

**Sri Lanka Institute of Information
Technology
Network Design and Management
IT3010
Practical 5
Report**



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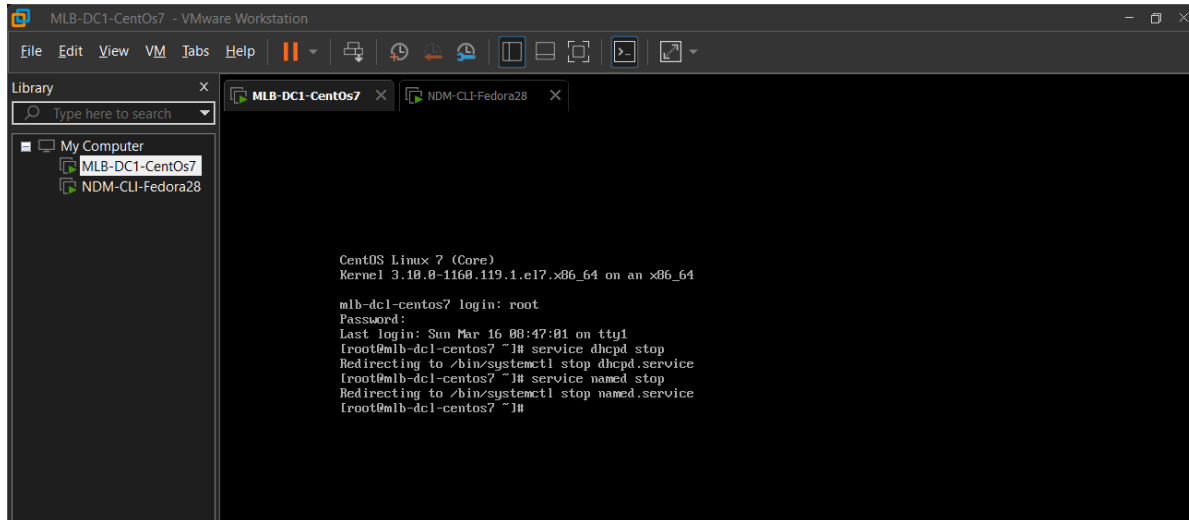
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Batch: Y3S1.WE.IT.03.01

STEP 01

01. Stop all the running services.

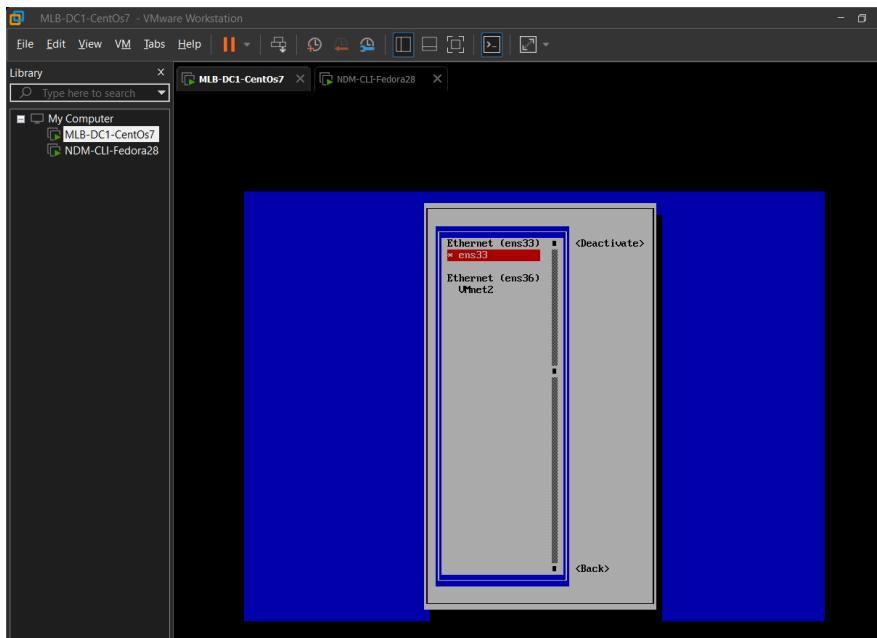
```
# service dhcpd stop  
# service named stop
```



