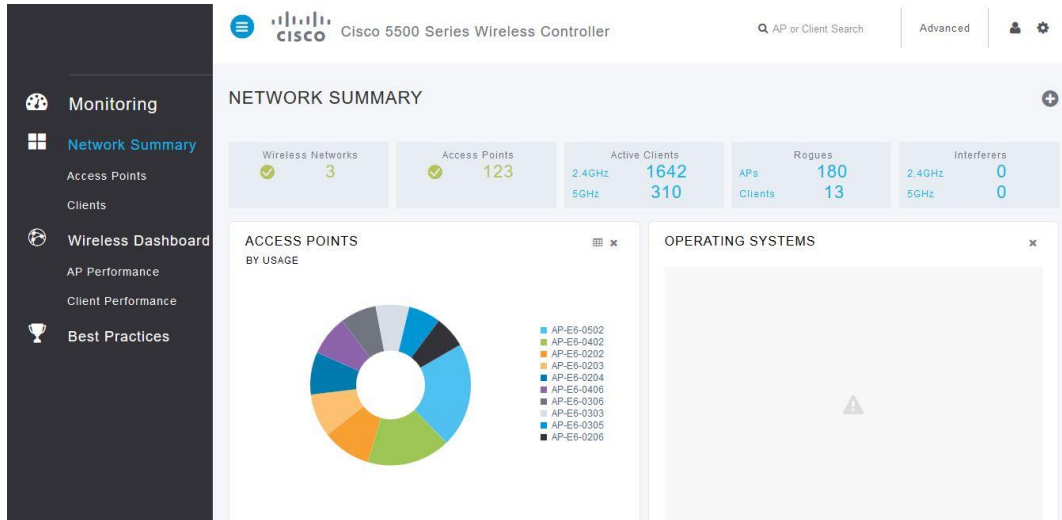


LAMPIRAN

Lampiran 1

Tampilan Home Cisco 5500 Series Wireless Controller



Lampiran 2

Access Point Performance



Lampiran 3

Client Performance



Lampiran 4

Tampilan Network Summary Access Point 5 GHz

Cisco 5500 Series Wireless Controller

AP or Client Search | Advanced | [User Icon] [Settings Icon]

ACCESS POINTS

2.4GHz | 5GHz

AP Name	Clients	Usage	Uptime	Chan...	Channels	Cover...	Interf...	Regu...
AP-E6-0D02	1	45 GB	35 Days 23 Hours	0	149	2	0	
AP-E6-0D03	1	22 GB	44 Days 20 Hours	0	161	5	0	
AP-E6-0101	0	33 GB	43 Days 20 Hours	0	149	8	0	
AP-E6-0D04	1	3 GB	50 Days 18 Hours	0	157	0	0	
AP-E6-0103	0	12 GB	44 Days 20 Hours	0	157	0	0	
AP-E6-0104	2	31 GB	43 Days 20 Hours	1	161	4	1	
AP-E6-0105-lob1	0	46 GB	44 Days 20 Hours	0	149	5	0	
AP-E6-0305	0	52 GB	35 Days 22 Hours	0	153	0	0	
AP-E6-0302	2	47 GB	43 Days 20 Hours	0	157	1	0	
AP-E6-0306	1	53 GB	35 Days 22 Hours	0	161	2	0	
AP-E6-0301	0	41 GB	35 Days 22 Hours	1	157	0	1	
AP-E6-0204	5	97 GB	35 Days 22 Hours	0	149	0	0	
AP-E6-0205	1	22 GB	35 Days 22 Hours	0	153	0	0	
AP-E6-0207-lob1	1	24 GB	35 Days 22 Hours	0	157	0	0	

