CS 158B Network Management Project

Group 4: Anni Shao, Corinna Chang, Kazuya Nakashima, Swift Sheng

Introduction

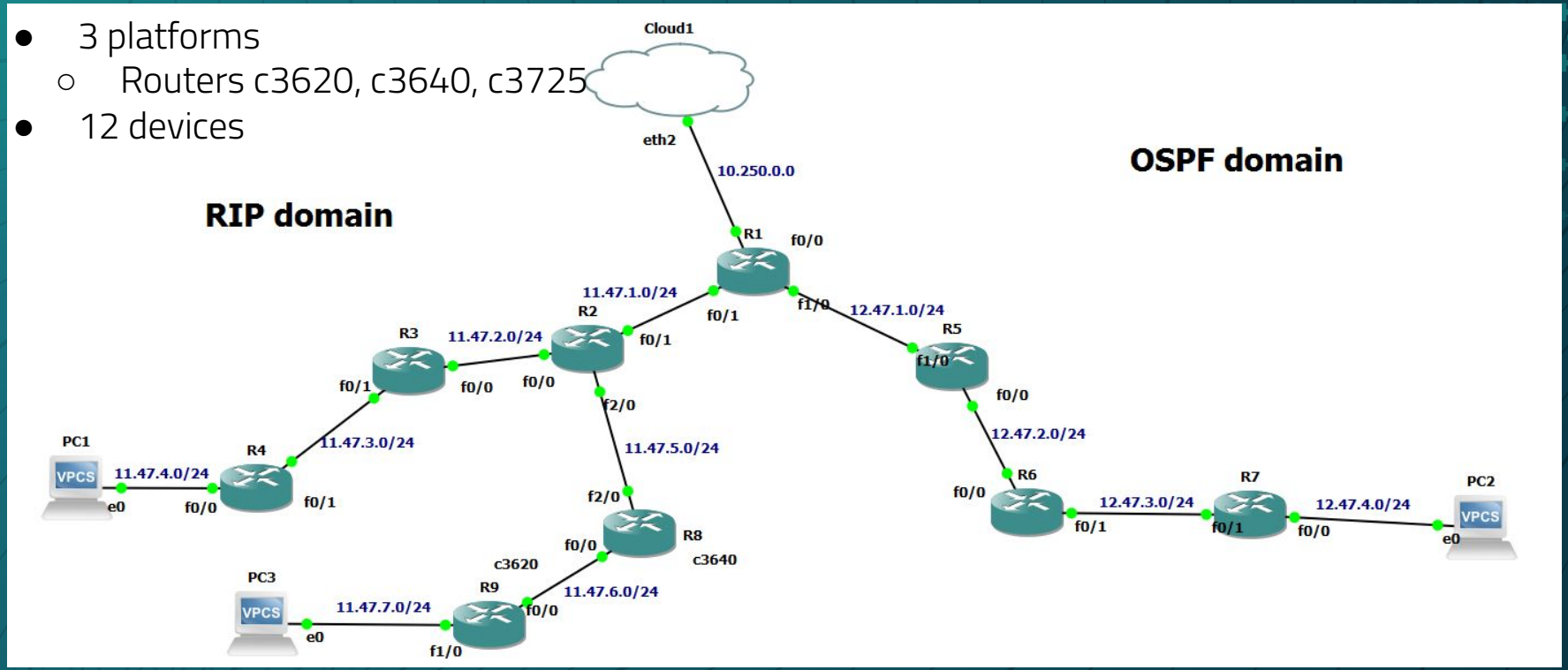
- Role: network management consultant
- Manage network consisting of 12 devices and 2 different platforms

Tools and Protocols

- GNS3 & VirtualBox - simulate network
- MG-Soft
- PRTG

- RIP protocol: R1, R2, R3, R4, R8, R9
- OSPF protocol: R1, R5, R6, R7

- 3 platforms
  - Routers c3620, c3640, c3725
- 12 devices



Network Topology

Feature 1: Find entire network

PC1

```
PC1> ping 12.47.4.2 (PC 2)

84 bytes from 12.47.4.2 icmp_seq=1 ttl=57 time=103.158 ms
84 bytes from 12.47.4.2 icmp_seq=2 ttl=57 time=104.074 ms
84 bytes from 12.47.4.2 icmp_seq=3 ttl=57 time=134.789 ms
84 bytes from 12.47.4.2 icmp_seq=4 ttl=57 time=125.667 ms
84 bytes from 12.47.4.2 icmp_seq=5 ttl=57 time=128.190 ms

PC1> ping 11.47.7.2 (PC 3)

84 bytes from 11.47.7.2 icmp_seq=1 ttl=59 time=129.007 ms
84 bytes from 11.47.7.2 icmp_seq=2 ttl=59 time=86.141 ms
84 bytes from 11.47.7.2 icmp_seq=3 ttl=59 time=87.042 ms
84 bytes from 11.47.7.2 icmp_seq=4 ttl=59 time=81.008 ms
84 bytes from 11.47.7.2 icmp_seq=5 ttl=59 time=105.073 ms

PC1> ping 10.250.84.218 (LOCALHOST)

84 bytes from 10.250.84.218 icmp_seq=1 ttl=124 time=59.225 ms
84 bytes from 10.250.84.218 icmp_seq=2 ttl=124 time=57.755 ms
84 bytes from 10.250.84.218 icmp_seq=3 ttl=124 time=107.438 ms
84 bytes from 10.250.84.218 icmp_seq=4 ttl=124 time=75.354 ms
84 bytes from 10.250.84.218 icmp_seq=5 ttl=124 time=73.828 ms
```

