



Pengelompokan DHCP Client berdasarkan Vendor Class ID

By Paul Darius
TR0606

Tentang saya



Nama : Paul Darius

Kenal Mikrotik sejak tahun 2004 (RB230 - 2.9.12)

Sertifikasi :

- MTCNA – Dasar / Essensial
- MTCTCE – Traffic Control Engineer
- MTCUME – User Management Engineer
- MTCRE - Routing Engineer
- MTCINE – Inner Networking Engineer
- MTCWE – Wireless Engineer
- MTCEWE – Enterprise Wireless Engineer
- MTCSE - Security Engineere

Work :

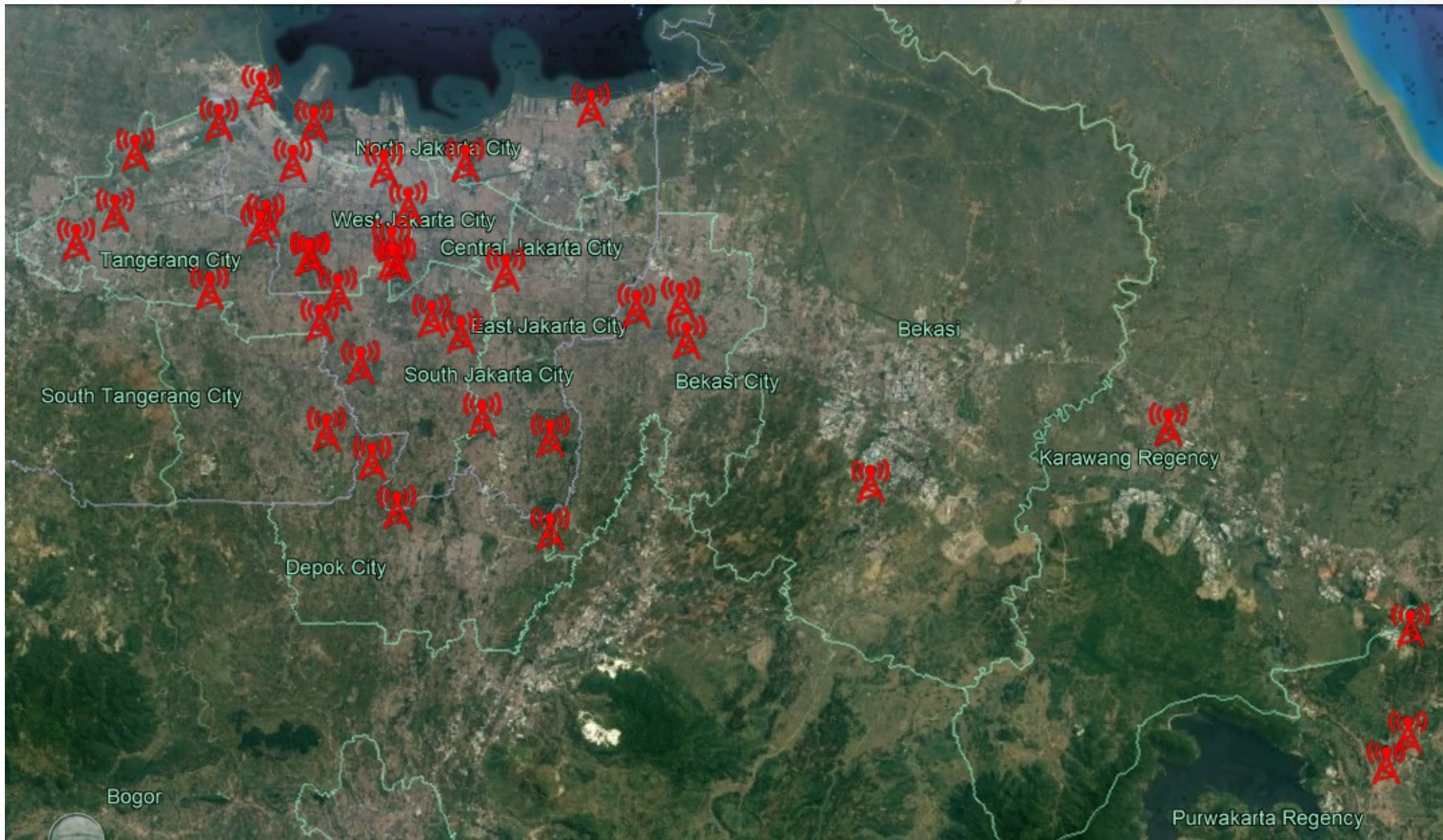
- Company : PT Asia Teknologi Solusi / ATS
- Assignment : NOC

Tentang Asia Teknologi Solusi



- PT Asia Teknologi Solusi
- Established since 1998
- Data center since 2006
- Internet Service Provider since 2014
- Coverage area:
 - East Tangerang
 - Jakarta
 - North Depok
 - Bekasi
 - Kerawang
 - Purwakarta
- MikroTik Training Center

Internet Services Coverage Area



ATS Internet Services

- Dedicated Internet Connection
- Broadband Internet Connection
- Interconnection
- Local-loop
- Server Hosting / Colocation
- WEB & Email hosting
- Managed Services
- MikroTik Training

How to reach us ?