Lampiran 5

Tampilan *Network Summary Access Point 5 GHz*

AP Name	Clients	Usage	Uptime	Chann...	Channels	Cover...	Interf...	Regis...
AP-E6-0D02	25	74 GB	35 Days 23 Hours	53	1	511	47	
AP-E6-0D03	4	82 GB	44 Days 20 Hours	57	5	210	54	
AP-E6-0101	4	89 GB	43 Days 20 Hours	75	1	40	73	
AP-E6-0D04	11	62 GB	50 Days 18 Hours	28	9	243	25	
AP-E6-0103	3	100 GB	44 Days 20 Hours	58	5	154	53	
AP-E6-0104	9	90 GB	43 Days 20 Hours	49	5	200	45	
AP-E6-0105-lobl	11	88 GB	44 Days 20 Hours	40	13	586	32	
AP-E6-0305	2	121 GB	35 Days 22 Hours	63	9	0	56	
AP-E6-0302	10	101 GB	43 Days 20 Hours	60	5	8	57	
AP-E6-0306	5	140 GB	35 Days 22 Hours	79	1	5	76	1
AP-E6-0301	13	97 GB	35 Days 22 Hours	56	13	0	53	
AP-E6-0204	10	129 GB	35 Days 22 Hours	57	13	0	54	
AP-E6-0205	3	69 GB	35 Days 22 Hours	54	5	0	49	
AP-E6-0207-lobl	10	113 GB	35 Days 22 Hours	76	9	0	73	

Lampiran 6

Tampilan *Network Summary Client*

User Name	Rate	Mac Address	Access Point	Protocol	Signal...	Signal...
zulham.ia.2013@ft.uly.ac.id	43 Mbps	c0:38:96:98:40:29	AP-F4-Dasar	802.11n	-66	25
zulham.ia.2013@ft.uly.ac.id	29 Mbps	1c:77:f6:ed:ef:1a	AP-F4-Dasar	802.11n	-69	25
zulfkar.andri.2013@fkiik.uly.ac.id	0 Mbps	c4:46:19:86:84:32	AP-F5-1	802.11n	0	0
zuliani.ayu.2015@law.uly.ac.id	72 Mbps	3c:ab:8e:c0:05:24	AP-H-D-5	802.11n	-65	29
zulfah.feba.2013@fe.uly.ac.id	0 Mbps	1c:77:f6:41:06:8a	AP-E6-0301	802.11n	0	0
zulfa.sekar.2016@fkiik.uly.ac.id	58 Mbps	cc:fa:00:b4:a0:28	AP-F5-1	802.11n	-74	45
zulfa.inayah.2010@fisispol.uly.a...	65 Mbps	10:2a:b3:f8:ea:01	AP-A-Dasar-1	802.11n	-77	15
zuhdan.Mahardika.2015@fp.uly....	65 Mbps	48:88:ca:12:87:3f	AP-G4-2	802.11n	-46	45
zico.septian.2015@fe.uly.ac.id	72 Mbps	68:fb:7e:94:d9:2d	AP-E1-2	802.11n	-84	4
zh.amalya.2014@fisispol.uly.ac.id	0 Mbps	cc:2d:93:88:b2:e6	AP-G6-2	802.11n	0	0
zazan.arifangko.2013@fisispol.u...	72 Mbps	68:76:4f:5f:8d:ef	AP-H-D-4	802.11n	-70	22
zazan.arifangko.2013@fisispol.u...	65 Mbps	58:00:e3:69:93:53	AP-H-D-4	802.11n	-51	41
zarkoni@uly.ac.id	72 Mbps	30:5a:3a:d9:a9:61	AP-D-Dasar	802.11n	-52	38
zamzam.nurdin.2014@fe.uly.ac.id	72 Mbps	94:d8:59:ca:41:d6	AP-E6-0304	802.11n	-40	53
zamroni.nugraha.2016@fal.uly....	65 Mbps	78:7e:61:7c:1a:99	AP-F6-Dasar	802.11n	-65	26

Lampiran 7

Access Point View

The screenshot displays the Cisco 5500 Series Wireless Controller interface. The left sidebar contains navigation options: Monitoring, Network Summary, Access Points, Clients, Wireless Dashboard, AP Performance, Client Performance, and Best Practices. The main content area is titled 'ACCESS POINT VIEW' and shows details for AP-G4-2.

GENERAL

- AP Name: **AP-G4-2**
- Location: **default location**
- MAC Address: 7c:69:16:ef:8f:07
- IP Address: 10.75.0.22
- CDP / LLDP: cisco WS-C3560X-48, GigabitEthernet0/47
- Model / Domain: AIR-CT35602I-C-K9 / 802.11bg--E 802.11a--C
- Serial Number: FGL1738W419
- Groups: AP Group: default-group, Flex Group: Zone-G
- Mode / Sub-mode: FlexConnect / Not Configured
- Max Capabilities: 802.11n 2.4GHz 5GHz, Spatial Streams: 3(2.4GHz) 3(5GHz), Max. Data Rate: 450 MBps(2.4GHz) 450 MBps(5GHz)

