“Expert Cloud Consulting”

SOP | Block Failed Login IPs for Grafana

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Block Failed Login IPs for Grafana

Expert Cloud Consulting

Enhance Optimise & Scale

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Objective

Automatically detect and block IPs that attempt to log in to Grafana with incorrect credentials more than 3 times within 5 minutes. Blocked IPs will be unblocked automatically after 5 minutes

Step-by-Step: Install Grafana on Ubuntu

Step 1: Update System

sudo apt update && sudo apt upgrade -y

```
sudo apt-get install -y apt-transport-https
sudo apt-get install -y software-properties-common wget
sudo wget -q -O /usr/share/keyrings/grafana.key https://apt.grafana.com/gpg.key
```

Stable release

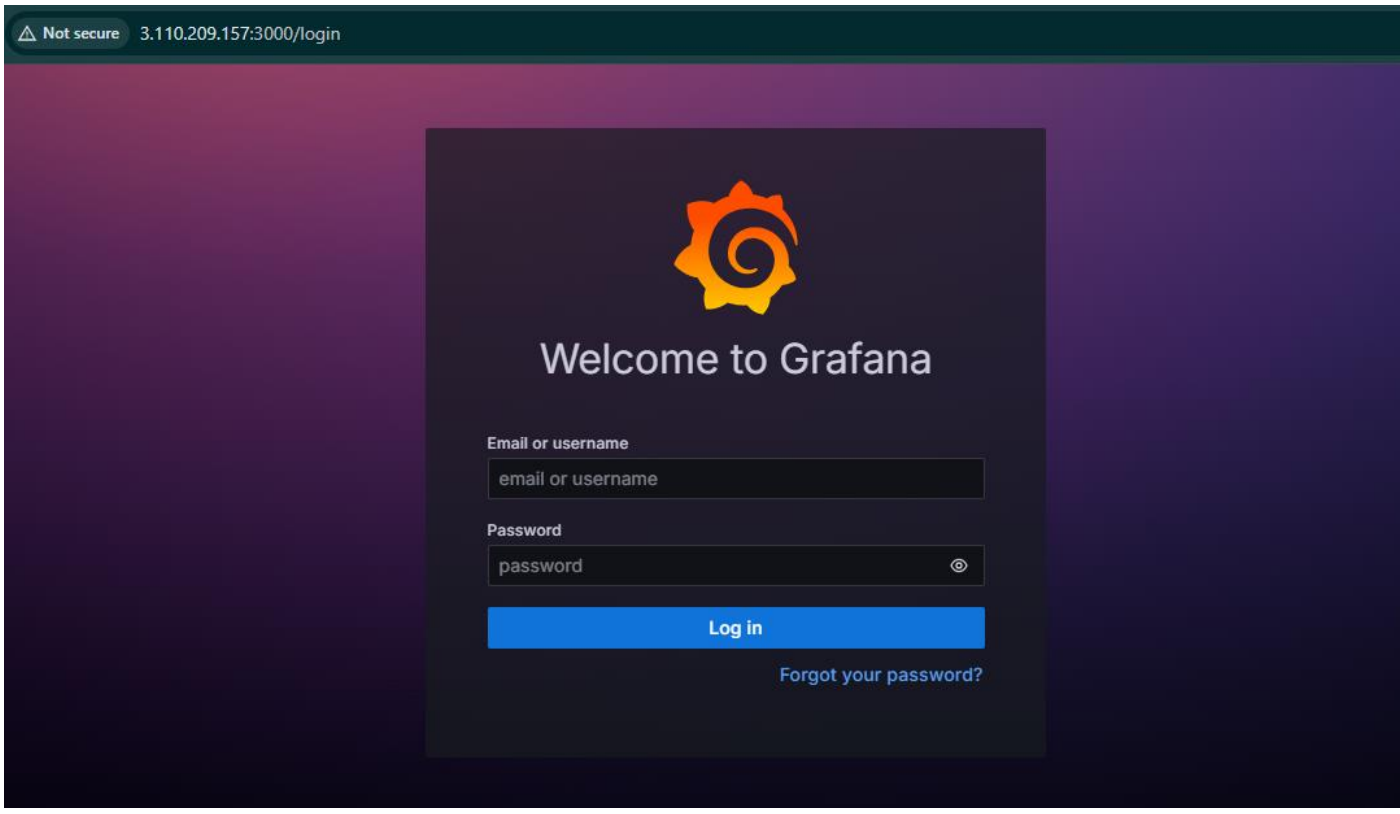
```
echo "deb [signed-by=/usr/share/keyrings/grafana.key] https://apt.grafana.com

stable main" | sudo tee -a /etc/apt/sources.list.d/grafana.list
```

```
# Update the list of available packages
sudo apt-get update

# Install the latest OSS release:
sudo apt-get install grafana

#To start Grafana Server

sudo /bin/systemctl status grafana-server
```