PC2

```
PC2> ping 11.47.4.2 (PC1)

84 bytes from 11.47.4.2 icmp_seq=1 ttl=57 time=118.032 ms
84 bytes from 11.47.4.2 icmp_seq=2 ttl=57 time=101.832 ms
84 bytes from 11.47.4.2 icmp_seq=3 ttl=57 time=99.385 ms
84 bytes from 11.47.4.2 icmp_seq=4 ttl=57 time=136.341 ms
84 bytes from 11.47.4.2 icmp_seq=5 ttl=57 time=135.766 ms

PC2> ping 11.47.7.2 (PC 3)

84 bytes from 11.47.7.2 icmp_seq=1 ttl=57 time=118.490 ms
84 bytes from 11.47.7.2 icmp_seq=2 ttl=57 time=154.846 ms
84 bytes from 11.47.7.2 icmp_seq=3 ttl=57 time=102.892 ms
84 bytes from 11.47.7.2 icmp_seq=4 ttl=57 time=140.146 ms
84 bytes from 11.47.7.2 icmp_seq=5 ttl=57 time=134.100 ms

PC2> ping 10.250.84.218 (LOCALHOST)

84 bytes from 10.250.84.218 icmp_seq=1 ttl=124 time=83.307 ms
84 bytes from 10.250.84.218 icmp_seq=2 ttl=124 time=74.599 ms
84 bytes from 10.250.84.218 icmp_seq=3 ttl=124 time=66.243 ms
84 bytes from 10.250.84.218 icmp_seq=4 ttl=124 time=111.006 ms
84 bytes from 10.250.84.218 icmp_seq=5 ttl=124 time=70.629 ms
```

PC3

```
PC3> ping 11.47.4.2 (PC1)

84 bytes from 11.47.4.2 icmp_seq=1 ttl=59 time=76.923 ms
84 bytes from 11.47.4.2 icmp_seq=2 ttl=59 time=80.111 ms
84 bytes from 11.47.4.2 icmp_seq=3 ttl=59 time=78.603 ms
84 bytes from 11.47.4.2 icmp_seq=4 ttl=59 time=94.669 ms
84 bytes from 11.47.4.2 icmp_seq=5 ttl=59 time=110.983 ms

PC3> ping 12.47.4.2 (PC 2)

84 bytes from 12.47.4.2 icmp_seq=1 ttl=57 time=128.009 ms
84 bytes from 12.47.4.2 icmp_seq=2 ttl=57 time=111.482 ms
84 bytes from 12.47.4.2 icmp_seq=3 ttl=57 time=116.371 ms
84 bytes from 12.47.4.2 icmp_seq=4 ttl=57 time=124.689 ms
84 bytes from 12.47.4.2 icmp_seq=5 ttl=57 time=131.916 ms

PC3> ping 10.250.84.218 (LOCALHOST)

84 bytes from 10.250.84.218 icmp_seq=1 ttl=124 time=55.960 ms
84 bytes from 10.250.84.218 icmp_seq=2 ttl=124 time=68.285 ms
84 bytes from 10.250.84.218 icmp_seq=3 ttl=124 time=52.250 ms
84 bytes from 10.250.84.218 icmp_seq=4 ttl=124 time=74.095 ms
84 bytes from 10.250.84.218 icmp_seq=5 ttl=124 time=56.239 ms
```

Ping from Localhost

Administrator: Command Prompt

```
C:\WINDOWS\system32>ping 11.47.4.2 (PC1)

Pinging 11.47.4.2 with 32 bytes of data:
Reply from 11.47.4.2: bytes=32 time=83ms TTL=60
Reply from 11.47.4.2: bytes=32 time=97ms TTL=60
Reply from 11.47.4.2: bytes=32 time=53ms TTL=60
Reply from 11.47.4.2: bytes=32 time=69ms TTL=60

Ping statistics for 11.47.4.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 53ms, Maximum = 97ms, Average = 75ms
```

Administrator: Command Prompt

```
C:\WINDOWS\system32>ping 12.47.4.2 (PC 2)

Pinging 12.47.4.2 with 32 bytes of data:
Reply from 12.47.4.2: bytes=32 time=67ms TTL=60
Reply from 12.47.4.2: bytes=32 time=84ms TTL=60
Reply from 12.47.4.2: bytes=32 time=83ms TTL=60
Reply from 12.47.4.2: bytes=32 time=44ms TTL=60

Ping statistics for 12.47.4.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 44ms, Maximum = 84ms, Average = 69ms

C:\WINDOWS\system32>ping 11.47.7.2 (PC3)

Pinging 11.47.7.2 with 32 bytes of data:
Reply from 11.47.7.2: bytes=32 time=76ms TTL=60
Reply from 11.47.7.2: bytes=32 time=53ms TTL=60
Reply from 11.47.7.2: bytes=32 time=72ms TTL=60
Reply from 11.47.7.2: bytes=32 time=71ms TTL=60

Ping statistics for 11.47.7.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 53ms, Maximum = 76ms, Average = 68ms
```