PERFORMANCE SUMMARY

	2.4GHz (Ch 1)	5GHz (Ch 157)
Number of clients	102	8
Configured Rate	Min: 1 Mbps, Max: 217 Mbps	Min: 6 Mbps, Max: 217 Mbps
Usage	3 GB	145 MB
Throughput	199 Kbps	20 Kbps
Transmit Power	18 dBm	23 dBm
Noise	()	()
Channel Utilization	83%	1%
Interference	59%	1%
Traffic	4%	0%
Air Quality	-	-

Lampiran 8

Client View

The screenshot displays the Cisco 5500 Series Wireless Controller interface. The left sidebar contains navigation options: Monitoring, Network Summary, Access Points, Clients, Wireless Dashboard, AP Performance, Client Performance, and Best Practices. The main content area is titled 'CLIENT VIEW' and shows details for a client.

GENERAL

- User Name: **satria.try.2013@ft.umy.ac.id**
- Host Name: **Unknown**
- MAC Address: 40:e2:30:2a:71:40
- Uptime: Associated since 1 Hour 55 Minutes
- SSID: UMY-Faculty
- AP Name: AP-G5-2 (Ch 1)
- Nearby APs: AP843d.c64d.c564, AP-G1-2, AP-G3-2
- Device Type: 72 Mbps
- Rate: 72 Mbps
- Capabilities: 802.11n (2.4GHz) (CCXv0) Spatial Streams: 1

TOP APPLICATIONS

Name	Usage	% Usage
1 - 0	73.6 KB	100%

NETWORK

Description	Status

QOS

Description	Status

Lampiran 9

Tampilan *Advanced* Monitor

The screenshot displays the Cisco Advanced Monitor interface for a Cisco 5520 Wireless Controller. The interface is divided into several sections:

- Summary:** Shows 369 Access Points Supported and 15 Rogue APs.
- Controller Summary:**

Management IP Address	10.0.4.6, ::1/128
Service Port IP Address	192.168.1.10, ::1/128
Software Version	8.1.102.0
Emergency Image Version	8.1.102.0
System Name	WLC UMY
Up Time	104 days, 22 hours, 31 minutes
System Time	Thu Mar 30 09:06:04 2017
Redundancy Mode	Disabled
Internal Temperature	+19 C
802.11a Network State	Enabled
802.11b/g	
- Rogue Summary:**

Active Rogue APs	177	Detail
Active Rogue Clients	12	Detail
Adhoc Rogues	1	Detail
Rogues on Wired Network	0	
- Top WLANs:**

Profile Name	# of Clients	Detail
UMY Student	1354	Detail
UMY Faculty	784	Detail
UMY Guest	57	Detail
- Most Recent Traps:**
 - Rogue AP: e6:5a:a2:43:89:8a detected on Base Radio MAC: 84:3d:c6:c8:bc:90 Interface no: 0(802.11n(2.4 GHz
 - Rogue AP: e6:5a:a2:43:89:8a detected on Base Radio MAC: 84:3d:c6:6d:cc:d0 Interface no: 0(802.11n(2.4 GHz

Lampiran 10

Tampilan *Advanced* WLANs

The screenshot displays the Cisco Advanced WLANs interface. The interface shows a list of WLANs with the following columns: WLAN ID, Type, Profile Name, WLAN SSID, Admin Status, and Security Policies.

WLAN ID	Type	Profile Name	WLAN SSID	Admin Status	Security Policies
1	WLAN	UMY Student	UMY-Student	Enabled	Web-Auth
2	WLAN	UMY Faculty	UMY-Faculty	Enabled	Web-Auth
3	WLAN	UMY Guest	UMY-Guest	Enabled	Web-Auth

Lampiran 11

Tampilan *Advanced Controller*

The screenshot displays the 'General' configuration page for a Cisco Controller. The left sidebar shows navigation options like General, Inventory, Interfaces, Multicast, Network Routes, Redundancy, Mobility Management, Ports, NTP, CDP, PHIPv6, Tunneling, IPv6, mDNS, and Advanced. The main content area is titled 'General' and contains various configuration fields and dropdown menus. Key settings include the controller name 'WLC UMY', disabled 802.3x Flow Control and LAG Mode, Unicast for AP Multicast and IPv6 Multicast modes, and IPv4 for CAPWAP Preferred Mode. A note at the bottom states: 'Multicast is not supported with FlexConnect on this platform. Multicast-Unicast mode does not support IGMP/MLD Snooping. Disable Global Multicast first.'

