

CS158B Network Management with Web Services Project 3 Presentation

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Basic SNMP Operations

- Users can perform basic SNMP operations
 - Status
 - Netstatus
 - Walk
 - Get
 - Test
 - Translate

Basic SNMP Operations

- User will be able to type the Application Server address (Server Host), network element address (Host Address), the community string, OID and select one of operations to perform
- MIB Tree is also available for users to select and input particular OID by selecting it on the Tree

The screenshot shows a web application interface for performing SNMP operations. At the top, there are two tabs: 'Home' and 'Alarms & Events'. The main form contains several input fields and a dropdown menu:

- Server Host:** A text input field containing '24.7.122.241'.
- Host:** A text input field containing '192.168.0.112'.
- Community:** A text input field containing '*****'.
- OID:** A text input field containing '1.3.6.1.2.1'.
- Commands:** A dropdown menu with 'Status' selected. The dropdown list shows: Status, Netstat, Test, Walk, Get, and Translate.
- Submit:** A button to execute the command.

Below the form, a MIB Tree is displayed as a vertical sequence of nodes:

- internet(1)
- mgmt(2)
- mib-2(1)
- system(1)
- interface(2)
- at(3)
- ip(4)
- icmp(5)

Basic SNMP Operations

The screenshot shows a web interface for performing SNMP operations. It includes input fields for Host (192.168.0.112), Community (*****), and OID (1.3.6.1.2.1). A dropdown menu for Commands is set to 'Status', and a 'Submit' button is present. Below the form, a 'Show all' button is visible. On the right side, the results of the status operation are displayed in red text, showing network statistics and system information.

Host
192.168.0.112

Community

OID
1.3.6.1.2.1

Commands
Status ▼ Submit

Show all

iso(1)
org(3)
dod(6)
internet(1)
mgmt(2)

- [UDP: [192.168.0.112]:161]=>[Linux linuxmachine1-Virtual-Machine 3.5.0-18-generic #29-Ubuntu SMP Fri Oct 19 10:27:31 UTC 2012 i686] Up: 3 days, 5:06:09.36
- Interfaces: 2, Recv/Trans packets: 384434/63701 | IP: 209761/59744

- A status operation is performed and results are shown

Change Location, Contact and System

- User will be able to change the contact, location and name of a network element by using a community string that has written privilege

The screenshot displays a web-based interface for managing network elements. It features several input fields and a dropdown menu. The 'Server Host' field contains '24.7.122.241'. The 'Host' field contains '192.168.0.111'. The 'Community' field is masked with dots. Below these, a dropdown menu is open, showing options: 'contact' (highlighted in blue), 'location', 'name', and 'establish the contact, location'. To the right of the dropdown, a text field contains 'team@gmail.com'. At the bottom, a red status line reads: 'OID Name:OID: 1.3.6.1.2.1.1.4.0 Type: class snmp.SNMPOctetString Value: team@gmail.com (hex: 74 65 61 6d 40 67 6d 61 69 6c 2e 63 6f 6d)'.

Server Host:

24.7.122.241

Host:

192.168.0.111

Community:

.....

contact ▼ team@gmail.com

contact

location

name

establish the contact, location ▼

OID Name:OID: 1.3.6.1.2.1.1.4.0 Type: class snmp.SNMPOctetString Value: team@gmail.com (hex: 74 65 61 6d 40 67 6d 61 69 6c 2e 63 6f 6d)