STEP 02

01. Install SNMP

```
# yum install -y net-snmp net-snmp-utils
```

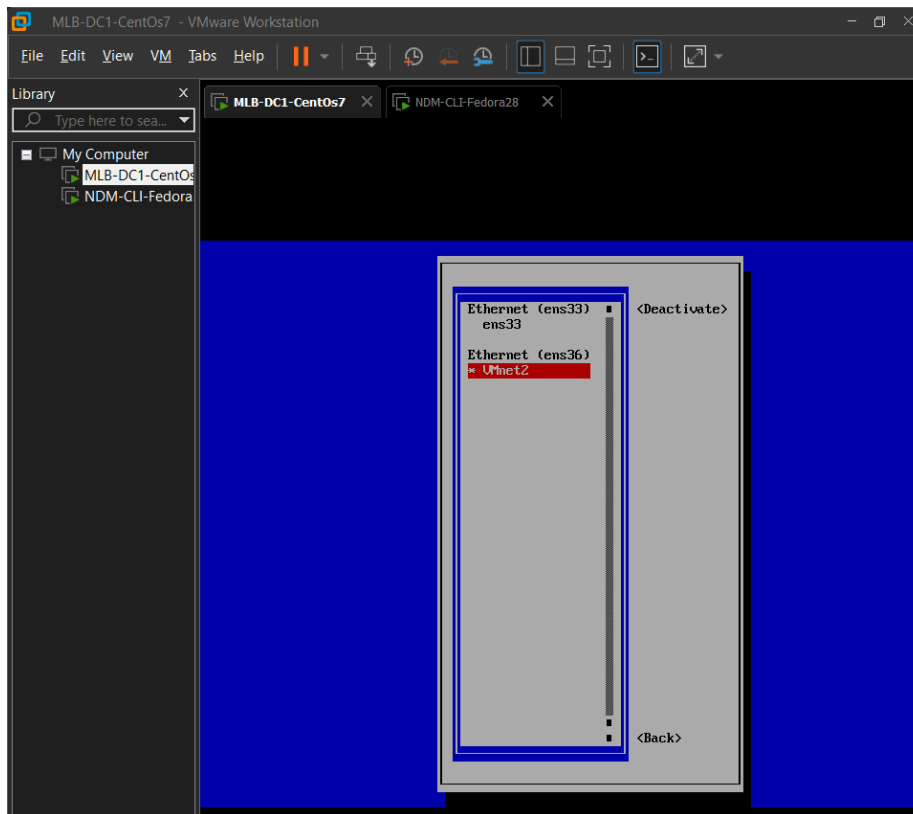


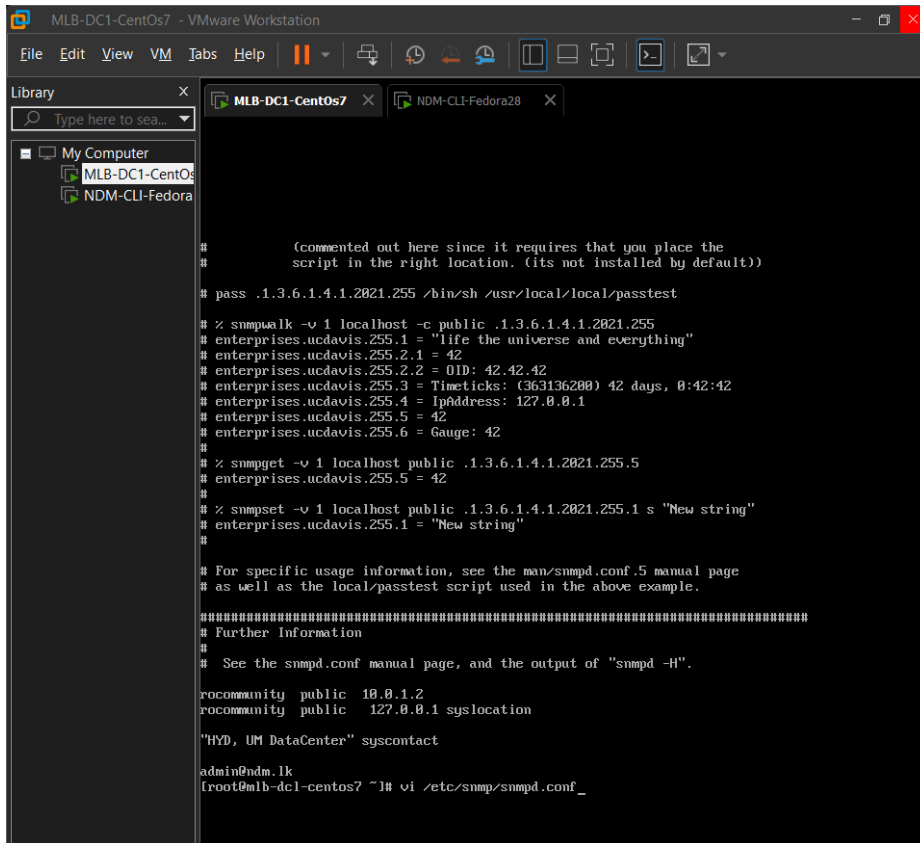
```
[root@mlb-dcl-centos7 ~]# yum install -y net-snmp net-snmp-utils
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
base                                     | 3.6 kB  00:00:00
extras                                 | 2.9 kB  00:00:00
updates                               | 2.9 kB  00:00:00
Package 1:net-snmp-5.7.2-49.el7_9.4.x86_64 already installed and latest version
Package 1:net-snmp-utils-5.7.2-49.el7_9.4.x86_64 already installed and latest version
Nothing to do
[root@mlb-dcl-centos7 ~]# _
```