Lampiran 12

Tampilan *Advanced Wireless*

The screenshot displays the 'Wireless' configuration page, specifically the 'All APs' section. The left sidebar shows navigation options like Access Points, Mesh, RF Profiles, FlexConnect Groups, OEAP ACLs, Network Lists, 802.11a/n/ac, 802.11b/g/n, Media Stream, Application Visibility And Control, Lync Server, Country, Timers, Netflow, and QoS. The main content area shows a table of APs with the following columns: AP Name, IP Address (IPv4/IPv6), AP Model, AP MAC, AP Up Time, and Admin Status. The table lists 75 APs, with the first few rows showing AP names like AP-E6-0202, AP-E6-0101, AP-E6-0204, AP-E6-0103, AP-E6-0104, AP-E6-0105, AP-E6-0205, AP-E6-0206, AP-E6-0207, AP-E6-0208, AP-E6-0209, AP-E6-0210, AP-E6-0402, and AP-E6-0304. The AP models are either AIR-CAP2702I-F-K9 or AIR-CAP1702I-F-K9. The AP MAC addresses and up times are also listed for each AP.

Lampiran 13

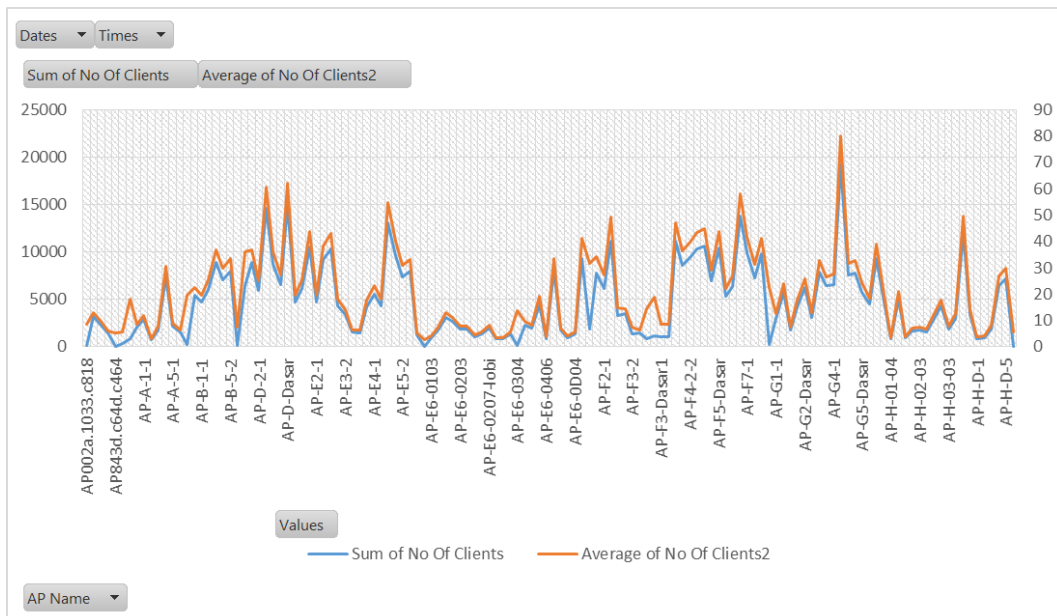
Advanced User Admin Management

The screenshot shows the Cisco Management interface for 'Local Management Users'. The left sidebar contains a navigation menu with options like Summary, SNMP, HTTP-HTTPS, Telnet-SSH, Serial Port, Local Management Users, User Sessions, Logs, Mgmt Via Wireless, Software Activation, and Tech Support. The main content area displays a table of users with columns for User Name, User Access Mode, and Telnet Capable. The table contains four entries: admin (ReadWrite, checked), adminwlc (ReadWrite, checked), lobby (LobbyAdmin, unchecked), and satria (ReadOnly, checked). There are 'Apply' and 'New...' buttons at the bottom right of the table.