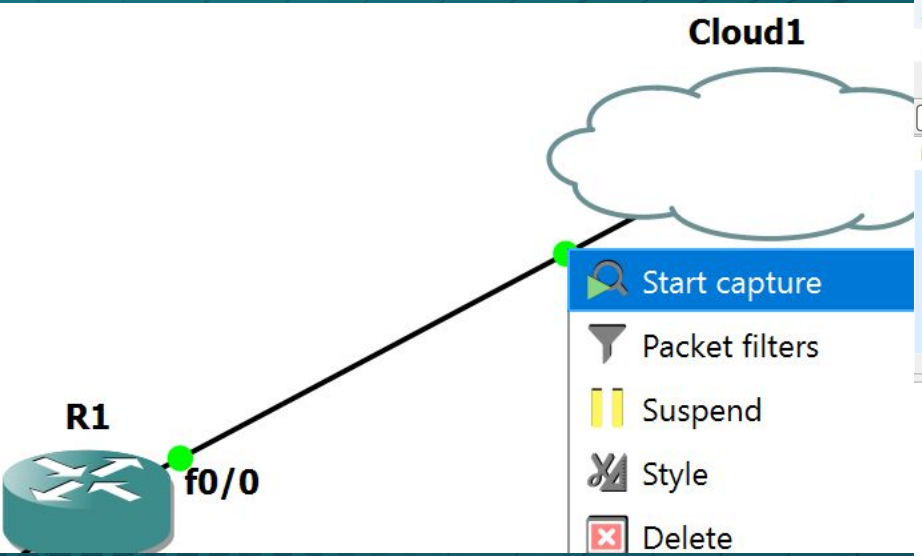
2. Receive syslog from network devices

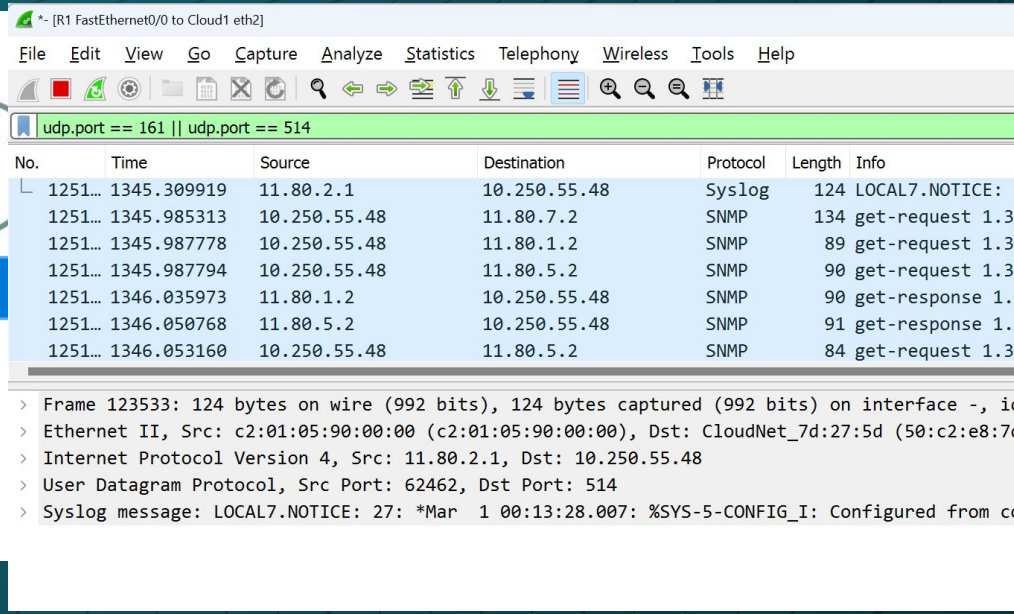
```
[OK]
R1#config t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#hostname test
test(config)#end
test#wr mem
Building configuration...

*Mar  1 01:47:23.591: %SYS-5-CONFIG_I: Configured from console by console[OK]
test#config t
Enter configuration commands, one per line.  End with CNTL/Z.
test(config)#hostname R1
R1(config)#end
R1#wr mem
Building configuration...

*Mar  1 01:49:14.443: %SYS-5-CONFIG_I: Configured from console by co
R1#
```

Syslog Messages

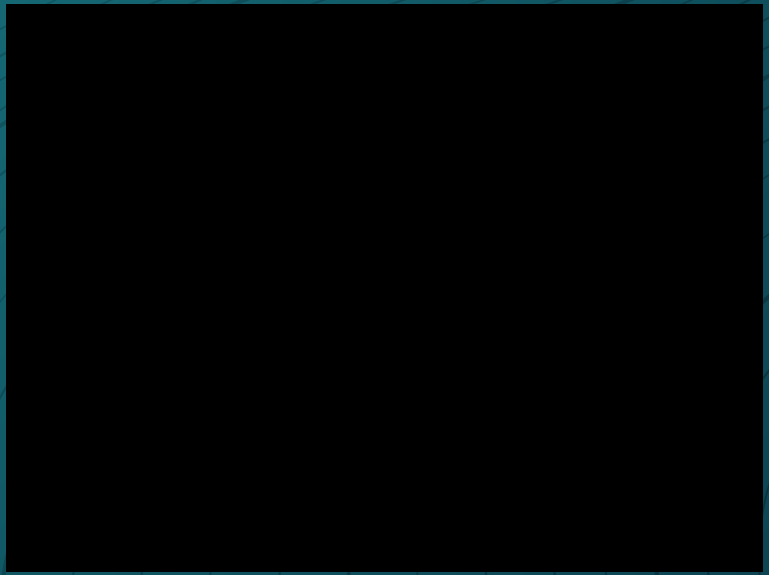
Date Time	Source	Message
11/7/2022 11:13:...	10.25...	28: *Mar 1 01:49:14.443: %SYS-5-CONFIG_I: Configured from console by console
11/7/2022 11:11:...	10.25...	27: *Mar 1 01:47:23.591: %SYS-5-CONFIG_I: Con...
11/7/2022 11:10:...	10.25...	26: *Mar 1 01:45:50.391: %SYS-6-LOGGINGHOST...
11/7/2022 11:10:...	10.25...	25: *Mar 1 01:45:49.391: %SYS-5-CONFIG_I: Con...

3. Receive snmp messages from network devices





4. Receive event when interface or device is down



5. Run snmp mibwalk

Query | MIB | Ping

Remote SNMP agent: 11.80.1.1

Split: Vertical

Command line: get 1.3.6.1.2.1.1.1.0

MIB tree

- MIB Tree
  - ccitt
  - iso
    - org
      - dod
        - internet
          - directory
          - mgmt
            - mib-2
              - system
                - s
                - s
                - s
                - s
                - s
                - s
                - s
              - inter

Contact
Walk
Prompt For OID...
Multiple Variable Bindings...
Multiple Operations...
Expand
Collapse

Query results

Welcome to MG-SOFT MIB

Remote address: 11.80.1.1
Local address: 192.168.56.
Protocol version: SNMPv1
1: sysUpTime.0 (TimeTicks)