Access Grafana

Open your browser and go to:

http://3.110.209.157:3000/login



Step 1: Create the Python Script

Create a directory to store the script:

```
sudo mkdir -p /opt/scripts
```

Create the Python script file:

```
sudo nano /opt/scripts/block_failed_ips.py
```

```
import time

import re

import subprocess

import logging

from collections import defaultdict

from datetime import datetime, timedelta


# === CONFIGURATION ===

LOG_FILE = "/var/log/grafana/grafana.log"

LOG_OUTPUT_FILE = "/var/log/block_failed_ips.log"

FAILED_PATTERN = r'status=401.*remote_addr=(\d+\.\d+\.\d+\.\d+)'

FAIL_LIMIT = 3

BLOCK_DURATION = 300  # 5 minutes


WHITELIST = [

   "127.0.0.1"

   # Add your own IP here if you don’t want to get blocked during testing

   # "3.110.209.157"
]


logging.basicConfig(
    filename=LOG_OUTPUT_FILE,
    level=logging.INFO,
    format="%(asctime)s [%(levelname)s] %(message)s",
)


failed_ips = defaultdict(list)
blocked_ips = {}


def is_whitelisted(ip):
    return ip in WHITELIST


def block_ip(ip):
    if is_whitelisted(ip):
        logging.info(f"[WHITELIST] Skipping block for whitelisted IP: {ip}")
        return
    subprocess.run(["iptables", "-I", "INPUT", "-s", ip, "-j", "DROP"])
    blocked_ips[ip] = datetime.now() + timedelta(seconds=BLOCK_DURATION)
    logging.warning(f"[BLOCKED] IP {ip} has been blocked.")


def unblock_ip(ip):
    subprocess.run(["iptables", "-D", "INPUT", "-s", ip, "-j", "DROP"])
    blocked_ips.pop(ip, None)
    logging.info(f"[UNBLOCKED] IP {ip} has been unblocked.")


def monitor_logs():
    logging.info("🚀 Monitoring Grafana logins for failures...")
    try:
        with open(LOG_FILE, "r") as logfile:
            logfile.seek(0, 2)
            while True:
                now = datetime.now()

                # Unblock IPs after timeout
                for ip in list(blocked_ips):
                    if now >= blocked_ips[ip]:
                        unblock_ip(ip)

                line = logfile.readline()
                if not line:
                    time.sleep(1)
                    continue

                match = re.search(FAILED_PATTERN, line)
                if match:
                    ip = match.group(1)
                    if is_whitelisted(ip) or ip in blocked_ips:
                        continue
                failed_ips[ip].append(now)
                failed_ips[ip] = [t for t in failed_ips[ip] if now - t < timedelta(minutes=5)]

                if len(failed_ips[ip]) >= FAIL_LIMIT:
                    block_ip(ip)
                    failed_ips[ip] = []

    except FileNotFoundError:
        logging.error(f"[ERROR] Log file not found: {LOG_FILE}")
    except Exception as e:
        logging.error(f"[EXCEPTION] {str(e)}")

if __name__ == "__main__":
    monitor_logs()
```

