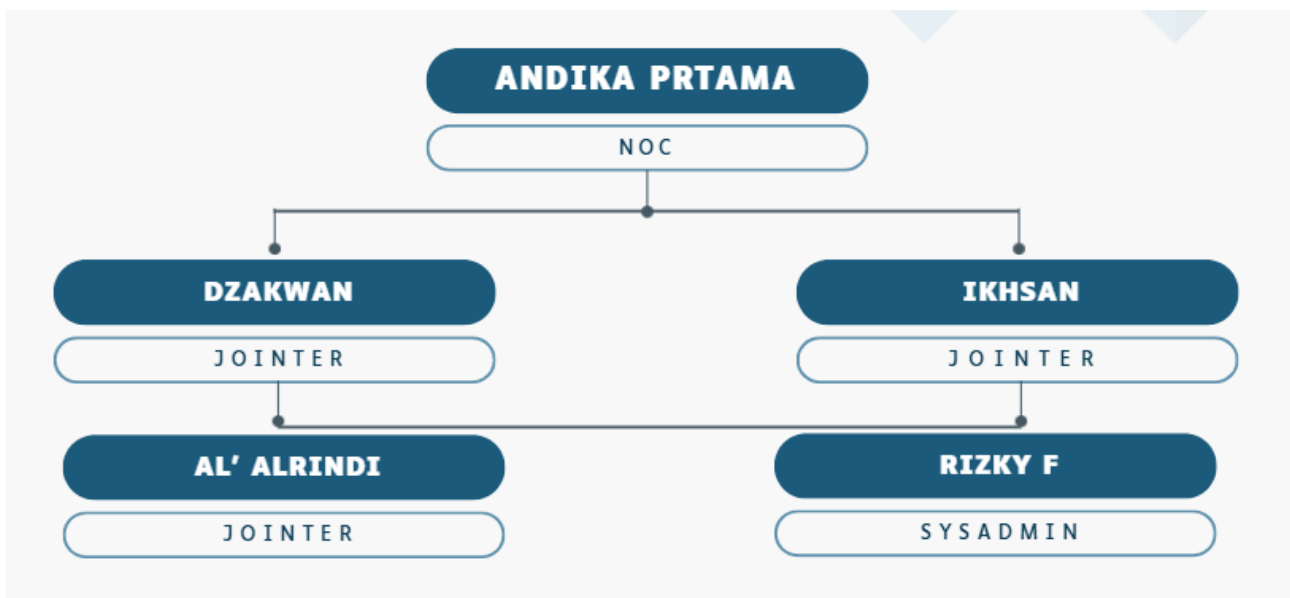


**DOKUMENTASI PROJECT 2 KELAS XII
KONSENTRASI KEAHLIAN TKJ XI 2024**

Muhamad Andika Pratama (12209146/ Sukasari 2)
Muhamad Dzakwan Ar Efendi (12209161/Cicurug 1)
Muhammad Nurikhsan (12209251/Tajur 1)
Muhammad Al`Aridi Putera Sebastian(12209202/ Cicurug 7)
Muhammad Rizky Fadillah (12209271/Tajur 3)

TJKT XII-3



I. Membuat Daftar Perangkat Jaringan dan Rancangan

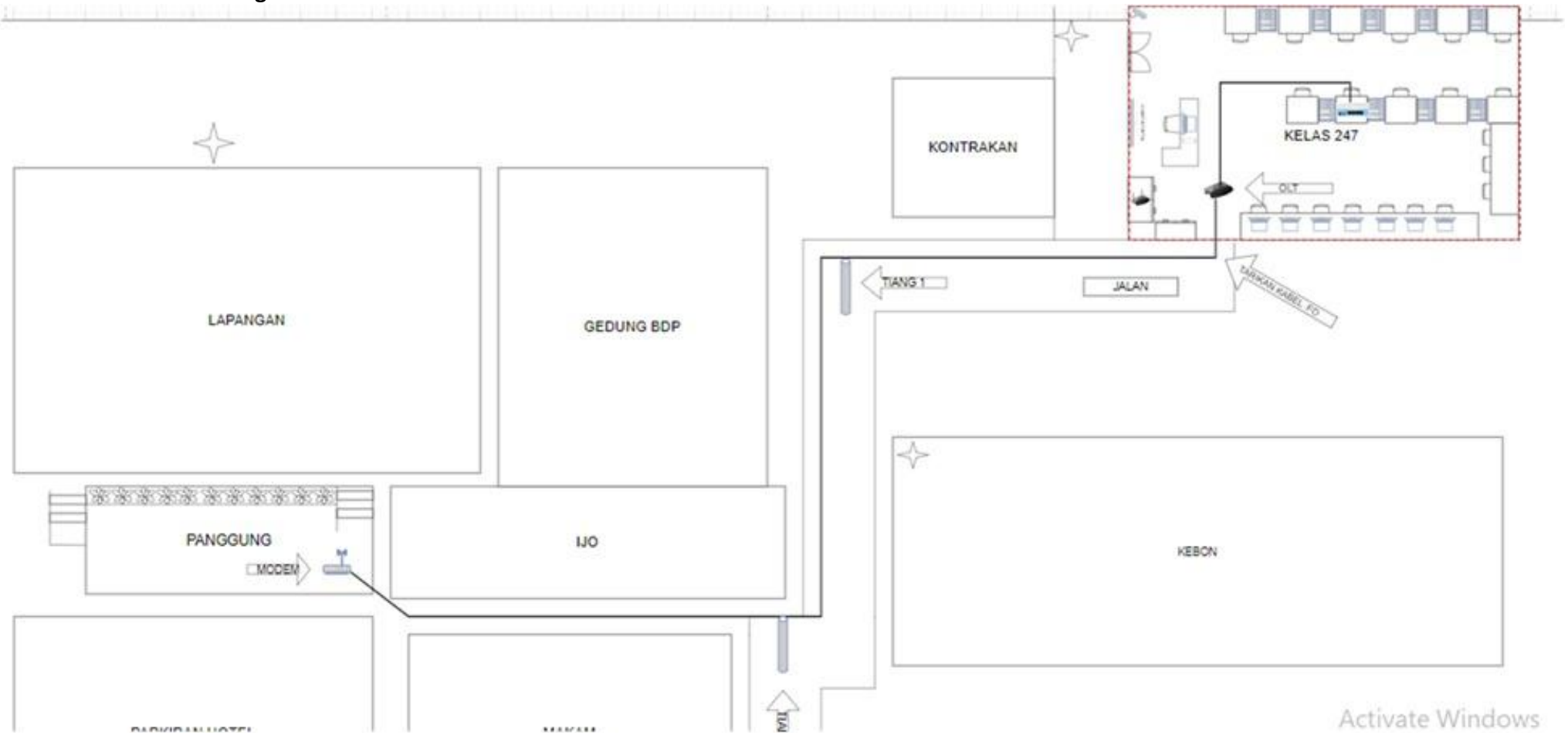
No	Nama Perangkat	Spesifikasi	Jumlah	Harga	Total	Keterangan
1	Mikrotik RB2011iL-RM	CPU AR9344** 600MHz— RAM 64MB LAN PORTS 5 SWITCH CHIP 2 GIGABIT 5 Dimentions 250x250x90mm	1	Rp. 907.500	Rp. 907.500	Kami menggunakan tipe router ini karena router ini suda sanggup untuk mencukupi hingga 150 client secara bersamaan dan dengan harga terjangkau.
2	Kabel drop core	Standar Telkom Fiber Core G657A2 3 sling 1 core Jacket LSZH	1	Rp 650.000	Rp 650.000	Untuk saat ini hanya perlu memerlukan 1 core saja karena start up.
3	Laptop	OS : Windows 11 Pro Processor : AMD Ryzen 7 5800H Mobile Processor (8-core/16-thread, 20MB cache, up to 4.4 GHz max boost)	1	Rp. 11.000.000	Rp. 11.000.000	Laptop hanya sebagai administrator dan pengetesan saja.

		<p>Intergrated GPU : AMD Radeon Graphics</p> <p>On board memory : 16GB DDR4 on board</p> <p>Storage : 512GB M.2 NVMe PCIe 3.0 SSD</p> <p>Wireless : Wi-Fi 6(802.11ax) (Dual band) 2x2</p>				
4	ZTE AC1200 Dual-Band Wi-Fi 5 GPON ONT — ZXHN F670L	<p>GPON</p> <p>2 x 2 802.11b/g/n Wi-Fi @ 2.4 GHz</p> <p>2 x 2 802.11a/n/ac Wi-Fi @ 5 GHz</p> <p>4 100/1000 Mbps LAN Ports</p>	1	Rp322.000	Rp322.000	Agar Ngacir
5	BELDEN 7814A CAT 6 50M	<p>CAT 6</p> <p>Speed up to 1000Mbps</p> <p>Frequency Max. Delay Max. Delay Skew Nom. Velocity of Prop.</p> <p>100 MHz 538 ns/100m 45 ns/100m 70%</p>	1	Rp360.000	Rp360.000	Agar awet

6	ODP	<p>Spesifikasi :</p> <p>-Tipe : SC</p> <p>-Brand : PAZ</p> <p>-Kapasitas : 16 Core</p> <p>-Dimensi : 275mm x 345mm x 75mm</p> <p>-Unit : 1 set</p> <p>-Kelengkapan :</p> <p>1.Passive Splitter Lengkap Untuk ODP Solid</p> <p>2.Kunci Atas</p> <p>3.Pigtail SC UPC</p> <p>4.Protection Sleeve</p> <p>5.Isolasi</p> <p>6.Buku Manual</p> <p>7.Klem Tiang</p> <p>8.Selang Spiral</p>	1	Rp 95.000	Rp 95.000	Untuk penyebaran suatu wilayah
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		9.Kabel Grounding 10.Klem Kabel 11.Kabel Ties				
7	Hioso GEpon Olt Ha7302 Cst	2 SFP PON ports 2 1000M RJ45 ports + 2 Gigabit SFP port uplink port, AC 100-240V	1	Rp3.174.000	Rp3.174.000	Hemat-hemat dulu
	Gpon OLT Module SFP C++ 8db HSGQ-SFP	. SFP with SC/PC interface . 1490nm continuous mode 2.5Gbps . 1310nm burst mode 1.25Gbps . Support DDM 20KM . Compliance with SFP MSA . Compliance with SFF-8472 . RoHS compliant, FDA compliant	1	Rp287.804	Rp287.804	Hemat-hemat dulu

II. Membuat Desain Jaringan



Activate Windows

III. Merancang Pengalamatan Jaringan

Divisi	Network	Prefix/CIDR	Range	Broadcast
Network Router	172.16.247.0	255.255.255.0/24	172.16.247.2-172.16.247.254	172.16.247.255
PPPoE	10.247.12.128	255.255.255.128/25	10.247.12.130-10.247.12.166	10.247.12.255
Hotspot	10.247.12.0	255.255.255.192/26	10.247.12.1-10.247.12.110	10.247.12.127
Lan Konfig	10.3.12.0	255.255.255.192/26	10.3.12.2-10.3.12.254	10.3.12.255

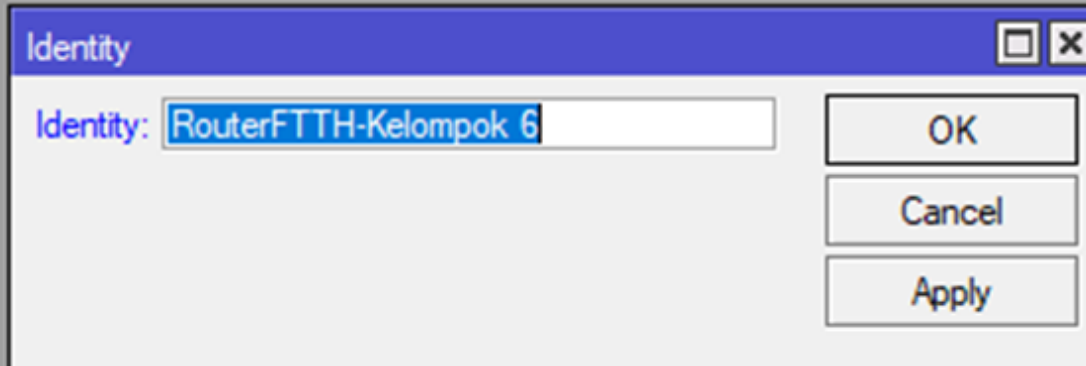
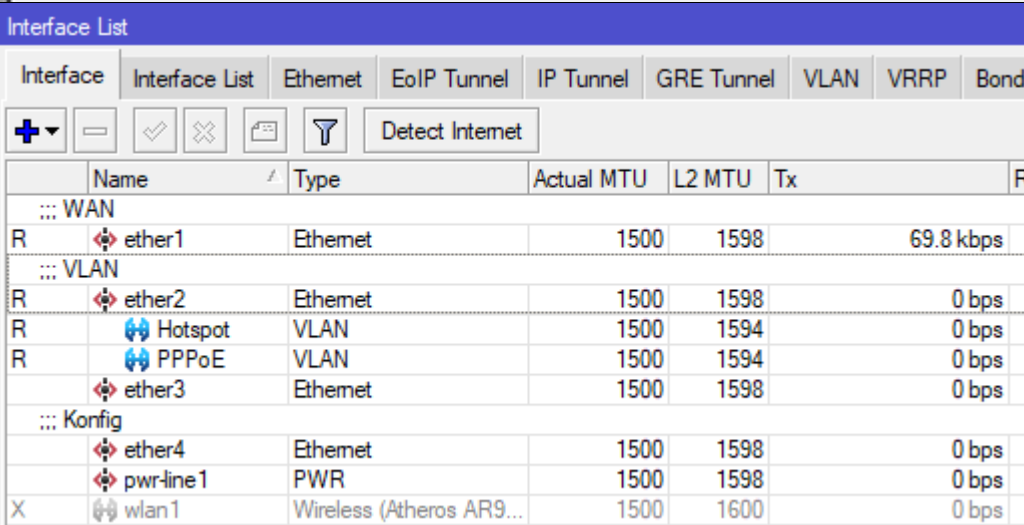
IV. Menentukan Pengalamatan Jaringan

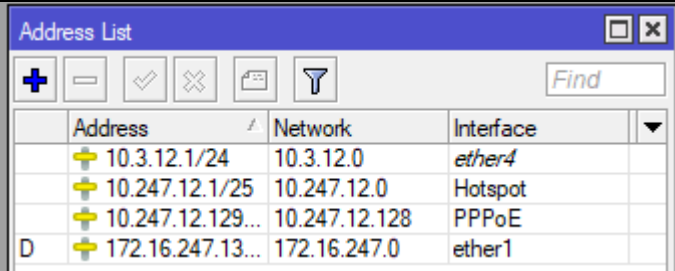
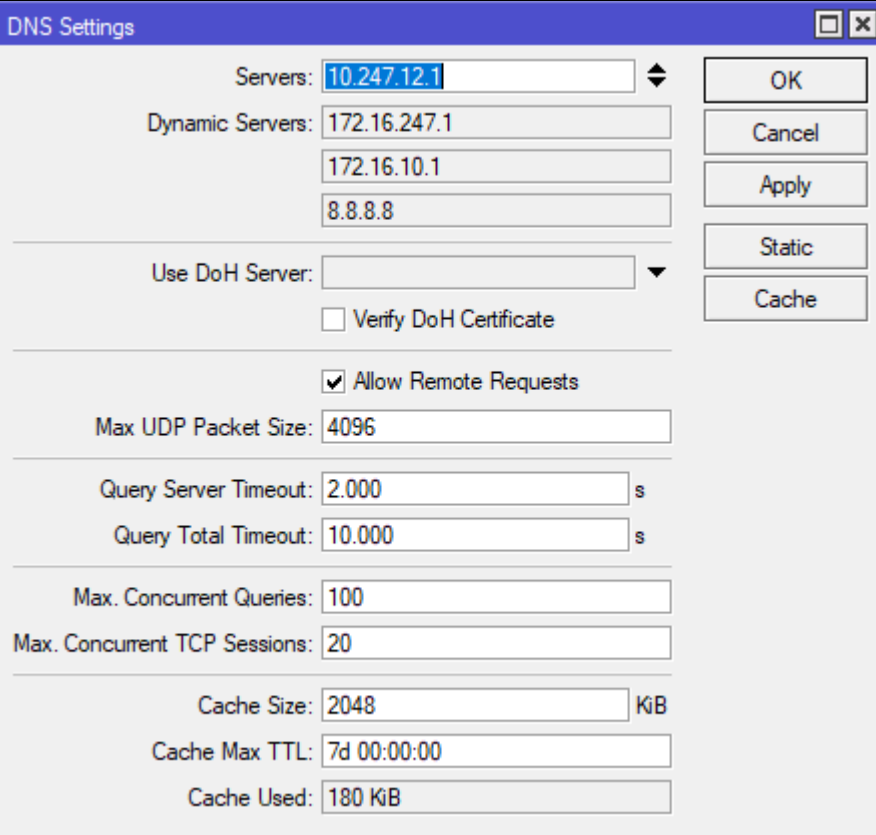
Device	Interface	Mac Address	IP Address	Subnet Mask	Gateway
Router 1	Ether-1	18:FD:74:A7:2B:6C	172.16.247.132/24	255.255.255.0	172.16.247.1
	Ether-2	18:FD:74:A7:2B:6D	-	-	-
	Ether-3	18:FD:74:A7:2B:6E	-	-	-
	Ether4	18:FD:74:A7:2B:6F	10.3.12.1/24	255.255.255.0	10.3.12.1
Hotspot	VLAN-PPPoE	18:FD:74:A7:2B:6D	10.247.12.129/26	255.255.255.192	10.247.12.129
PPPoE	VLAN-Hotspot	18:FD:74:A7:2B:6D	10.247.12.1/25	255.255.255.128	10.247.12.1

