1.Write a Linux shell script that determines if any of the mounted file system has less than 20% disk free

```
#!/bin/bash

THRESHOLD=80 #If a filesystem is using 80% or more of its capacity, an alert will be sent.

mounts=$(df -h | awk '{print $6}' | grep -v "^Mounted$")

for mount in $mounts; do

  usage=$(df -h $mount | awk 'NR==2 {print $5}' | grep -o '[0-9]*')

  if [ $usage -ge $THRESHOLD ]; then

    echo "Usage of $mount is at $usage %." | mail -s "High disk usage alert: $mount" mail@example.com

  fi

done
```

2.Write a python equivalent version of a script that determines if any of the mounted file system has less than 20% disk free

```
import subprocess

import smtplib

from email.mime.text import MIMEText


threshold = 80

partition = "/"


def report_via_email():

  msg = MIMEText("Server running out of disk space")

  msg["Subject"] = "Low disk space warning"

  msg["From"] = "admin@example.com"
```

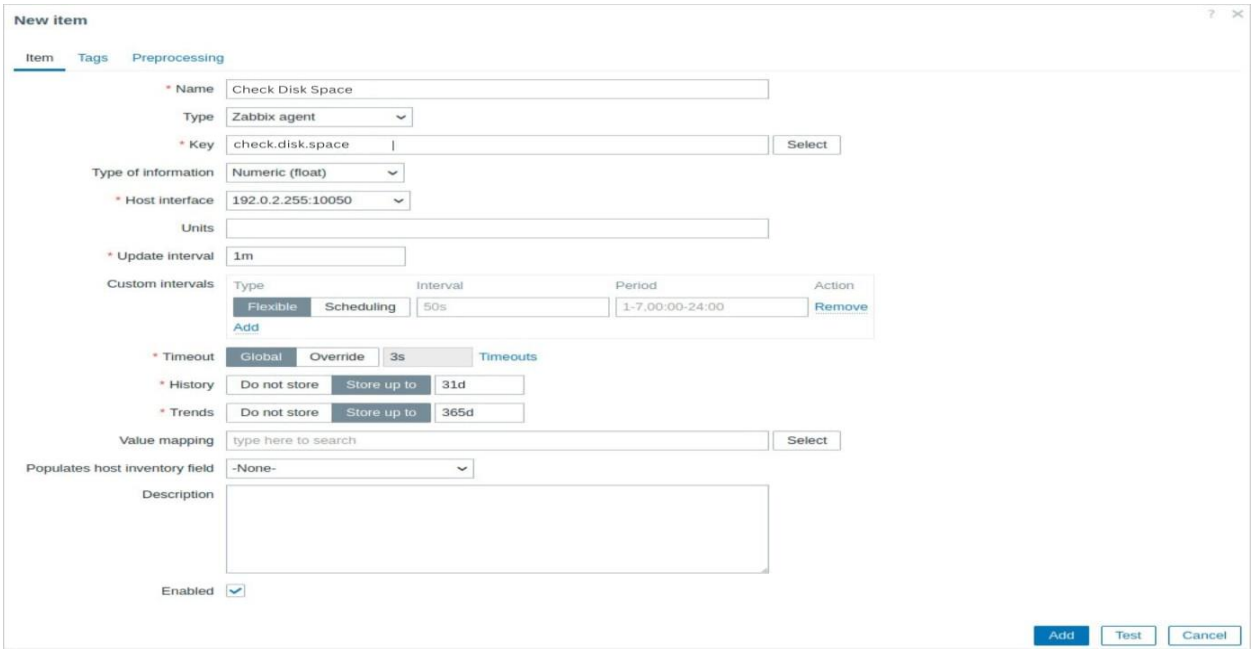
```
    msg["To"] = "test@gmail.com"
    with smtplib.SMTP("smtp.gmail.com", 587) as server:
        server.ehlo()
        server.starttls()
        server.login("gmail_user", "gmail_password")
        server.sendmail("admin@example.com", "test@gmail.com", msg.as_string())


def check_once():
    df_output = subprocess.check_output(["df", "-h"]).decode("utf-8")
    lines = df_output.splitlines()
    for line in lines[1:]:  # Skip the header line
        splitline = line.split()
        if splitline[5] == partition:
            if int(splitline[4][:-1]) > threshold:
                report_via_email()


check_once()
```