Change Location, Contact and System

Server Host

Host

Community

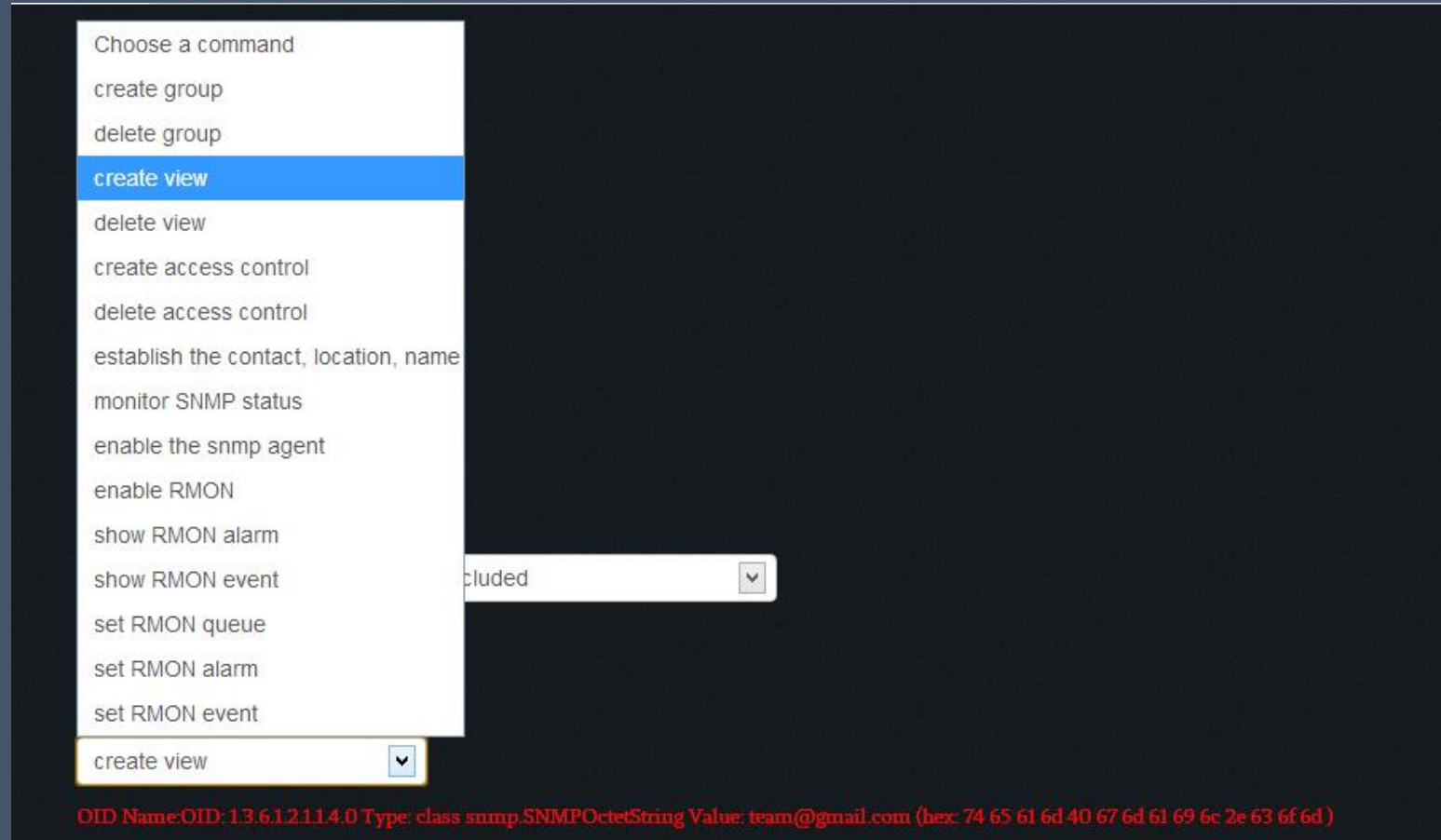
Commands

OID Name:OID: 1.3.6.1.2.1.1.4.0 Type: class snmp.SNMPOctetString Value: team@gmail.com (hex: 74 65 61 6d 40 67 6d 61 69 6c 2e 63 6f 6d)

- An operation to change contact is performed and results to reflect the change is shown

Access Control

- User will be able to create/delete
 - Groups for existing security names
 - Views that specify a particular OID Tree
 - Access controls that links views with a group to control privileges for certain groups
- User will only be able to perform these operations with a community string that has the written privilege




Access Control

Server Host

Host

Community

Commands
 

OID Name:OID: 1.3.6.1.2.1.14.0 Type: class snmp.SNMPOctetString Value: team@gmail.com (hex: 74 65 61 6d 40 67 6d 61 69 6c 2e 63 6f 6d)

deleteAccess ERROR:Access successfully deleted.