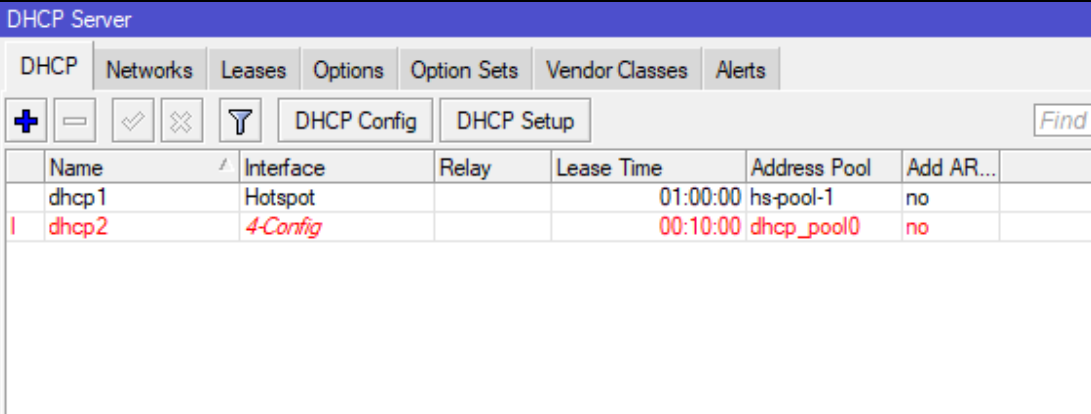
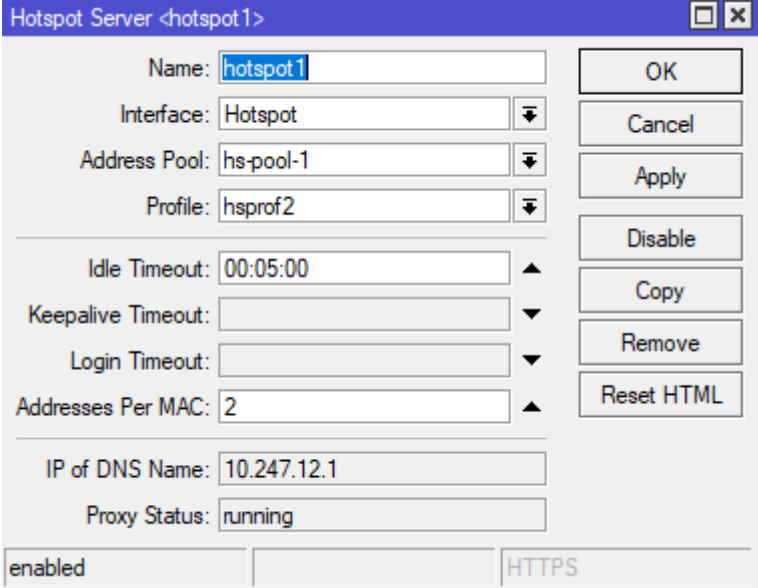
VI. Implementasi

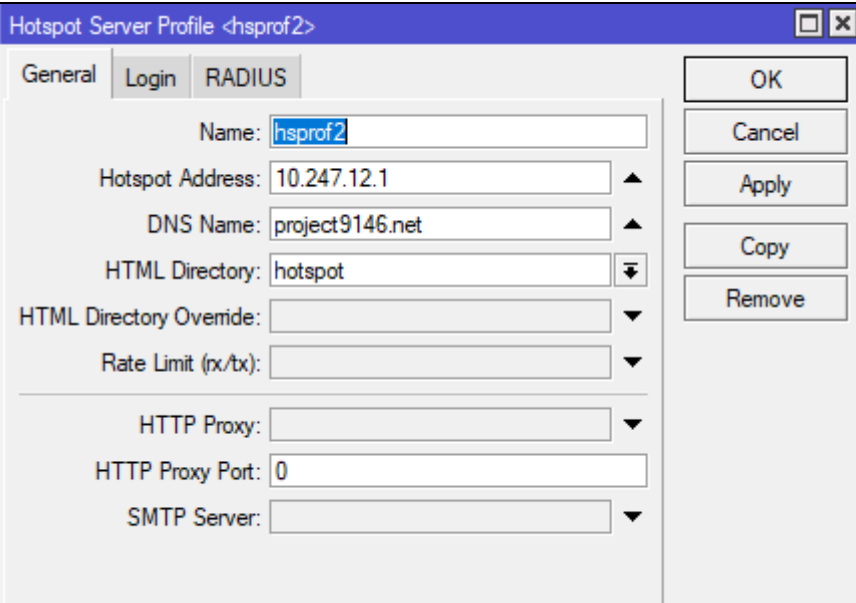
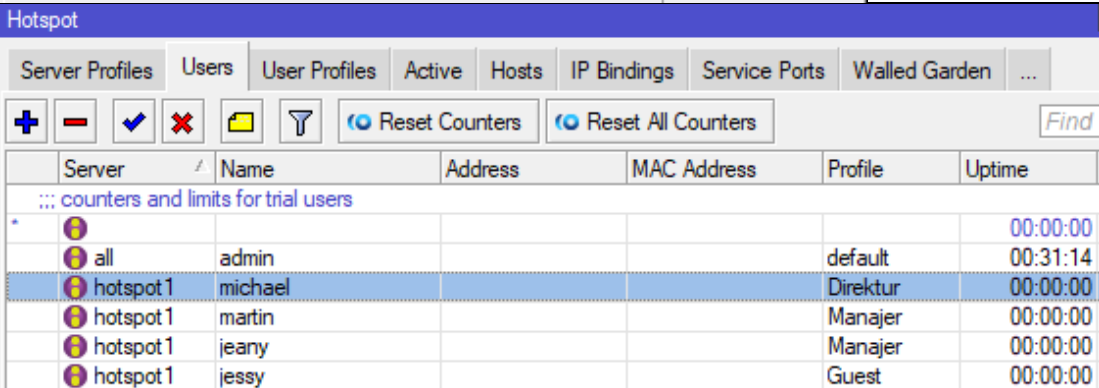
A. HASIL KONFIGURASI

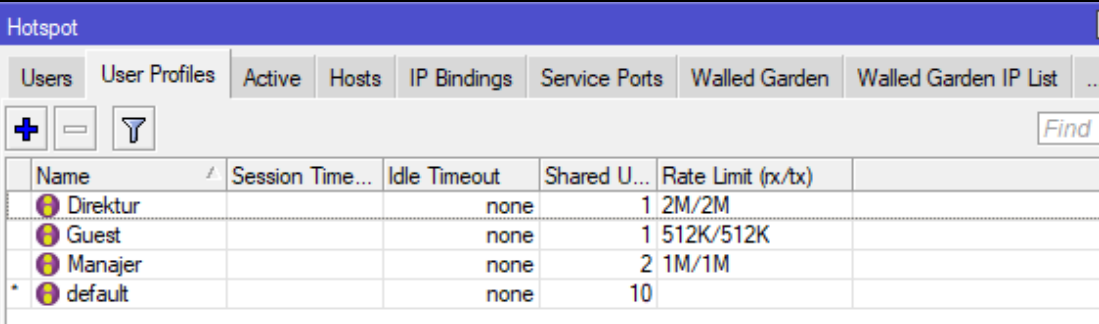
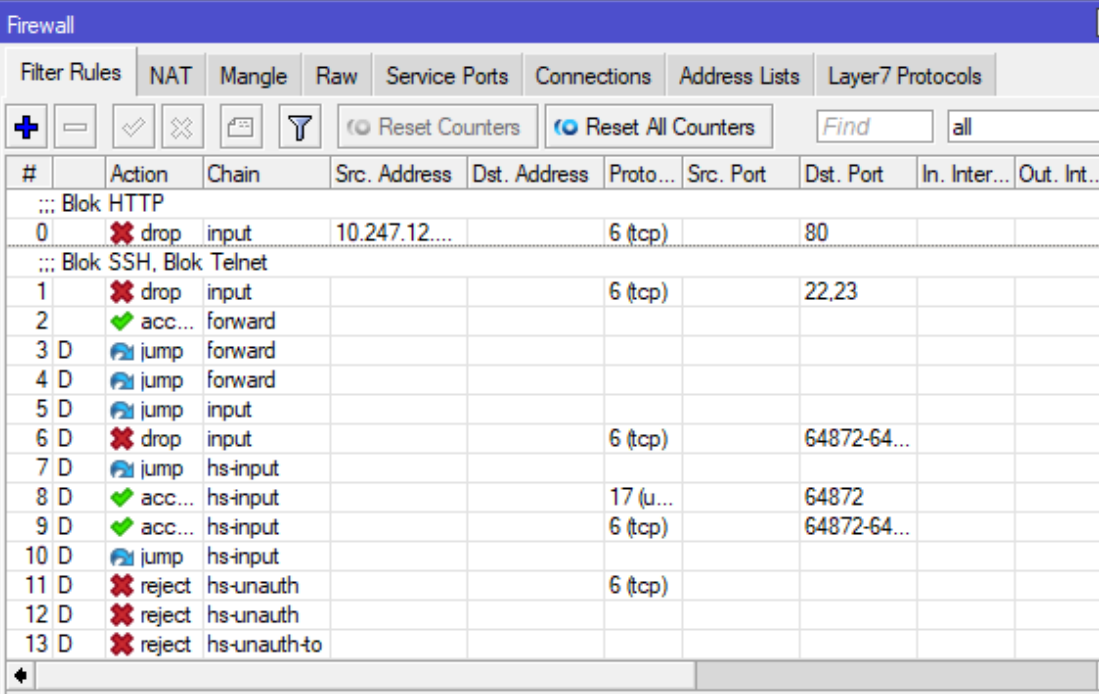
- Router

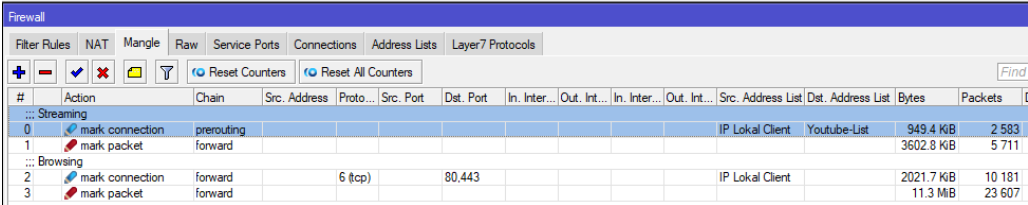
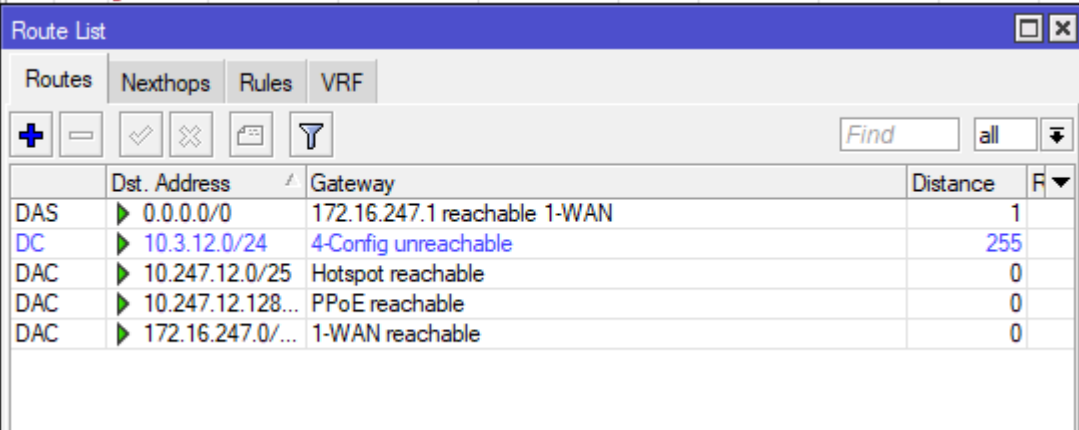
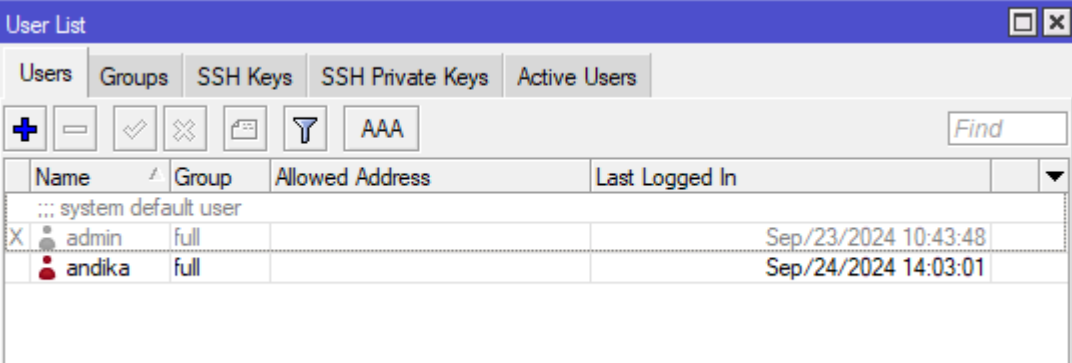
No	Konfigurasi	Hasil/Dokumentasi	Keterangan																																																																								
1.	Identity		Disini kami membuat Identity untuk Mikrotik, Berhasil																																																																								
2.	Interface	 <table><thead><tr><th></th><th>Name</th><th>Type</th><th>Actual MTU</th><th>L2 MTU</th><th>Tx</th></tr></thead><tbody><tr><td colspan="6">::: WAN</td></tr><tr><td>R</td><td>ether1</td><td>Ethernet</td><td>1500</td><td>1598</td><td>69.8 kbps</td></tr><tr><td colspan="6">::: VLAN</td></tr><tr><td>R</td><td>ether2</td><td>Ethernet</td><td>1500</td><td>1598</td><td>0 bps</td></tr><tr><td>R</td><td>Hotspot</td><td>VLAN</td><td>1500</td><td>1594</td><td>0 bps</td></tr><tr><td>R</td><td>PPPoE</td><td>VLAN</td><td>1500</td><td>1594</td><td>0 bps</td></tr><tr><td></td><td>ether3</td><td>Ethernet</td><td>1500</td><td>1598</td><td>0 bps</td></tr><tr><td colspan="6">::: Konfig</td></tr><tr><td></td><td>ether4</td><td>Ethernet</td><td>1500</td><td>1598</td><td>0 bps</td></tr><tr><td></td><td>pwr-line 1</td><td>PWR</td><td>1500</td><td>1598</td><td>0 bps</td></tr><tr><td>X</td><td>wlan1</td><td>Wireless (Atheros AR9...</td><td>1500</td><td>1600</td><td>0 bps</td></tr></tbody></table>		Name	Type	Actual MTU	L2 MTU	Tx	::: WAN						R	ether1	Ethernet	1500	1598	69.8 kbps	::: VLAN						R	ether2	Ethernet	1500	1598	0 bps	R	Hotspot	VLAN	1500	1594	0 bps	R	PPPoE	VLAN	1500	1594	0 bps		ether3	Ethernet	1500	1598	0 bps	::: Konfig							ether4	Ethernet	1500	1598	0 bps		pwr-line 1	PWR	1500	1598	0 bps	X	wlan1	Wireless (Atheros AR9...	1500	1600	0 bps	Selanjutnya kami mengsetting bagian interface (Disini kami memberi nama tiap interface agar tidak tertukar)
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No	Konfigurasi	Hasil/Dokumentasi	Keterangan
3	IP Address		Jangan lupa untuk memberikan IP Address agar bisa terhubung dan jangan sampai bentrok, karena itulah gunanya VLSM.
4	DNS		Disini kami meng-setting Domain Name Server dan centang bagian Allow Remote Requests

No	Konfigurasi	Hasil/Dokumentasi	Keterangan
5	DHCP Server		DHCP server penting untuk di atur karna Sebuah protokol jaringan yang bekerja secara otomatis dalam mengenali perangkat yang terhubung ke jaringan.
6	Server Hotspot		Setelah itu kami mengatur Hostpot Server untuk mengelola jaringan publik.

