

Notes

- 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

First make sure that your routers are configured to send logs to your PC (this should have been done in the previous exercise).

Update rsyslog configuration

If you have not already done so, log in to your virtual machine and become the root user:

```
$ sudo bash
#
```

Configure rsyslog to save all router logs in one file for monitoring purposes.

Edit /etc/rsyslog.d/30-routerlogs.conf ,

```
# editor /etc/rsyslog.d/30-routerlogs.conf
```

... and find the line

```
local0.*    -?RouterLogs
```

... and add the following new line immediately after this:

```
local0.*    /var/log/network/everything
```

(but before the line which says '& ~'). So what you should end up with is:

```
$template RouterLogs, "/var/log/network/%$YEAR%/%$MONTH%/%$DAY%/%$HOSTNAME%-%$HOUR%.log"
local0.* -?RouterLogs
local0.* /var/log/network/everything
& ~
```

This will enable logging of ALL messages matching the local0 facility to a single file, so that we can run a monitoring script on the messages.

Be sure to save and exit from the file.

Now restart rsyslog so that it sees the new configuration:

```
# service rsyslog restart
```

Log rotation

Create a daily automated script to truncate the log file so it doesn't grow too big (COPY and PASTE):

```
# editor /etc/logrotate.d/everything

/var/log/network/everything {
    daily
    copytruncate
    rotate 1
    postrotate
        /etc/init.d/tenshi restart
    endscript
}
```

Then save and exit from the file.

Install tenshi

```
# apt-get install tenshi
```

Configure tenshi

Configure Tenshi to send you alarms when the routers are configured (COPY and PASTE):

```
# editor /etc/tenshi/includes-available/network

set logfile /var/log/network/everything
set queue network_alarms tenshi@localhost sysadm@localhost [*/1 * * * *] Log
check

group_host rtr
network_alarms SYS-5-CONFIG_I
network_alarms PRIV_AUTH_PASS
network_alarms LINK
group_end
```

Then save and exit from the file.

Create a symlink so that Tenshi loads your new file (COPY and PASTE):

```
# ln -s /etc/tenshi/includes-available/network /etc/tenshi/includes-active
```

Finally restart Tenshi:

```
# service tenshi restart
```

Testing Tenshi

Log in to your router, and run some "config" commands (example below):

```
$ ssh cisco@rtrX          [where "X" is your router number]
rtrX> enable
Password: <password>
rtrX# config terminal
rtrX(config)# int FastEthernet0/0
rtrX(config-if)# description Description Change for FastEthernet0/0 for
Tenshi
rtrX(config-if)# ctrl-z
rtrX# write memory
```

Don't exit from the router yet. Just as in the previous rsyslog exercises, attempt to shutdown / no shutdown loopback interface:

```
rtrX# conf t
rtrX(config)# interface Loopback 999
rtrX(config-if)# shutdown
```

wait a few seconds

```
rtrX(config-if)# no shutdown
```

Then exit, and save the config ("write mem"):

```
rtrX(config-if)# ctrl-z          (same as exit, exit twice)
rtrX# write memory
rtr1# exit
```

Verify that you are receiving emails to the sysadm user from Tenshi. A quick check is to look in the mail directory:

```
$ ls -l /var/mail
```

- Note: Tenshi checks /var/log/network/everything once a minute, so you may have to wait up to a minute for the email to arrive to the sysadm user.

Make sure you are logged in as sysadm (not root). Either open a new session to your virtual machine, or exit from the root user (exit). Then do:

```
$ mutt
```

Scroll up/down to select a message from "tenshi@localhost", then press ENTER to view it, and q to quit and 'q' again to quit mutt.

If mails are not arriving, then check the following:

- Are logs arriving in the file /var/log/network/everything ?

```
$ tail /var/log/network/everything
```

- Do these logs show a hostname like 'rtr5'? Remember that the way we have configured tenshi, it only looks at hostnames matching the pattern 'rtr'
- Check your tenshi configuration file. Restart tenshi if you change it.
- If you are still stuck ask an instructor or a neighbor for help.

Optional: Add a new Tenshi rule

See if you can figure out how to add a rule to Tenshi so that an email is sent if someone enters an incorrect enable password on your router.

Hints:

- "PRIV_AUTH_FAIL" is the Cisco IOS log message in such cases.
- To test your new rule log in to your router, type "enable" and then enter an incorrect enable password.