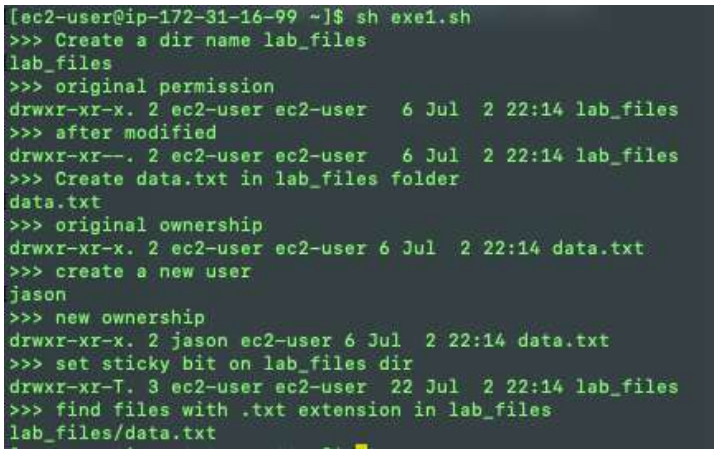
Project3: Linux Project

Lab Exercise 1: File Manipulation and Permissions

1. Create a directory named "lab_files" and set its permissions to read, write, and execute for the owner, read and execute for the group, and read-only for others.
2. Inside "lab_files", create a file named "data.txt" containing some text.
3. Change the ownership of "data.txt" to another user.
4. Set the sticky bit on "lab_files" directory.
5. Find all files with ".txt" extension in "lab_files" directory and its subdirectories.

[1] https://www.redhat.com/sysadmin/linux-file-permissions-explained
[2] https://www.redhat.com/sysadmin/create-delete-files-directories-linux
[3] https://www.geeksforgeeks.org/how-to-create-a-text-file-using-the-command-line-in-linux/

```
rou1      D5rm7r m pv5 &mzr ymn svyr6
5rmp pv5Vmzr
zxpv5  pv5Vmzr

rou1      15vtv&my 2r5zv66v1&
y6  y   t5r2  pv5Vmzr

rou1      ms7r5 z1pvsvrp
ouz1p      pv5Vmzr
y6  y   t5r2  pv5Vmzr

rou1      D5rm7r pm7m 7:7 v& ymn svyr6 s1ypr5
5rmp svyrVmzr
zxpv5 ymn svyr6  svyrVmzr

rou1      15vtv&my 1.&r56uv2
y6  y ymn svyr6   t5r2  svyrVmzr

rou1      o5rm7r m &r. 86r5
5rmp 86r5Vmzr
68p1 86r5mpp  p  865  86r5Vmzr  o  &r. 86r5 s15 ymn   t ro  86r5  2 6ro5r7  6  865 nv8
68p1 ou1.&  d  86r5Vmzr ymn svyr6 pm7m 7:7

rou1      &r. 1.&r56uv2
y6  y ymn svyr6   t5r2  svyrVmzr

rou1      6r7 67vox" nv7 1& ymn svyr6 pv5
ouz1p  7 ymn svyr6
y6  y   t5r2 ymn svyr6

rou1      sv&p svyr6 .v7u  7:7 r:7r&6v1& v& ymn svyr6
sv&p ymn svyr6  &mzr    7:7
```

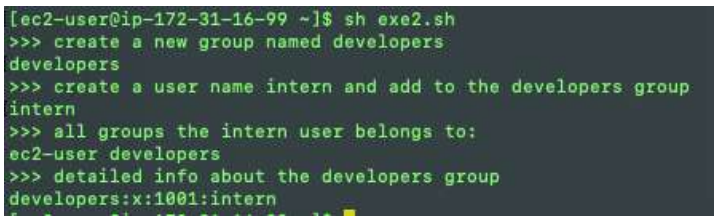


Lab Exercise 2: User and Group Management

1. Create a new group named "developers".
2. Add the user "intern" to the "developers" group.
3. List all groups the "intern" user belongs to.
4. Display detailed information about the "developers" group.