No	Konfigurasi	Hasil/Dokumentasi	Keterangan																																																
7	Server Profile Hotspot		Bagian ini adalah keterangan yang berisi tentang domain untuk hotspot dan web HTML yang sedang dipakai.																																																
8	User Hotspot	 <table><thead><tr><th>Server</th><th>Name</th><th>Address</th><th>MAC Address</th><th>Profile</th><th>Uptime</th></tr></thead><tbody><tr><td colspan="6">::: counters and limits for trial users</td></tr><tr><td>*</td><td></td><td></td><td></td><td></td><td>00:00:00</td></tr><tr><td>all</td><td>admin</td><td></td><td></td><td>default</td><td>00:31:14</td></tr><tr><td>hotspot1</td><td>michael</td><td></td><td></td><td>Direktur</td><td>00:00:00</td></tr><tr><td>hotspot1</td><td>martin</td><td></td><td></td><td>Manajer</td><td>00:00:00</td></tr><tr><td>hotspot1</td><td>jeany</td><td></td><td></td><td>Manajer</td><td>00:00:00</td></tr><tr><td>hotspot1</td><td>jessy</td><td></td><td></td><td>Guest</td><td>00:00:00</td></tr></tbody></table>	Server	Name	Address	MAC Address	Profile	Uptime	::: counters and limits for trial users						*					00:00:00	all	admin			default	00:31:14	hotspot1	michael			Direktur	00:00:00	hotspot1	martin			Manajer	00:00:00	hotspot1	jeany			Manajer	00:00:00	hotspot1	jessy			Guest	00:00:00	Kami menambahkan user untuk memberikan akses masuk kedalam hotspot kita.
Server	Name	Address	MAC Address	Profile	Uptime																																														
::: counters and limits for trial users																																																			
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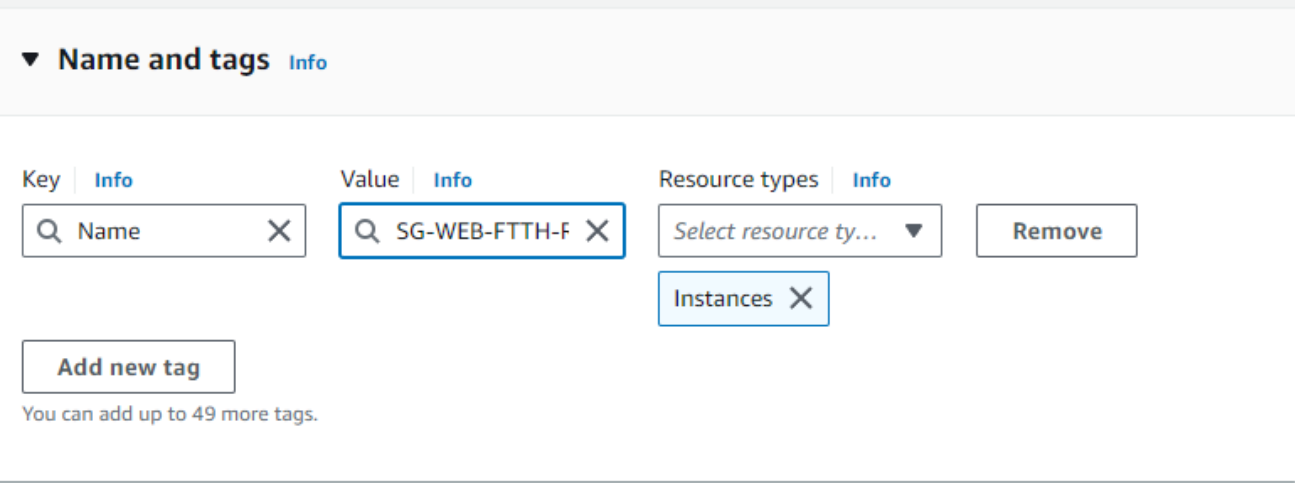
No	Konfigurasi	Hasil/Dokumentasi	Keterangan
9	User Profile Hotspot		Disini kami mengatur bandwidth untuk user, dan mengatur batas maximum pengguna yang akan mengakses
10	Filter Firewall (Forward dan Blok)		Selanjutnya kami mengatur Filter Firewall, Forward dan Blok. Kami telah menambahkan blok akses HTTP menuju ke router dari network hotspot. Kemudian, kami juga menambahkan blok akses SSH dan Telnet bagi network hotspot dan PPOE.

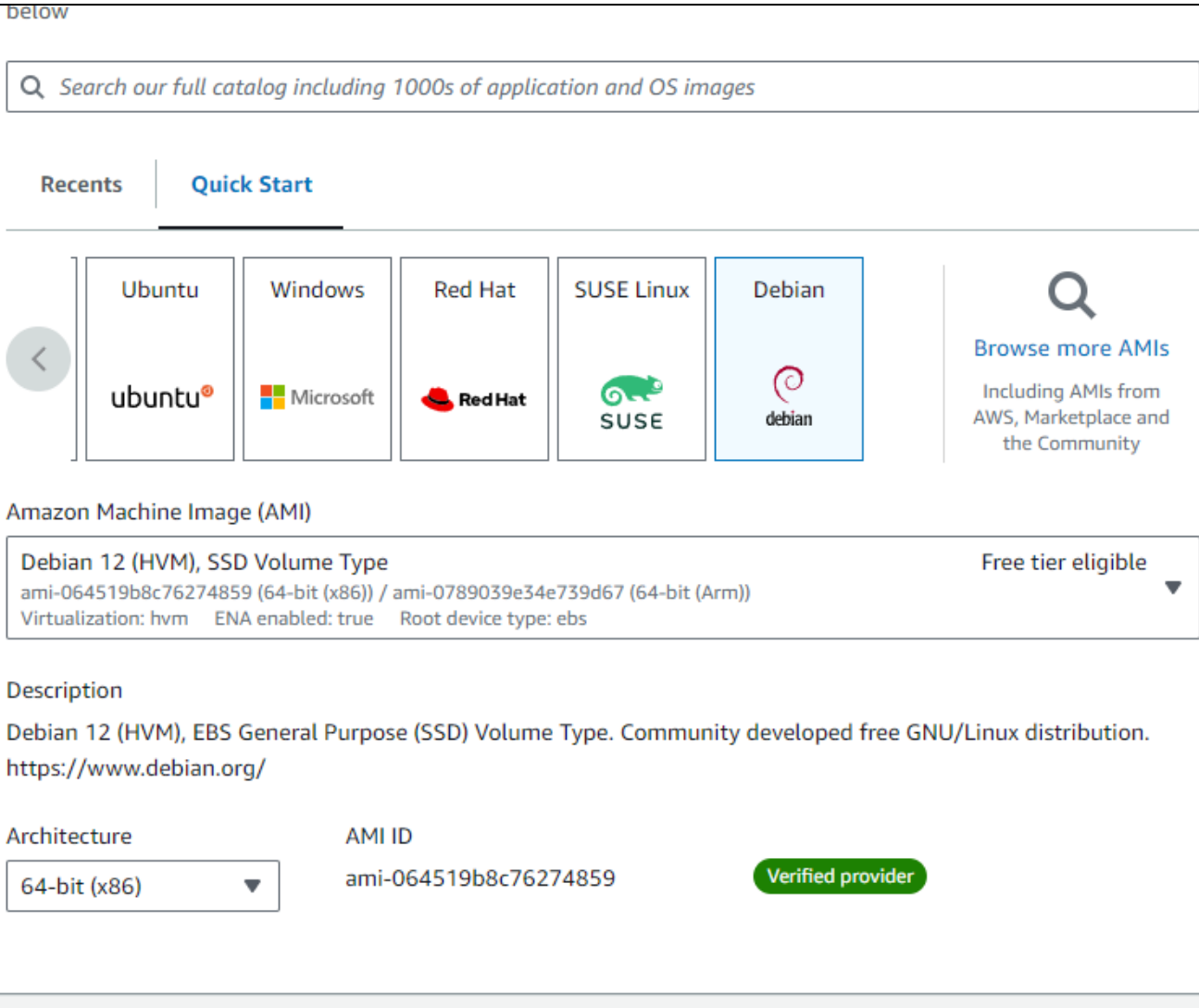
No	Konfigurasi	Hasil/Dokumentasi	Keterangan																								
13	Mangle Firewall	 <p>The screenshot shows the Mikrotik WinBox Firewall Mangle configuration. The 'Filter Rules' tab is selected. A rule named 'Streaming' is configured with the action 'mark connection' and 'prerouting'. Another rule named 'Browsing' is configured with the action 'mark packet' and 'forward'. The 'Chain' is set to 'forward' for both rules. The 'Src. Address' is 'IP Lokal Client' and the 'Dst. Address List' is 'Youtube-List' for the 'Streaming' rule. The 'Src. Address' is 'IP Lokal Client' and the 'Dst. Address List' is '11.3 MB' for the 'Browsing' rule. The 'Bytes' and 'Packets' counters are shown for each rule.</p>	Disini kami menambah mark connection untuk menandai suatu traffic dan membuat mark packet agar dapat di limit melalui queue.																								
14	IP Routes	 <p>The screenshot shows the Mikrotik WinBox IP Routes window. The 'Routes' tab is selected. The list of routes is as follows:</p> <table border="1"> <thead> <tr> <th></th> <th>Dst. Address</th> <th>Gateway</th> <th>Distance</th> </tr> </thead> <tbody> <tr> <td>DAS</td> <td>0.0.0.0/0</td> <td>172.16.247.1 reachable 1-WAN</td> <td>1</td> </tr> <tr> <td>DC</td> <td>10.3.12.0/24</td> <td>4-Config unreachable</td> <td>255</td> </tr> <tr> <td>DAC</td> <td>10.247.12.0/25</td> <td>Hotspot reachable</td> <td>0</td> </tr> <tr> <td>DAC</td> <td>10.247.12.128...</td> <td>PPoE reachable</td> <td>0</td> </tr> <tr> <td>DAC</td> <td>172.16.247.0/...</td> <td>1-WAN reachable</td> <td>0</td> </tr> </tbody> </table>		Dst. Address	Gateway	Distance	DAS	0.0.0.0/0	172.16.247.1 reachable 1-WAN	1	DC	10.3.12.0/24	4-Config unreachable	255	DAC	10.247.12.0/25	Hotspot reachable	0	DAC	10.247.12.128...	PPoE reachable	0	DAC	172.16.247.0/...	1-WAN reachable	0	IP Routes/Routing Fungsi Routing pada Mikrotik adalah untuk mengatur jalur lalu lintas data antar jaringan, sehingga paket data dapat dikirim dari satu jaringan ke jaringan lain dengan efisien.
	Dst. Address	Gateway	Distance																								
DAS	0.0.0.0/0	172.16.247.1 reachable 1-WAN	1																								
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DAC	172.16.247.0/...	1-WAN reachable	0																								
15	Users	 <p>The screenshot shows the Mikrotik WinBox User List window. The 'Users' tab is selected. The list of users is as follows:</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Group</th> <th>Allowed Address</th> <th>Last Logged In</th> </tr> </thead> <tbody> <tr> <td>admin</td> <td>full</td> <td></td> <td>Sep/23/2024 10:43:48</td> </tr> <tr> <td>andika</td> <td>full</td> <td></td> <td>Sep/24/2024 14:03:01</td> </tr> </tbody> </table>	Name	Group	Allowed Address	Last Logged In	admin	full		Sep/23/2024 10:43:48	andika	full		Sep/24/2024 14:03:01	Bagian ini kami meng-edit, menambahkan dan menghapus user login Ketika masuk kedalam MikroTik.												
Name	Group	Allowed Address	Last Logged In																								
admin	full		Sep/23/2024 10:43:48																								
andika	full		Sep/24/2024 14:03:01																								

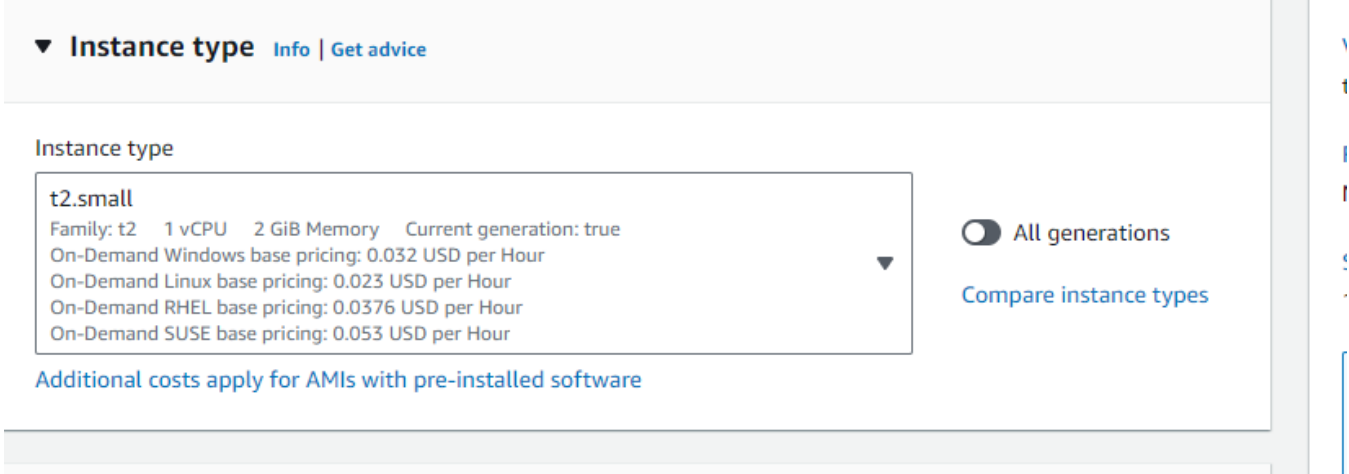
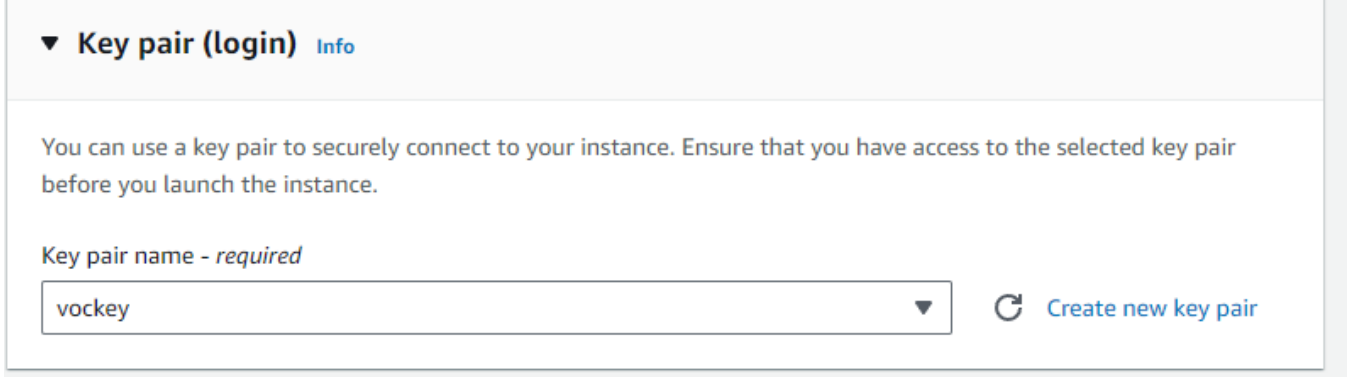
- Hasil Konfigurasi Security Group