Make the script executable

```
sudo chmod +x /opt/scripts/block_failed_ips.py
```

Step 2: Create a systemd Service

```
sudo nano /etc/systemd/system/block_failed_ips.service

[Unit]
Description=Block Failed IPs Script
After=network.target
```

```
[Service]

ExecStart=/usr/bin/python3 /opt/scripts/block_failed_ips.py

WorkingDirectory=/opt/scripts

StandardOutput=append:/var/log/block_failed_ips.log

StandardError=append:/var/log/block_failed_ips.log

Restart=always

User=root


[Install]

WantedBy=multi-user.target
```

Step 3: Enable and Start the Service

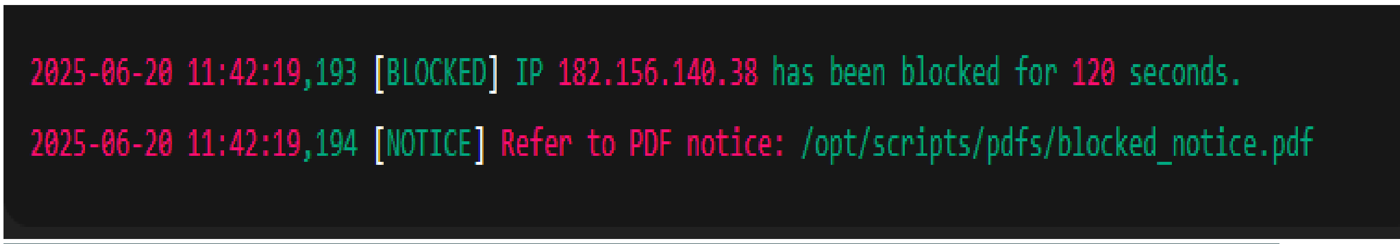
```
sudo systemctl daemon-reexec
sudo systemctl daemon-reload
sudo systemctl enable block_failed_ips.service
sudo systemctl start block_failed_ips.service
```

Check service status:

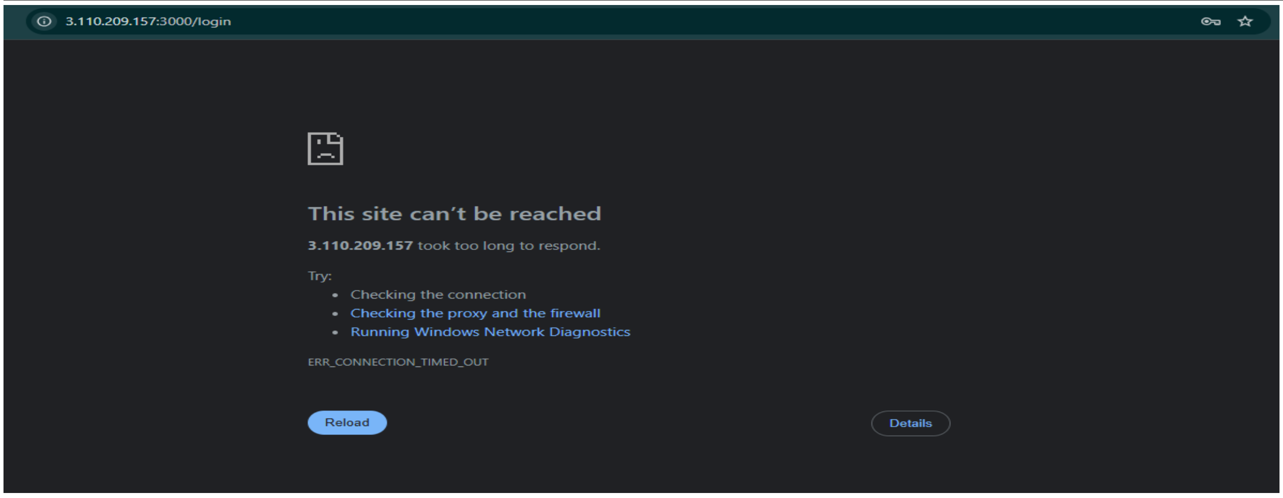
```
sudo systemctl status block_failed_ips.service
```