Query results

```
276: system.9.1.4.72 (timeticks) 0 days 00h:00m:00s.00th (0)
277: system.9.1.4.73 (timeticks) 0 days 00h:00m:00s.00th (0)
278: system.9.1.4.74 (timeticks) 0 days 00h:00m:00s.00th (0)
279: system.9.1.4.75 (timeticks) 0 days 00h:00m:00s.00th (0)
280: system.9.1.4.76 (timeticks) 0 days 00h:00m:00s.00th (0)
281: system.9.1.4.77 (timeticks) 0 days 00h:00m:00s.00th (0)
282: system.9.1.4.78 (timeticks) 0 days 00h:00m:00s.00th (0)
283: system.9.1.4.79 (timeticks) 0 days 00h:00m:00s.00th (0)
284: system.9.1.4.80 (timeticks) 0 days 00h:00m:00s.00th (0)
285: system.9.1.4.81 (timeticks) 0 days 00h:00m:00s.00th (0)
286: system.9.1.4.82 (timeticks) 0 days 00h:00m:00s.00th (0)
287: system.9.1.4.83 (timeticks) 0 days 00h:00m:00s.00th (0)
288: system.9.1.4.84 (timeticks) 0 days 00h:00m:00s.00th (0)
289: system.9.1.4.85 (timeticks) 0 days 00h:00m:00s.00th (0)
290: system.9.1.4.86 (timeticks) 0 days 00h:00m:00s.00th (0)
291: system.9.1.4.87 (timeticks) 0 days 00h:00m:00s.00th (0)
292: system.9.1.4.88 (timeticks) 0 days 00h:00m:00s.00th (0)
293: system.9.1.4.89 (timeticks) 0 days 00h:00m:00s.00th (0)
294: system.9.1.4.90 (timeticks) 0 days 00h:00m:00s.00th (0)
295: system.9.1.4.91 (timeticks) 0 days 00h:00m:00s.00th (0)
296: system.9.1.4.92 (timeticks) 0 days 00h:00m:00s.00th (0)
297: system.9.1.4.93 (timeticks) 0 days 00h:00m:00s.00th (0)
298: system.9.1.4.94 (timeticks) 0 days 00h:00m:00s.00th (0)
299: system.9.1.4.95 (timeticks) 0 days 00h:00m:00s.00th (0)
300: system.9.1.4.96 (timeticks) 0 days 00h:00m:00s.00th (0)
301: system.9.1.4.97 (timeticks) 0 days 00h:00m:00s.00th (0)
302: system.9.1.4.98 (timeticks) 0 days 00h:00m:00s.00th (0)
Start time : 11/7/2022 11:25:40 PM
End time : 11/7/2022 11:25:43 PM
Duration : 3s.213ms
***** SNMP QUERY FINISHED *****
```

6: Compile a new snmp mib when customer purchase a new device

SNMP MIB file

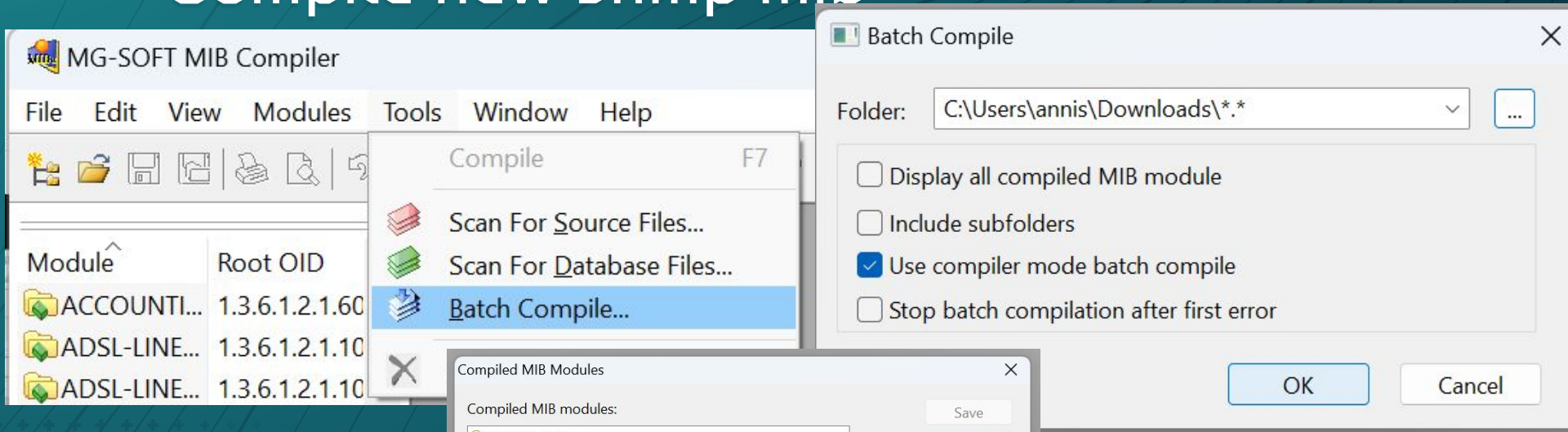
C:\Users\annis\Downloads\ARUBA-MIB.mib - Notepad++

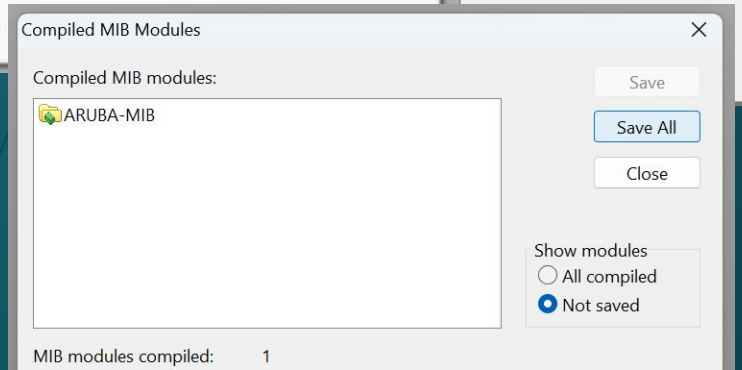
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