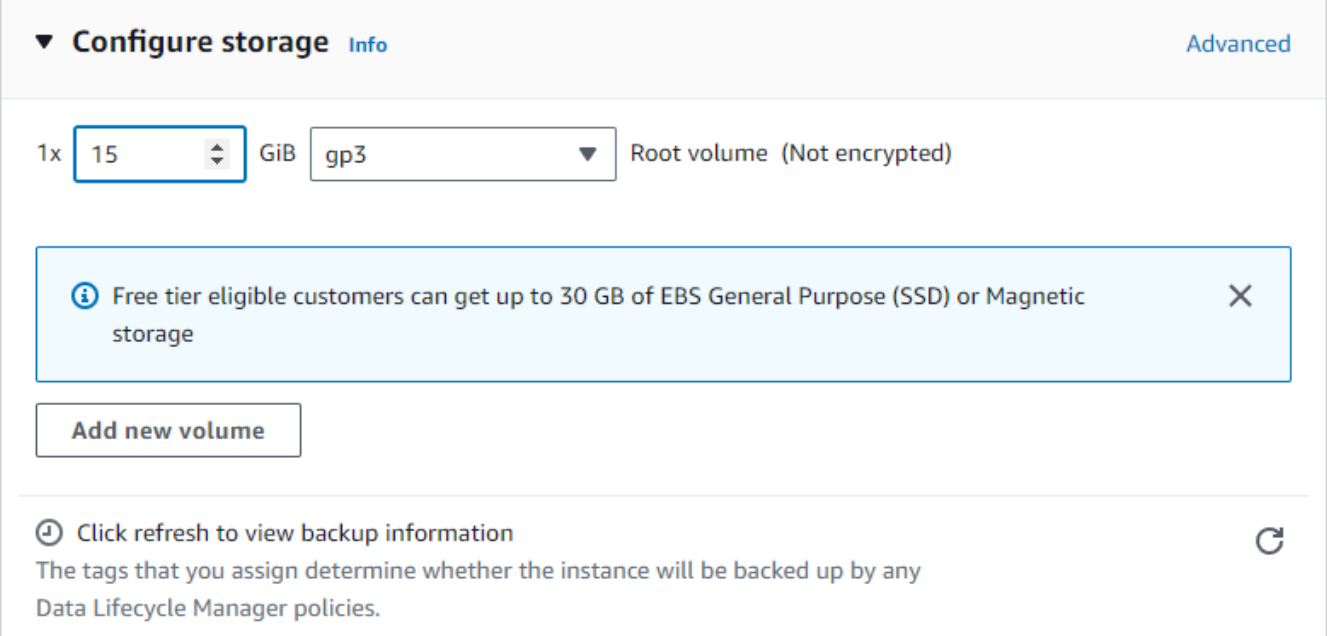

No	Konfigurasi	Screenshot Hasil Konfigurasi
1	Inbound rules SG-1	<div><div>Inbound rules (3)</div><div><div><div>Search</div></div><div><div><div><div><div><div></div></div><div>Name</div></div><div><div><div></div></div><div>Security group rule...</div></div><div><div><div></div></div><div>IP version</div></div><div><div><div></div></div><div>Type</div></div><div><div><div></div></div><div>Protocol</div></div><div><div><div></div></div><div>Port range</div></div><div><div><div></div></div><div>Source</div></div><div><div><div></div></div><div>Description</div></div></div><div><div><div></div></div><div>-</div></div><div><div><div></div></div><div>sgr-02f2696f8dade1382</div></div><div><div><div></div></div><div>IPv4</div></div><div><div><div></div></div><div>HTTPS</div></div><div><div><div></div></div><div>TCP</div></div><div><div><div></div></div><div>443</div></div><div><div><div></div></div><div>0.0.0.0/0</div></div><div><div><div></div></div><div>-</div></div></div><div><div><div></div></div><div>-</div></div><div><div><div></div></div><div>sgr-01a1a603ed79fc417</div></div><div><div><div></div></div><div>IPv4</div></div><div><div><div></div></div><div>SSH</div></div><div><div><div></div></div><div>TCP</div></div><div><div><div></div></div><div>22</div></div><div><div><div></div></div><div>0.0.0.0/0</div></div><div><div><div></div></div><div>-</div></div></div><div><div><div></div></div><div>-</div></div><div><div><div></div></div><div>sgr-01d0680d2c5a286...</div></div><div><div><div></div></div><div>IPv4</div></div><div><div><div></div></div><div>HTTP</div></div><div><div><div></div></div><div>TCP</div></div><div><div><div></div></div><div>80</div></div><div><div><div></div></div><div>0.0.0.0/0</div></div><div><div><div></div></div><div>-</div></div></div></div>

- Hasil Konfigurasi EC2 Instance

No	Konfigurasi	Screenshot Hasil Konfigurasi
1	Nama Instance	 <p>The screenshot shows the 'Name and tags' configuration for an AWS EC2 instance. It includes a section for 'Key' and 'Value' with a search bar and a dropdown menu for 'Resource types'. The key 'Name' is set to 'SG-WEB-FTTH-F' and the resource type is 'Instances'. There is also an 'Add new tag' button and a note: 'You can add up to 49 more tags.'</p>

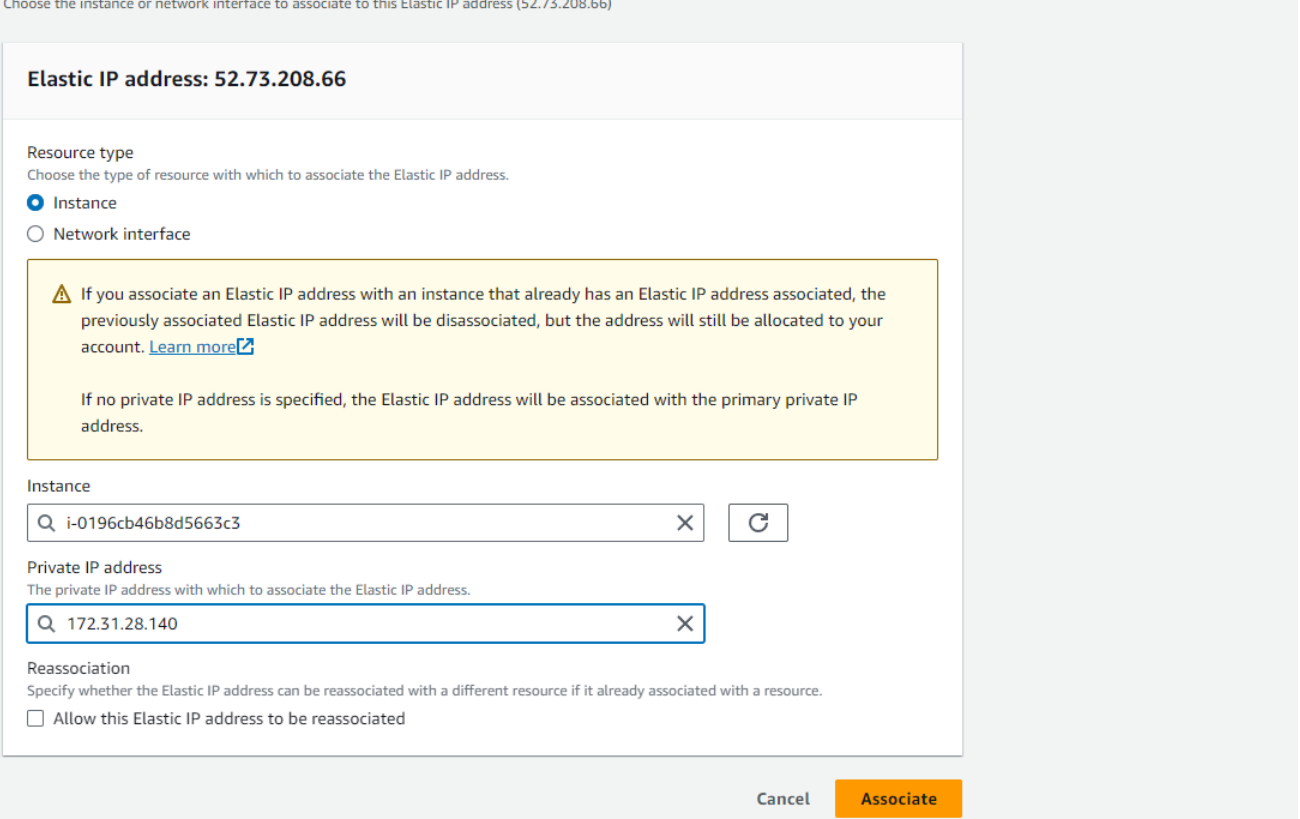
No	Konfigurasi	Screenshot Hasil Konfigurasi
2	OS / AMI	<p>below</p>  <p>Search our full catalog including 1000s of application and OS images</p> <p>Recents Quick Start</p> <p>Ubuntu Windows Red Hat SUSE Linux Debian</p> <p>ubuntu® Microsoft Red Hat SUSE debian</p> <p>Browse more AMIs</p> <p>Including AMIs from AWS, Marketplace and the Community</p> <p>Amazon Machine Image (AMI)</p> <p>Debian 12 (HVM), SSD Volume Type Free tier eligible</p> <p>ami-064519b8c76274859 (64-bit (x86)) / ami-0789039e34e739d67 (64-bit (Arm))</p> <p>Virtualization: hvm ENA enabled: true Root device type: ebs</p> <p>Description</p> <p>Debian 12 (HVM), EBS General Purpose (SSD) Volume Type. Community developed free GNU/Linux distribution.</p> <p>https://www.debian.org/</p> <p>Architecture AMI ID</p> <p>64-bit (x86) ami-064519b8c76274859 Verified provider</p>

No	Konfigurasi	Screenshot Hasil Konfigurasi
3	Instance type	
4	Key Pair	

No	Konfigurasi	Screenshot Hasil Konfigurasi
5	Storage	 <p>The screenshot shows the 'Configure storage' section in the AWS Management Console. It features a dropdown for '1x' set to '15', a 'GiB' unit, a 'gp3' volume type, and a 'Root volume (Not encrypted)' label. A blue informational banner states: 'Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage'. Below this is an 'Add new volume' button. At the bottom, there is a section for backup information with a 'Click refresh to view backup information' link and a refresh icon.</p>
6	Instance Details	 <p>The screenshot displays the 'Instance summary' for instance 'i-0196cb46b8d5663c3 (SG-WEB-FTTH-Rizkyf)'. The instance is in a 'Running' state. Key details include: Public IPv4 address '52.73.208.66', Private IPv4 address '172.31.28.140', Elastic IP address '52.73.208.66 (IP-Project-Rizkyf)', and Instance type 't2.small'. The VPC ID is 'vpc-0ef0147a9c8f2c053' and the Subnet ID is 'subnet-08d6f4a85180cd519'. The instance ARN is 'arn:aws:ec2:us-east-1:441117096228:instance/i-0196cb46b8d5663c3'. The bottom of the page shows navigation tabs for 'Details', 'Status and alarms', 'Monitoring', 'Security', 'Networking', 'Storage', and 'Tags'.</p>

● Hasil Konfigurasi Elastic IP Address

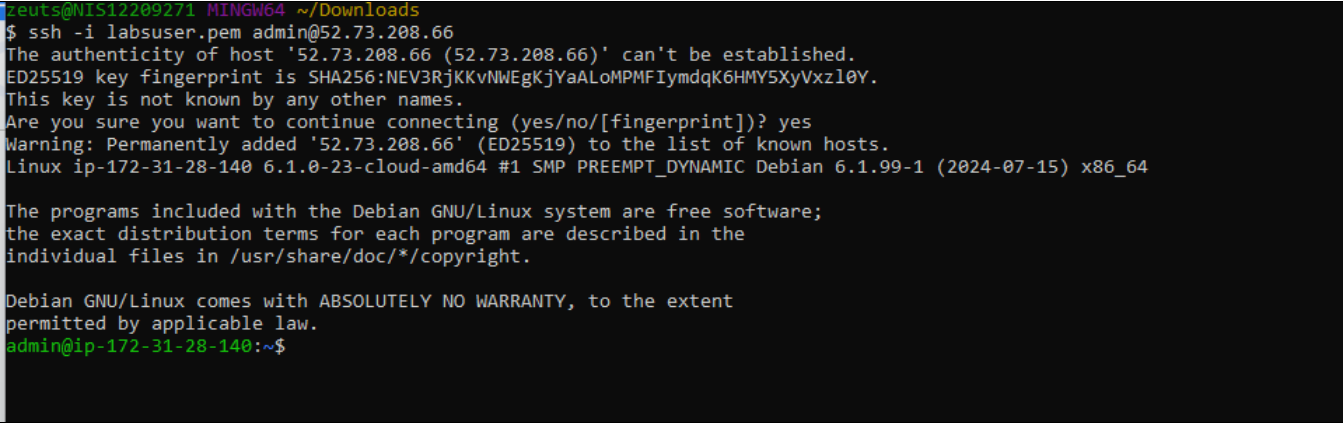

No	Konfigurasi	Screenshot Hasil Konfigurasi																								
1	Buat / Alokasikan Elastic IP	<div><div>Elastic IP addresses (2)</div><div><div><div>Find resources by attribute or tag</div></div><div><div>< 1 ></div></div></div><table><tr><th><input type="checkbox"/></th><th>Name</th><th>Allocated IPv4 addr...</th><th>Type</th><th>Allocation ID</th><th>Reverse DNS record</th><th>Associated instance ID</th><th>Private IP address</th></tr><tr><td><input type="checkbox"/></td><td>-</td><td>100.27.69.171</td><td>Public IP</td><td>eipalloc-01c2415094171b993</td><td>-</td><td>-</td><td>-</td></tr><tr><td><input type="checkbox"/></td><td>IP-Project-Rizkyf</td><td>52.73.208.66</td><td>Public IP</td><td>eipalloc-065e939c09d550c4d</td><td>-</td><td>i-0196cb46b8d5663c3</td><td>172.31.28.140</td></tr></table></div>	<input type="checkbox"/>	Name	Allocated IPv4 addr...	Type	Allocation ID	Reverse DNS record	Associated instance ID	Private IP address	<input type="checkbox"/>	-	100.27.69.171	Public IP	eipalloc-01c2415094171b993	-	-	-	<input type="checkbox"/>	IP-Project-Rizkyf	52.73.208.66	Public IP	eipalloc-065e939c09d550c4d	-	i-0196cb46b8d5663c3	172.31.28.140
<input type="checkbox"/>	Name	Allocated IPv4 addr...	Type	Allocation ID	Reverse DNS record	Associated instance ID	Private IP address																			
<input type="checkbox"/>	-	100.27.69.171	Public IP	eipalloc-01c2415094171b993	-	-	-																			
<input type="checkbox"/>	IP-Project-Rizkyf	52.73.208.66	Public IP	eipalloc-065e939c09d550c4d	-	i-0196cb46b8d5663c3	172.31.28.140																			

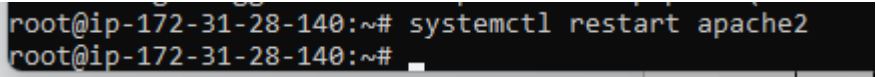
No	Konfigurasi	Screenshot Hasil Konfigurasi
2	Associate Elastic IP to EC2 Instance (Pasang Elastic IP ke EC2 Instance)	 <p>Choose the instance or network interface to associate to this Elastic IP address (52.73.208.66)</p> <p>Elastic IP address: 52.73.208.66</p> <p>Resource type Choose the type of resource with which to associate the Elastic IP address.</p> <p><input checked="" type="radio"/> Instance <input type="radio"/> Network interface</p> <p>Warning: If you associate an Elastic IP address with an instance that already has an Elastic IP address associated, the previously associated Elastic IP address will be disassociated, but the address will still be allocated to your account. Learn more</p> <p>If no private IP address is specified, the Elastic IP address will be associated with the primary private IP address.</p> <p>Instance i-0196cb46b8d5663c3</p> <p>Private IP address The private IP address with which to associate the Elastic IP address. 172.31.28.140</p> <p>Reassociation Specify whether the Elastic IP address can be reassociated with a different resource if it already associated with a resource. <input type="checkbox"/> Allow this Elastic IP address to be reassociated</p> <p>Cancel Associate</p>