- Asia Teknologi Solusi
Sentra Niaga Blok N-17
Green Lake City, Duri Kosambi
West Jakarta – 11750 – Indonesia
- Phone: (62-21) 225 242 012
- Homepage : <https://www.ats-com.net>

DHCP

- Dynamic Host Control Protocol
- DHCP Server, Client and Relay
- Digunakan pada network yang dapat dipercaya
- Dapat digunakan untuk management ip network dari segmen yang berbeda, dan mencegah terjadinya IP Conflict.
- DHCP Server bahkan bisa beroperasi dengan baik TANPA IP Pool.
- Satu DHCP Server bisa handle multiple IP Pool berdasarkan kategori yang telah ditetapkan.
- Silahkan ikut kelas MTCECE untuk fungsi lengkap DHCP lainnya.

DHCP Leases pada umumnya

DHCP Server									
DHCP Networks Leases Options Option Sets Alerts									
+ - ✓ ✗ 📄 🔍 Check Status									
	Address	MAC Address	Client ID	Server	Active Address	Active MAC Address	Active Host Name	Expires After	Status
D	192.168.11.67	A6:A3:30:A7:4E:E7	1:a6:a3:30:a7:4e:e7	Office	192.168.11.67	A6:A3:30:A7:4E:E7	Galaxy-Note9	00:01:35	bound
D	192.168.11.68	08:C5:E1:B6:D2:29	1:8:c5:e1:b6:d2:29	Office	192.168.11.68	08:C5:E1:B6:D2:29	Galaxy-Note9	00:01:17	bound
D	192.168.11.69	A4:D9:90:80:6A:FD	1:a4:d9:90:80:6a:fd	Office	192.168.11.69	A4:D9:90:80:6A:FD	Galaxy-A70	00:01:27	bound
D	192.168.11.72	A4:D9:90:68:4A:05	1:a4:d9:90:68:4a:5	Office	192.168.11.72	A4:D9:90:68:4A:05	Galaxy-M10	00:01:56	bound
D	192.168.11.73	A0:C9:A0:8B:64:7B	1:a0:c9:a0:8b:64:7b	Office	192.168.11.73	A0:C9:A0:8B:64:7B	Galaxy-Note-Fan-Edition	00:01:32	bound
D	192.168.11.74	50:3C:EA:36:29:97		Office	192.168.11.74	50:3C:EA:36:29:97	android-81af77c1584902a7	00:01:49	bound
D	192.168.11.75	40:B0:76:65:FF:54	1:40:b0:76:65:ff:54	Office	192.168.11.75	40:B0:76:65:FF:54		00:01:57	bound
D	192.168.11.76	A0:18:28:BC:AF:A8	1:a0:18:28:bc:af:a8	Office	192.168.11.76	A0:18:28:BC:AF:A8	Andreass-iPhone	00:01:50	bound
D	192.168.11.77	20:5E:F7:A0:D5:92	1:20:5ef7:a0:d5:92	Office	192.168.11.77	20:5E:F7:A0:D5:92	Galaxy-J7-prime	00:01:50	bound
D	192.168.11.78	0C:98:38:5A:64:AB	1:c:98:38:5a:64:ab	Office	192.168.11.78	0C:98:38:5A:64:AB	Redmi5A-Edwin	00:01:24	bound
D	192.168.11.79	D0:37:45:3E:D2:72	1:d0:37:45:3e:d2:72	Office	192.168.11.79	D0:37:45:3E:D2:72	DESKTOP-8T0A4BB	00:01:49	bound
D	192.168.11.80	08:7F:98:AE:7E:37		Office	192.168.11.80	08:7F:98:AE:7E:37	vivo-1818	00:01:19	bound
D	192.168.11.81	D0:37:45:43:C2:DD	1:d0:37:45:43:c2:dd	Office	192.168.11.81	D0:37:45:43:C2:DD	DESKTOP-8T0A4BB	00:01:50	bound
D	192.168.11.82	A4:D9:90:1F:90:E5	1:a4:d9:90:1f:90:e5	Office	192.168.11.82	A4:D9:90:1F:90:E5	Galaxy-A30	00:02:00	bound
D	192.168.11.83	A0:8D:16:24:B8:1B		Office	192.168.11.83	A0:8D:16:24:B8:1B	android-4798e3429e219d...	00:01:28	bound
D	192.168.11.84	20:5E:F7:C7:05:26	1:20:5ef7:c7:5:26	Office	192.168.11.84	20:5E:F7:C7:05:26	Galaxy-A5-2017	00:01:41	bound
D	192.168.11.85	F8:D0:27:56:A9:F0	1:f8:d0:27:56:a9:f0	Office	192.168.11.85	F8:D0:27:56:A9:F0	EPSON56A9F0	00:00:12	offered
D	192.168.11.86	D0:37:45:48:1A:88	1:d0:37:45:48:1a:88	Office	192.168.11.86	D0:37:45:48:1A:88	DESKTOP-G5RAK87	00:01:43	bound
D	192.168.11.87	30:CB:F8:5F:39:95	1:30:cb:f8:5f:39:95	Office	192.168.11.87	30:CB:F8:5F:39:95	Galaxy-A7-2016	00:01:48	bound
D	192.168.11.88	78:36:CC:C4:3B:D1	1:78:36:cc:c4:3b:d1	Office	192.168.11.88	78:36:CC:C4:3B:D1	android-f2d7342da3569882	00:01:13	bound
D	192.168.11.89	A0:51:0B:13:E2:1E	1:a0:51:b:13:e2:1e	Office	192.168.11.89	A0:51:0B:13:E2:1E	DESKTOP-G4GE526	00:01:42	bound
D	192.168.11.90	38:BA:F8:04:22:16	1:38:baf8:4:22:16	Office	192.168.11.90	38:BA:F8:04:22:16	DESKTOP-M4BN0D9	00:01:41	bound
D	192.168.11.91	08:C5:E1:B7:CF:38	1:8:c5:e1:b7:cf:38	Office	192.168.11.91	08:C5:E1:B7:CF:38	Galaxy-Note9	00:01:44	bound
D	192.168.11.92	F4:F1:5A:E9:33:4A	1:f4f1:5a:e9:33:4a	Office	192.168.11.92	F4:F1:5A:E9:33:4A	GarryInnuiPhone	00:01:24	bound

