



MANUAL BOOK SISTEM MONITORING SERVER JTI POLITEKNIK NEGERI MALANG

MOCH. YUDHA ERIAN SAPUTRA



MANUAL BOOK SISTEM MONITORING SERVER JTI DI POLITEKNIK NEGERI Malang menggunakan data source <u>prometheus</u> dan visualisasi <u>Grafana</u>

Sistem Monitoring Server JTI adalah sistem untuk memantau dan mengelola server di Jurusan Teknologi Informasi Politeknik Negeri Malang. Dengan menggunakan Prometheus sebagai penyimpanan data server, Grafana untuk visualisasi data secara grafis dalam panel Gauge dan Grafik, dan Telegram digunakan untuk pengiriman notifikasi.

- 1. Requirement
 - a. Software:
 - Sistem Operasi Debian 11 "Buster" (64 bit)
 - Sistem Operasi Windows 11
 - Bitvise SSH client
 - Grafana versi 9.5.1
 - Prometheus versi 2.43.0
 - Docker versi 24.0.2
 - Telegram
 - Browser
 - OpenVPN
 - b. Hardware:
 - Laptop

c. Alamat IP

| Perangkat | Alamat IP | Netmask | Gateway | Nama Server |
|-----------|-----------|-----------------|----------|-------------|
| Server A | 10.0.0.34 | 255.255.255.240 | 10.0.0.1 | Skmon |
| Server B | 10.0.0.35 | 255.255.255.240 | 10.0.0.1 | Skmon-1 |
| Server C | 10.0.0.36 | 255.255.255.240 | 10.0.0.1 | Skmon-2 |
| Server D | 10.0.0.37 | 255.255.255.240 | 10.0.0.1 | Skmon-3 |
| Server E | 10.0.0.38 | 255.255.255.240 | 10.0.0.1 | Skmon-4 |
| Server F | 10.0.0.39 | 255.255.255.240 | 10.0.0.1 | Skmon-5 |
| Server G | 10.0.0.40 | 255.255.255.240 | 10.0.0.1 | Skmon-6 |



| Nama Server | Prosesor | RAM | Storage |
|-------------|----------|--------|---------|
| Skmon | 2 Core | 2 GB | 16 GB |
| Skmon-1 | 2 Core | 512 MB | 16 GB |
| Skmon-2 | 2 Core | 512 MB | 16 GB |
| Skmon-3 | 2 Core | 512 MB | 16 GB |
| Skmon-4 | 2 Core | 512 MB | 16 GB |
| Skmon-5 | 2 Core | 512 MB | 16 GB |
| Skmon-6 | 2 Core | 512 MB | 16 B |

2. OpenVPN Connect

Penggunaan OPenVPN bertujuan untuk menghubungkan dengan client secara aman dan terenskripsi. Pertama-tama, pastikan PC sudah terhubung ke jaringan Wi-Fi "JTI-PO LINEMA".



Unduh OpenVPN dan instal kemudian import profil koneksi OpenVPN, pilih tab "FILE".

| OpenV | PN Connect | _ | _ | | - > | | | | | | |
|-------|----------------------------|-------------------------------------|---------|---|-----------|--|--|--|--|--|--|
| ≡ | Import Profile | | | | | | | | | | |
| | URL | | | FILE | | | | | | | |
| Y | Drag and dr ou can impo | op to up ort <mark>only</mark> (| load .O | VPN profile <mark>file</mark> at a tim | e. ie. | | | | | | |
| | 6 | .ovi | PN | \mathbf{b} | | | | | | | |
| | | BRO | VSE | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| - | | | | | | | | | | | |



Buat file profil koneksi dengan format *.ovpn beri nama file "*monsev.ovpn*" menggunakan *Software* Visual Studio Code. isi file tersebut dengan script berikut:

```
dev tun
proto tcp
remote 192.168.60.82 1194
resolv-retry infinite
nobind
persist-key
persist-tun
remote-cert-tls server
cipher AES-128-CBC
auth SHA1
auth-user-pass
route 10.0.0.32 255.255.240 10.0.0.49
```