- Hasil Konfigurasi DNS Lokal di MikroTik

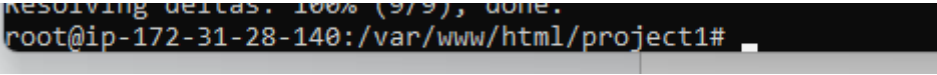
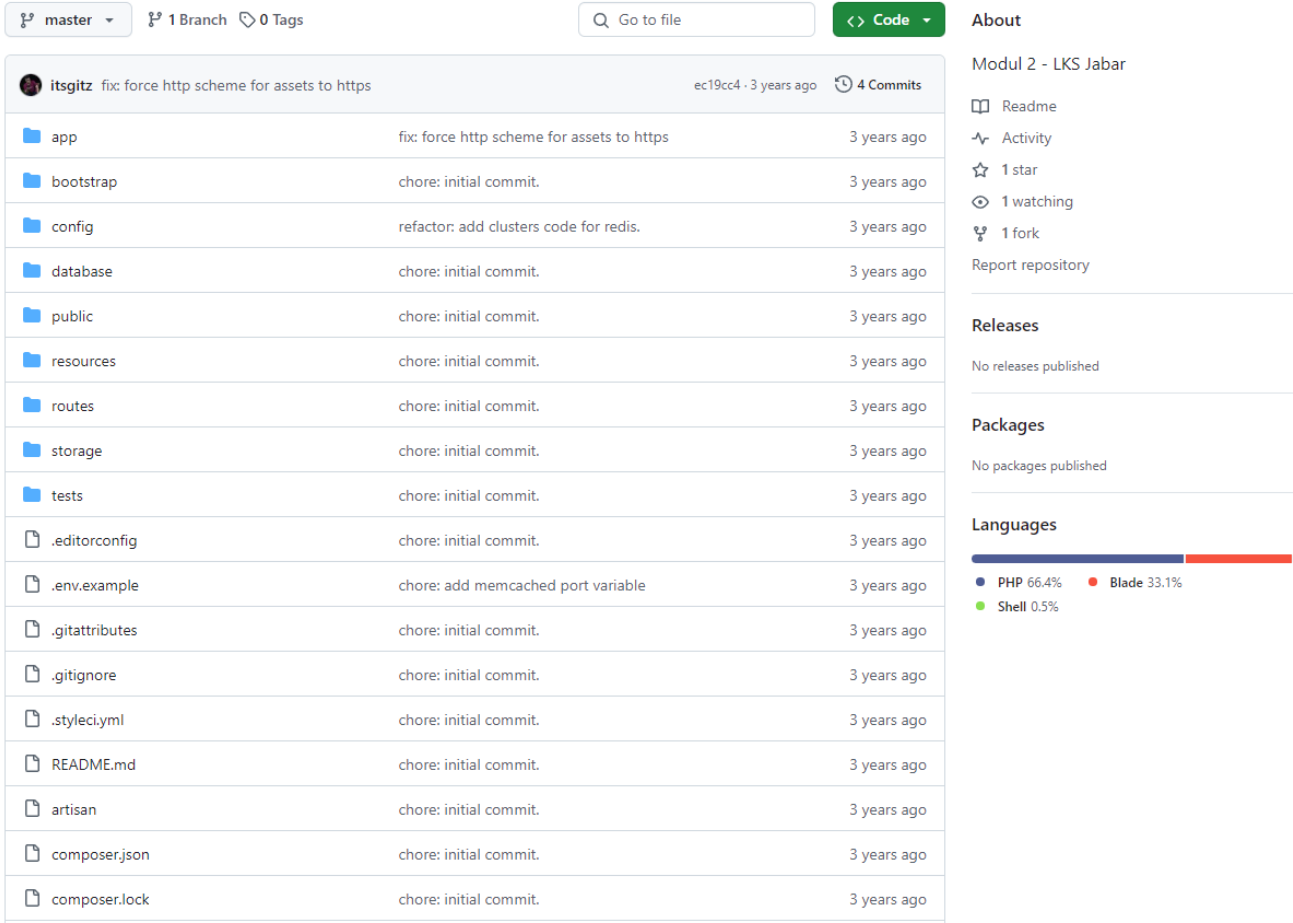
No	Konfigurasi	Screenshot Hasil Konfigurasi																					
1	Tampilan tabel DNS Lokal di router MikroTik	<div><div>DNS Settings</div><div>DNS Static</div><div><div><div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div><div></div></div></div></div><table><tr><th>#</th><th>Name</th><th>Regexp</th><th>Type</th><th>TTL (s)</th><th>Address</th><th>IP</th></tr><tr><td>0</td><td>ftthkelompok6....</td><td></td><td>A</td><td>1d 00:00:00</td><td>52.73.208.66</td><td></td></tr><tr><td>1 D</td><td>project9146.net</td><td></td><td>A</td><td>00:05:00</td><td>10.247.12.1</td><td></td></tr></table></div>	#	Name	Regexp	Type	TTL (s)	Address	IP	0	ftthkelompok6....		A	1d 00:00:00	52.73.208.66		1 D	project9146.net		A	00:05:00	10.247.12.1	
#	Name	Regexp	Type	TTL (s)	Address	IP																	
0	ftthkelompok6....		A	1d 00:00:00	52.73.208.66																		
1 D	project9146.net		A	00:05:00	10.247.12.1																		


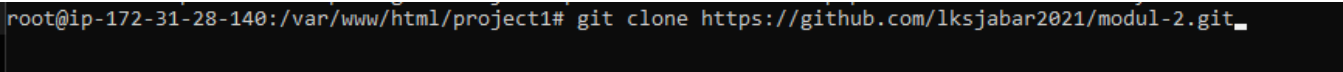
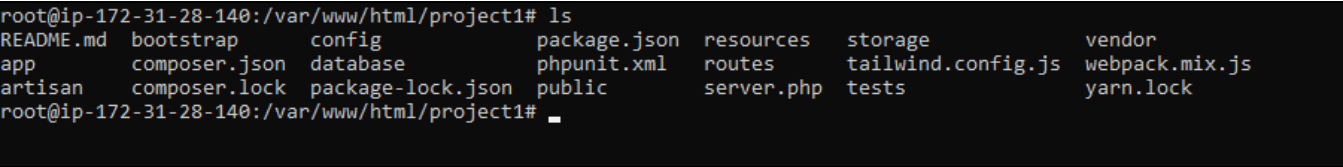
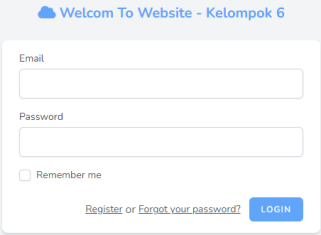
- Hasil Konfigurasi Web Server (Apache2 atau NGINX) dan Clone Sources-Code

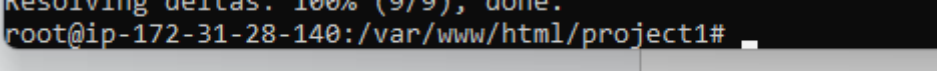
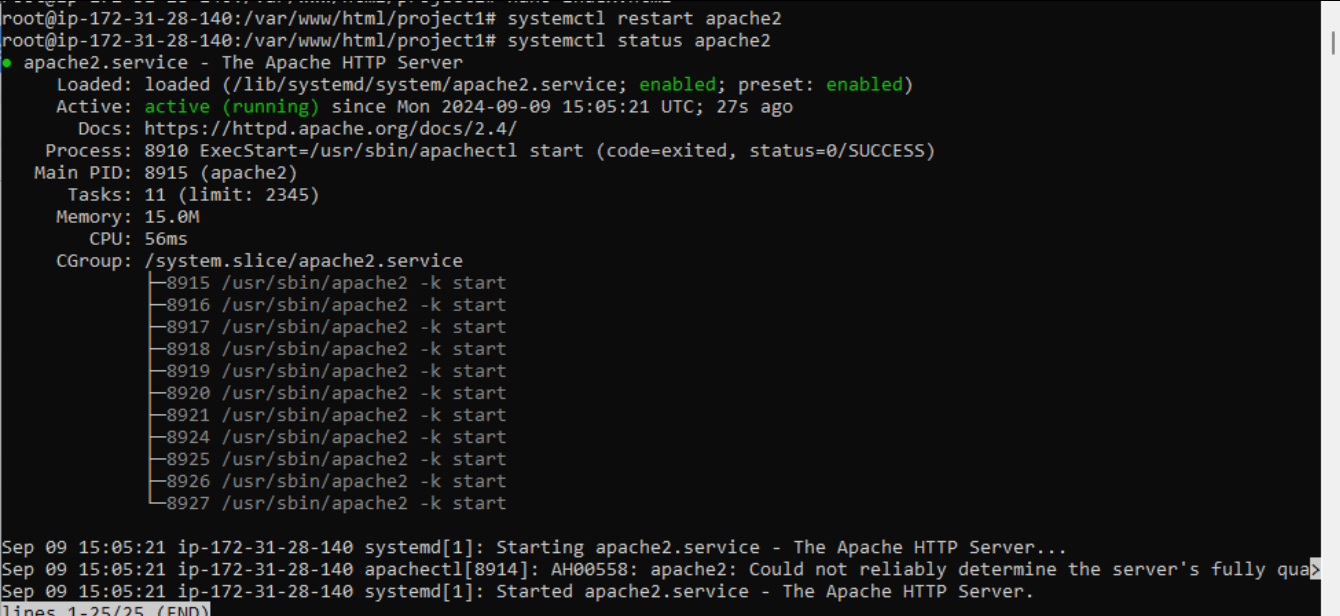
No	Konfigurasi	Screenshot Hasil Konfigurasi
1	Remote server menggunakan SSH Client	 <p>The screenshot shows a terminal window with the following output:</p> <pre> reuts@NIS12209271 MINGW64 ~/Downloads \$ ssh -i labsuser.pem admin@52.73.208.66 The authenticity of host '52.73.208.66 (52.73.208.66)' can't be established. ED25519 key fingerprint is SHA256:NEV3RjKKvNWEgKjYaALoMPMFImdqK6HMY5XyVxz10Y. This key is not known by any other names. Are you sure you want to continue connecting (yes/no/[fingerprint])? yes Warning: Permanently added '52.73.208.66' (ED25519) to the list of known hosts. Linux ip-172-31-28-140 6.1.0-23-cloud-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.99-1 (2024-07-15) x86_64 The programs included with the Debian GNU/Linux system are free software; the exact distribution terms for each program are described in the individual files in /usr/share/doc/*/copyright. Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent permitted by applicable law. admin@ip-172-31-28-140:~\$ </pre>
2	Install services apache2, php, library php, unzip dan git	 <p>The screenshot shows a terminal window with the following command being executed:</p> <pre> root@ip-172-31-28-140:~# apt install apache2 php php8.2 php8.2-zip php8.2-cli git mariadb-client mariadb-server </pre>

No	Konfigurasi	Screenshot Hasil Konfigurasi
3	Restart service web server	 <pre> root@ip-172-31-28-140:~# systemctl restart apache2 root@ip-172-31-28-140:~# </pre>

- Hasil Konfigurasi Clone Sourcescode Web Statis dari Github

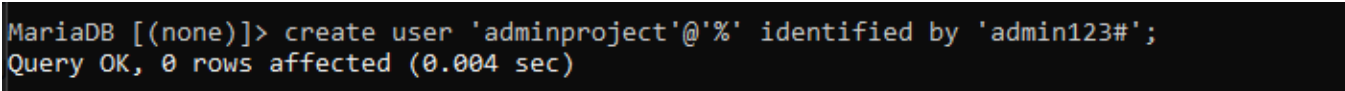
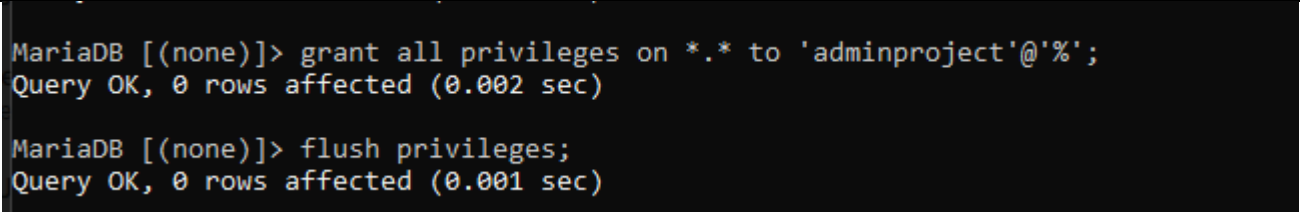
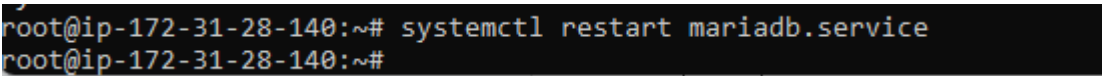
No	Konfigurasi	Screenshot Hasil Konfigurasi
1	Buat direktori baru /var/www/html/project1	 <pre> resolving deltas: 100% (9/9), done. root@ip-172-31-28-140:/var/www/html/project1# </pre>
2	1 link sourcecode / screenshot tampilan repository github ** Sertakan 3 screenshot	 <p>The screenshot shows a GitHub repository page for 'itsgitz'. The repository has 1 branch (master) and 0 tags. It contains a file list with folders like 'app', 'bootstrap', 'config', 'database', 'public', 'resources', 'routes', 'storage', 'tests' and files like '.editorconfig', '.env.example', '.gitattributes', '.gitignore', '.styleci.yml', 'README.md', 'artisan', 'composer.json', and 'composer.lock'. The repository statistics show 4 commits, 1 star, 1 watching, and 1 fork. The languages section shows PHP at 66.4%, Blade at 33.1%, and Shell at 0.5%.</p>

No	Konfigurasi	Screenshot Hasil Konfigurasi
1	Buat direktori baru /var/www/html/project1	 A terminal window showing the command 'mkdir /var/www/html/project1' being executed. The prompt is 'root@ip-172-31-28-140:/var/www/html/project1#'.
3	Clone source code ** Sertakan 3 screenshot	 A terminal window showing the command 'git clone https://github.com/lksjabar2021/modul-2.git' being executed. The prompt is 'root@ip-172-31-28-140:/var/www/html/project1#'.
4	Cek isi direktori project1 ** Sertakan 1 screenshot	 A terminal window showing the command 'ls' being executed. The output lists the contents of the directory: README.md, bootstrap, config, package.json, resources, storage, vendor, app, composer.json, database, phpunit.xml, routes, tailwind.config.js, webpack.mix.js, artisan, composer.lock, package-lock.json, public, server.php, tests, yarn.lock. The prompt is 'root@ip-172-31-28-140:/var/www/html/project1#'.
5	Edit tampilan website : project1	 A screenshot of a web application's login page. The page has a light blue background and a white login form in the center. The form has fields for 'Email' and 'Password', a 'Remember me' checkbox, and a 'LOGIN' button. Above the form, there is a header 'Welcom To Website - Kelompok 6'. Below the form, there is a link 'Register or Forget your password?'.


No	Konfigurasi	Screenshot Hasil Konfigurasi
1	Buat direktori baru /var/www/html/project1	 <pre> resolving deltas: 100% (9/9), done. root@ip-172-31-28-140:/var/www/html/project1# </pre>
6	Restart dan cek status service web server	 <pre> root@ip-172-31-28-140:/var/www/html/project1# systemctl restart apache2 root@ip-172-31-28-140:/var/www/html/project1# systemctl status apache2 ● apache2.service - The Apache HTTP Server Loaded: loaded (/lib/systemd/system/apache2.service; enabled; preset: enabled) Active: active (running) since Mon 2024-09-09 15:05:21 UTC; 27s ago Docs: https://httpd.apache.org/docs/2.4/ Process: 8910 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS) Main PID: 8915 (apache2) Tasks: 11 (limit: 2345) Memory: 15.0M CPU: 56ms CGroup: /system.slice/apache2.service └─8915 /usr/sbin/apache2 -k start └─8916 /usr/sbin/apache2 -k start └─8917 /usr/sbin/apache2 -k start └─8918 /usr/sbin/apache2 -k start └─8919 /usr/sbin/apache2 -k start └─8920 /usr/sbin/apache2 -k start └─8921 /usr/sbin/apache2 -k start └─8924 /usr/sbin/apache2 -k start └─8925 /usr/sbin/apache2 -k start └─8926 /usr/sbin/apache2 -k start └─8927 /usr/sbin/apache2 -k start Sep 09 15:05:21 ip-172-31-28-140 systemd[1]: Starting apache2.service - The Apache HTTP Server... Sep 09 15:05:21 ip-172-31-28-140 apachectl[8914]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name, please see the /etc/httpd/conf/httpd.conf file for details. Sep 09 15:05:21 ip-172-31-28-140 systemd[1]: Started apache2.service - The Apache HTTP Server. lines 1-25/25 (END) </pre>