[1] https://www.redhat.com/sysadmin/linux-user-group-management

```
rou1      o5rm7r m &r. t5182 &mzrp pr9ry12r56
5rmp t5182Vmzr
68p1 t5182mpp  t5182Vmzr

rou1      o5rm7r m 86r5 &mzr v&7r5& m&p mpp 71 7ur pr9ry12r56 t5182
5rmp 86r5Vmzr
68p1 86r5mpp  p  865  86r5Vmzr  o  v&7r5& 86r5 s15 ymn   t ro  86r5  2 6ro5r7  6  865
68p1 t2m66.p  U  86r5Vmzr  t5182Vmzr

rou1      myy t51826 7ur v&7r5& 86r5 nry1&t6 71
             r
vp  N&  86r5Vmzr

rou1      pr7mvyrp v&s1 mn187 7ur pr9ry12r56 t5182
tr7r&7 t5182  t5182Vmzr
```



Lab Exercise 3: Process Management

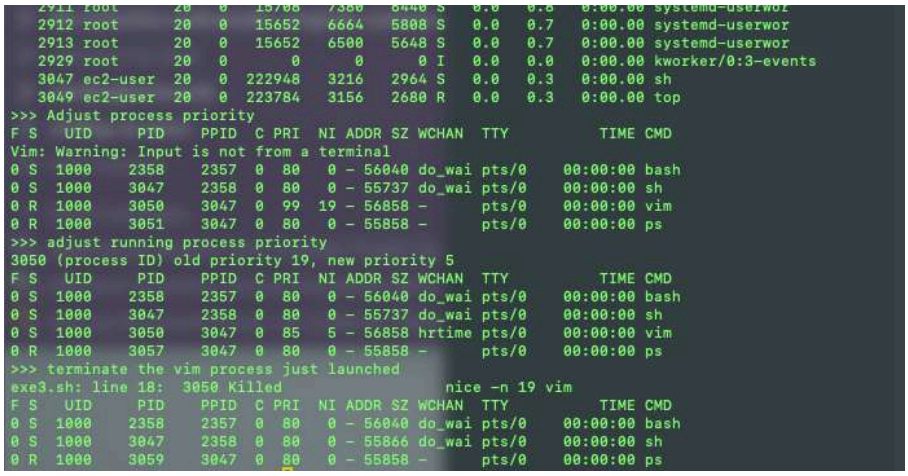
1. Displaying Running Processes

2. Displaying Dynamic View of Processes
3.Terminate a process
4.Adjust process priority
5.Adjust running process priority
[1] https://www.digitalocean.com/community/tutorials/process-management-in-linux

```
rou1      pv62ym" 58&&v&t 251or66r6
26  A

rou1      G"&mzvo 9vr. 1s 251or66r6
712  n  &

rou1      Apw867 251or66 25v15v7"
&vor  &    9vz
26  y

rou1      mpw867 58&&v&t 251or66 25v15v7"
bQG   2t5r2 9vz
68p1 5r&vor  &    2  bQG
26  y

rou1      7r5zv&m7r 7ur 9vz 251or66 w867 ym8&ourp
2xvyy    9vz
26  y
```

```
>>> display running processes
    PID TTY          TIME CMD
      1 ?        00:00:00 systemd
      2 ?        00:00:00 kthreadd
      3 ?        00:00:00 rcu_gp
      4 ?        00:00:00 rcu_par_gp
      5 ?        00:00:00 slub_flushwq
      6 ?        00:00:00 netns
      8 ?        00:00:00 kworker/0:0H-events_highpri
     10 ?        00:00:00 mm_percpu_wq
     11 ?        00:00:00 rcu_tasks_kthread
     12 ?        00:00:00 rcu_tasks_rude_kthread
     13 ?        00:00:00 rcu_tasks_trace_kthread
     14 ?        00:00:00 ksoftirqd/0
     15 ?        00:00:00 rcu_preempt
     16 ?        00:00:00 migration/0
     17 ?        00:00:00 kworker/0:1-events
     18 ?        00:00:00 cpuhp/0
     20 ?        00:00:00 kdevtmpfs
     21 ?        00:00:00 inet_frag_wq
     22 ?        00:00:00 kauditd
     23 ?        00:00:00 khungtaskd
     24 ?        00:00:00 oom_reaper
     25 ?        00:00:00 kworker/u30:1-events_unbound
     27 ?        00:00:00 writeback
     28 ?        00:00:00 kcompactd0
     29 ?        00:00:00 khugepaged
     30 ?        00:00:00 kintegrityd
     31 ?        00:00:00 kblockd
     32 ?        00:00:00 blkcg_punt_bio
     33 ?        00:00:00 xen-balloon
     34 ?        00:00:00 tpm_dev_wq
     35 ?        00:00:00 md
     36 ?        00:00:00 edac-poller
     37 ?        00:00:00 watchdogd
     38 ?        00:00:00 kworker/0:1H-kblockd
     39 ?        00:00:00 kworker/u30:3-events_unbound
     73 ?        00:00:00 kswapd0
     76 ?        00:00:00 xfsalloc
     77 ?        00:00:00 xfs_mru_cache
     80 ?        00:00:00 kthrotld
     83 ?        00:00:00 kworker/0:2-cgroup_destroy
     95 ?        00:00:00 xenbus
     96 ?        00:00:00 xenwatch
    134 ?        00:00:00 nvme-wq
    136 ?        00:00:00 nvme-reset-wq
    138 ?        00:00:00 nvme-delete-wq
    161 ?        00:00:00 mld
    162 ?        00:00:00 ipv6_addrconf
    172 ?        00:00:00 kstrp
    181 ?        00:00:00 zswap-shrink
```

```
>>> Dynamic view of processes
top - 22:18:11 up 7 min,  1 user,  load average: 0.00, 0.08, 0.07
Tasks:  99 total,   1 running,  98 sleeping,   0 stopped,   0 zombie
%Cpu(s):  0.0 us,  6.2 sy,  0.0 ni, 93.8 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :    949.5 total,    599.5 free,    127.7 used,    222.4 buff/cache