User Name	User Access Mode	Telnet Capable
admin	ReadWrite	<input checked="" type="checkbox"/>
adminwlc	ReadWrite	<input checked="" type="checkbox"/>
lobby	LobbyAdmin	<input type="checkbox"/>
satria	ReadOnly	<input checked="" type="checkbox"/>

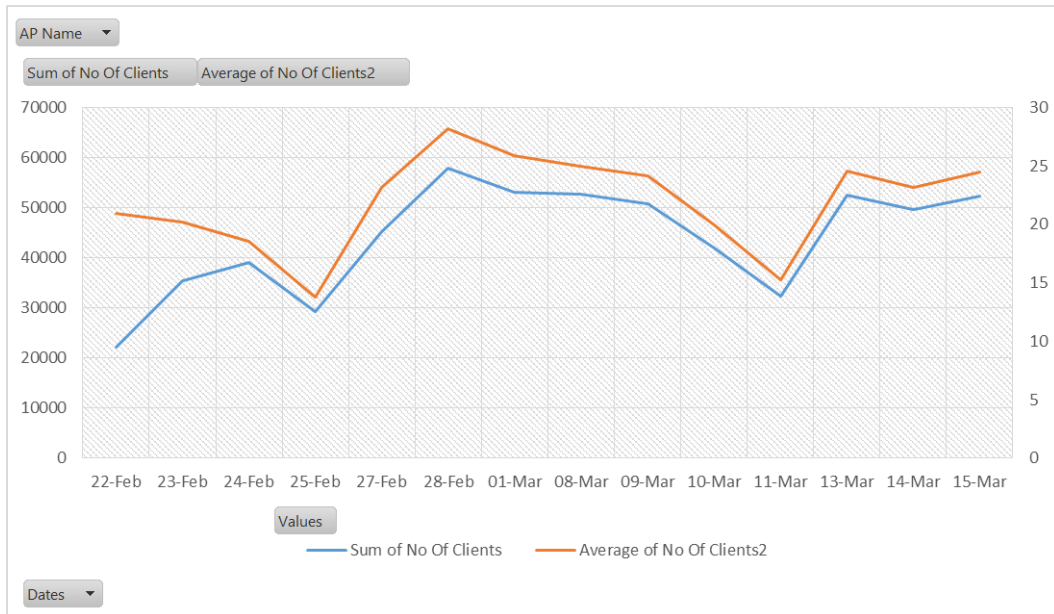
Lampiran 14

Jumlah dan rata-rata *Number of Client* per *access point* selama 14 hari pengukuran dan rentang perekaman dari jam 7:30 sampai dengan 16:00.



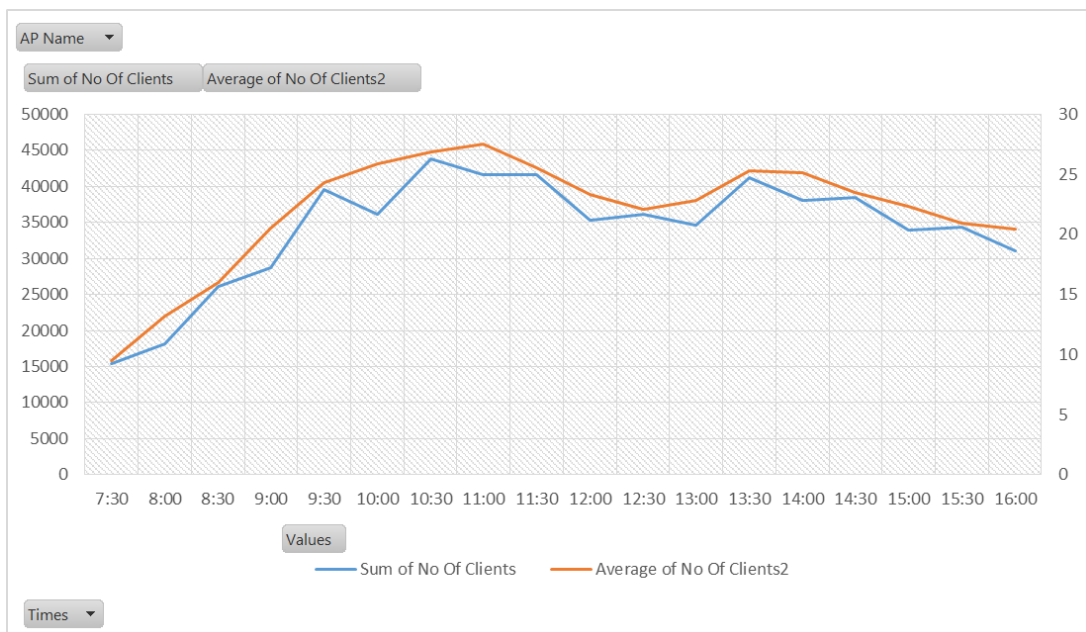
Lampiran 15

Jumlah dan rata-rata *Number of Client* terhadap hari pengukuran atau tanggal pengukuran.