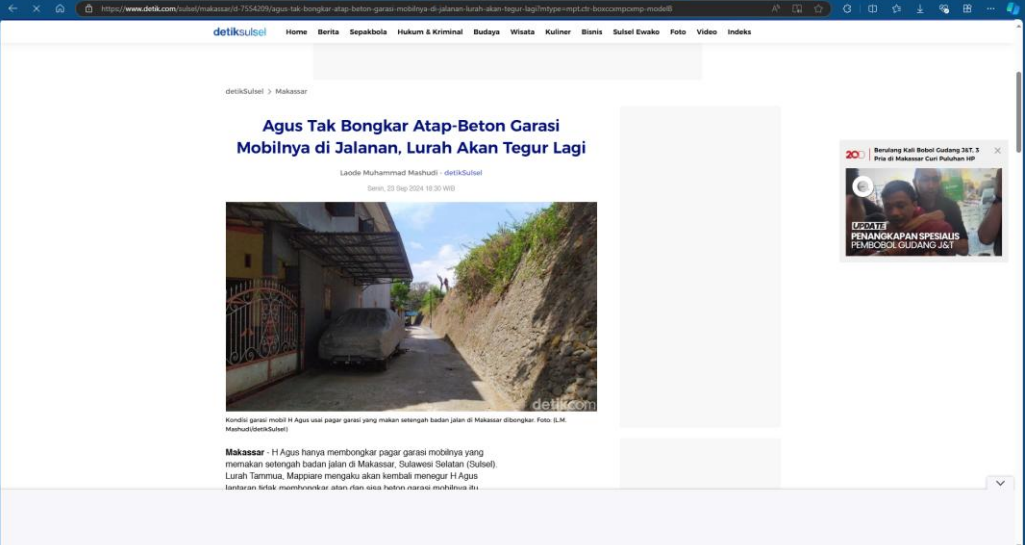
- Hasil Konfigurasi DBMS MariaDB

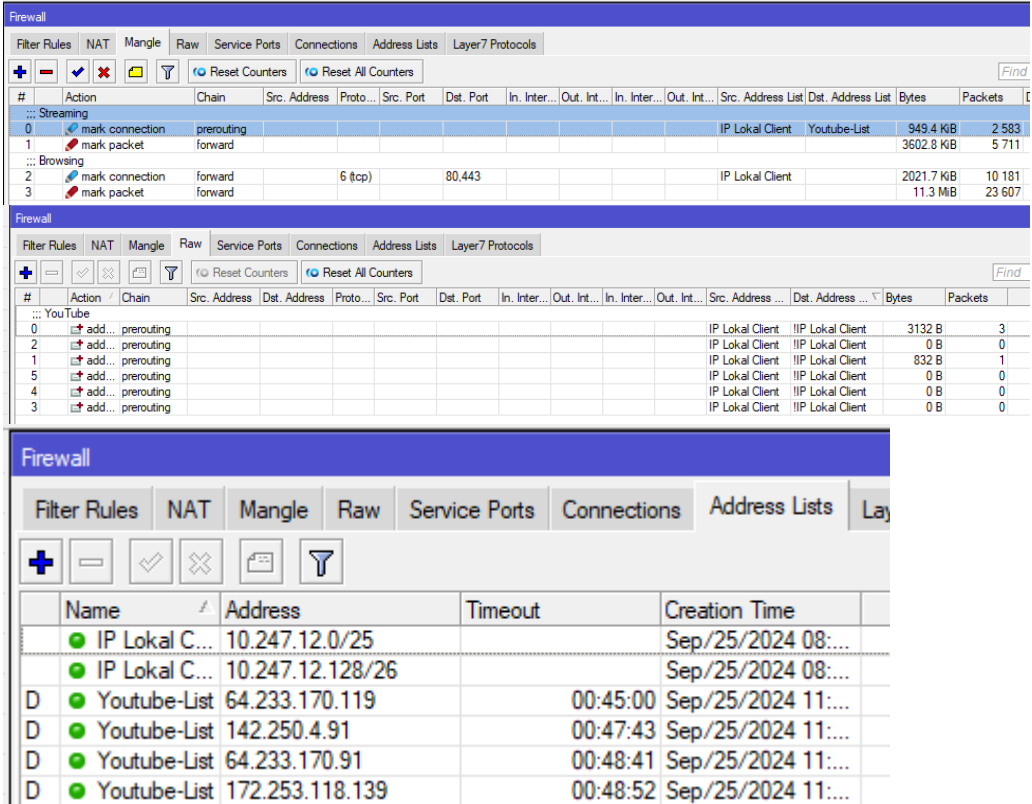
No	Konfigurasi	Screenshot Hasil Konfigurasi
1	Install mariadb-server	<pre> root@ip-172-31-28-140:~# apt install mariadb-server Reading package lists... Done Building dependency tree... Done Reading state information... Done mariadb-server is already the newest version (1:10.11.6-0+deb12u1). 0 upgraded, 0 newly installed, 0 to remove and 34 not upgraded. root@ip-172-31-28-140:~# </pre>
2	Konfigurasi instalasi aman mysql (mysql secure installation)	<pre> Disallow root login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment. Remove test database and access to it? [Y/n] y - Dropping test database... ... Success! - Removing privileges on test database... ... Success! Reloading the privilege tables will ensure that all changes made so far will take effect immediately. Reload privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB! root@ip-172-31-28-140:~# </pre>
3	Membuat database baru	<pre> MariaDB [(none)]> create database projectrizky; Query OK, 1 row affected (0.000 sec) </pre>

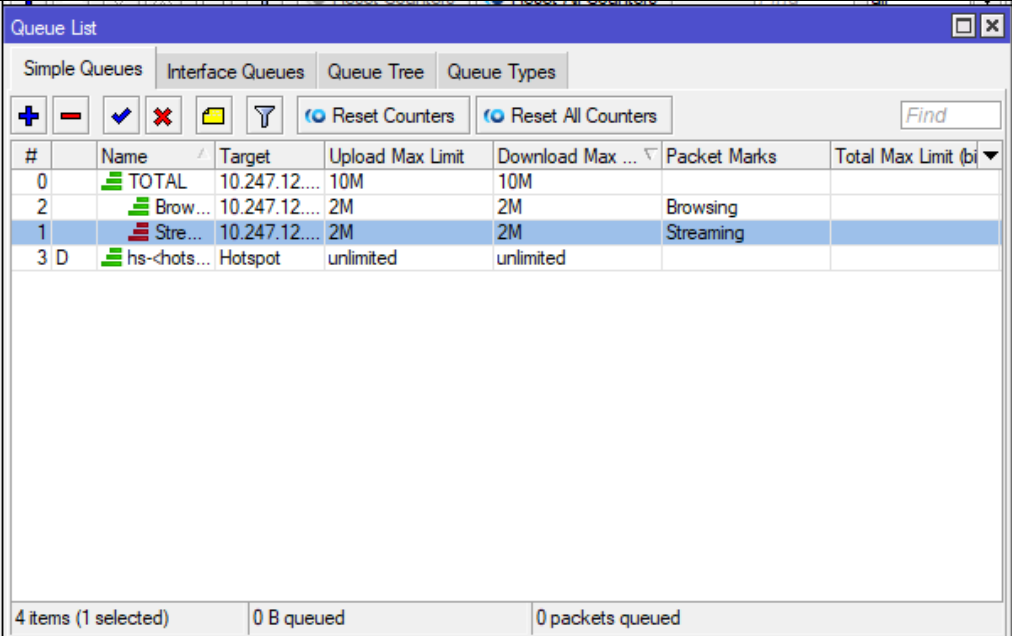
No	Konfigurasi	Screenshot Hasil Konfigurasi
4	Membuat user database baru	 <pre>MariaDB [(none)]> create user 'adminproject'@'%' identified by 'admin123#'; Query OK, 0 rows affected (0.004 sec)</pre>
5	Konfigurasi privileges untuk user baru	 <pre>MariaDB [(none)]> grant all privileges on *.* to 'adminproject'@'%'; Query OK, 0 rows affected (0.002 sec) MariaDB [(none)]> flush privileges; Query OK, 0 rows affected (0.001 sec)</pre>
6	Restart dan cek status service mysql	 <pre>root@ip-172-31-28-140:~# systemctl restart mariadb.service root@ip-172-31-28-140:~#</pre>

B. HASIL UJI KONFIGURASI

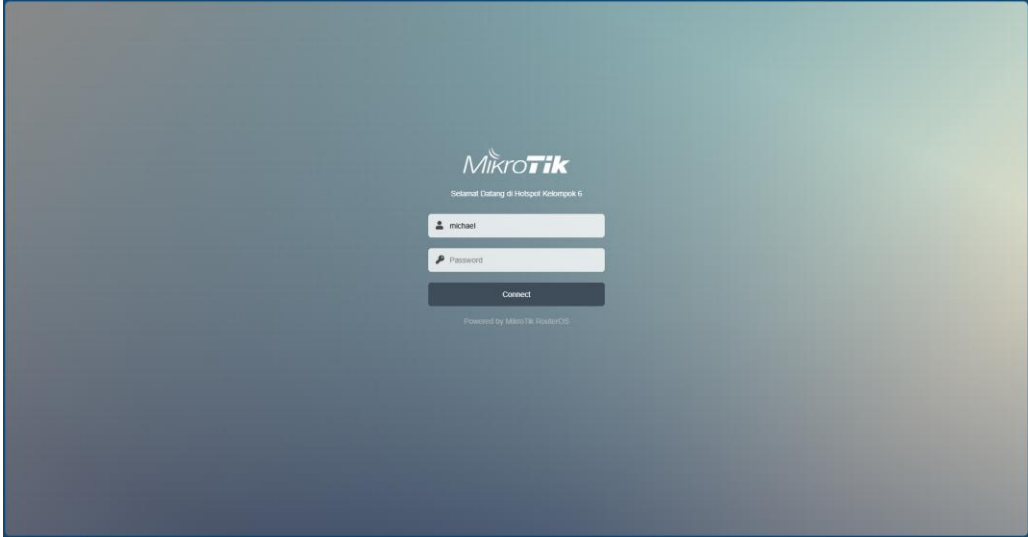
No	Pengecekan	Hasil/Dokumentasi	Keterangan
Uji Coba Client jaringan PPPoE			
1.	IP Address PPPoE		PPoE server melalui VLAN telah berhasil tembus ke ONT tanpa gangguan dari Ormas.
2.	Browsing Internet		Internet lancar jaya!!!

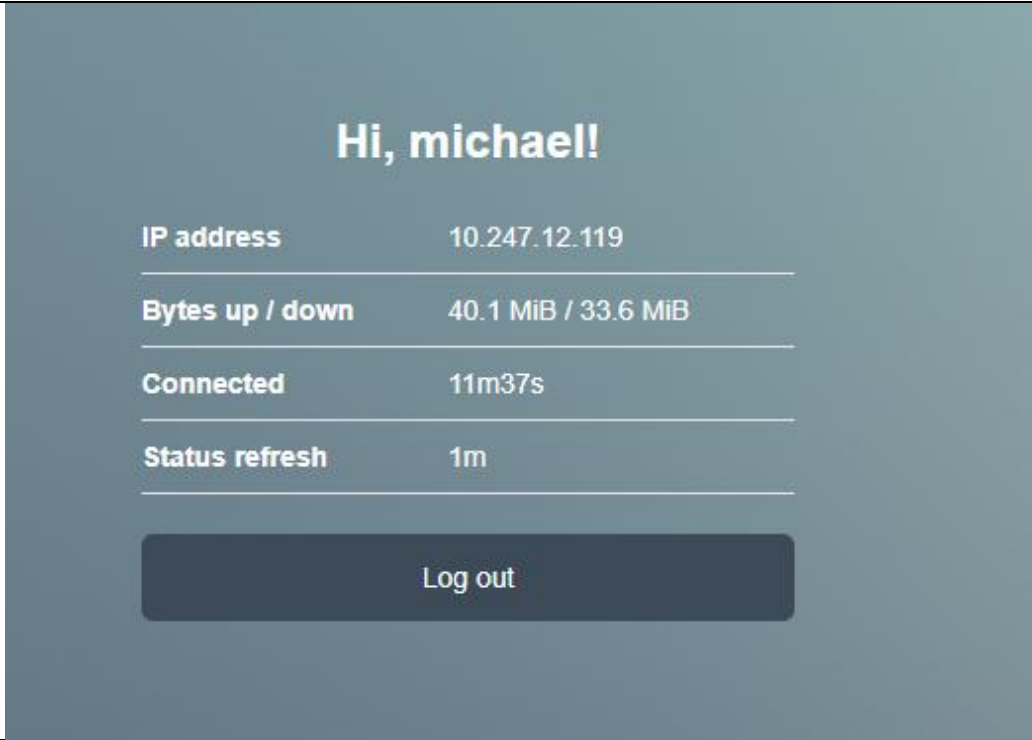
No	Pengecekan	Hasil/Dokumentasi	Keterangan
			
3.	Ping ke IP Gateway Router	<pre> C:\Users\user>ping 10.247.12.129 Pinging 10.247.12.129 with 32 bytes of data: Reply from 10.247.12.129: bytes=32 time=2ms TTL=64 Reply from 10.247.12.129: bytes=32 time=3ms TTL=64 Reply from 10.247.12.129: bytes=32 time=3ms TTL=64 Reply from 10.247.12.129: bytes=32 time=3ms TTL=64 Ping statistics for 10.247.12.129: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 2ms, Maximum = 3ms, Average = 2ms C:\Users\user>_ </pre>	Alhamdulillah tembus tanpa hambatan.

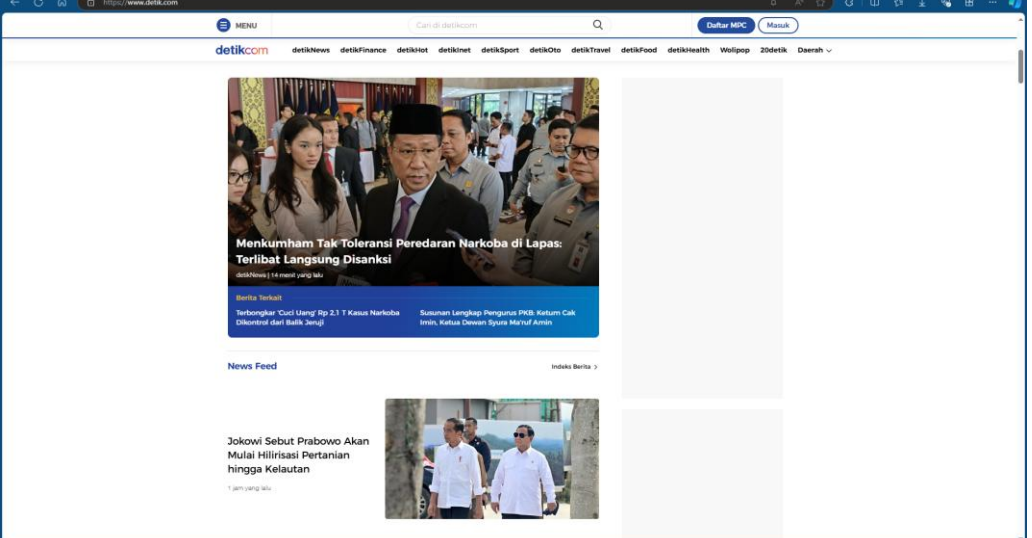
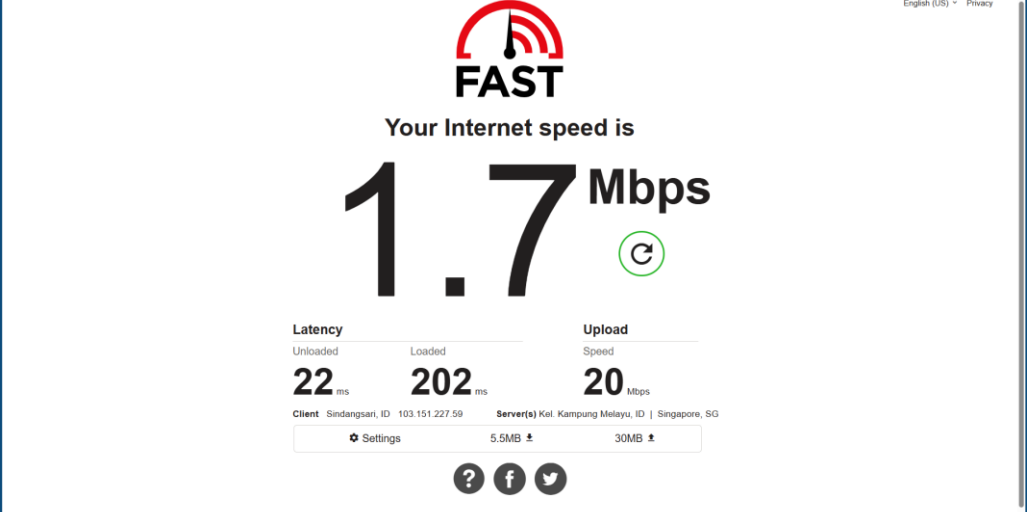
No	Pengecekan	Hasil/Dokumentasi	Keterangan
4	Hasil Pemisahan Traffic (Sertakan lebih dari 1 ss)	 <p>The screenshots show the Mikrotik WinBox Firewall configuration and traffic statistics. The first screenshot shows the Firewall tab with the Filter Rules tab selected, displaying a list of rules for Streaming and Browsing. The second screenshot shows the Firewall tab with the NAT tab selected, displaying a list of NAT rules for YouTube and IP Lokal Client. The third screenshot shows the Firewall tab with the Address Lists tab selected, displaying a list of address lists for IP Lokal Client and Youtube-List.</p>	Disini bisa dilihat hasil dari pemisahan traffic sudah berhasil/sukses semua. Untuk limitasi streaming dan browsing seimbang.