Kembali ke jendela OpenVPN Connect, pilih tab "**File**" dan klik tombol "**Browser**", Pilih file "*monsev.ovpn*".Setelah itu, profil yang di *import* akan muncul. Masukkan *Username, Password* dan *Private Key Password*, klik tombol "*CONNECT*". ketika statusnya berubah menjadi "*CONNECTED*" dan berwarna hijau, berarti koneksi ke VPN telah berhasil tersambung

| penVPN Connect | - × | OpenVPN Connect | | - × | OpenVPN Connect | | |
|---|--------------------------------|-----------------------|-------------------------------|-------|--------------------------------|-----------------------|---------|
| Imported Profil | e | = | Profiles | ţ | = | Profiles | E |
| Profile Name 192.168.60.82 [monsev] | | CONNECTED | | | | | |
| Server Hostname (locked) 192.168.60.82 | | OpenVF 192.168 | PN Profile .60.82 [monsev] | | OB/s | BY | TES OUT |
| Username | | DISCONNECTED | | ~ | OKB/S 🧡 DURATION | PACKET RECEIVE | 5 B/S |
| Save password | | | | _ | 00:00:39 YOU | 16 sec ago | |
| Password yudha | • | 2.8KB/s | ATS | | | | |
| Save Private Key Password | | | | | 10.0.0.58 | | |
| Private Key Password jtifast! | \odot | | | | SERVER 192.168.60.82 | | |
| | | OB/s | RVTE | SOUT | SERVER PUBLIC IP 192.168.60.82 | | |
| | | 0 кв/s | T 1.53 P | KB/S | PORT 1194 | VPN PROTOCOL TCPv4 | |
| PROFILES | CONNECT | DURATION 00:00:22 | PACKET RECEIVED 16 sec ago | Ð | | | G |
| | | | | - | | | |
| coute ADD 10.0 | .0.32 MA | SK 255.25 | 55.255.240 | 10.0 | 0.0.49 | | |
| Administrator: C:\WINDOWS | 5\system32\cmd. | exe | | | | — | |
| rosoft Windows [Versic Microsoft Corporation | on 10.0.22621 n. All rights | .1848] 5 reserved. | | | | | |
| Windows\System32>route | ≥ ADD 10.0.0. | 32 MASK 255.2 | 55.255.240 10.0 | .0.49 | | | |
| .! | | | | | | | |
| | | | | | | | |



Untuk melakukan *remote connection* pada server menggunakan protocol SSH dari sisi *client* menggunakan perangkat lunak *Bitvise SSH*, Setelah membuka *Bitvise SSH Client*, *Log in* ke server dengan memasukkan host(alamat server), port, username dan password. Kemudian Klik "**Log in**".

| 🙆 Bitvise SSH Cli | ient 9.25 | | | | | | | _ | C | | \times |
|-------------------|--|--|--|---|---|--|--|--|------------------|----------|-----------|
| Profile: Serv | er 1.tlp | | | | | | | | <u>Win</u> | dow beha | vior |
| (3) | Login Options | Terminal | RDP | SFTP | Services | C2S Authentic | S2C ation | SSH | Notes | About* | |
| Load profile | <u>H</u> ost 10.0. P <u>o</u> rt 22 | 0.34 | Enable o | obfuscati | DN | <u>U</u> sernai Initial <u>n</u> | me <u>n</u> ethod | server passwo | rd | ~ | |
| Save profile | Obfuscation k | eyword | | | | Stor | e encry | pted pas | sword in | profile | |
| | Kerberos | | | | | <u>P</u> asswo <mark>></mark> Enal | rd ble pass | eeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeee | er kbdi fa | allback | |
| Save profile as | GSS/Kerbe | eros key exc elegation ex authentio | hange cation | | | Elevatio | in | Default | | ~ | |
| | Proxy settings | 1 | <u>Host k</u> | ey mana | <u>ger</u> | <u>Client k</u> | ey man | ager | | He | <u>ip</u> |
| Close profile | 14:58:25.182 14:58:25.182 14:58:25.182 14:58:25.182 14:58:25.182 | Current dat Bitvise SSH Copyright (Visit www.l Run 'BvSsh Cryptograp | e: 2023- Client 9 C) 2000- bitvise.co -help' to hic provi | 06-28 .25, a ful 2022 by om for la learn al der: Win | ly featured Bitvise Lim test inform bout suppo dows CNG | d SSH clie nited. nation ab orted com 5 (x86) wi | ent for \ out our mand-l th addit | Windows SSH soft ine parar ions | ware. meters. | | I |
| | <u>L</u> og in | | | | | | | | E <u>x</u> it | | |