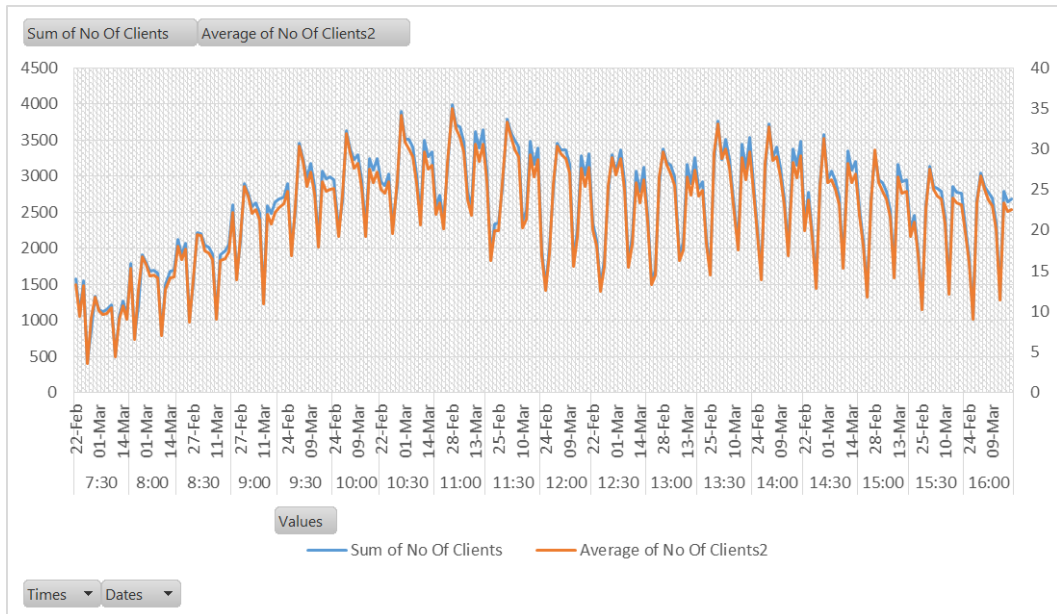
Lampiran 16

Jumlah dan rata-rata *Number of Client* terhadap jam pengukuran.