STEP 04

01. View the SNMP configuration file

vi /etc/snmp/snmpd.conf





```
# (commented out here since it requires that you place the
# script in the right location. (its not installed by default))

# pass .1.3.6.1.4.1.2021.255 /bin/sh /usr/local/local/passtest

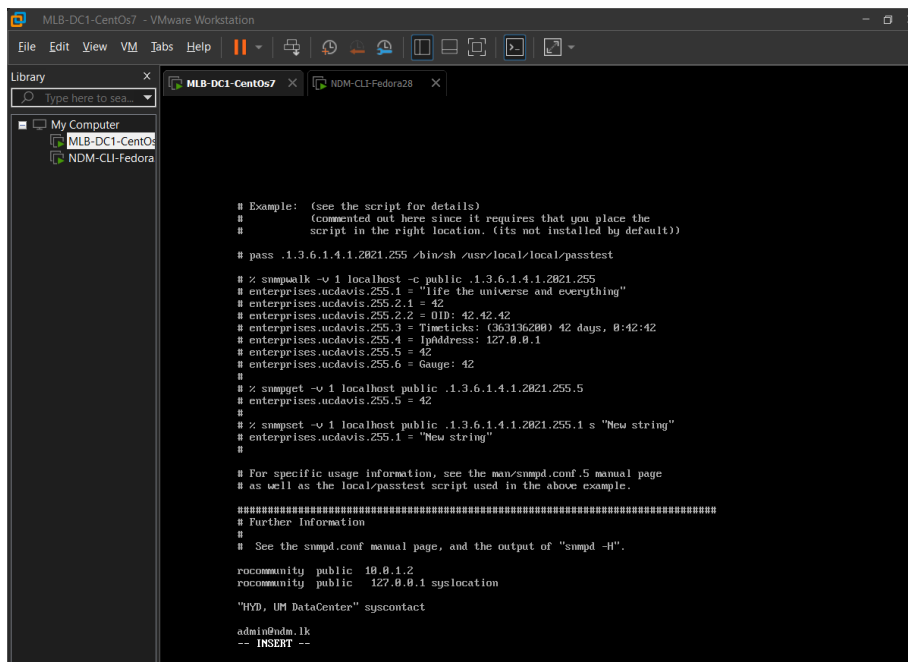
# % snmpwalk -v 1 localhost -c public .1.3.6.1.4.1.2021.255
# enterprises.ucdavis.255.1 = "life the universe and everything"
# enterprises.ucdavis.255.2.1 = 42
# enterprises.ucdavis.255.2.2 = OID: 42.42.42
# enterprises.ucdavis.255.3 = Timeticks: (363136200) 42 days, 0:42:42
# enterprises.ucdavis.255.4 = Ipaddress: 127.0.0.1
# enterprises.ucdavis.255.5 = 42
# enterprises.ucdavis.255.6 = Gauge: 42
#
# % snmpget -v 1 localhost public .1.3.6.1.4.1.2021.255.5
# enterprises.ucdavis.255.5 = 42
#
# % snmpset -v 1 localhost public .1.3.6.1.4.1.2021.255.1 s "New string"
# enterprises.ucdavis.255.1 = "New string"
#
# For specific usage information, see the man/snmpd.conf.5 manual page
# as well as the local/passtest script used in the above example.
#
#####
# Further Information
#
# See the snmpd.conf manual page, and the output of "snmpd -H".

rocommunity public 10.0.1.2
rocommunity public 127.0.0.1 syslocation

"HYD, UM DataCenter" syscontact

admin@ndm.lk
[root@mlb-dcl-centos7 ~]# vi /etc/snmp/snmpd.conf_
```

