PRACTICAL EXERCISE 3 (W1_PE3): A BETTER SNMP AGENT

This third practical exercice aims at building and executing an improved SNMP agent.

1. Add New Attribute

Let's add an attribute to our MIB! Suppose we want a better Agent, able to monitor the water level of the coffee machine. Easy! Just make a copy of the original CoffeePot.mib file in our working folder (from the non-root terminal!):

```
$ cd /home/user/snmp-lab/SnmpWorkShop-nojava/agent-step1
$ cp ../mibs/CoffeePot.mib .      # do not forget the "." at the end!
```

Now edit this file with your preferred editor (mousepad, xcoral, vi ...):

```
$ mousepad CoffeePot.mib &
```

...and add a new attribute named **CoffeePotWaterLevel** of type `INTEGER`, `read-write` access rights and OID `1.3.6.1.4.1.9999.1.2.9`.

> **Hint:** To avoid typing errors, you can simply make use of copy and paste! Taking an existing attribute of type INTEGER as a model. Please do not forget to save the file, when leaving mousepad.

Now perform the steps above to compile the modified MIB and to regenerate the Agent:

```
$ smic CoffeePot.mib         # will compile the local copy, not the original
$ build_all                  # Java-compile the new generated code
```

Go to the **root terminal**. On the root terminal, stop the old running Agent by typing Ctrl-C. Now start the fresh, new Agent that we just built by typing again:

```
# start_agent 161 public
```

The new Agent should show the new attribute for water level on its list of attributes.

Aidez-nous à améliorer ce MOOC

- Week 2: Monitoring with Nagios
- Week 3: Instrumentation with JMX
- Week 4: Next-Generation Management Protocols
- Votre avis nous intéresse

Now you should be able to validate the new attribute through a GET request, which should bring you the usual default response.

You can now stop the current running Agent by typing Ctrl-C.

2. Actions and Agent Behaviour

It is time to look further than these pre-made, boring "default" responses! Our Agent still lacks the behaviour that would make it look like a coffee machine, even a virtual one.

The lab indeed has the adequate resources in the next working folder: `agent-step2`. So go there with **both terminals** (note: vous devez vous placer dans le répertoire agent-step2 avec les deux terminaux.):

```
cd ../agent-step2
```

In the non-root terminal, make a copy of the modified MIB of earlier:

```
$ cp ../agent-step1/CoffeePot.mib .    # do not forget the
"."
```

While examining the files of the *agent-step2* folder you'll notice that there are some new, different files here. These correspond to specific Agent behaviour. Take the time to examine the `CoffeePotMibAccessImpl.java` file, even if you're not a Java expert!

Build and test this new Agent with the usual commands.

QUESTION W1.PE3.1: CHECK THE BETTER AGENT (1/1 point)

Reminding all you've seen up to now,

what is the procedure to generate a virtual cup of coffee from a Manager? (NA=1)

○ To write a value to the CoffeePotCoffeeSupply attribute

○ To write a value to the CoffeePotControl attribute

● To write a "1" to the CoffeePotControl attribute ✓

Vous avez utilisé 1 essais sur 3

Generate one cup of coffee while looking at the Agent terminal. The Agent now prints out its coffee making! Generate more coffee, and observe via the MIB browser the value of the water level attribute. What is happening ? (note : il est normal que la valeur de coffeePotControl repasse à off, afin que de nouvelles tasses de café puissent être préparées).

QUESTION W1.PE3.2: WATER LEVEL BEHAVIOUR (1/1 point)

What might explain the behaviour of the water level attribute ? (NA=1)

○ The SNMP GET request launches specific code that decrements the water level

● The SNMP SET request launches specific code that decrements the water level ✓

○ The specific code decrementing the water level is in the Manager

Correct: Correct!

Vous avez utilisé 2 essais sur 3

QUESTION W1.PE3.3: WATER LEVEL BEHAVIOUR (1/1 point)

How does the Manager-Agent interaction work to obtain this result? (NA=1)

○ The Manager issues a SET request on the water level attribute

○ The Agent issues a SET request to generate some coffee

● The Manager issues a SET request to generate some coffee ✓

Correct: Correct!

Vous avez utilisé 2 essais sur 3