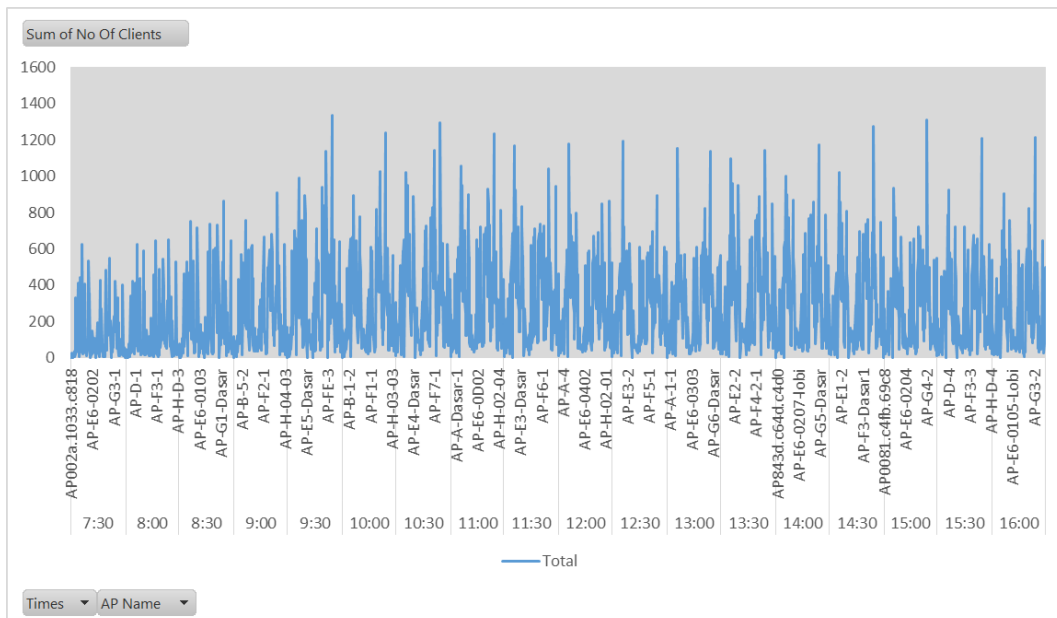
Lampiran 17

Perbandingan kepadatan *Number of Client* setiap harinya.



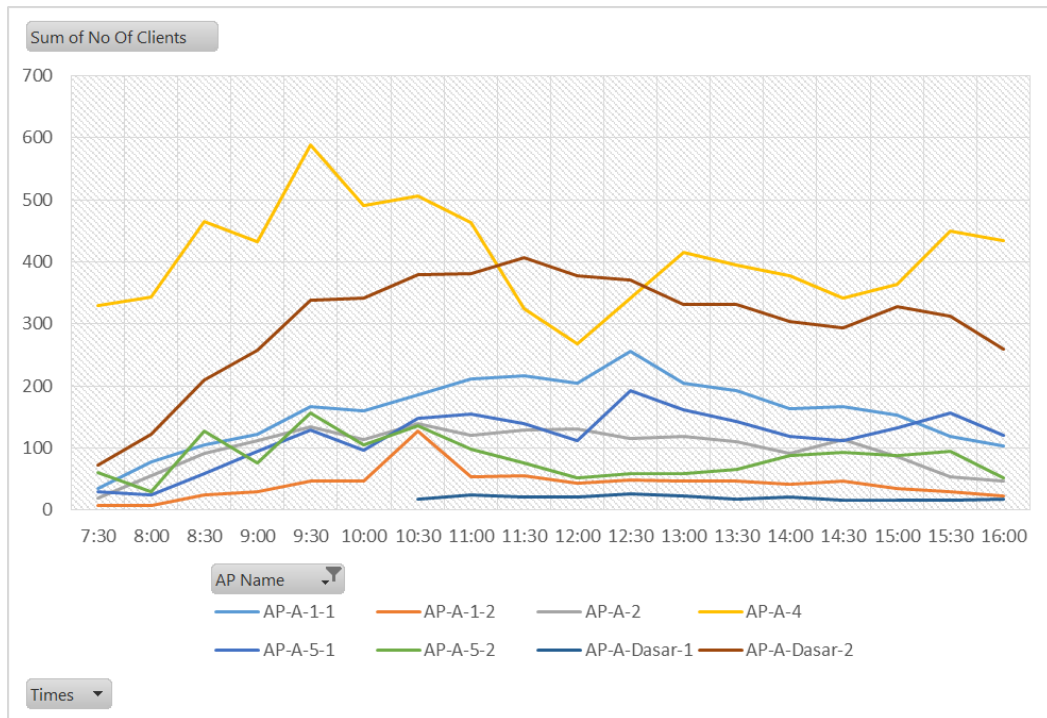
Lampiran 18

Perbandingan kepadatan *Number of Client per access point* setiap jamnya.