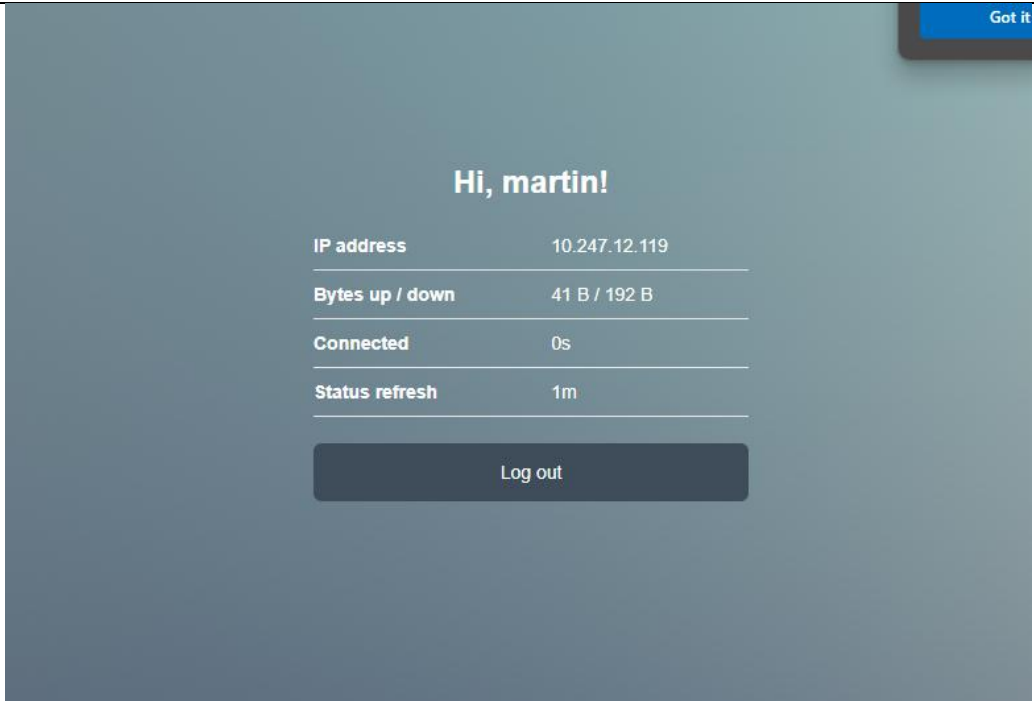
No	Pengecekan	Hasil/Dokumentasi	Keterangan
			

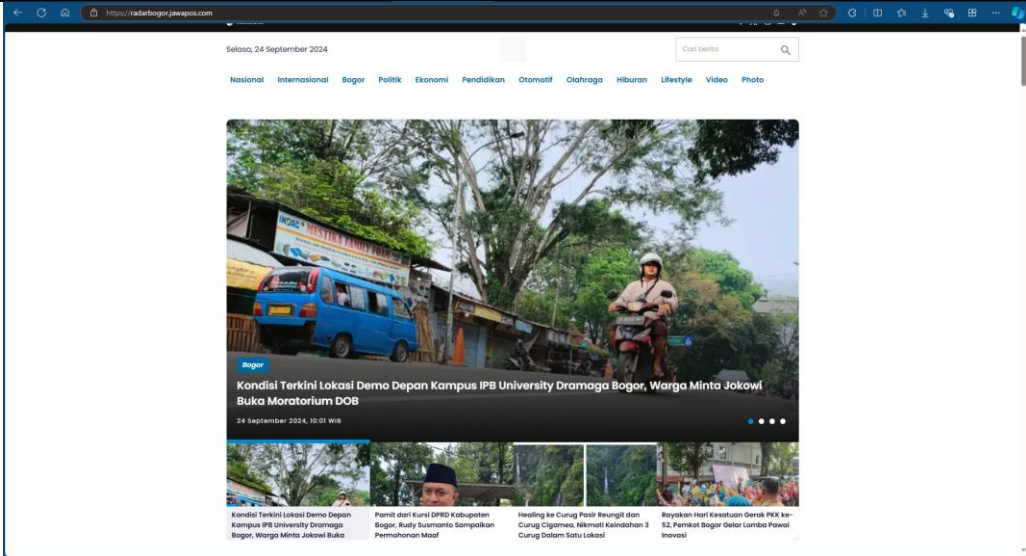
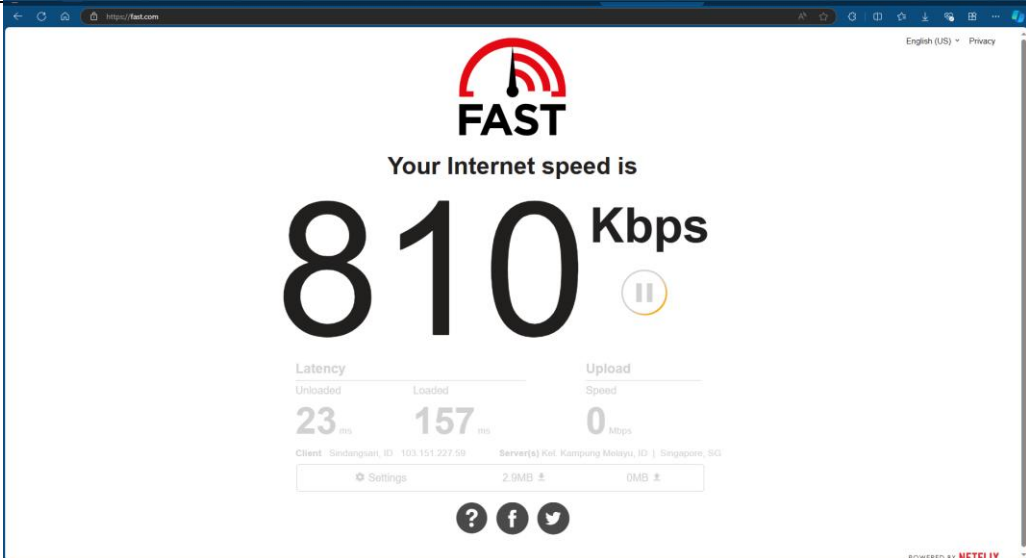
No	Pengecekan	Hasil/Dokumentasi	Keterangan
Uji Coba Client Hotspot			
1.	IP Address Client Hotspot	<pre> Wireless LAN adapter Wi-Fi: Connection-specific DNS Suffix . : Link-local IPv6 Address : fe80::3a72:8025:f0d0:24db%8 IPv4 Address. : 10.247.12.119 Subnet Mask : 255.255.255.128 Default Gateway : 10.247.12.1 </pre>	IP dari router sudah tembus ke client yang terhubung melalui ONT.

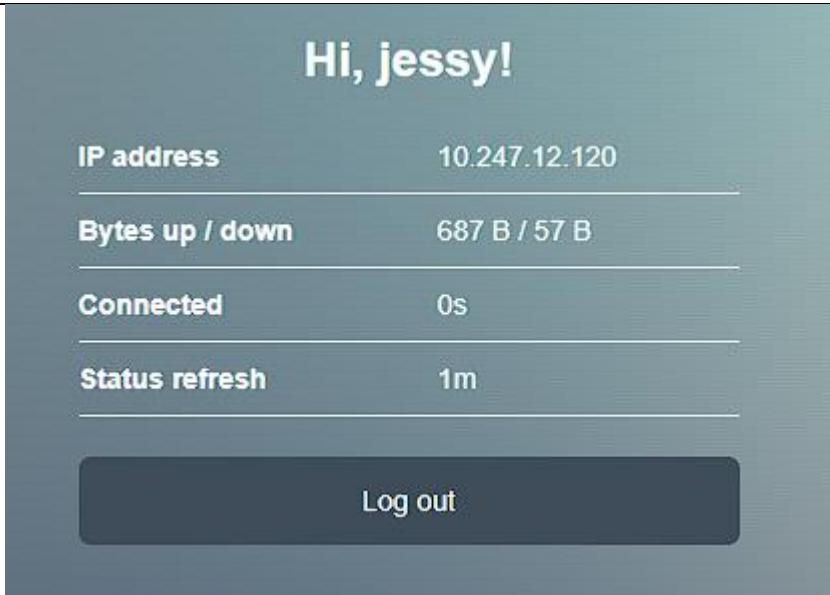
No	Pengecekan	Hasil/Dokumentasi	Keterangan
2.	Tampilan Login Hotspot	 <p>The screenshot shows a web browser window displaying the MikroTik Hotspot login interface. The page has a blue gradient background. At the top, the MikroTik logo is visible, followed by the text 'Selamat Datang di Hotspot Komplek 6'. Below this, there are two input fields: one for the username 'michael' and another for the password, labeled 'Password'. A 'Connect' button is positioned below the password field. At the bottom, it says 'Powered by MikroTik RouterOS'. The browser's address bar shows a URL starting with 'project9146.net'.</p>	Tampilan login nembus Gan

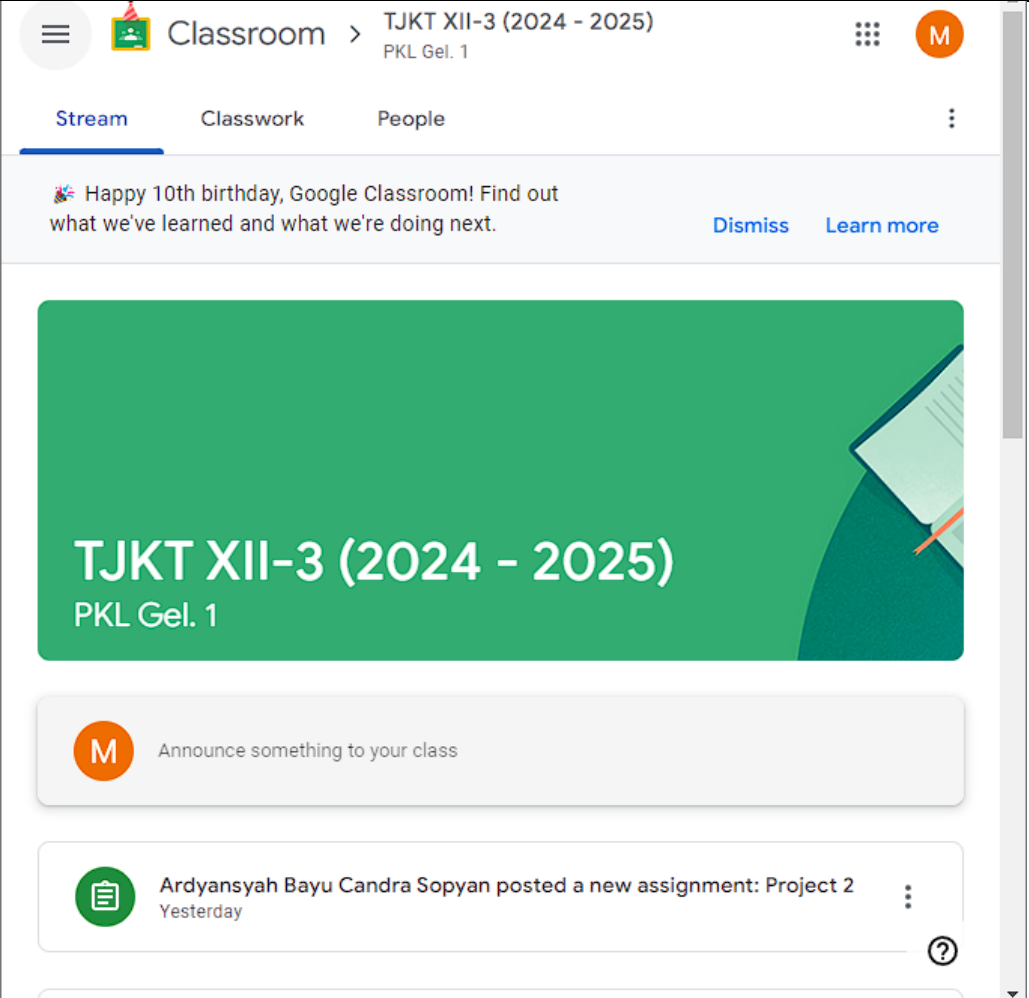
No	Pengecekan	Hasil/Dokumentasi	Keterangan
3.	Login Hotspot Direktur	 <p>The screenshot shows a login interface with a dark blue background. At the top, it says 'Hi, michael!'. Below this, there are four rows of status information, each separated by a horizontal line:</p> <ul style="list-style-type: none"> IP address: 10.247.12.119 Bytes up / down: 40.1 MiB / 33.6 MiB Connected: 11m37s Status refresh: 1m <p>At the bottom, there is a dark blue button labeled 'Log out'.</p>	Berhasil
4.	Browsing User Direktur		berhasil

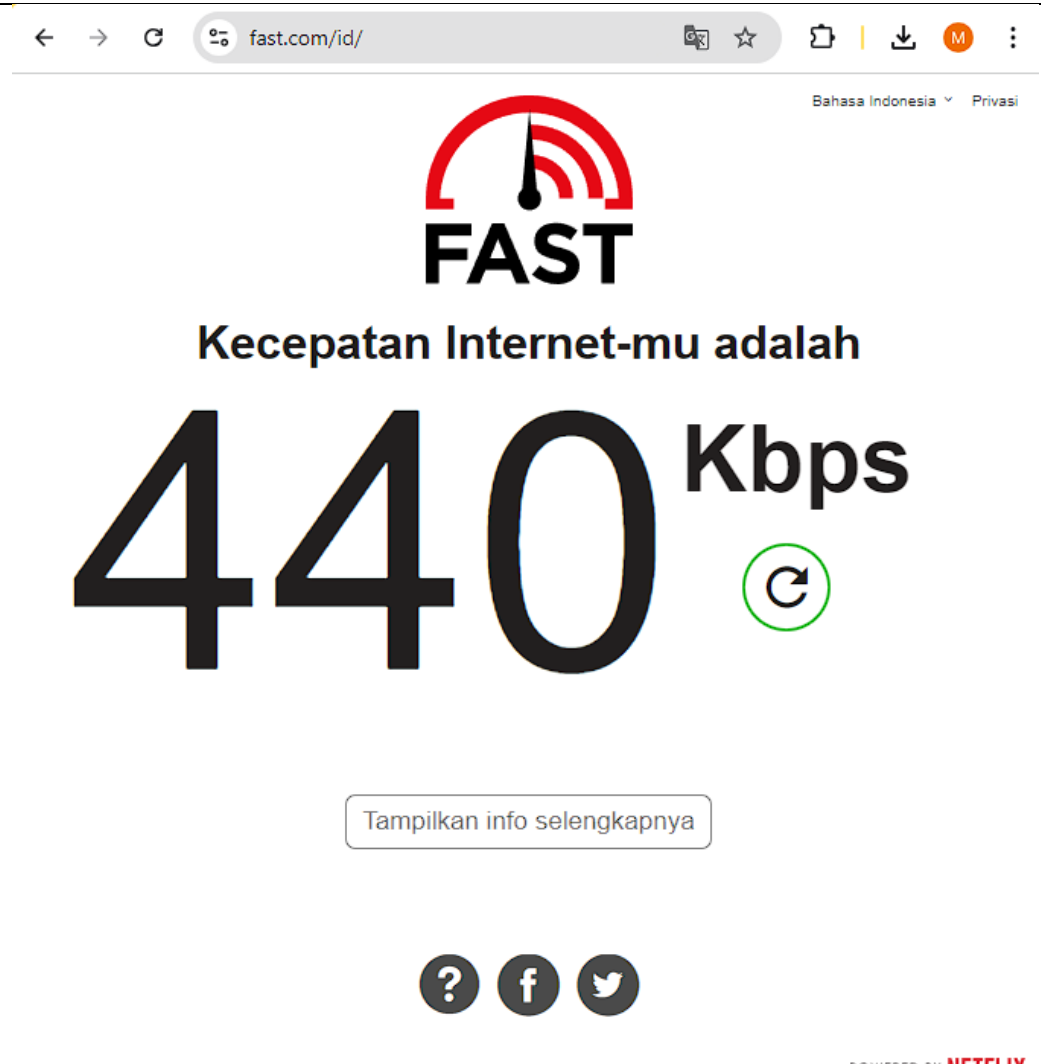
No	Pengecekan	Hasil/Dokumentasi	Keterangan
		 <p>The screenshot shows the detik.com website. The main headline is "Menkumham Tak Toleransi Peredaran Narkoba di Lapas: Terlibat Langsung Disanksi". Below it, there's a sub-headline "Berita Terkait" and a list of related articles. Another article visible is "Jokowi Sebut Prabowo Akan Mulai Hilirisasi Pertanian hingga Kelautan".</p>	
5.	Speedtest User Direktur	 <p>The screenshot shows a Speedtest result. The main result is "Your Internet speed is 1.7 Mbps". Below this, there are details for Latency (Unloaded: 22 ms, Loaded: 202 ms) and Upload Speed (20 Mbps). The client is identified as "Sindangsari, ID" and the server is "Kel. Kampung Melayu, ID Singapore, SG".</p>	ncieeee

No	Pengecekan	Hasil/Dokumentasi	Keterangan
6.	Login Hotspot Manajer	 <p>The screenshot shows a web interface for a Hotspot Manager. At the top right, there is a blue button labeled 'Got it'. The main content area has a dark blue background. In the center, it says 'Hi, martin!'. Below this, there are four rows of status information, each with a label and a value, separated by a horizontal line:</p> <ul style="list-style-type: none"> IP address: 10.247.12.119 Bytes up / down: 41 B / 192 B Connected: 0s Status refresh: 1m <p>At the bottom, there is a dark blue button labeled 'Log out'.</p>	berhasil