ARUBA-MIB.mib

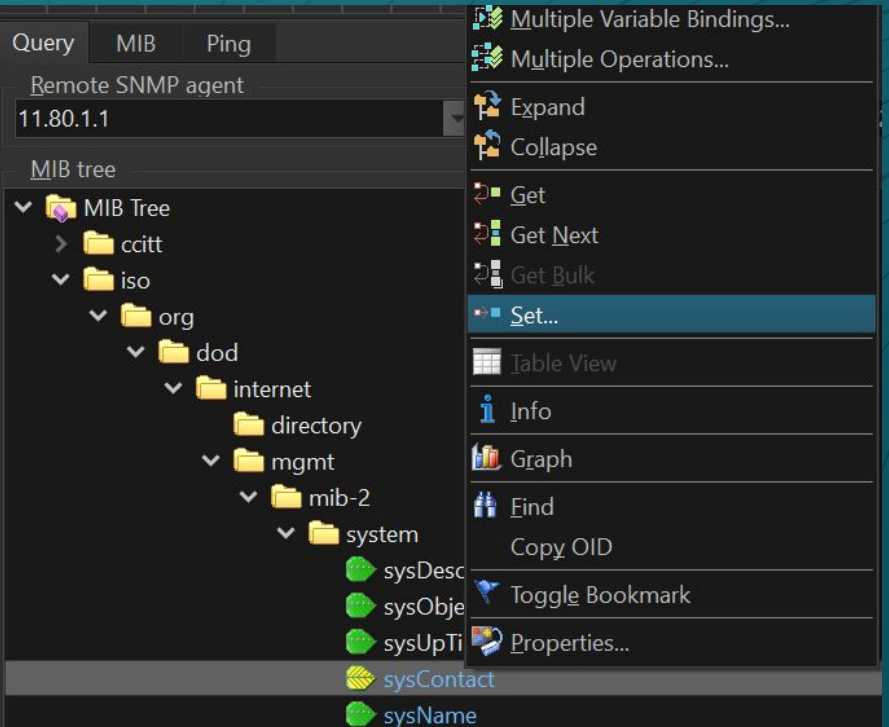
```
emsProducts OBJECT IDENTIFIER ::= { products 3}


--Partner Products
partnerProducts OBJECT IDENTIFIER   ::= {products 4}

ecsE50    OBJECT IDENTIFIER ::= {partnerProducts 1}
ecsE100C  OBJECT IDENTIFIER ::= {partnerProducts 2}
ecsE100A  OBJECT IDENTIFIER ::= {partnerProducts 3}
ecsENSM   OBJECT IDENTIFIER ::= {partnerProducts 4}

--Amigopod
amigopodProducts OBJECT IDENTIFIER ::= { products 5 }

-- List of all the Enterprise MIB Modules.

-- common node will contain all the objects which can be shared between
-- Aruba products.

common  OBJECT IDENTIFIER ::= { arubaEnterpriseMibModules 1 }

-- switch node will contain all the objects for the switch products

switch OBJECT IDENTIFIER ::= { arubaEnterpriseMibModules 2 }

-- Aruba AP will contain all the objects for the Aruba AP.
arubaAp OBJECT IDENTIFIER ::= { arubaEnterpriseMibModules 3 }

arubaEcs    OBJECT IDENTIFIER ::= {arubaEnterpriseMibModules 4}

-- Common MIB Modules shared across Aruba products.
arubaMIBModules OBJECT IDENTIFIER ::= { common 1 }

-- Switch Mib Modules
```

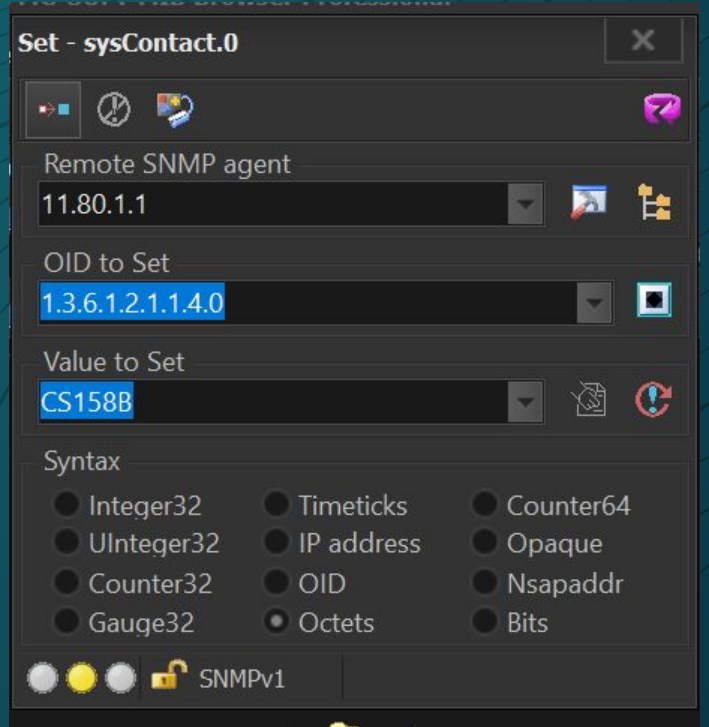
Compile new snmp mib





7. Make changes through snmp set operation





7. Make changes through snmp set operation

Before:

```
***** SNMP QUERY STARTED *****
1: sysDescr.0 (DisplayString) Cisco IOS Software, 3700 Software
2: sysObjectID.0 (OBJECT IDENTIFIER) enterprises.9.1.122
3: sysUpTime.0 (TimeTicks) 0 days 02h:01m:18s.64th (727864)
4: sysContact.0 (DisplayString) (zero-length)
5: sysName.0 (DisplayString) R1 [52.31 (hex)]
6: sysLocation.0 (DisplayString) (zero-length)
7: sysServices.0 (INTEGER) 78
```

After:

```
Remote address: 11.80.1.1  port: 161 transport: IP/UDP
Local address: 192.168.56.1  port: 49691 transport: IP/UDP
Protocol version: SNMPv1
1: sysUpTime.0 (TimeTicks) 0 days 02h:04m:50s.83th (749083)
***** SNMP SET-RESPONSE START *****
1: sysContact.0 (DisplayString) CS158B [43.53.31.35.38.42 (hex)]
***** SNMP SET-RESPONSE END *****
```

Feature 8: Monitor device resources

R1 (Device) [Cisco Device Cisco IOS]

Ping 6 msec	Uptime 1 h 19 m	(001) FastEthe... < 0.01 Mbit/s	(003) FastEthe... < 0.01 Mbit/s	(004) FastEthe... < 0.01 Mbit/s
System Health ... 1 %	System Health ... Normal	System Health ... < 0.01 GB	System Health ... Normal	System Health ... No channel
CPU Load 1 %	Syslog Receiver 0 #/s	SNMP Trap Re... 0 #/s	Add Sensor	

R2 (Device) [Cisco Device Cisco IOS]

Ping 25 msec	Uptime 1 h 10 m	(003) FastEthe... < 0.01 Mbit/s	(004) FastEthe... < 0.01 Mbit/s	System Health ... 2 %
System Health ... Normal	System Health ... < 0.01 GB	System Health ... Normal	System Health ... No channel	CPU Load 2 %
Syslog Receiver 0 #/s	SNMP Trap Re... 0 #/s	Add Sensor		

R3 (Device) [Cisco Device Cisco IOS]

Ping 33 msec	(003) FastEthe... < 0.01 Mbit/s	(004) FastEthe... < 0.01 Mbit/s	Uptime 41 m 20 s	System Health ... 2 %
System Health ... Normal	System Health ... < 0.01 GB	System Health ... Normal	System Health ... No channel	CPU Load 2 %
Syslog Receiver 0 #/s	SNMP Trap Re... 0 #/s	Add Sensor		

R4 (Device) [Cisco Device Cisco IOS]