MiB Swap:      0.0 total,      0.0 free,      0.0 used.    684.4 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
      1 root      20   0  185200  16372  10032 S   0.0   1.7   0:00.90 systemd
      2 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kthreadd
      3 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_gp
      4 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_par_gp
      5 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 slub_flushwq
      6 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 netns
      8 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/0:0H-events_highpri
     10 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 mm_percpu_wq
     11 root      20   0       0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_kthread
     12 root      20   0       0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_rude_kthread
     13 root      20   0       0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_trace_kthread
     14 root      20   0       0      0      0 S   0.0   0.0   0:00.03 ksoftirqd/0
     15 root      20   0       0      0      0 I   0.0   0.0   0:00.05 rcu_preempt
     16 root      rt   0       0      0      0 S   0.0   0.0   0:00.00 migration/0
     17 root      20   0       0      0      0 I   0.0   0.0   0:00.02 kworker/0:1-xfs-buf/xvda1
     18 root      20   0       0      0      0 S   0.0   0.0   0:00.00 cpuhp/0
     20 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kdevtmpfs
     21 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 inet_frag_wq
     22 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kauditd
     23 root      20   0       0      0      0 S   0.0   0.0   0:00.00 khungtaskd
     24 root      20   0       0      0      0 S   0.0   0.0   0:00.00 oom_reaper
     25 root      20   0       0      0      0 I   0.0   0.0   0:00.05 kworker/u30:1-xfs-cil/xvda1
     27 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 writeback
     28 root      20   0       0      0      0 S   0.0   0.0   0:00.01 kcompactd0
     29 root      39  19       0      0      0 S   0.0   0.0   0:00.00 khugepaged
     30 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kintegrityd
     31 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kblockd
     32 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 blkcg_punt_bio
     33 root      20   0       0      0      0 S   0.0   0.0   0:00.00 xen-balloon
     34 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 tpm_dev_wq
     35 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 md
     36 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 edac-poller
     37 root     -51   0       0      0      0 S   0.0   0.0   0:00.00 watchdogd
     38 root       0 -20       0      0      0 I   0.0   0.0   0:00.01 kworker/0:1H-xfs-log/xvda1
     39 root      20   0       0      0      0 I   0.0   0.0   0:00.00 kworker/u30:3-events_unbound
     73 root      20   0       0      0      0 S   0.0   0.0   0:00.00 kswapd0
     76 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 xfsalloc
     77 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 xfs_mru_cache
     80 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kthrotld
     83 root      20   0       0      0      0 I   0.0   0.0   0:00.01 kworker/0:2-cgroup_destroy
```