DHCP Leases pada umumnya

- Semua client akan mendapatkan alamat ip dari DHCP Server berdasarkan First Come First Served.
- DHCP Server tidak mengelompokkan client berdasarkan kategori apapun.
- Pembagian bandwidth akan menjadi First Come First Served.
- Jika menggunakan PCQ maka bandwidth akan menjadi sama rata antara PC dan Gadgets.

Request from client...

- Kecepatan untuk PC/Notebook 3M/3M dengan prioritas lebih tinggi.
- Kecepatan untuk Gadgets 1M/1M dengan prioritas lebih rendah.

Solusi yang dilakukan...

- Seluruh ip notebook dibuat static dan dimasukkan ke address-list.
- Buat queue (queue simple / pcq), kecepatan untuk ip yang ada di address-list dibuat 3M/3M dengan prioritas lebih tinggi.
- Tambah queue untuk device lainnya dengan kecepatan 1M/1M dengan prioritas lebih rendah.

Next problem...

- NIC pada salah satu PC/notebook rusak dan diganti, sehingga menggunakan MAC-Address baru.
- Atau salah satu atau beberapa notebook rusak sehingga diputuskan beli baru.
- Atau ada penambahan staff / karyawan sehingga ada penambahan pc / notebook.

Solusi... ?

Update data di table DHCP-Server Leases setiap kali ada kejadian yang sejenis.

Efektifkah... ?

Bagaimana jika hal ini terjadi pada institusi yang cukup besar dengan jumlah karyawan yang hampir mencapai 100 atau lebih dan kejadian yang sama terjadi tiap minggu ?

Pengelompokan dengan Vendor Class ID

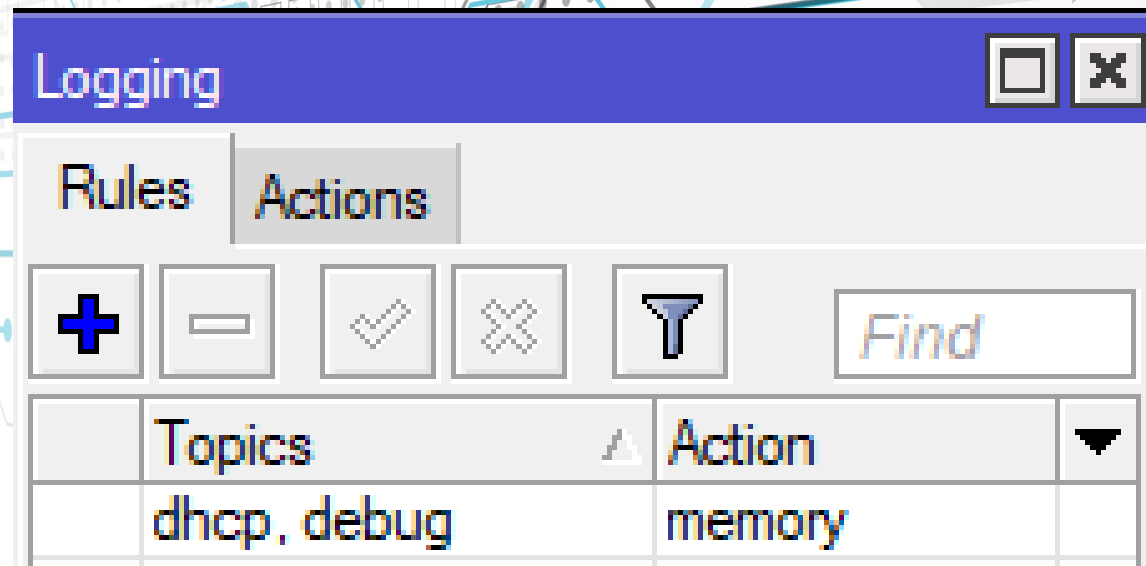
- Sejak versi 6.45beta6, RouterOS mendukung pencocokan vendor class id.
- Oleh DHCP Client, Vendor Class ID ini mengidentifikasi vendor dan konfigurasi untuk secara opsional.
- Hanya boleh 1 (satu) DHCP Server / Relay pada sebuah interface.