- A delete access control operation is performed and results are shown to reflect that the operation successes

Enable/Disable Network Element

- User will be able to disable/enable network elements with a community string that has this privilege

Server Host:

Host

Community

enable

Submit

Commands

enable the snmp agent

OID Name:OID: 1.3.6.1.2.1.1.4.0 Type: class snmp.SNMPOctetString Value: team@gmail.com (hex: 74 65 61 6d 40 67 6d 61 69 6c 2e 63 6f 6d)

deleteAccess ERROR:Access successfully deleted.

ERROR:Invalid Password

STOPSNMPD: * Stopping network management services:

STOPSNMPD: * snmpd is not running

Enable/Disable Network Element

Server Host

Host

Community

Submit

Commands

OID Name:OID:1.3.6.1.2.1.1.4.0 Type: class snmp.SNMPOctetString Value: team@gmail.com (hex: 74 65 61 6d 40 67 6d 61 69 6c 2e 63 6f 6d)

deleteAccess ERROR:Access successfully deleted.

ERROR:Invalid Password

STOPSNMPD: * Stopping network management services:

STOPSNMPD: * snmpd is not running

- A disable SNMP agent operation is performed and results are shown to reflect that the operation successes

RMON Operations

- Users will be able to perform basic RMON operations
 - Show RMON alarms
 - Show RMON events
 - Enable/disable RMON events (Not working)
 - Set RMON queue (Only be able to decrease the Queue, but not be able to decrease it)
 - Set RMON event (Not working)
 - Set RMON alarm (Not working)
- User will only be able to perform these operations with a community string that has this particular privilege

RMON Operations

Commands

show RMON alarm

OID Name:OID:1.3.6.1.2.1.1.4.0 Type: class snmp.SNMPOctetString Value: team@gmail.com (hex: 74 65 61 6d 40 67 6d 61 69 6e 2e 63 6f 6d)

deleteAccess ERROR:Access successfully deleted.

ERROR:Invalid Password

STOPSNMPD: * Stopping network management services:

STOPSNMPD: * snmpd is not running

STARTSNMPD: * Starting network management services:

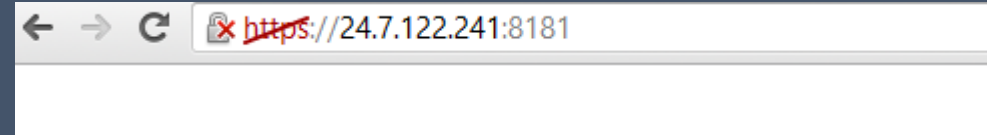
STARTSNMPD: * snmpd is running

alarm index	alarm variable	alarm interval	alarm interval option	alarm rising threshold	alarm rising event index	alarm falling threshold	alarm falling event index	alarm status	alarm owner
0	null	undefined	null	0	0	0	0	null	null
1	null	undefined	null	0	0	0	0	null	null
2	null	undefined	null	0	0	0	0	null	null
3	null	undefined	null	0	0	0	0	null	null
4	null	undefined	null	0	0	0	0	null	null

- A show RMON alarm operation is performed and results are shown as a table

Security with Secure Sockets Layer (SSL)

- Communications between the application server and the frontend are protected with SSL
- Browser will display the certificate as an invalid one since the certificate is a self – signed one instead of one that is signed by third – party Certificate Authority (CA)



The End

Thank you very much for viewing