Lab Exercise 4: Networking

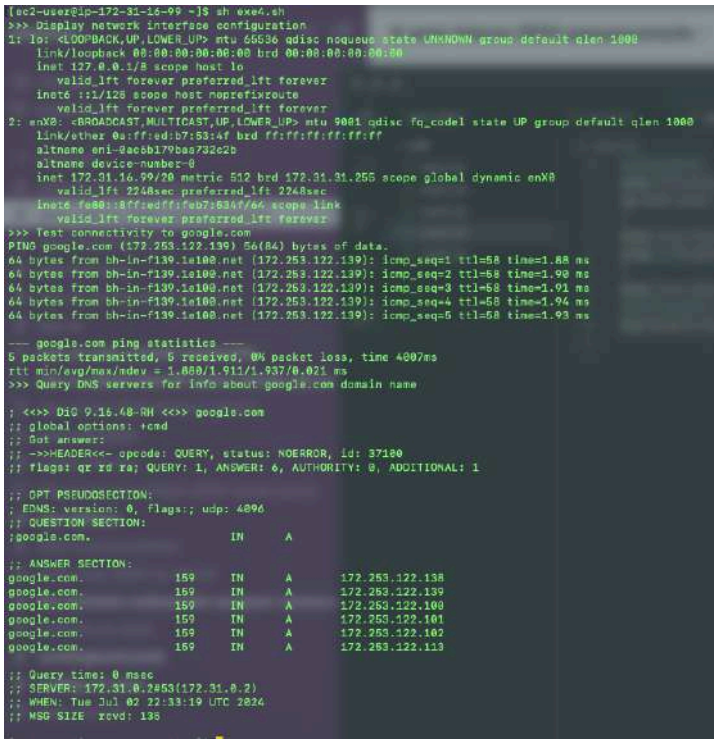
1.Display network interface configuration.

2.Test network connectivity to a remote host(e.g. google.com)

3.Query DNS servers for information about a domain name(e.g. google.com)

[1] https://www.redhat.com/sysadmin/7-great-network-commands

```
rou1      Gv62ym" &r7.15x v&7r5smor o1&svt85m7v1&
v2 mpp5 6u1.

rou1      fr67 o1&&ro7v9v7" 71 t11tyr o1z
2v&t  o   t11tyr o1z

rou1      c8r5" GVe 6r59r56 s15 v&s1 mn187 t11tyr o1z p1zmv& &mzr

pvt t11tyr o1z
```