How to... ?

- Identifikasi vendor class id dari masing-masing perangkat.
- Mengelompokkan client dari DHCP berdasarkan Vendor Class ID.

Identifikasi Vendor Class ID

- Aktifkan detail log untuk dhcp dan tunggu setiap request dhcp dari client.



Identifikasi Vendor Class ID

- Check log DHCP yang didapat dan cari kata-kata Class-ID untuk device yang dimaksud.

```
10:19:22 dhcp,debug,packet Office received request with id 2625330636 from 192.168.11.30
10:19:22 dhcp,debug,packet      ciaddr = 192.168.11.30
10:19:22 dhcp,debug,packet      chaddr = 00:90:F5:B2:62:52
10:19:22 dhcp,debug,packet      Msg-Type = request
10:19:22 dhcp,debug,packet      Client-Id = 01-00-90-F5-B2-62-52
10:19:22 dhcp,debug,packet      Host-Name = "DESKTOP-EAKGL1T"
10:19:22 dhcp,debug,packet      Client-FQDN = 00-00-00-44-45-53-4B-54-4F-50-2D-45-41-4B-47-4C-31-54
10:19:22 dhcp,debug,packet      Class-Id = "MSFT 5.0"
10:19:22 dhcp,debug,packet      Parameter-List = Subnet-Mask,Router,Domain-Server,Domain-Name,Router-
Discovery,Static-Route,Vendor-Specific,NETBIOS-Name-Server,NETBIOS-Node-Type,NETBIOS-Scope,Domain-Se
arch,Classless-Route,MS-Classless-Route,Auto-Proxy-Config
```

Pengelompokkan...

- Tambahkan ip address baru pada interface yang sama di router; misal 192.168.11.1/26 interface=Office
- Tambahkan ip pool baru untuk device yang sejenis; misal Office-WinPC range 192.168.11.2-192.168.11.62
- Tambahkan DHCP-Server Network untuk pool baru; misal 192.168.11.0/26 gateway=192.168.11.1 dns=192.168.11.1
- Pada New Terminal, tambahkan baris berikut di /ip dhcp-server vendor-class-id

```
add name="Office Windows" server=Office \  
address-pool="Pool Office Windows" vid="MSFT 5.0"
```

Step-by-Step

Bridge

Bridge Ports VLANs

#	Interface	Br
0 H	ether2	On
1 I	wlan1	On

Address List

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Address	Network
192.168.100.3/28	192.168.100.0
;;; Segmen for WinPC	
192.168.11.1/26	192.168.11.0
;;; Segmen for Gadgets	
192.168.11.65/26	192.168.11.64

IP Pool

Pools Used Addresses

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Find

Name	Addresses
Pool Office Windows	192.168.11.2-192.168.11.62
Pool Office Gadgets	192.168.11.66-192.168.11.126

DHCP Server

DHCP Networks Leases Options Option Sets ...

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Find

Address	Gateway	Net...	DNS Servers
192.168.11.0/26	192.168.11.1		192.168.11.1
192.168.11.64/26	192.168.11.65	32	192.168.11.65

DHCP Server

DHCP Networks Leases Options Option Sets ...

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DHCP Config DHCP Setup

Find

Name	Interface	Lease Time	Address Pool	Add ARP..
Office	Office	00:10:00	Pool Office Gadgets	yes

```
[admin@MikroTik] /ip dhcp-server vendor-class-id> add name="Office Windows" \
... server=Office address-pool="Pool Office Windows" vid="MSFT 5.0"
```


Sejak 6.46

DHCP Vendor Class <Office Windows>

Name: Office Windows

Server: Office

Address Pool: Pool Office Windows

VID: MSFT 5.0

OK

Cancel

Apply

Disable

Copy

Remove

enabled

Sebelum...