02. Add some configuration



```
# Example: (see the script for details)
# (commented out here since it requires that you place the
# script in the right location. (its not installed by default))

# pass .1.3.6.1.4.1.2021.255 /bin/sh /usr/local/local/passtest

# % snmpwalk -v 1 localhost -c public .1.3.6.1.4.1.2021.255
# enterprises.ucdavis.255.1 = "life the universe and everything"
# enterprises.ucdavis.255.2.1 = 42
# enterprises.ucdavis.255.2.2 = OID: 42.42.42
# enterprises.ucdavis.255.3 = Timeticks: (363136200) 42 days, 0:42:42
# enterprises.ucdavis.255.4 = Ipaddress: 127.0.0.1
# enterprises.ucdavis.255.5 = 42
# enterprises.ucdavis.255.6 = Gauge: 42
#
# % snmpget -v 1 localhost public .1.3.6.1.4.1.2021.255.5
# enterprises.ucdavis.255.5 = 42
#
# % snmpset -v 1 localhost public .1.3.6.1.4.1.2021.255.1 s "New string"
# enterprises.ucdavis.255.1 = "New string"
#
# For specific usage information, see the man/snmpd.conf.5 manual page
# as well as the local/passtest script used in the above example.
#
#####
# Further Information
#
# See the snmpd.conf manual page, and the output of "snmpd -H".

rocommunity public 10.0.1.2
rocommunity public 127.0.0.1 syslocation

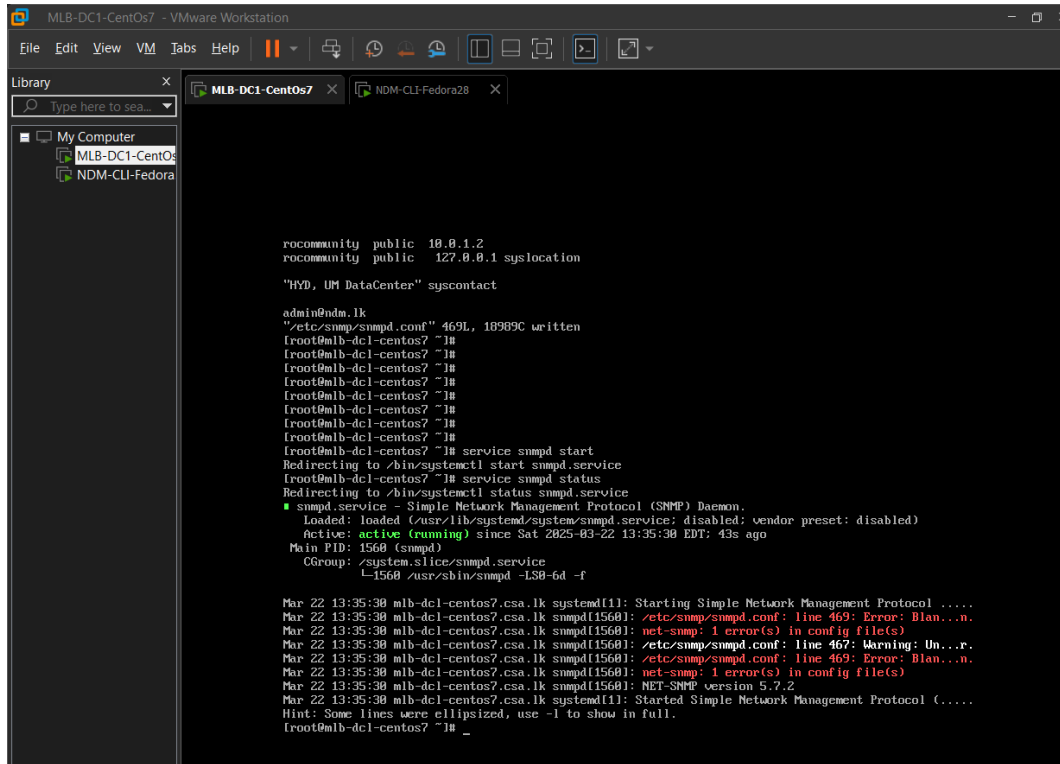
"HYD, UM DataCenter" syscontact

admin@ndm.lk
-- INSERT --

root@mlb-dcl-centos7 ~]# vi /etc/snmp/snmpd.conf_
```

03. Start SNMP service and check status

```
# service snmpd start
# service snmpd status
```



```
rocommunity public 10.0.1.2
rocommunity public 127.0.0.1 syslocation

"HYD, UM DataCenter" syscontact

admin@ndm.lk
"/etc/snmp/snmpd.conf" 469L, 18989C written
[root@mlb-dcl-centos7 ~]#
[root@mlb-dcl-centos7 ~]#
[root@mlb-dcl-centos7 ~]#
[root@mlb-dcl-centos7 ~]#
[root@mlb-dcl-centos7 ~]#
[root@mlb-dcl-centos7 ~]#
[root@mlb-dcl-centos7 ~]#
[root@mlb-dcl-centos7 ~]#
[root@mlb-dcl-centos7 ~]# service snmpd start
Redirecting to /bin/systemctl start snmpd.service
[root@mlb-dcl-centos7 ~]# service snmpd status
Redirecting to /bin/systemctl status snmpd.service
● snmpd.service - Simple Network Management Protocol (SNMP) Daemon.
   Loaded: loaded (/usr/lib/systemd/system/snmpd.service; disabled; vendor preset: disabled)
   Active: active (running) since Sat 2025-03-22 13:35:30 EDT; 43s ago
     Main PID: 1560 (snmpd)
       CGroup: /system.slice/snmpd.service
               └─1560 /usr/sbin/snmpd -LS0-6d -f

Mar 22 13:35:30 mlb-dcl-centos7.csa.lk systemd[1]: Starting Simple Network Management Protocol .....
Mar 22 13:35:30 mlb-dcl-centos7.csa.lk snmpd[1560]: /etc/snmp/snmpd.conf: line 469: Error: Blank line.
Mar 22 13:35:30 mlb-dcl-centos7.csa.lk snmpd[1560]: net-snmp: 1 error(s) in config file(s)
Mar 22 13:35:30 mlb-dcl-centos7.csa.lk snmpd[1560]: /etc/snmp/snmpd.conf: line 467: Warning: Unrecognized.
Mar 22 13:35:30 mlb-dcl-centos7.csa.lk snmpd[1560]: /etc/snmp/snmpd.conf: line 469: Error: Blank line.
Mar 22 13:35:30 mlb-dcl-centos7.csa.lk snmpd[1560]: net-snmp: 1 error(s) in config file(s)
Mar 22 13:35:30 mlb-dcl-centos7.csa.lk snmpd[1560]: NET-SNMP version 5.7.2
Mar 22 13:35:30 mlb-dcl-centos7.csa.lk systemd[1]: Started Simple Network Management Protocol (.....
Hint: Some lines were ellipsized, use -l to show in full.
[root@mlb-dcl-centos7 ~]# _
```