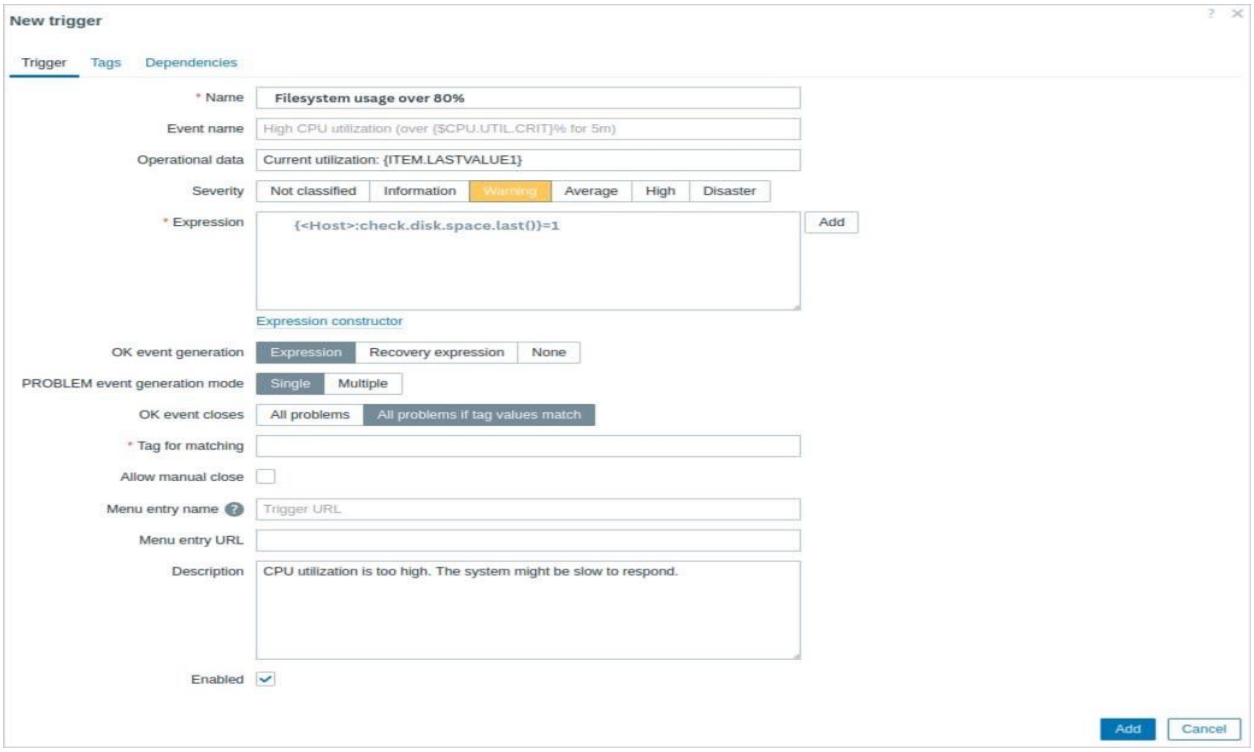
3. Zabbix python script

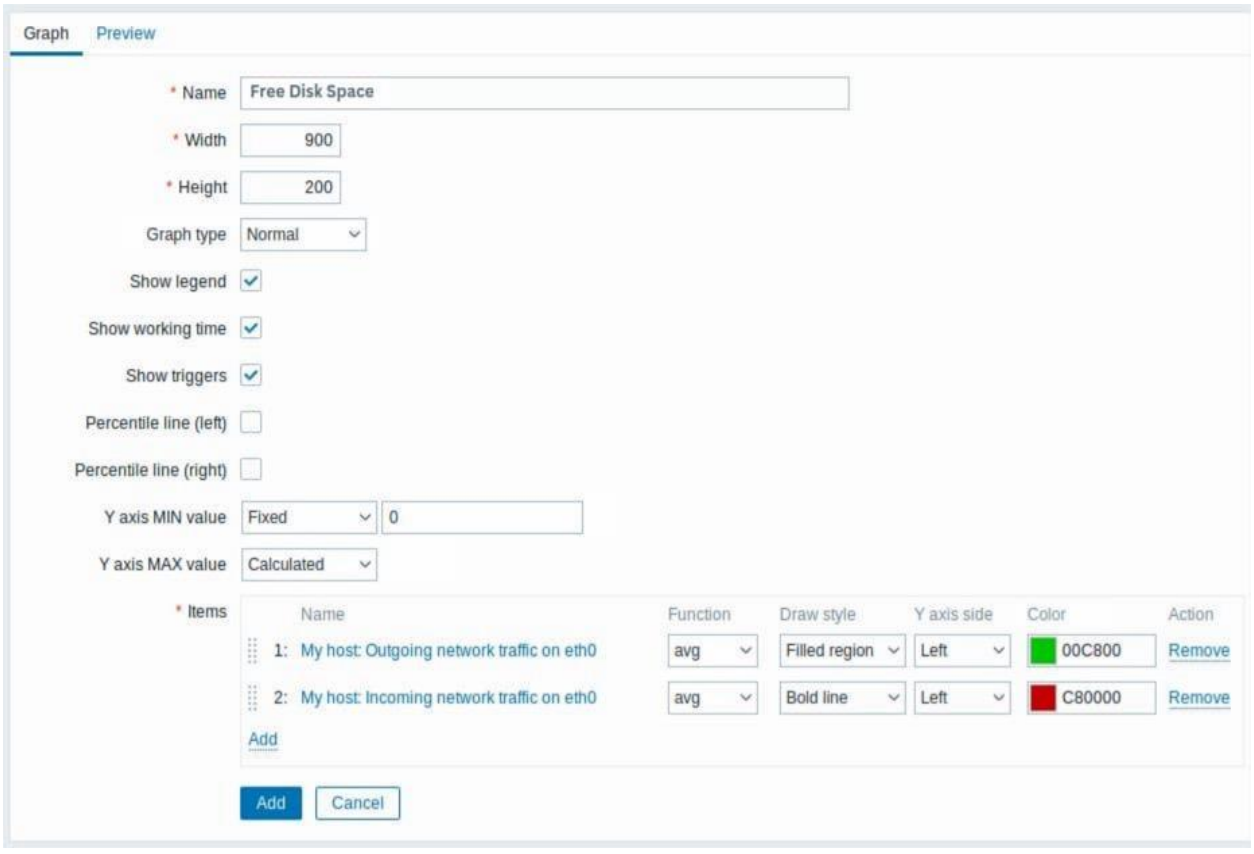
```
#!/usr/bin/env python3


import psutil
def check_disk_space(threshold=20):
    partitions = psutil.disk_partitions()
    for partition in partitions:
        usage = psutil.disk_usage(partition.mountpoint)
```

```
        free_percentage = usage.free / usage.total * 100
        if free_percentage < threshold:
            return 1  # Return 1 if any filesystem is using over 20% of its free disk space
    return 0  # Return 0 if all filesystems have more than 20% free disk space


if __name__ == "__main__":
    result = check_disk_space(20)
    print(result)
```

Screenshots of configuration:




New trigger
Trigger
Tags
Dependencies
* Name
Filesystem usage over 80%
Event name
High CPU utilization (over {$CPU.UTIL.CRIT}% for 5m)
Operational data
Current utilization: {ITEM.LASTVALUE1}
Severity
Not classified
Information
Warning
Average
High
Disaster
* Expression
{<Host>:check.disk.space.last()}=1
Add
Expression constructor
OK event generation
Expression
Recovery expression
None
PROBLEM event generation mode
Single
Multiple
OK event closes
All problems
All problems if tag values match
* Tag for matching
Allow manual close
Menu entry name
Trigger URL
Menu entry URL
Description
CPU utilization is too high. The system might be slow to respond.
Enabled
Add
Cancel


Graph
Preview
* Name
Free Disk Space
* Width
900
* Height
200
Graph type
Normal
Show legend
Show working time
Show triggers
Percentile line (left)
Percentile line (right)
Y axis MIN value
Fixed
0
Y axis MAX value
Calculated
* Items
Name
Function
Draw style
Y axis side
Color
Action
1: My host: Outgoing network traffic on eth0
avg
Filled region
Left
00C800
Remove
2: My host: Incoming network traffic on eth0
avg
Bold line
Left
C80000
Remove
Add
Add
Cancel


Graph
Preview
Free disk space (1h)
120
100
80
60
40
20
0
last
min
avg
max
Used disk space on / (percentage) [avg] 60.16 60.16 60.16 60.16
Free disk space on / (percentage) [avg] 39.84 % 39.84 % 39.84 % 39.84 %
Trigger: Free disk space is less than 20% on volume / [< 20]
Add
Cancel