Ping 40 msec	(003) FastEthe... < 0.01 Mbit/s	(004) FastEthe... < 0.01 Mbit/s	Uptime 51 m 26 s	System Health ... 2 %
System Health ... Normal	System Health ... < 0.01 GB	System Health ... Normal	System Health ... No channel	CPU Load 2 %
Syslog Receiver 0 #/s	SNMP Trap Re... 0 #/s	Add Sensor		

R5 (Device) [Cisco Device Cisco IOS]

Ping 19 msec	(001) FastEthe... < 0.01 Mbit/s	(003) FastEthe... < 0.01 Mbit/s	Uptime 1 h 40 m	System Health ... 1 %
System Health ... Normal	System Health ... < 0.01 GB	System Health ... Normal	System Health ... No channel	CPU Load 1 %
Syslog Receiver 0 #/s	SNMP Trap Re... 0 #/s	Add Sensor		

R6 (Device) [Cisco Device Cisco IOS]

Ping 34 msec	(003) FastEthe... < 0.01 Mbit/s	(004) FastEthe... < 0.01 Mbit/s	Uptime 1 h 41 m	System Health ... 1 %
System Health ... Normal	System Health ... < 0.01 GB	System Health ... Normal	System Health ... No channel	CPU Load 1 %
Syslog Receiver 0 #/s	SNMP Trap Re... 0 #/s	Add Sensor		

R7 (Device) [Cisco Device Cisco IOS]

Ping 98 msec	Uptime 1 h 49 m	(003) FastEthe... < 0.01 Mbit/s	(004) FastEthe... < 0.01 Mbit/s	System Health ... 1 %
System Health ... Normal	System Health ... < 0.01 GB	System Health ... Normal	System Health ... No channel	CPU Load 1 %
Syslog Receiver 0 #/s	SNMP Trap Re... 0 #/s	Add Sensor		

R8 (Device) [Cisco Device Cisco IOS]

Ping 52 msec	(001) FastEthe... < 0.01 Mbit/s	(003) FastEthe... < 0.01 Mbit/s	Uptime 1 h 19 m	System Health ... 1 %
System Health ... 0.11 GB	System Health ... Normal	System Health ... No channel	CPU Load 1 %	Syslog Receiver 0 #/s
SNMP Trap Re... 0 #/s	Add Sensor			

R9 (Device) [Cisco Device Cisco IOS]

Ping 44 msec	Uptime 45 m 47 s	(001) FastEthe < 0.01 Mbi	(002) stEthe	System Health ... 1 %
System Health ... 0.14 GB	System Health ... Normal	System Health ... No channel	Syslog Receiver 0 #/s	CPU Load 0 %
SNMP Trap Re... 0 #/s	Add Sensor			

Syslog Receiver (0 #/s)

Feature 9: Run automation Python script to configure router

Enable password and telnet in router

```
R8#config t
Enter configuration commands, one per line.  End with CNTL/Z.
R8(config)#enable password cisco
R8(config)#username admin password password
R8(config)#line vty 0 4
R8(config-line)#login local
R8(config-line)#exit
R8(config)#exit
R8#wr mem
Building configuration...

*Mar  1 00:17:32.503: %SYS-5-CONFIG_I: Configured from console by console[OK]
R8#
```

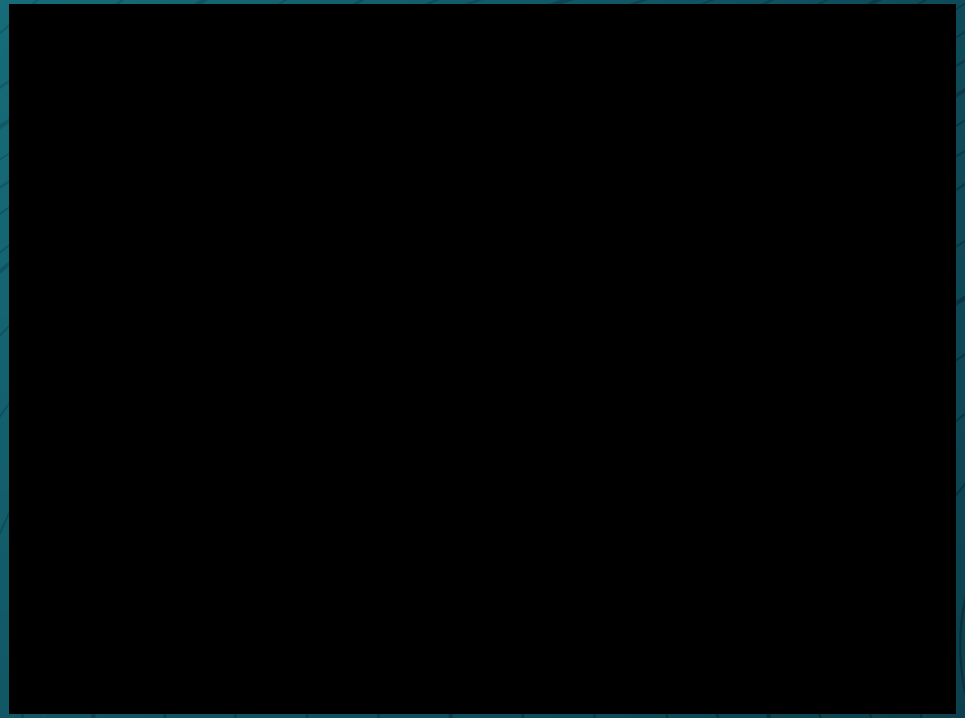
Python Script

```python
import getpass
import telnetlib

# user input
HOST = input ("Enter Router IP: ")
user = input ("Enter your telnet username: ")
fa = input ("Enter interface: ")
ipadd = input ("Enter ip address for interface: ")
protocol = input ("Enter protocol (RIP or OSPF): ")

password = getpass.getpass()
tn = telnetlib.Telnet(HOST)

tn.read_until(b"Username: ")
tn.write(user.encode('ascii') + b"\n")
if password:
    tn.read_until(b"Password: ")
    tn.write(password.encode('ascii') + b"\n")

tn.write(b"enable\n")
tn.write(b"cisco\n")
```

```python
# set ip address
tn.write(b"conf t\n")
tn.write(bytes("inter " + fa +"\n", 'utf-8'))
tn.write(b"no shut\n")
tn.write(bytes("ip address " + ipadd + " 255.255.255.0\n", 'utf-8'))
tn.write(b"exit\n")

# define RIP protocol
if protocol == "RIP":
    tn.write(b"router rip\n")
    tn.write(b"version  2\n")
    tn.write(b"no auto-summary\n")
    tn.write(bytes("network "+ ipadd +"\n", 'utf-8'))

# define OSPF protocol
if protocol == "OSPF":
    tn.write(b"ip routing\n")
    tn.write(b"router ospf 1\n")
    tn.write(bytes("network" + ipadd + " 0.0.0.255 area 0\n", 'utf-8'))

tn.write(b"end\n")
tn.write(b"wr mem\n")

print (tn.read_all().decode('ascii'))
```