STEP 05

I. Snmptranslate :-

- snmptranslate .1.3.6.1.2.1.1.3.0

```
[root@mlb-dcl-centos7 ~]#
[root@mlb-dcl-centos7 ~]# snmptranslate .1.3.6.1.2.1.1.3.0
DISMAN-EVENT-MIB::sysUpTimeInstance
[root@mlb-dcl-centos7 ~]#
```

- snmptranslate -On SNMPv2-MIB::system.sysUpTime.0

```
[root@mlb-dcl-centos7 ~]#
[root@mlb-dcl-centos7 ~]# snmptranslate -On SNMPv2-MIB::system.sysUpTime.0
.1.3.6.1.2.1.1.3.0
[root@mlb-dcl-centos7 ~]#
```

- snmptranslate .iso.3.6.1.private.enterprises.2021.2.1.prNames.0

```
[root@mlb-dcl-centos7 ~]#
[root@mlb-dcl-centos7 ~]# snmptranslate .iso.3.6.1.private.enterprises.2021.2.1.prNames.0
UCD-SNMP-MIB::prNames.0
[root@mlb-dcl-centos7 ~]#
```

- snmptranslate -On .iso.3.6.1.private.enterprises.2021.2.1.prNames.0

```
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]# snmptranslate -On .iso.3.6.1.private.enterprises.2021.2.1.prNames.0
.1.3.6.1.4.1.2021.2.1.2.0
[root@mlb-dcl-centos? ~]#
```

- snmptranslate -Of .iso.3.6.1.private.enterprises.2021.2.1.prNames.0

```
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]# snmptranslate -Of .iso.3.6.1.private.enterprises.2021.2.1.prNames.0
.iso.org.dod.internet.private.enterprises.ucdavis.prTable.prEntry.prNames.0
[root@mlb-dcl-centos? ~]#
```

- snmptranslate sysUpTime.0

```
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]# snmptranslate sysUpTime.0
sysUpTime.0: Unknown Object Identifier (Sub-id not found: (top) -> sysUpTime)
[root@mlb-dcl-centos? ~]#
```

- snmptranslate -IR sysUpTime.0

```
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]# snmptranslate -IR sysUpTime.0
DISMAN-EVENT-MIB::sysUpTimeInstance
[root@mlb-dcl-centos? ~]#
```

- snmptranslate -Ib 'sys.*ime'

```
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]# snmptranslate -Ib 'sys.*ime'
SNMPv2-MIB::sysORUpTime
[root@mlb-dcl-centos? ~]#
```

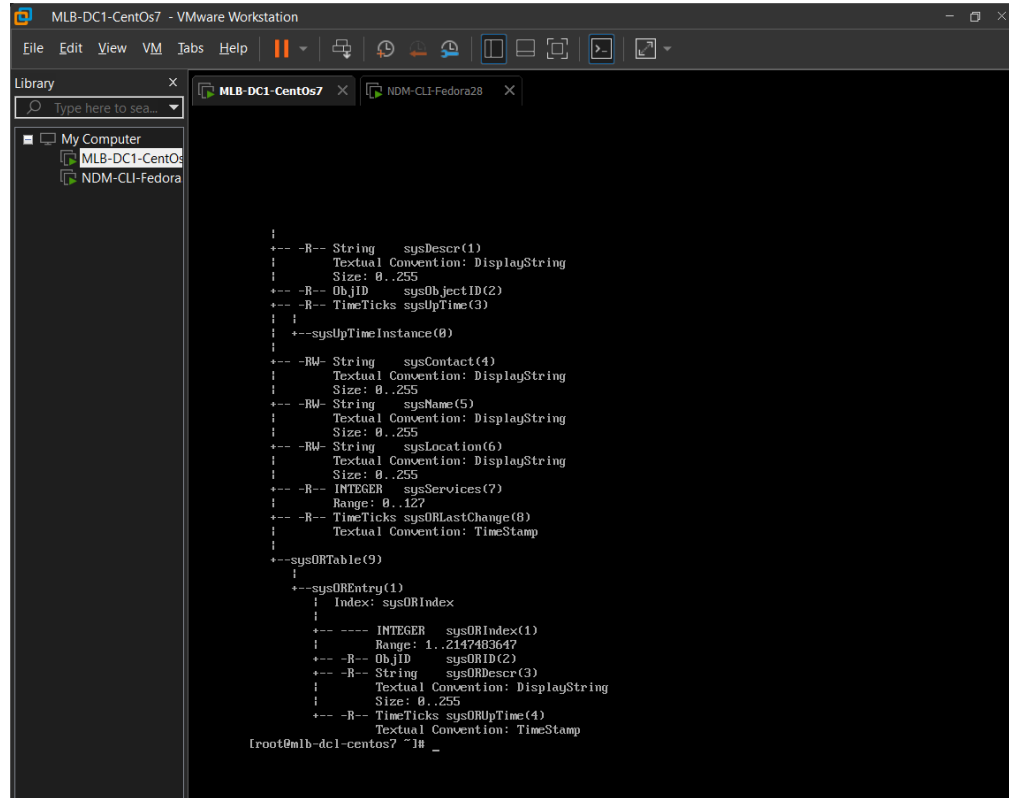
- snmptranslate -TB 'vacm.*table'

```
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]# snmptranslate -TB 'vacm.*table'
SNMP-VIEW-BASED-ACM-MIB::vacmViewTreeFamilyTable
SNMP-VIEW-BASED-ACM-MIB::vacmAccessTable
SNMP-VIEW-BASED-ACM-MIB::vacmSecurityToGroupTable
SNMP-VIEW-BASED-ACM-MIB::vacmContextTable
NET-SNMP-VACM-MIB::nsVacmAccessTable
[root@mlb-dcl-centos? ~]#
```