DHCP Server									
DHCP Networks Leases Options Option Sets Alerts									
+ - ✓ ✗ 🗨 🔍 Check Status									
	Address	MAC Address	Client ID	Server	Active Address	Active MAC Address	Active Host Name	Expires After	Status
D	192.168.11.67	A6:A3:30:A7:4E:E7	1:a6:a3:30:a7:4e:e7	Office	192.168.11.67	A6:A3:30:A7:4E:E7	Galaxy-Note9	00:01:35	bound
D	192.168.11.68	08:C5:E1:B6:D2:29	1:8:c5:e1:b6:d2:29	Office	192.168.11.68	08:C5:E1:B6:D2:29	Galaxy-Note9	00:01:17	bound
D	192.168.11.69	A4:D9:90:80:6A:FD	1:a4:d9:90:80:6a:fd	Office	192.168.11.69	A4:D9:90:80:6A:FD	Galaxy-A70	00:01:27	bound
D	192.168.11.72	A4:D9:90:68:4A:05	1:a4:d9:90:68:4a:5	Office	192.168.11.72	A4:D9:90:68:4A:05	Galaxy-M10	00:01:56	bound
D	192.168.11.73	A0:C9:A0:8B:64:7B	1:a0:c9:a0:8b:64:7b	Office	192.168.11.73	A0:C9:A0:8B:64:7B	Galaxy-Note-Fan-Edition	00:01:32	bound
D	192.168.11.74	50:3C:EA:36:29:97		Office	192.168.11.74	50:3C:EA:36:29:97	android-81af77c1584902a7	00:01:49	bound
D	192.168.11.75	40:B0:76:65:FF:54	1:40:b0:76:65:ff:54	Office	192.168.11.75	40:B0:76:65:FF:54		00:01:57	bound
D	192.168.11.76	A0:18:28:BC:AF:A8	1:a0:18:28:bc:af:a8	Office	192.168.11.76	A0:18:28:BC:AF:A8	Andreass-iPhone	00:01:50	bound
D	192.168.11.77	20:5E:F7:A0:D5:92	1:20:5ef7:a0:d5:92	Office	192.168.11.77	20:5E:F7:A0:D5:92	Galaxy-J7-prime	00:01:50	bound
D	192.168.11.78	0C:98:38:5A:64:AB	1:c:98:38:5a:64:ab	Office	192.168.11.78	0C:98:38:5A:64:AB	Redmi5A-Edwin	00:01:24	bound
D	192.168.11.79	D0:37:45:3E:D2:72	1:d0:37:45:3e:d2:72	Office	192.168.11.79	D0:37:45:3E:D2:72	DESKTOP-8T0A4BB	00:01:49	bound
D	192.168.11.80	08:7F:98:AE:7E:37		Office	192.168.11.80	08:7F:98:AE:7E:37	vivo-1818	00:01:19	bound
D	192.168.11.81	D0:37:45:43:C2:DD	1:d0:37:45:43:c2:dd	Office	192.168.11.81	D0:37:45:43:C2:DD	DESKTOP-8T0A4BB	00:01:50	bound
D	192.168.11.82	A4:D9:90:1F:90:E5	1:a4:d9:90:1f:90:e5	Office	192.168.11.82	A4:D9:90:1F:90:E5	Galaxy-A30	00:02:00	bound
D	192.168.11.83	A0:8D:16:24:B8:1B		Office	192.168.11.83	A0:8D:16:24:B8:1B	android-4798e3429e219d...	00:01:28	bound
D	192.168.11.84	20:5E:F7:C7:05:26	1:20:5ef7:c7:5:26	Office	192.168.11.84	20:5E:F7:C7:05:26	Galaxy-A5-2017	00:01:41	bound
D	192.168.11.85	F8:D0:27:56:A9:F0	1:f8:d0:27:56:a9:f0	Office	192.168.11.85	F8:D0:27:56:A9:F0	EPSON56A9F0	00:00:12	offered
D	192.168.11.86	D0:37:45:48:1A:88	1:d0:37:45:48:1a:88	Office	192.168.11.86	D0:37:45:48:1A:88	DESKTOP-G5RAK87	00:01:43	bound
D	192.168.11.87	30:CB:F8:5F:39:95	1:30:cb:f8:5f:39:95	Office	192.168.11.87	30:CB:F8:5F:39:95	Galaxy-A7-2016	00:01:48	bound
D	192.168.11.88	78:36:CC:C4:3B:D1	1:78:36:cc:c4:3b:d1	Office	192.168.11.88	78:36:CC:C4:3B:D1	android-f2d7342da3569882	00:01:13	bound
D	192.168.11.89	A0:51:0B:13:E2:1E	1:a0:51:b:13:e2:1e	Office	192.168.11.89	A0:51:0B:13:E2:1E	DESKTOP-G4GE526	00:01:42	bound
D	192.168.11.90	38:BA:F8:04:22:16	1:38:baf8:4:22:16	Office	192.168.11.90	38:BA:F8:04:22:16	DESKTOP-M4BN0D9	00:01:41	bound
D	192.168.11.91	08:C5:E1:B7:CF:38	1:8:c5:e1:b7:cf:38	Office	192.168.11.91	08:C5:E1:B7:CF:38	Galaxy-Note9	00:01:44	bound
D	192.168.11.92	F4:F1:5A:E9:33:4A	1:f4f1:5a:e9:33:4a	Office	192.168.11.92	F4:F1:5A:E9:33:4A	GarryInnuiPhone	00:01:24	bound

Sesudah...