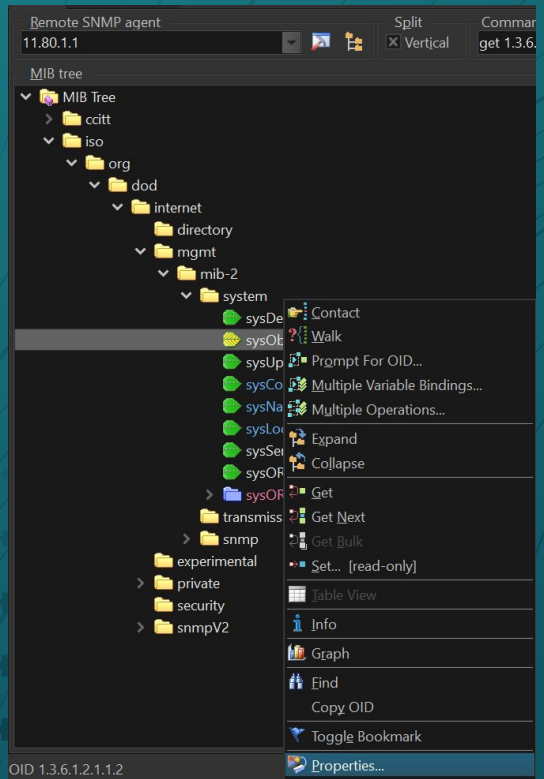
reference: https://www.youtube.com/watch?v=lfnWT_BPs-w&ab_channel=DavidBombal