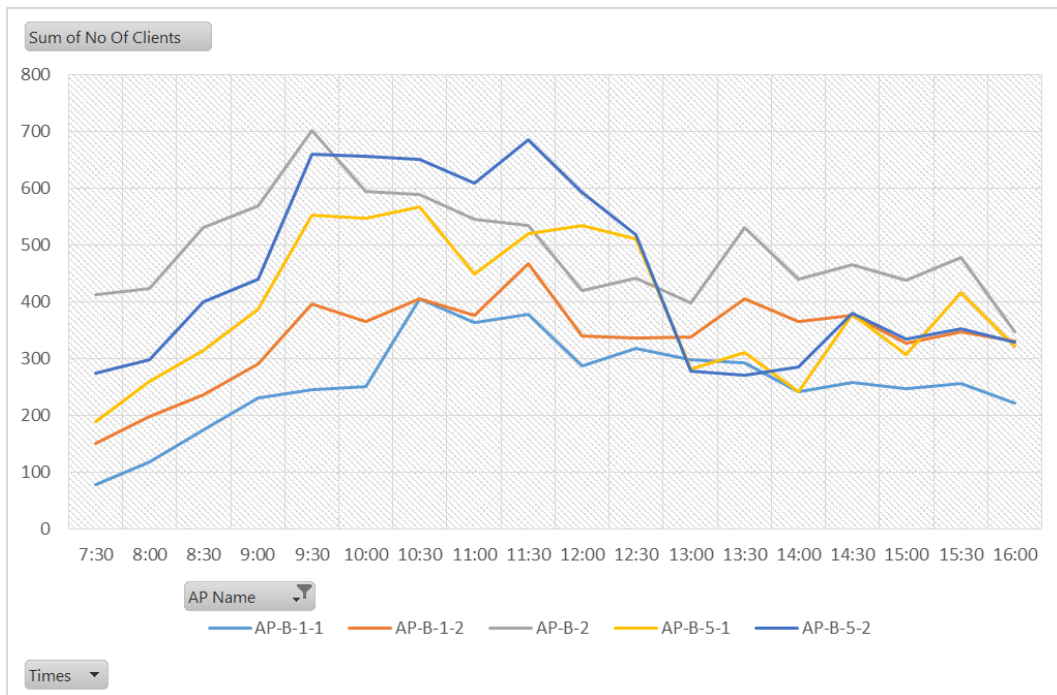
Lampiran 19

Perbandingan kepadatan *access point* di Gedung A



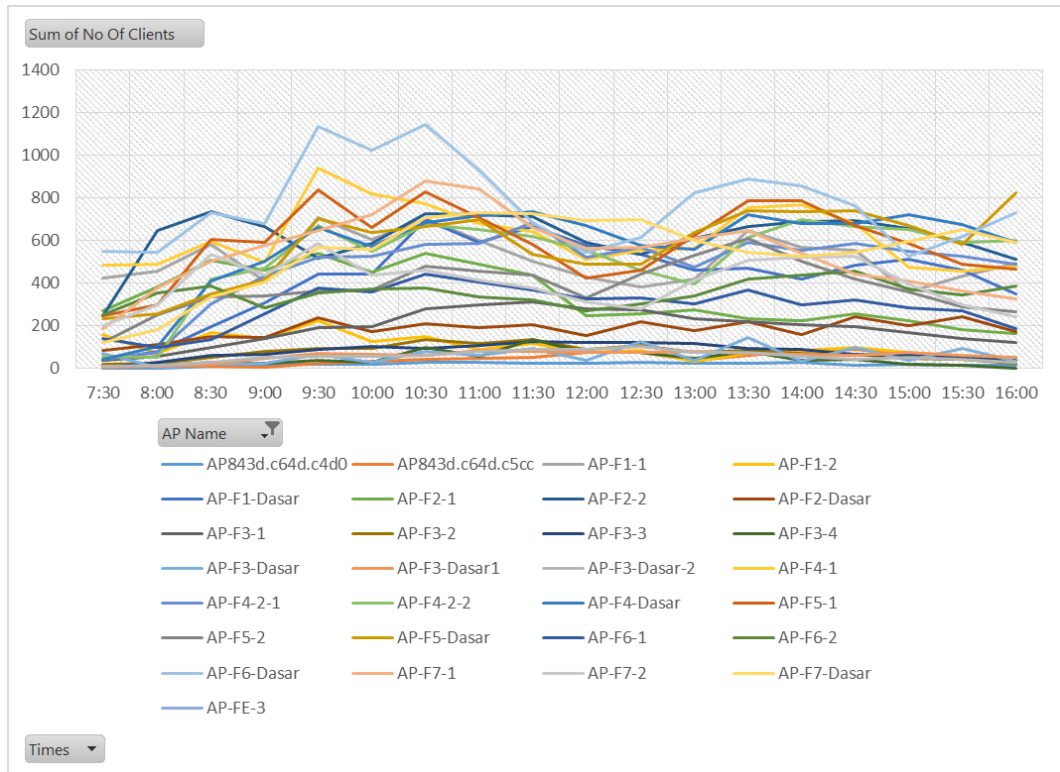
Lampiran 20

Perbandingan kepadatan *access point* di Gedung B



Lampiran 23

Perbandingan kepadatan *access point* di Gedung F



Lampiran 24

Perbandingan kepadatan *access point* di Gedung G