DHCP Server									
DHCP Networks Leases Options Option Sets Alerts									
+ - ✓ ✗ 📄 🔍 Check Status									
	Address	MAC Address	Client ID	Server	Active Address	Active MAC Address	Active Host Name	Expires After	Status
D	192.168.11.3	A0:51:0B:2B:90:1C	1:a0:51:b:2b:90:1c	Office	192.168.11.3	A0:51:0B:2B:90:1C	DESKTOP-IFK0SF7	00:01:11	bound
D	192.168.11.4	A0:51:0B:13:E4:03	1:a0:51:b:13:e4:3	Office	192.168.11.4	A0:51:0B:13:E4:03	DESKTOP-POE0B6U	00:01:22	bound
D	192.168.11.5	B0:FC:36:B2:B7:EB	1:b0:fc:36:b2:b7:eb	Office	192.168.11.5	B0:FC:36:B2:B7:EB	DESKTOP-UFHDDR0	00:01:48	bound
D	192.168.11.7	D0:37:45:41:03:33	1:d0:37:45:41:3:33	Office	192.168.11.7	D0:37:45:41:03:33	DESKTOP-8T0A4BB	00:01:14	bound
D	192.168.11.9	A0:51:0B:13:E2:1E	1:a0:51:b:13:e2:1e	Office	192.168.11.9	A0:51:0B:13:E2:1E	DESKTOP-G4GE526	00:01:40	bound
D	192.168.11.10	D0:37:45:34:8F:95	1:d0:37:45:34:8f:95	Office	192.168.11.10	D0:37:45:34:8F:95	DESKTOP-M68HK69	00:01:24	bound
D	192.168.11.13	D0:37:45:48:1A:88	1:d0:37:45:48:1a:88	Office	192.168.11.13	D0:37:45:48:1A:88	DESKTOP-G5RAK87	00:01:28	bound
D	192.168.11.15	38:BA:F8:04:22:16	1:38:baf8:4:22:16	Office	192.168.11.15	38:BA:F8:04:22:16	DESKTOP-M4BN0D9	00:01:03	bound
D	192.168.11.18	B0:C0:90:16:E2:E9	1:b0:c0:90:16:e2:e9	Office	192.168.11.18	B0:C0:90:16:E2:E9	DESKTOP-S35EG46	00:01:36	bound
D	192.168.11.19	18:1D:EA:E6:9B:14	1:18:1d:ea:e6:9b:14	Office	192.168.11.19	18:1D:EA:E6:9B:14	DESKTOP-RQLI788	00:01:41	bound
D	192.168.11.21	D0:37:45:3E:D2:72	1:d0:37:45:3e:d2:72	Office	192.168.11.21	D0:37:45:3E:D2:72	DESKTOP-8T0A4BB	00:01:35	bound
D	192.168.11.22	D0:37:45:43:C2:DD	1:d0:37:45:43:c2:dd	Office	192.168.11.22	D0:37:45:43:C2:DD	DESKTOP-8T0A4BB	00:01:43	bound
D	192.168.11.23	02:0D:DC:85:1E:02	1:2:d:dc:85:1e:2	Office	192.168.11.23	02:0D:DC:85:1E:02	DESKTOP-QFC91BD	00:01:37	bound
D	192.168.11.24	7C:DD:90:5E:8B:31	1:7c:dd:90:5e:8b:31	Office	192.168.11.24	7C:DD:90:5E:8B:31	DESKTOP-C9R36G7	00:01:36	bound
D	192.168.11.26	A0:51:0B:2B:8E:D7	1:a0:51:b:2b:8e:d7	Office	192.168.11.26	A0:51:0B:2B:8E:D7	DESKTOP-PNU7K45	00:01:36	bound
D	192.168.11.28	38:00:25:3B:4B:83	1:38:0:25:3b:4b:83	Office	192.168.11.28	38:00:25:3B:4B:83	DESKTOP-9KJUT68	00:01:58	bound
D	192.168.11.29	D0:37:45:54:D3:6E	1:d0:37:45:54:d3:6e	Office	192.168.11.29	D0:37:45:54:D3:6E	DESKTOP-8T0A4BB	00:01:47	bound
D	192.168.11.30	D0:37:45:53:7D:A6	1:d0:37:45:53:7d:a6	Office	192.168.11.30	D0:37:45:53:7D:A6	GraphicsTGMM19	00:01:49	bound
D	192.168.11.67	A6:A3:30:A7:4E:E7	1:a6:a3:30:a7:4e:e7	Office	192.168.11.67	A6:A3:30:A7:4E:E7	Galaxy-Note9	00:01:18	bound
D	192.168.11.68	08:C5:E1:B6:D2:29	1:8:c5:e1:b6:d2:29	Office	192.168.11.68	08:C5:E1:B6:D2:29	Galaxy-Note9	00:01:02	bound
D	192.168.11.69	A4:D9:90:80:6A:FD	1:a4:d9:90:80:6a:fd	Office	192.168.11.69	A4:D9:90:80:6A:FD	Galaxy-A70	00:01:02	bound
D	192.168.11.70	34:E9:11:18:47:2F		Office	192.168.11.70	34:E9:11:18:47:2F	vivo-1718	00:00:12	bound
D	192.168.11.72	A4:D9:90:68:4A:05	1:a4:d9:90:68:4a:5	Office	192.168.11.72	A4:D9:90:68:4A:05	Galaxy-M10	00:01:05	bound
D	192.168.11.73	A0:C9:A0:8B:64:7B	1:a0:c9:a0:8b:64:7b	Office	192.168.11.73	A0:C9:A0:8B:64:7B	Galaxy-Note-Fan-Edition	00:01:26	bound
D	192.168.11.74	50:3C:EA:36:29:97		Office	192.168.11.74	50:3C:EA:36:29:97	android-81af77c1584902a7	00:01:52	bound
D	192.168.11.77	20:5E:F7:A0:D5:92	1:20:5ef7:a0:d5:92	Office	192.168.11.77	20:5E:F7:A0:D5:92	Galaxy-J7-prime	00:01:29	bound
D	192.168.11.78	0C:98:38:5A:64:AB	1:c:98:38:5a:64:ab	Office	192.168.11.78	0C:98:38:5A:64:AB	Redmi5A-Edwin	00:01:09	bound