Setelah berhasil login, Maka tampilan utama seperti dibawah ini:



3. Sistem Monitoring Server

Halaman Login akan muncul seperti berikut :

| 🧑 Grafana | × + | | | ~ - 0 X |
|-----------|----------------------------------|---|--|-----------|
| ← → C ▲ N | ot secure 10.0.0.34:3000/login | | | 🖻 🖈 🖬 🔕 i |
| | | Welcome to Gr | rafana | |
| | | Email or username | | |
| | | email or username | | |
| | | Password | | |
| | | | | |
| | | Log in | | |
| | | Forg | ot your password? | |
| | Documenta | ition 🕑 Support 🛱 Community Open Source | v9.5.1 (bc353e4b2d) ط New version available! | |

Masuk dengan akun Grafana default :

Username : admin Password : admin

Setelah berhasil masuk, Anda akan diarahkan ke halaman utama.

| G Grafana X + | | | ~ | - 0 × |
|--|---|---|---|---|
| ← → C ▲ Not secure 10.0.34:3000/ | ?orald=1 | | ir 4 | |
| Home | | | Add Add | ✓ ◎ ₽ ✓ |
| Welcome to Grafana | | Need help | ? Documentation Tutorials Community. | Public Slack |
| | | | Ren | nove this panel |
| Basic The steps below will guide you to quickly finish setting up your Grafana installation. | TUTORIAL DATA SOURCE AND DASHBOARDS Grafana fundamentals Set up and understand Grafana if you have no prior experience. This tutorial guides you through the entire process and covers the "Data source" and "Dashboards" steps to the right. | COMPLETE Add your first data source E Learn how in the docs @ | COMPLETE Create your first dashboard | > |
| Dashboards | | Latest from the blog | | |
| Starred dashboards SISTEM MONITORING SERVER JTI Grafana Recently viewed dashboards SISTEM MONITORING SERVER JTI Grafana | * | Unit of the state | 21 E Learning with Just Eat Takeaway: 'I wai everybody feels included and heard' HIRE Learning series gets inside the brains of agers who are looking for smart engineers, pr ana users, and observability enthusiasts to jo out what questions they ask, what red flags what helps their teams succeed. We all have | nt to make hiring sissionate in their teams. they look for, our own way of |



Pada halaman utama Grafana, pilih "SISTEM NONITORING SERVER JTI" dalam menu Dashboard, dan tampilan akan muncul seperti berikut:

- SISTEM MONITORING SERVER JT × + 🗧 🔿 😋 🕼 Not secure | 10.0.0.34.3000/d/1590ae0f-e06e-42fa-9209-919148b65c508/sistem-monitoring-server-jti7orgid=18trefresh=5s8var-job=node-exporter8var-hostname=All8var-mode=All8var-mo 🚍 Home > Dashboards > Grafana > SISTEM MONITORING SERVER JTI 🌟 😪 🗚 Add 🗸 🛱 🐵 🕘 Last 5 minutes 🗸 📿 5s 🗸 📮 🗸 IP Address All ~ CPU AII DISK AII RAM AII 36.9% _g 44.3% _g -2.00% _§ _____24.9% _§ 65.4% _§ 45.0% _§ 45.8% _g **_-2.00%** _§ **ੁ**■5.10% _{ਡੁੱ} 10.0.0.34:9100 10.0.0.35:9100 10.0.0.36:9100 10.0.0.34:9100 10.0.0.35:9100 10.0.0.36:9100 10.0.0.34:9100 10.0.0.35:9100 10.0.0.36:9100 45.2% _____24.9% _s 24.8% 24.9% ਡੂ 45.0% **__**2.40% _s 45.0% **_-**2.20% _š **_-1.80%** _§ 3 10 10.0.0.37:9100 10.0.0.38:9100 10.0.0.39:9100 10.0.0.37:9100 10.0.0.38:9100 10.0.0.39:9100 10.0.0.37:9100 10.0.0.38:9100 10.0.0.39:9100 24.8% **_-**1.80% 45.0% 10.0.0.40:9100 10.0.0.40:9100 10.0.0.40:9100 CPU All 6.25% All CPU _ SISTEM MONITORING SERVER JT × + ← → C ▲ Not secure | 10.0.0.34:3000/d/f590ae0f-e06e-42fa-9209-9f9b48b65c08/sis xporter&var-hostname=All&var-node=All&var-m... 🖻 🖈 🖨 🙆 🚦 r-iti?orald=18refresh=5s8 👪 Add 🗸 🖺 🕲 🕐 Last 5 minutes 🖌 📿 5s 🗸 📮 🚍 Home > Dashboards > Grafana > SISTEM MONITORING SERVER JTI 🖕 😪 ~ CPU All 6.25% 3.13% 156% 13:38:45 13:37:00 13:37:15 13:37:30 13:37:45 13:38:00 13:38:15 13:38:30 13:38:45 13:39:00 13:39:15 13:39:30 13:39:45 13:40:00 13:40:15 13:40:30 13:40:45 13:41:00 13:41:15 13:41:30 Mean Max Min - IP Server : 10.0.0.34:9100 4.75% 5.70% 5.70% 4.00% - IP Server : 10.0.0.35:9100 1.90% 1.80% 2.40% 1.80% - IP Server : 10.0.0.36:9100 2.00% 2.00% 2.40% 1.80% - IP Server : 10.0.0.37:9100 2.10% 2.00% 2.40% 2.00% - IP Server : 10.0.0.38:9100 2.04% 2.00% 2.40% 1.80% IP Server : 10.0.0.39:9100
 IP Server : 10.0.0.40:9100 1.97% 2.00% 2.40% 1.80% 179% 1.60% 2.00% 1.60% RAM All 45.00%
- All Panel Gauge CPU, Ram dan Disk