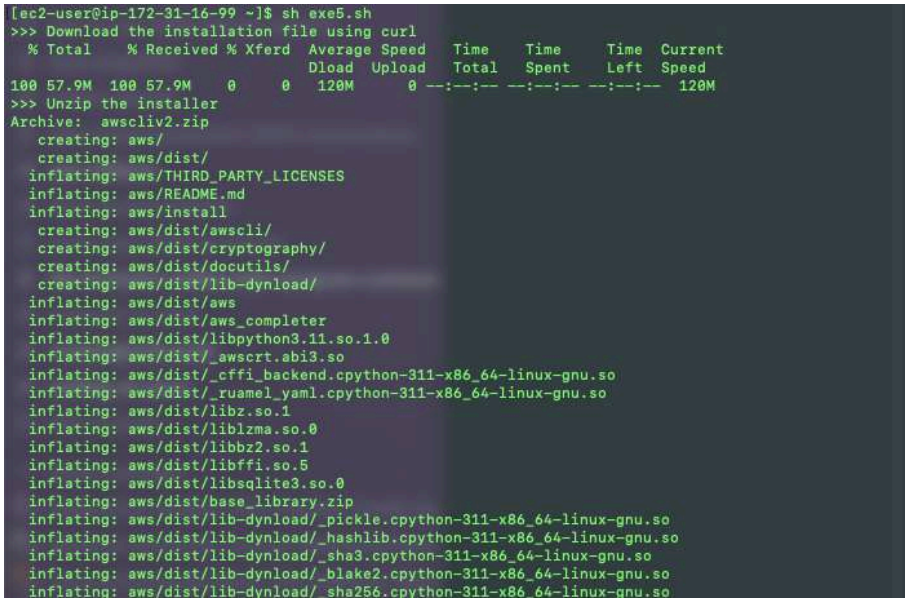


Lab Exercise 5: Install AWS CLI

Install AWS CLI on your environment[1].

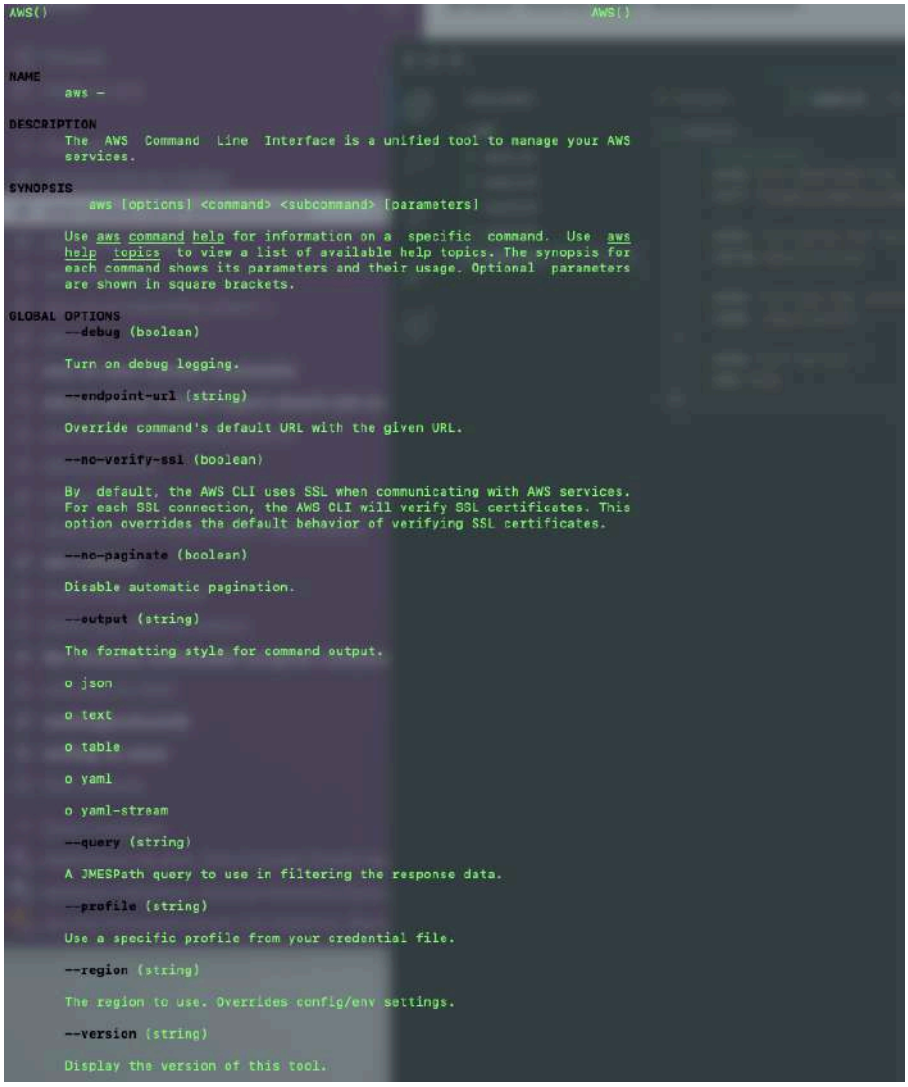
https://docs.aws.amazon.com/cli/latest/userguide/getting-started-install.html#getting-started-install-instructions

```
rou1      G1.&y1mp 7ur v&67myym7v1& svyr 86v&t o85y
o85y  u7726   m.6oyv mzm-1&m.6 o1z m.6oyv r:r yv&8: :      -v2   1  m.6oyv9  -v2

rou1      g&-v2 7ur v&67myyr5
8&-v2 m.6oyv9  -v2

rou1      d8& 7ur v&67myy 251t5mz
68p1   m.6 v&67myy

rou1      hr5vs"
m.6 ury2
```



```
[ec2-user@ip-172-31-16-99 ~]$ sh exe5.sh
>>> Download the installation file using curl
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100 57.9M  100 57.9M    0     0   120M      0 --:--:-- --:--:-- --:--:--  120M
>>> Unzip the installer
Archive:  awscliv2.zip
   creating: aws/
   creating: aws/dist/
  inflating: aws/THIRD_PARTY_LICENSES
  inflating: aws/README.md
  inflating: aws/install
   creating: aws/dist/awscli/
   creating: aws/dist/cryptography/
   creating: aws/dist/docutils/
   creating: aws/dist/lib-dynload/
  inflating: aws/dist/aws
  inflating: aws/dist/aws_completer
  inflating: aws/dist/libpython3.11.so.1.0
  inflating: aws/dist/_awscrt.abi3.so
  inflating: aws/dist/_cffi_backend.cpython-311-x86_64-linux-gnu.so
  inflating: aws/dist/_ruamel_yaml.cpython-311-x86_64-linux-gnu.so
  inflating: aws/dist/libz.so.1
  inflating: aws/dist/liblzma.so.0
  inflating: aws/dist/libbz2.so.1
  inflating: aws/dist/libffi.so.5
  inflating: aws/dist/libsqlite3.so.0
  inflating: aws/dist/base_library.zip
  inflating: aws/dist/lib-dynload/_pickle.cpython-311-x86_64-linux-gnu.so
  inflating: aws/dist/lib-dynload/_hashlib.cpython-311-x86_64-linux-gnu.so
  inflating: aws/dist/lib-dynload/_sha3.cpython-311-x86_64-linux-gnu.so
  inflating: aws/dist/lib-dynload/_blake2.cpython-311-x86_64-linux-gnu.so