Result...

- Seluruh PC dengan OS yang sama sudah terkelompok pada subnet yang sama.
- Device lainnya tetap menggunakan ip dari pool default dhcp.
- Setiap penambahan dan atau perubahan device pada kelompok (Vendor ID) yang sama akan langsung mengubah DHCP-Server Leases secara dynamic; sepanjang alokasi IP mencukupi.

Queue Simple

Name	Target	Upload Max...	Download Max...	Upload Queue Type	Download Queue Type	Upload Avg...	Download Avg...
Office	192.168.11.0/25	40M	40M	default-small	default-small	234.9 kbps	31.8 Mbps
Office Windows	192.168.11.0/26	40M	40M	pcq-upload-3M	pcq-download-3M	191.5 kbps	31.7 Mbps
Office Gadgets	192.168.11.64/26	40M	40M	pcq-upload-1M	pcq-download-1M	17.3 kbps	30.4 kbps

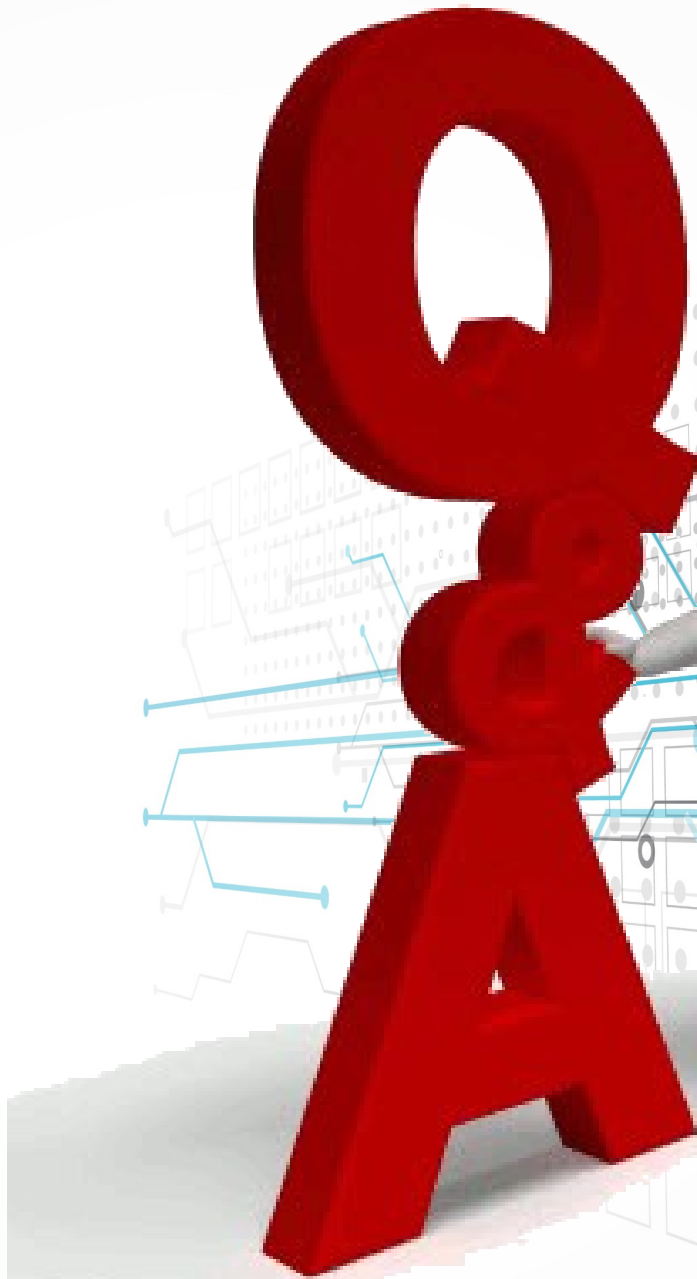
- Berdasarkan alokasi ip yang telah ditentukan, dan telah dikelompokkan berdasarkan Vendor ID maka bisa dilakukan pemisahan Queue antara tiap kelompok.