- All RAM



- All Disk

| 6 SISTEN | 4 MONITORIN | IG SERVER JT | × + | | | | | | | | | | | | | | | | ~ | ×- | 0 | > |
|----------|----------------|--------------|-----------|-------------|------------|-------------|------------|-------------|--------------|---------------|------------|------------|------------|-----------|------------|----------------|------------|--------|--------|--------|---------------|----------|
| ← → | C A N | lot secure | 10.0.34:3 | 000/d/f590a | eOf-eO6e-4 | 2fa-9209-9f | 9b48b65c0i | 3/sistem-mo | onitoring-se | erver-jti?org | ld=1&refre | sh=5s&var- | job=node-e | xporter&v | ar-hostnam | e=All&var-i | node=All& | var-m | 6 \$ | * 1 | . 😡 | |
| 🔳 Ног | me > Dast | nboards > | Grafana > | SISTEM N | NONITORIN | IG SERVER | JTI ★ | ŝ | | | | | dil* | Add ~ | 6 6 | ② Las | t 5 minute | s v | a c | 5s ~ | Ð | , |
| - IP S | erver : 10.0.0 | 40:9100 | | | | | | | | | | | | | | | | 24.80% | 24.79% | 24.82% | 24.79 | 1% |
| DISK AII | l. | | | | | | | | | | | | | | | | | | | | | |
| 80.00% | | | | | | | | | | | | | | | | | | | | | | |
| 70.00% | | | | | | | | | | | | | | | | | | | | | | |
| 70.00% | | _ | _ | _ | _ | _ | | | _ | _ | | | _ | - | | _ | _ | _ | | | | |
| 60.00% | | | | | | | | | | | | | | | | | | | | | | |
| 50.00% | | | | | | | | | | | | | | | | | | | | | | |
| 40.00% | | | | | | | | | | | | | | | | | | | | | | |
| 30.00% | | | | _ | _ | | | | | | | | | | | | | | | | _ | |
| 20.00% | | | | | | | | | | | | | | | | | | | | | | |
| 10.00% | | | | | | | | | | | | | - | | | | | | | | | |
| 0.00% | 10.00.15 | 10.00.00 | 10.00.45 | 10.00.00 | 10-20-15 | 10.00.00 | 10.00.45 | 10.40.00 | 10.40.15 | 12.40.20 | 10.40.45 | 12.01.00 | 10.41.15 | 10.41.00 | 10.41.47 | 10.40.00 | 10.40.4 | c 10.4 | | 10.15 | | 0 |
| | 13.36.15 | 13.36.30 | 10.00.40 | 13.35.00 | 13.38.13 | 13.39.30 | 13.38.40 | 13.40.00 | 13.40.13 | 13.40.30 | 13,40,43 | 13.41.00 | 13.41,13 | 13.41.30 | 10.41.40 | 13.42.00 | 13.42.1 | Mean | Last * | Max | 13.43.00 M | in |
| = IP S | erver : 10.0.0 | .34:9100 (/h | ome) | | | | | | | | | | | | | | | 29.32% | 29.32% | 29.32% | 29.32 | % |
| - IP S | erver : 10.0.0 | .35:9100 (/h | ome) | | | | | | | | | | | | | | | 5.56% | 5.56% | 5.56% | 5.56 | % |
| - IP S | erver : 10.0.0 | .36:9100 (/h | ome) | | | | | | | | | | | | | | | 5.56% | 5.56% | 5.56% | 5.56 | % |
| - IP S | erver : 10.0.0 | .37:9100 (/h | ome) | | | | | | | | | | | | | | | 5.56% | 5.56% | 5.56% | 5.56 | .% |
| - IP S | erver: 10.0.0 | 30-0100 (/h | omel | | | | | | | | | | | | | | | 0.00% | 0.00% | 0.50% | 5.55 | 70 |
| = IP S | erver : 10.0.0 | .40:9100 (/h | ome) | | | | | | | | | | | | | | | 5.56% | 5.56% | 5.56% | 5.56 | 24 26 |
| - IP S | erver : 10.0.0 | .34:9100 (/v | ar) | | | | | | | | | | | | | | | 77.95% | 77.99% | 77.99% | 77.91 | 1% |