- snmptranslate -On -Td -Ib 'sys.*ime'

```
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]# snmptranslate -On -Td -Ib 'sys.*ime'
.1.3.6.1.2.1.1.9.1.4
sysORUpTime OBJECT-TYPE
-- FROM      SNMPv2-MIB
-- TEXTUAL CONVENTION TimeStamp
SYNTAX       TimeTicks
MAX-ACCESS   read-only
STATUS       current
DESCRIPTION  "The value of sysUpTime at the time this conceptual
              row was last instantiated."
 ::= { iso(1) org(3) dod(6) internet(1) mgmt(2) mib-2(1) system(1) sysORTable(9) sysOREntry(1) 4 }
[root@mlb-dcl-centos? ~]#
```

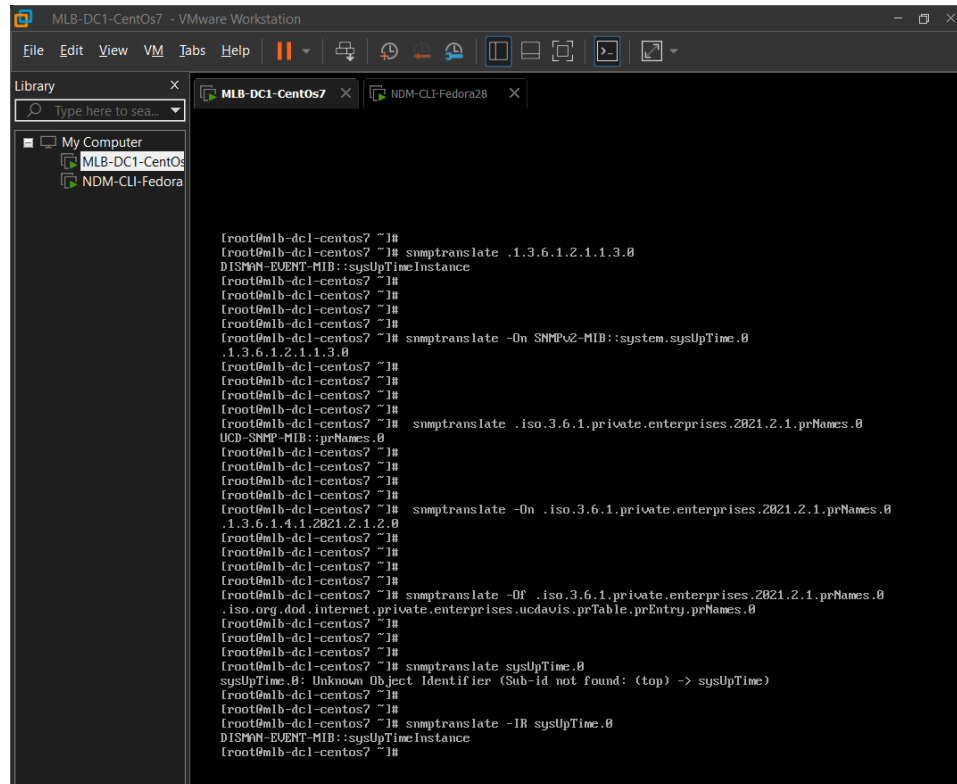
- snmptranslate -Tp -IR system



```

+--- -R-- String      sysDescr(1)
+   |      Textual Convention: DisplayString
+   |      Size: 0..255
+--- -R-- ObjID      sysObjectID(2)
+--- -R-- TimeTicks   sysUpTime(3)
+   |
+   |      +--sysUpTimeInstance(0)
+   |
+--- -RW- String      sysContact(4)
+   |      Textual Convention: DisplayString
+   |      Size: 0..255
+--- -RW- String      sysName(5)
+   |      Textual Convention: DisplayString
+   |      Size: 0..255
+--- -RW- String      sysLocation(6)
+   |      Textual Convention: DisplayString
+   |      Size: 0..255
+--- -R-- INTEGER     sysServices(7)
+   |      Range: 0..127
+--- -R-- TimeTicks   sysORLastChange(8)
+   |      Textual Convention: TimeStamp
+   |
+---sysORTable(9)
+   |
+   |      +--sysOREntry(1)
+   |      |      Index: sysORIndex
+   |      |
+   |      |      +--- -R-- INTEGER     sysORIndex(1)
+   |      |      |      Range: 1..2147483647
+   |      |      +--- -R-- ObjID      sysORID(2)
+   |      |      +--- -R-- String      sysORDescr(3)
+   |      |      |      Textual Convention: DisplayString
+   |      |      |      Size: 0..255
+   |      |      +--- -R-- TimeTicks   sysORUpTime(4)
+   |      |      |      Textual Convention: TimeStamp
+   |      |
+   |      |      [root@mlb-dcl-centos? ~]#