Kesimpulan

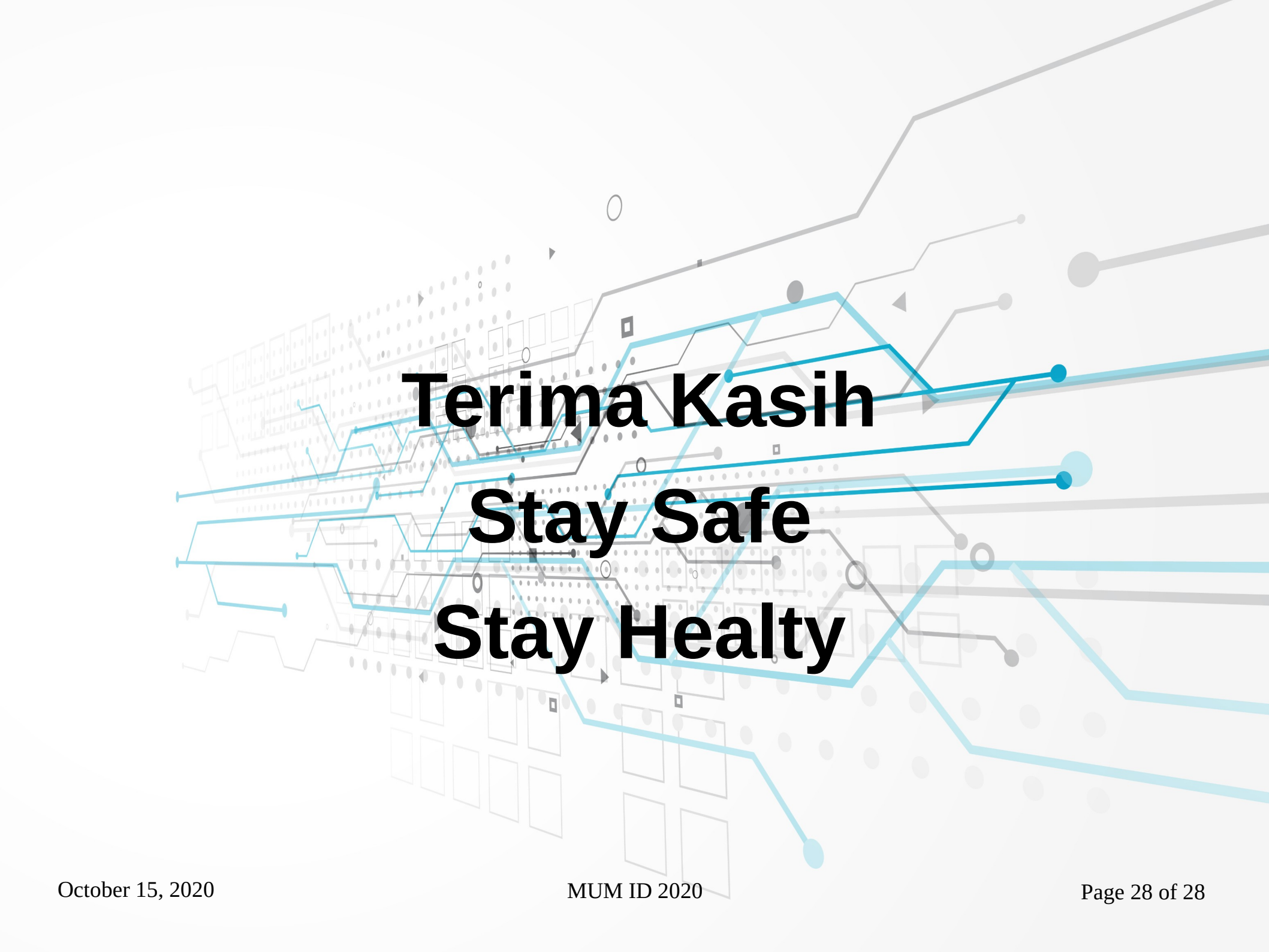
- Penambahan dan atau perubahan device pada kelompok (Vendor ID) yang akan langsung mengupdate DHCP-Server Leases secara dynamic; sepanjang alokasi IP mencukupi.
- Tidak diperlukan update secara manual pada table DHCP-Server Leases setiap terjadi perubahan dan atau penambahan device.
- Dengan konfigurasi lebih lanjut, sangat dimungkinkan supaya DHCP Server hanya menerima / melayani perangkat berdasarkan Vendor Class ID saja; contoh dalam kasus ini bisa dibuat hanya melayani Windows 10 saja.

Limitation

- vid = Vendor ID belum mendukung wildcard dan atau full posix RegEx.
- Operating System yang sama, tapi beda versi akan mengirimkan Class ID yang berbeda.
- Beberapa device (termasuk RouterBoard dengan RouterOS) tidak mengirimkan Class ID ke DHCP-Server.
- Sejak dari versi 6.45beta6 sampai dengan 6.45.9 Long Term, konfigurasi vendor class id hanya bisa dilakukan via terminal / console. Konfigurasi vendor class id pada winbox mulai tersedia sejak versi 6.46 Stable



training@skynet.co.id
training@ats-com.net
 [@atsinternet](https://www.instagram.com/atsinternet)



Terima Kasih
Stay Safe
Stay Healthy