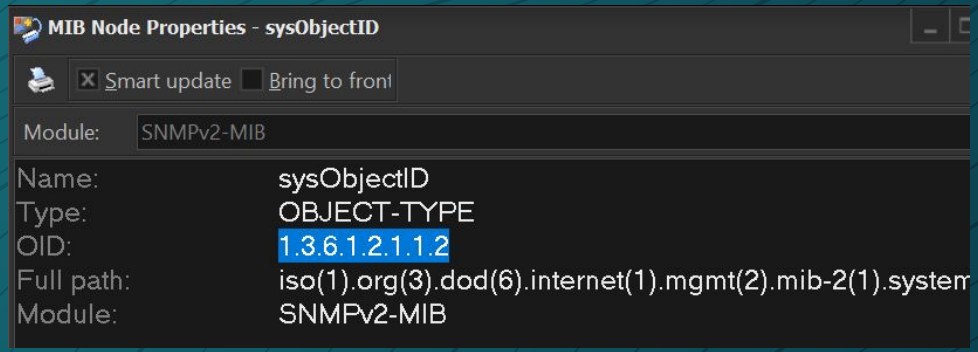
Demo with R8



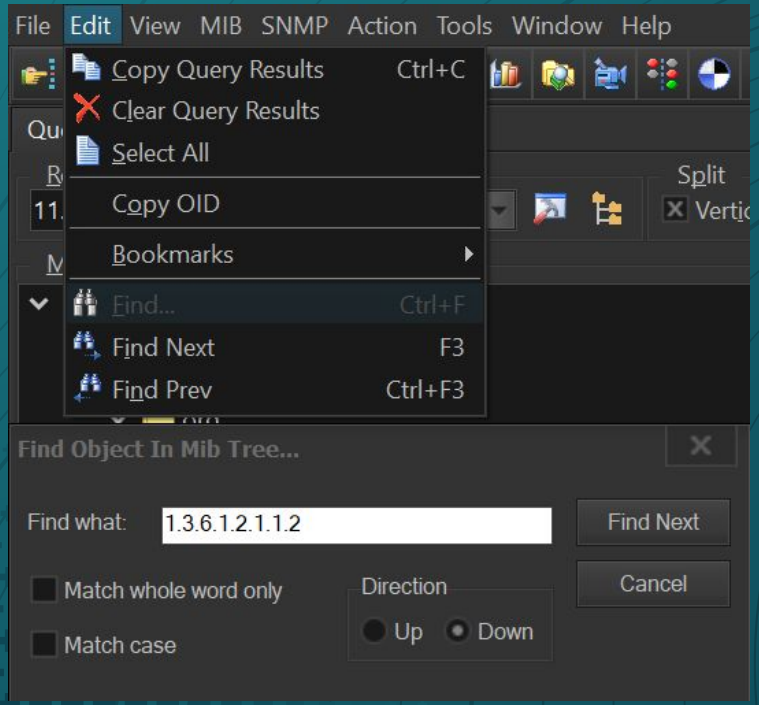
Demonstrate using NMS Tools

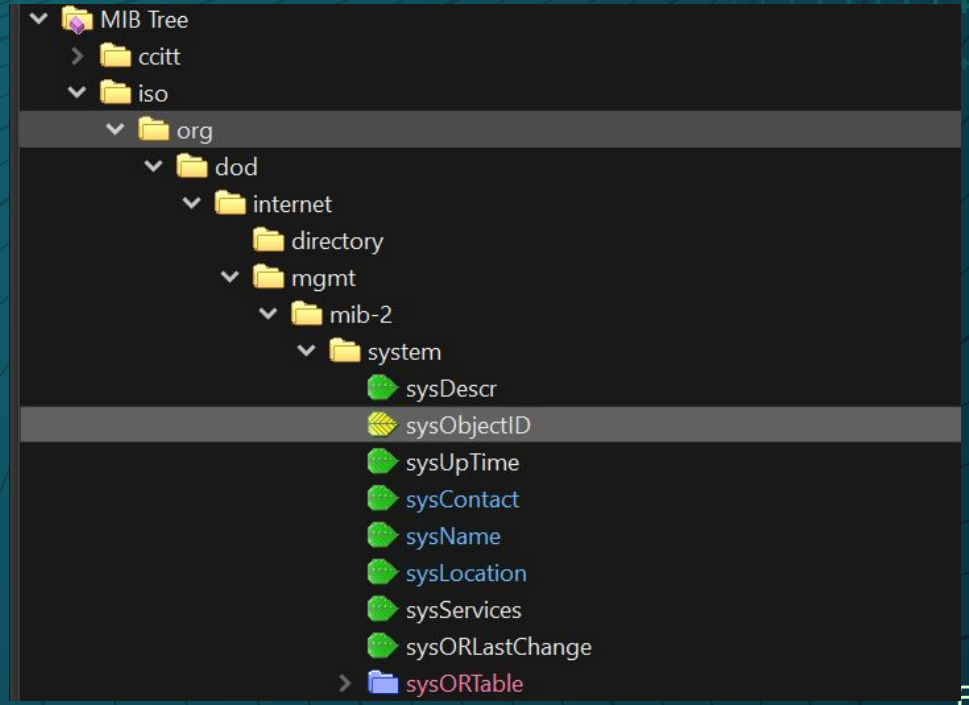
MGSoft: Browse few OID





MGSoft: Browse few OID





MGSoft: Compile new MIB and add to MIB tree

Query | MIB | Ping

Loaded MIB modules

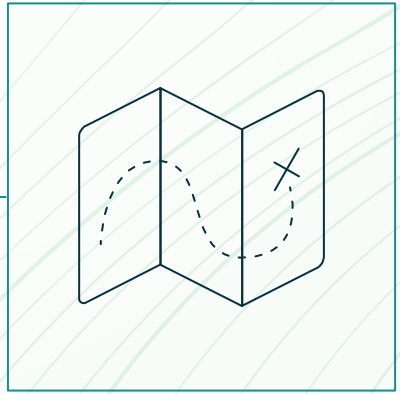
Module identity	Root OID	Nodes	Size	Path
ACCOUNTING-CONTROL-MIB	1.3.6.1.2.1.60	58	80209 B	C:\ProgramData\MG-S...
ACTONA-ACTASTOR-MIB	1.3.6.1.4.1.17471	135	51135 B	C:\ProgramData\MG-S...
ADSL2-LINE-MIB	1.3.6.1.2.1.10.2...	363	328147 B	C:\ProgramData\MG-S...
ADSL2-LINE-TC-MIB	1.3.6.1.2.1.10.2...	9	43310 B	C:\ProgramData\MG-S...
ADSL-DMT-LINE-MIB	1.3.6.1.2.1.10.9...	71	57486 B	C:\ProgramData\MG-S...
ADSL-LINE-EXT-MIB	1.3.6.1.2.1.10.9...	101	87979 B	C:\ProgramData\MG-S...
ADSL-LINE-MIB	1.3.6.1.2.1.10.94	289	238417 B	C:\ProgramData\MG-S...
ADSL-TC-MIB	1.3.6.1.2.1.10.94	9	5573 B	C:\ProgramData\MG-S...
AGENTX-MIB	1.3.6.1.2.1.74	47	26823 B	C:\ProgramData\MG-S...
AGGREGATE-MIB	1.3.6.1.3.123	33	47197 B	C:\ProgramData\MG-S...
AIRESPACE-REF-MIB	1.3.6.1.4.1.14179	7	1668 B	C:\ProgramData\MG-S...
AIRESPACE-SWITCHING-MIB	1.3.6.1.4.1.141...	344	228680 B	C:\ProgramData\MG-S...
AIRESPACE-WIRELESS-MIB	1.3.6.1.4.1.141...	1231	740676 B	C:\ProgramData\MG-S...
ALARM-MIB	1.3.6.1.2.1.118	89	80689 B	C:\ProgramData\MG-S...
ALTIGA-GLOBAL-REG	1.3.6.1.4.1.3076	93	14346 B	C:\ProgramData\MG-S...
ALTIGA-MIB	1.3.6.1.4.1.307...	266	33855 B	C:\ProgramData\MG-S...
ALTIGA-MULTILINK-STATS-MIB	1.3.6.1.4.1.307...	45	36084 B	C:\ProgramData\MG-S...
ALTIGA-NAT-STATS-MIB	1.3.6.1.4.1.307...	54	20254 B	C:\ProgramData\MG-S...
ALTIGA-PPPOE-STATS-MIB	1.3.6.1.4.1.307...	47	18084 B	C:\ProgramData\MG-S...
ALTIGA-PPP-STATS-MIB	1.3.6.1.4.1.307...	49	37170 B	C:\ProgramData\MG-S...
ALTIGA-PPTP-STATS-MIB	1.3.6.1.4.1.307...	88	59845 B	C:\ProgramData\MG-S...
ALTIGA-SDI-ACE-STATS-MIB	1.3.6.1.4.1.307...	37	10732 B	C:\ProgramData\MG-S...
ALTIGA-SEP-STATS-MIB	1.3.6.1.4.1.307...	57	45532 B	C:\ProgramData\MG-S...
ALTIGA-SESSION-STATS-MIB	1.3.6.1.4.1.307...	179	120106 B	C:\ProgramData\MG-S...
ALTIGA-SSH-STATS-MIB	1.3.6.1.4.1.307...	43	15901 B	C:\ProgramData\MG-S...
ALTIGA-SSL-STATS-MIB	1.3.6.1.4.1.307...	30	7120 B	C:\ProgramData\MG-S...
ALTIGA-SYNC-STATS-MIB	1.3.6.1.4.1.307...	47	38715 B	C:\ProgramData\MG-S...
ALTIGA-T1E1-STATS-MIB	1.3.6.1.4.1.307...	41	34422 B	C:\ProgramData\MG-S...
ALTIGA-TELNET-STATS-MIB	1.3.6.1.4.1.307...	67	48168 B	C:\ProgramData\MG-S...
ALTIGA-VERSION-STATS-MIB	1.3.6.1.4.1.307...	30	8481 B	C:\ProgramData\MG-S...

MIB Modules | MIB Groups

Module identity
ARUBA-MIB

MIB tree

- enterprisesx4300
- cableLabs
- scteRoot
- pcube
- latitudeComm
- calista
- airespace
- aruba
  - products
    - switchProducts
      - a5000
      - a2400
      - a800
      - a6000



Thanks for listening :)