- Pada halaman utama Sistem Monitoring Server JTI, terdapat label Filter Alamat IP



- Filter CPU



OF

- Filter RAM



- Filter Disk

1

| 🙆 SISTEM MONITORING SERVERJI: 🗙 🔸 | | ~ | - | 0 |
|---|--------------------|--------------------|----------------|------------------|
| 🗧 🔶 🖸 🛕 Not secure 10.0.34.3000/d/I590ae0f-e06e-42Ia-9209-919b48b65c08/sistem-monitoring-server-jti?orglid=18refresh=5s8var-job=node-exporter8var-hostname=All8var-nod | e=10.0.0.34:9. | . @ \$ | * 1 | - () |
| \Xi Home > Dashboards > Grafana > SISTEM MONITORING SERVER JTI 🌟 🥰 🕼 🙆 📀 Last 5 1 | minutes ~ | Q | 3 5s v | 9 |
| - IP Server: 10.0.0.34:9100 | 37.95 | % 37.63% | 38.24% | 36.87% |
| DISK 10.0.0.34:9100 | | | | |
| 80.00% | | | | |
| 75.00% | | | | |
| 70.00% | | | | |
| 65.00% | | _ | _ | |
| 80.00% | | | | |
| 55.00% | | | | |
| 50.00% | | | | |
| 45.00% | | | | |
| 40.00% | | | | |
| 35.00% | | | | |
| 30.00% | _ | _ | _ | |
| 25.00% 13:41:00 13:41:15 13:41:30 13:41:45 13:42:00 13:42:15 13:42:30 13:42:45 13:43:00 13:43:15 13:43:30 13:43:45 13:44:00 13:44:15 13:44:30 13:44:15 13:44:30 13:44:15 13:44:30 13:44:15 13:44:30 13:44:15 13:44:30 13:44:15 13:45:15 13:15 13 | 13:45:00 13 Mea | :45:15 1: | 3:45:30 Max | 13:45:45 Min |
| - IP Server : 10.0.0.34:9100 (/home) | 29.329 | 6 29.32% | 29.32% | 29.32% |
| IP Server : 10.0.34:9100 (/var) IP Server : 10.0.34:9100 (/) | 77.999 | 5 78.03% 65.42% | 78.03% | 77.95% 65.42% |



- Selain itu, pada halaman Dashboard terdapat fitur Refresh Dashboard yang memungkinkan Anda untuk secara otomatis memperbarui dashboard mulai dari setiap detik hingga setiap





CONTACT US

TELP : <62851-5650-8323 EMAIL : YUDHAERIAN111@GMAIL.COM GITHUB : GITHUB.COM/YUDHAERIAN

