts/securetty/_types  
>  
>  
>  
Display all 2232 possibilities? (y or n)  
!  
./  
:  
[  
[[
```



```
centos@centosstream9:~  
[-h host] [-p prompt] [-R directory] [-T timeout] [-u user] file ...  
[centos@centosstream9 ~]$ $ cat /path/to/file  
bash: $: command not found...  
[centos@centosstream9 ~]$ $ cat /path/to/file  
bash: $: command not found...  
[centos@centosstream9 ~]$ $ cat/path/to/file  
bash: $: command not found...  
[centos@centosstream9 ~]$ $ cat/path/to/file  
bash: $: command not found...  
[centos@centosstream9 ~]$ $ logout  
bash: $: command not found...  
[centos@centosstream9 ~]$ sudo logout  
sudo: logout: command not found  
[centos@centosstream9 ~]$ sudo id  
uid=0(root) gid=0(root) groups=0(root) context=unconfined_u:unconfined_r:unconfi  
ned_t:s0-s0:c0.c1023  
[centos@centosstream9 ~]$ sudo sentenforce 1  
sudo: sentenforce: command not found  
[centos@centosstream9 ~]$ sudo setenforce 1  
[centos@centosstream9 ~]$ sudo semodule -Lfull | grep "local_mls"  
semodule: invalid option -- 'L'  
[centos@centosstream9 ~]$ sudo semodule -Lfull | grep "local_mls"  
semodule: invalid option -- 'L'  
[centos@centosstream9 ~]$
```