```



```

[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]# snmptranslate .1.3.6.1.2.1.1.3.0
DISMAN-EVENT-MIB::sysUpTimeInstance
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]# snmptranslate -On SNMPv2-MIB::system.sysUpTime.0
.1.3.6.1.2.1.1.3.0
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]# snmptranslate .iso.3.6.1.private.enterprises.2021.2.1.prNames.0
UCD-SNMP-MIB::prNames.0
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]# snmptranslate -On .iso.3.6.1.private.enterprises.2021.2.1.prNames.0
.1.3.6.1.4.1.2021.2.1.2.0
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]# snmptranslate -Of .iso.3.6.1.private.enterprises.2021.2.1.prNames.0
.iso.org.dod.internet.private.enterprises.ucdavis.prTable.prEntry.prNames.0
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]# snmptranslate sysUpTime.0
sysUpTime.0: Unknown Object Identifier (Sub-id not found: (top) -> sysUpTime)
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]#
[root@mlb-dcl-centos? ~]# snmptranslate -IR sysUpTime.0
DISMAN-EVENT-MIB::sysUpTimeInstance
[root@mlb-dcl-centos? ~]#

```

II. Snmpget :-

- snmpget -v 1 -c public 10.0.1.2 system.sysUpTime.0

```
[root@mlb-dcl-centos? ~]#  
[root@mlb-dcl-centos? ~]# snmpget -v 1 -c public 10.0.1.2 system.sysUpTime.0  
DISMAN-EVENT-MIB::sysUpTimeInstance = Timeticks: (170818) 0:28:28.18  
[root@mlb-dcl-centos? ~]#
```

- snmpget -v 2c -c public 10.0.1.2 system.sysUpTime.0

```
[root@mlb-dcl-centos? ~]#  
[root@mlb-dcl-centos? ~]# snmpget -v 2c -c public 10.0.1.2 system.sysUpTime.0  
DISMAN-EVENT-MIB::sysUpTimeInstance = Timeticks: (185773) 0:30:57.73  
[root@mlb-dcl-centos? ~]#
```

- snmpget -v 2c -c public 10.0.1.2 sysUpTime.0

```
[root@mlb-dcl-centos? ~]#  
[root@mlb-dcl-centos? ~]# snmpget -v 2c -c public 10.0.1.2 sysUpTime.0  
DISMAN-EVENT-MIB::sysUpTimeInstance = Timeticks: (192659) 0:32:06.59  
[root@mlb-dcl-centos? ~]#
```

- snmpget -v 1 -c public 10.0.1.2 sysUpTime

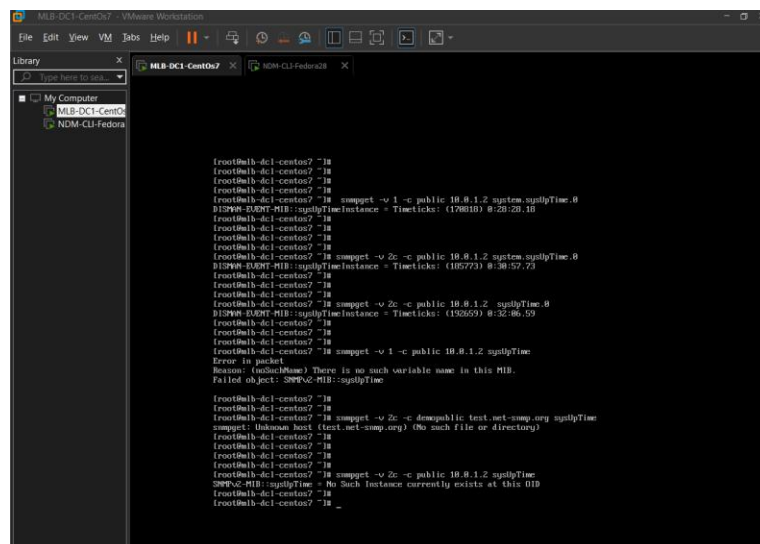
```
[root@mlb-dcl-centos? ~]#  
[root@mlb-dcl-centos? ~]# snmpget -v 1 -c public 10.0.1.2 sysUpTime  
Error in packet  
Reason: (noSuchName) There is no such variable name in this MIB.  
Failed object: SNMPv2-MIB::sysUpTime  
[root@mlb-dcl-centos? ~]#
```

- snmpget -v 2c -c public 10.0.1.2 sysUpTime

```
[root@mlb-dcl-centos? ~]#  
[root@mlb-dcl-centos? ~]# snmpget -v 2c -c public 10.0.1.2 sysUpTime  
SNMPv2-MIB::sysUpTime = No Such Instance currently exists at this OID  
[root@mlb-dcl-centos? ~]#
```