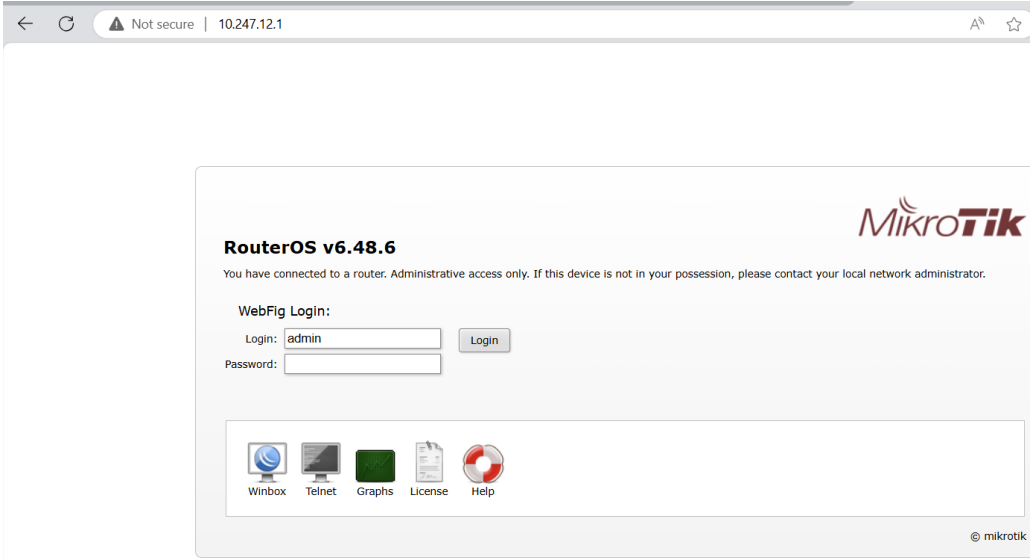
No	Pengecekan	Hasil/Dokumentasi	Keterangan
7.	Browsing User Manajer		berhasil
8.	Speedtest User Manajer		mayanlahh

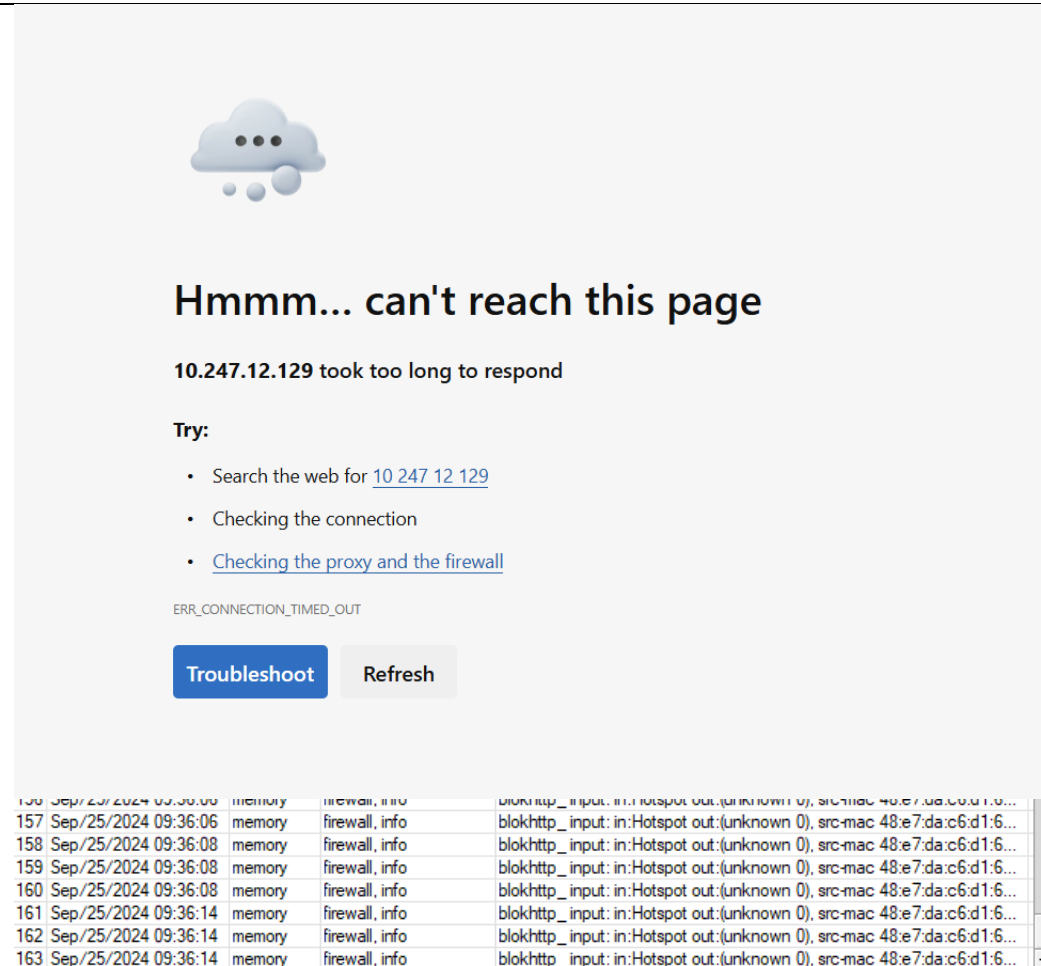
No	Pengecekan	Hasil/Dokumentasi	Keterangan
9.	Login Hotspot Guest	 <p>The screenshot displays a guest login page with a dark teal background. At the top, it says 'Hi, jessy!'. Below this, there are four status lines, each with a label on the left and a value on the right, separated by a horizontal line: 'IP address' with '10.247.12.120', 'Bytes up / down' with '687 B / 57 B', 'Connected' with '0s', and 'Status refresh' with '1m'. At the bottom, there is a dark blue button labeled 'Log out'.</p>	berhasil

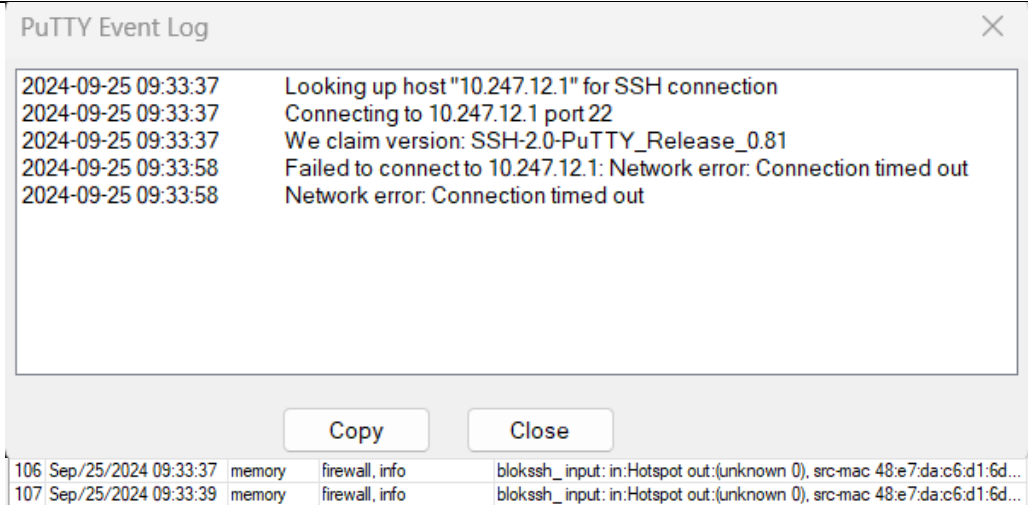
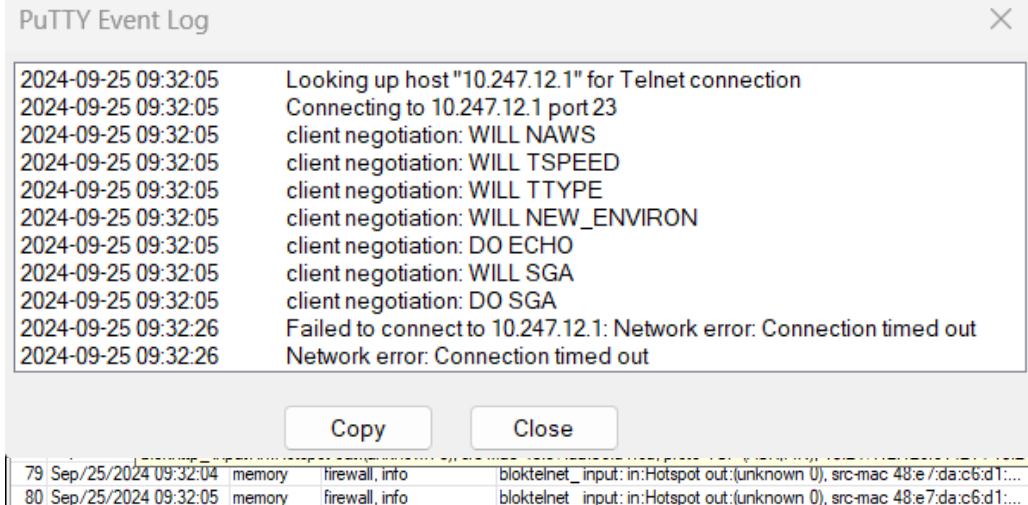
No	Pengecekan	Hasil/Dokumentasi	Keterangan
10.	Browsing User Guest	 <p>The screenshot displays the Google Classroom interface for a class named 'TJKT XII-3 (2024 - 2025)' with the section 'PKL Gel. 1'. The user is logged in as a guest. The interface features a green header with the class name and a profile icon 'M'. Below the header, there are tabs for 'Stream', 'Classwork', and 'People'. A notification banner celebrates Google Classroom's 10th birthday. The main content area shows a large green banner with the class name and section. Below this, there is a section for announcements, including a post by 'Ardyansyah Bayu Candra Sopyan' about a new assignment titled 'Project 2' posted yesterday.</p>	berhasil

No	Pengecekan	Hasil/Dokumentasi	Keterangan
11.	Speedtest User Guest	 <p>The screenshot shows the FAST speed test interface. At the top, the browser address bar displays 'fast.com/id/'. Below the FAST logo, the text 'Kecepatan Internet-mu adalah' (Your Internet speed is) is followed by a large '440 Kbps' result. A green circular refresh icon is next to the result. Below the result is a button labeled 'Tampilkan info selengkapnya' (Show more info). At the bottom, there are icons for help, Facebook, and Twitter. The footer text 'POWERED BY NETELIX' is visible at the bottom right.</p>	oke sip

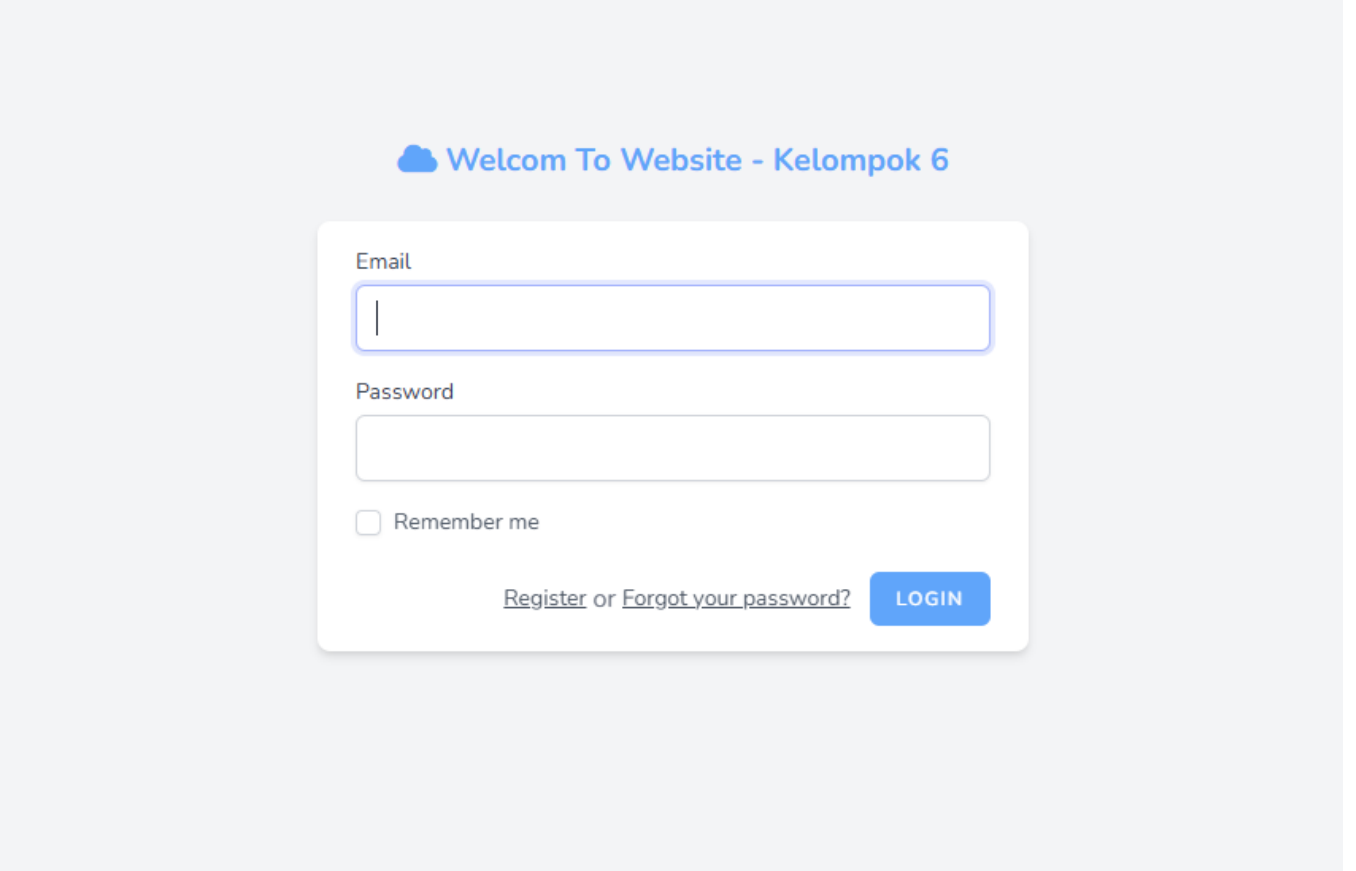
No	Pengecekan	Hasil/Dokumentasi	Keterangan
12.	Ping ke IP Gateway Router	<pre> C:\Users\user>ping 10.247.12.1 Pinging 10.247.12.1 with 32 bytes of data: Reply from 10.247.12.1: bytes=32 time=1ms TTL=64 Reply from 10.247.12.1: bytes=32 time=2ms TTL=64 Reply from 10.247.12.1: bytes=32 time=132ms TTL=64 Reply from 10.247.12.1: bytes=32 time=4ms TTL=64 Ping statistics for 10.247.12.1: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 1ms, Maximum = 132ms, Average = 34ms C:\Users\user> </pre>	berhasil

No	Pengecekan	Hasil/Dokumentasi	Keterangan
Uji Coba Blok Akses			
1.	Log akses blok port 80 dari PPPoE		Kami hanya blok http di network hotspot, jadi pada saat menggunakan network PPPoE tetap bisa diakses.

No	Pengecekan	Hasil/Dokumentasi	Keterangan
2.	Log akses blok port 80 dari Hotspot	<div></div>	berhasil

No	Pengecekan	Hasil/Dokumentasi	Keterangan
2.	Log akses blok port 22 dari PPPoE dan Hotspot	 <p>PuTTY Event Log</p> <pre> 2024-09-25 09:33:37 Looking up host "10.247.12.1" for SSH connection 2024-09-25 09:33:37 Connecting to 10.247.12.1 port 22 2024-09-25 09:33:37 We claim version: SSH-2.0-PuTTY_Release_0.81 2024-09-25 09:33:58 Failed to connect to 10.247.12.1: Network error: Connection timed out 2024-09-25 09:33:58 Network error: Connection timed out </pre> <p>Copy Close</p> <p>106 Sep/25/2024 09:33:37 memory firewall, info blokssh_input: in:Hotspot out:(unknown 0), src-mac 48:e7:da:c6:d1:6d...</p> <p>107 Sep/25/2024 09:33:39 memory firewall, info blokssh_input: in:Hotspot out:(unknown 0), src-mac 48:e7:da:c6:d1:6d...</p>	berhasil
3.	Log akses blok port 23 dari PPPoE dan Hotspot	 <p>PuTTY Event Log</p> <pre> 2024-09-25 09:32:05 Looking up host "10.247.12.1" for Telnet connection 2024-09-25 09:32:05 Connecting to 10.247.12.1 port 23 2024-09-25 09:32:05 client negotiation: WILL NAWS 2024-09-25 09:32:05 client negotiation: WILL TSPEED 2024-09-25 09:32:05 client negotiation: WILL TTYPE 2024-09-25 09:32:05 client negotiation: WILL NEW_ENVIRON 2024-09-25 09:32:05 client negotiation: DO ECHO 2024-09-25 09:32:05 client negotiation: WILL SGA 2024-09-25 09:32:05 client negotiation: DO SGA 2024-09-25 09:32:26 Failed to connect to 10.247.12.1: Network error: Connection timed out 2024-09-25 09:32:26 Network error: Connection timed out </pre> <p>Copy Close</p> <p>79 Sep/25/2024 09:32:04 memory firewall, info bloktelnet_input: in:Hotspot out:(unknown 0), src-mac 48:e7:da:c6:d1:6d...</p> <p>80 Sep/25/2024 09:32:05 memory firewall, info bloktelnet_input: in:Hotspot out:(unknown 0), src-mac 48:e7:da:c6:d1:6d...</p>	berhasil

Hasil Ujicoba Server

No	Ujicoba	Screenshot Hasil Ujicoba
1	Akses website : projecttjktnama.net/project1	

No	Ujicoba	Screenshot Hasil Ujicoba
		