  inflating: aws/dist/lib-dynload/_sha256.cpython-311-x86_64-linux-gnu.so
```

```
  inflating: aws/dist/docutils/parsers/rst/include/mmlextra.txt
  inflating: aws/dist/docutils/parsers/rst/include/xhtml1-special.txt
  inflating: aws/dist/docutils/parsers/rst/include/isolat1.txt
  inflating: aws/dist/docutils/parsers/rst/include/isobox.txt
  inflating: aws/dist/docutils/parsers/rst/include/isoamsr.txt
  inflating: aws/dist/docutils/parsers/rst/include/isogrk1.txt
  inflating: aws/dist/docutils/parsers/rst/include/isopub.txt
  inflating: aws/dist/docutils/parsers/rst/include/xhtml1-symbol.txt
>>> Run the install program
You can now run: /usr/local/bin/aws --version
>>> Verify
```


AWS()
AWS()
NAME
aws -
DESCRIPTION
The AWS Command Line Interface is a unified tool to manage your AWS services.
SYNOPSIS
aws [options] <command> <subcommand> [parameters]
Use aws command help for information on a specific command. Use aws help topics to view a list of available help topics. The synopsis for each command shows its parameters and their usage. Optional parameters are shown in square brackets.
GLOBAL OPTIONS
--debug (boolean)
Turn on debug logging.
--endpoint-url (string)
Override command's default URL with the given URL.
--no-verify-ssl (boolean)
By default, the AWS CLI uses SSL when communicating with AWS services. For each SSL connection, the AWS CLI will verify SSL certificates. This option overrides the default behavior of verifying SSL certificates.
--no-paginate (boolean)
Disable automatic pagination.
--output (string)
The formatting style for command output.
o json
o text
o table
o yaml
o yaml-stream
--query (string)
A JMESPath query to use in filtering the response data.
--profile (string)
Use a specific profile from your credential file.
--region (string)
The region to use. Overrides config/env settings.
--version (string)
Display the version of this tool.