Step 4: Verify the Logs

sudo tail -f /var/log/block_failed_ips.log



```
2025-06-20 11:42:19,193 [BLOCKED] IP 182.156.140.38 has been blocked for 120 seconds.
2025-06-20 11:42:19,194 [NOTICE] Refer to PDF notice: /opt/scripts/pdfs/blocked_notice.pdf
```



3.110.209.157:3000/login

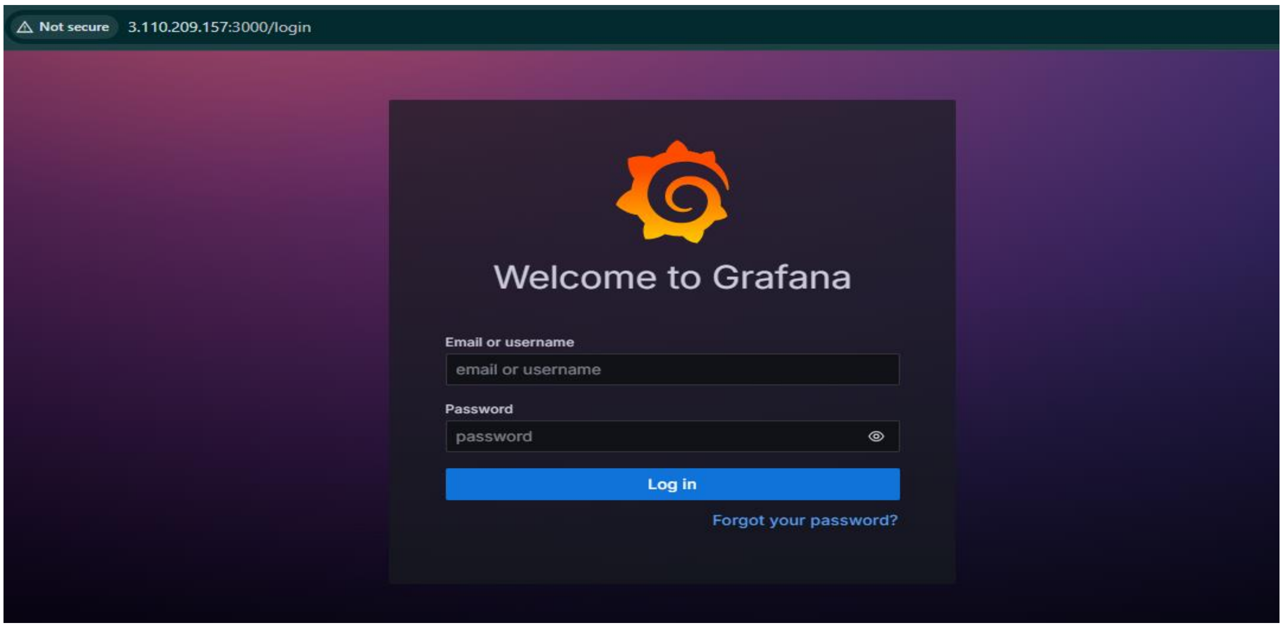
This site can't be reached

3.110.209.157 took too long to respond.

Try:

- Checking the connection
- Checking the proxy and the firewall
- Running Windows Network Diagnostics

ERR_CONNECTION_TIMED_OUT



Not secure 3.110.209.157:3000/login

Welcome to Grafana

Email or username: email or username

Password: password