- snmpget -v 2c -c public 10.0.1.2 sysUpTime.0 ucdDemoUserList.0

```
[root@mlb-dcl-centos? ~]#  
[root@mlb-dcl-centos? ~]# snmpget -v 2c -c public 10.0.1.2 sysUpTime.0 ucdDemoUserList.0  
DISMAN-EVENT-MIB::sysUpTimeInstance = Timeticks: (192659) 0:32:06.59  
[root@mlb-dcl-centos? ~]#
```



The screenshot shows a VMware Workstation window with a terminal session. The terminal displays the following commands and outputs:

```
[root@mlb-dcl-centos? ~]#  
[root@mlb-dcl-centos? ~]# snmpget -v 1 -c public 10.0.1.2 system.sysUpTime.0  
DISMAN-EVENT-MIB::sysUpTimeInstance = Timeticks: (170818) 0:28:28.18  
[root@mlb-dcl-centos? ~]#  
[root@mlb-dcl-centos? ~]# snmpget -v 2c -c public 10.0.1.2 system.sysUpTime.0  
DISMAN-EVENT-MIB::sysUpTimeInstance = Timeticks: (185773) 0:30:57.73  
[root@mlb-dcl-centos? ~]#  
[root@mlb-dcl-centos? ~]# snmpget -v 2c -c public 10.0.1.2 sysUpTime.0  
DISMAN-EVENT-MIB::sysUpTimeInstance = Timeticks: (192659) 0:32:06.59  
[root@mlb-dcl-centos? ~]#  
[root@mlb-dcl-centos? ~]# snmpget -v 1 -c public 10.0.1.2 sysUpTime  
Error in packet  
Reason: (noSuchName) There is no such variable name in this MIB.  
Failed object: SNMPv2-MIB::sysUpTime  
[root@mlb-dcl-centos? ~]#  
[root@mlb-dcl-centos? ~]# snmpget -v 2c -c public 10.0.1.2 sysUpTime  
SNMPv2-MIB::sysUpTime = No Such Instance currently exists at this OID  
[root@mlb-dcl-centos? ~]#  
[root@mlb-dcl-centos? ~]# snmpget -v 2c -c public 10.0.1.2 sysUpTime.0 ucdDemoUserList.0  
DISMAN-EVENT-MIB::sysUpTimeInstance = Timeticks: (192659) 0:32:06.59  
[root@mlb-dcl-centos? ~]#
```


III. Snmpgetnext :-

- snmpgetnext -v 2c -c public 10.0.1.2 system.sysUpTime.0

```
[root@mlb-dcl-centos7 ~]#  
[root@mlb-dcl-centos7 ~]# snmpgetnext -v 2c -c public 10.0.1.2 system.sysUpTime.0  
SNMPv2-MIB::sysContact.0 = STRING: Root <root@localhost> (configure /etc/snmp/snmp.local.conf)  
[root@mlb-dcl-centos7 ~]#
```

- snmpgetnext -v 2c -c public 10.0.1.2 system.sysContact.0

```
[root@mlb-dcl-centos7 ~]#  
[root@mlb-dcl-centos7 ~]# snmpgetnext -v 2c -c public 10.0.1.2 system.sysContact.0  
SNMPv2-MIB::sysName.0 = STRING: mlb-dcl-centos7.csa.lk  
[root@mlb-dcl-centos7 ~]#
```

- snmpgetnext -v 2c -c public 10.0.1.2 system.sysName.0

```
[root@mlb-dcl-centos7 ~]#  
[root@mlb-dcl-centos7 ~]# snmpgetnext -v 2c -c public 10.0.1.2 system.sysName.0  
SNMPv2-MIB::sysLocation.0 = STRING: Unknown (edit /etc/snmp/snmpd.conf)  
[root@mlb-dcl-centos7 ~]#
```

- snmpgetnext -v 2c -c public 10.0.1.2 system.sysUpTime

```
[root@mlb-dcl-centos7 ~]#  
[root@mlb-dcl-centos7 ~]# snmpgetnext -v 2c -c public 10.0.1.2 system.sysUpTime  
DISMAN-EVENT-MIB::sysUpTimeInstance = Timeticks: (335897) 0:55:58.97  
[root@mlb-dcl-centos7 ~]#
```

- snmpgetnext -v 2c -c public 10.0.1.2 system

```
[root@mlb-dcl-centos7 ~]#  
[root@mlb-dcl-centos7 ~]# snmpgetnext -v 2c -c public 10.0.1.2 system  
SNMPv2-MIB::sysDescr.0 = STRING: Linux mlb-dcl-centos7.csa.lk 3.10.0-1160.119.1.el7.x86_64 #1 SMP Tu  
e Jun 4 14:43:51 UTC 2024 x86_64  
[root@mlb-dcl-centos7 ~]#
```

- snmpgetnext -v 2c -c public 10.0.1.2 .1.3.6

```
[root@mlb-dcl-centos7 ~]#  
[root@mlb-dcl-centos7 ~]# snmpgetnext -v 2c -c public 10.0.1.2 .1.3.6  
SNMPv2-MIB::sysDescr.0 = STRING: Linux mlb-dcl-centos7.csa.lk 3.10.0-1160.119.1.el7.x86_64 #1 SMP Tu  
e Jun 4 14:43:51 UTC 2024 x86_64  
[root@mlb-dcl-centos7 ~]#
```