

## Nagios Installation and Configuration

### Notes:

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- \* Commands preceded with "\$" imply that you should execute the command as a general user - not as root.
- \* Commands preceded with "#" imply that you should be working as root.
- \* Commands with more specific command lines (e.g. "RTR-GW>" or "mysql>") imply that you are executing commands on remote equipment, or within another program.

### Exercises

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## PART IX

### Optional Exercises

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#### 1. Check that nagios is Running

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As opposed to just checking that a web server is running on the classroom PCs, you could also check that the nagios3 service is available, by requesting the /nagios3/ path. This means passing extra options to the check\_http plugin.

For a description of the available options, type this:

```
# /usr/lib/nagios/plugins/check_http          (short help)
# /usr/lib/nagios/plugins/check_http --help   (detailed help)
```

and of course you can browse the online nagios documentation or google for information on check\_http. You can even run the plugin by hand to perform a one-shot service check:

```
# /usr/lib/nagios/plugins/check_http -H localhost -u /nagios3/
```

So the goal is to configure nagios to call check\_http in this way.

(hint, /etc/nagios-plugins/config/http.cfg)

```
define command{
    command_name      check_http_arg
    command_line      /usr/lib/nagios/plugins/check_http -H '$HOSTADDRESS$' '$ARG1$'
}
```

(hint, /etc/nagios3/conf.d/services\_nagios2.cfg\_

```
define service {
    hostgroup_name      nagios-servers
    service_description NAGIOS
    check_command       check_http_arg!-u /nagios3/
    use                 generic-service
}
```

and of course you'll need to create a hostgroup called nagios-servers to link to this service check. (hint, /etc/nagios3/conf.d/hostgroups\_nagios2.cfg)

Once you have done this, check that Nagios warns you about failing

authentication (because it's trying to fetch the page without providing the username/password). There's an extra parameter you can pass to check\_http\_arg to provide that info, see if you can find it.

WARNING: in the tradition of "Debian Knows Best", their definition of the check\_http command in /etc/nagios-plugins/config/http.cfg is *not* the same as that recommended in the nagios3 documentation. It is missing \$ARG1\$, so any parameters to pass to check\_http are ignored. So you might think you are monitoring /nagios3/ but actually you are monitoring root!

This is why we had to make a new command definition "check\_http\_arg". You could make a more specific one like "check\_nagios", or you could modify the Ubuntu check\_http definition to fit the standard usage.

## 2. Check that SNMP is running on the classroom NOC

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- This exercise will not work if you did not complete the installation of additional SNMP MIBs at the start of the week and configure /etc/snmp/snmp.conf properly. Please refer to the documentation for more details.
- First you will need to add in the appropriate service check for SNMP in the file /etc/nagios3/conf.d/services\_nagios2.cfg. This is where Nagios is impressive. There are hundreds, if not thousands, of service checks available via the various Nagios sites on the web. You can see what plugins are installed by Ubuntu in the nagios3 package that we've installed by looking in the following directory:

```
# ls /usr/lib/nagios/plugins
```

As you'll see there is already a check\_snmp plugin available to us. If you are interested in the options the plugin takes you can execute the plugin from the command line by typing:

```
# /usr/lib/nagios/plugins/check_snmp                (short help)
# /usr/lib/nagios/plugins/check_snmp --help        (detailed help)
```

to see what options are available, etc. You can use the check\_snmp plugin and Nagios to create very complex or specific system checks.

- Now to see all the various service/host checks that have been created using the check\_snmp plugin you can look in /etc/nagios-plugins/config/snmp.cfg. You will see that there are a lot of preconfigured checks using snmp, including:

```
snmp_load
snmp_cpustats
snmp_procname
snmp_disk
snmp_mem
snmp_swap
snmp_procs
snmp_users
snmp_mem2
snmp_swap2
snmp_mem3
snmp_swap3
snmp_disk2
snmp_tcpopen
snmp_tcpstats
```

```
snmp_bgpstate
check_netapp_uptime
check_netapp_cupuload
check_netapp_numdisks
check_compaq_thermalCondition
```

And, even better, you can create additional service checks quite easily. For the case of verifying that snmpd (the SNMP service on Linux) is running we need to ask SNMP a question. If we don't get an answer, then Nagios can assume that the SNMP service is down on that host. When you use service checks such as check\_http, check\_ssh and check\_telnet this is what they are doing as well.

- In our case, let's create a new service check and call it "check\_system". This service check will connect with the specified host, use the private community string we have defined in class and ask a question of snmp on that host - in this case we'll ask about the System Description, or the OID "sysDescr.0" -

- To do this start by editing the file /etc/nagios-plugins/config/snmp.cfg:

```
# editor /etc/nagios-plugins/config/snmp.cfg
```

At the top (or the bottom, your choice) add the following entry to the file:

```
# 'check_system' command definition
define command{
    command_name      check_system
    command_line      /usr/lib/nagios/plugins/check_snmp -H '$HOSTADDRESS$' -C '$ARG1$' -o sysD
    }
}
```

COPY and PASTE this. Do not type this by hand and make sure that the command\_line line does not wrap.

Note that "command\_line" is a single line. If you copy and paste in your editor, the line may not wrap properly and you may have to manually "join" the two lines so they are one.

- Now you need to edit the file /etc/nagios3/conf.d/services\_nagios2.cfg and add in this service check. We'll run this check against all our servers in the classroom, or the hostgroup "debian-servers"

- Edit the file /etc/nagios3/conf.d/services\_nagios2.cfg

```
# editor /etc/nagios3/conf.d/services_nagios2.cfg
```

At the bottom of the file add the following definition:

```
# check that snmp is up on all servers
define service {
    hostgroup_name      snmp-servers
    service_description  SNMP
    check_command       check_system!xxxxxx
    use                 generic-service
    notification_interval 0 ; set > 0 if you want to be renotified
}
}
```

The "xxxxxx" is the community string previously (or to be) defined in class.

Note that we have included our own community string here vs. hard-coding it in the snmp.cfg file earlier. You must change the "xxxxx" to be the snmp community string given in class or this check will not work.

- Now we must create the "snmp-servers" group in our hostgroups\_nagios2.cfg file. Edit the file /etc/nagios3/conf.d/hostgroups\_nagios2.cfg and go to the end of the file. Add in the following hostgroup definition:

```
# A list of snmp-enabled devices on which we wish to run the snmp service check
define hostgroup {
    hostgroup_name    snmp-servers
        alias        snmp servers
        members      noc,localhost,pc1,pc2,pc3,pc4...pc36,rtr1,rtr2,rtr3...rtr9
    }
}
```

- Note that for "members" you can add in all PCs and routers as they should all have snmp up and running at this time. Remember to EXCLUDE our pc and use localhost instead.

- Now verify that your changes are correct and restart Nagios.

```
# service nagios3 restart
```

- \*\*\*\* Defect / Bug in Ubuntu 12.04 LTS \*\*\*\*  
The net-snmp 5.6.x package appears to not install one of the IANA mibs (IANAifType-MIB). This causes a MIB error, which, in turn causes the snmp check plugin to fail. To fix this problem do the following (as root):

```
# cd /usr/share/mibs
# wget http://www.iana.org/assignments/ianaiftype-mib/ianaiftype-mib
# mv ianaiftype-mib ianaiftype-mib.my
```

And, now you can continue.

- If you click on the Service Detail menu choice in web interface you should see the SNMP check appear for the noc host, or for any other hosts you may have included on the "members" line above.