

Network Administration and Security Level 2

Assignment #3

Due: March 9, 2017 - 1330 hrs. You may work in groups of two.

Objective: To design, implement and test a simple monitor application that will detect password guessing attempts against a service and block that IP using Netfilter.

Assignment:

- Design, implement and test an application that will monitor the `/var/log/secure` file and detect password guessing attempts and then use iptables to block that IP.
- Your application will get user specified parameters (see constraints) and then continuously monitor the log file specified.
- As soon as the monitor detects that the number of attempts from a particular IP has gone over a user-specified threshold, it will generate a rule to block that IP.
- If the user has specified a time limit for a block, your application will flush the rule from Firewall rule set upon expiration of the block time limit.
- Design a test procedure that will test your application under a variety of conditions. For example, how will you handle a situation when an attacker sends a slow scan of your system, meaning several password guessing attempts, but spaced far enough apart in time so that your application will miss the attack.

Constraints:

- The application will be implemented using any scripting or programming language of your choice.
- The Firewall rules will be implemented using **Netfilter**.
- Your application will obtain user input for the following parameters:
 - The number of attempts before blocking the IP
 - The time limit for blocking the IP (Optional - bonus). The default setting will be block indefinitely.
 - Monitor a log file of user's choice (Optional - bonus). Keep in mind that different log files have different formats.
- Your application will be activated through the ***crontab***.

To Be Submitted:

- Hand in complete and well-documented **design work** and the firewall **script**.
- You are also required to demonstrate your working programs during the lab the day the assignment is due.
- A formal and detailed test plan as well as the test results for each test case.
- Provide your test data and code and all supporting documentation. Include a set of instructions on how to use your application. Essentially a small "HOW-TO".
- Submit a **zip** file containing all the code and documents as described below in the sharein folder for this course under “**Assignment #3**”.

Evaluation:

(1). Design/Documentation:	/ 5
(2). Functionality:	/ 30
(3). Testing:	/ 15
 Total:	 / 50