

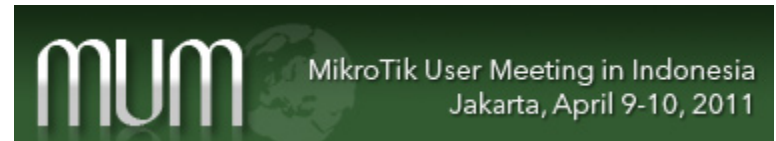
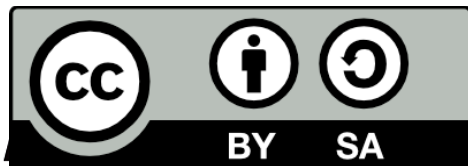


# Multifunction Proxy

by: **Pujo Dewobroto**

Citraweb Nusa Infomedia, Indonesia

[www.mikrotik.co.id](http://www.mikrotik.co.id)



# Perkenalan



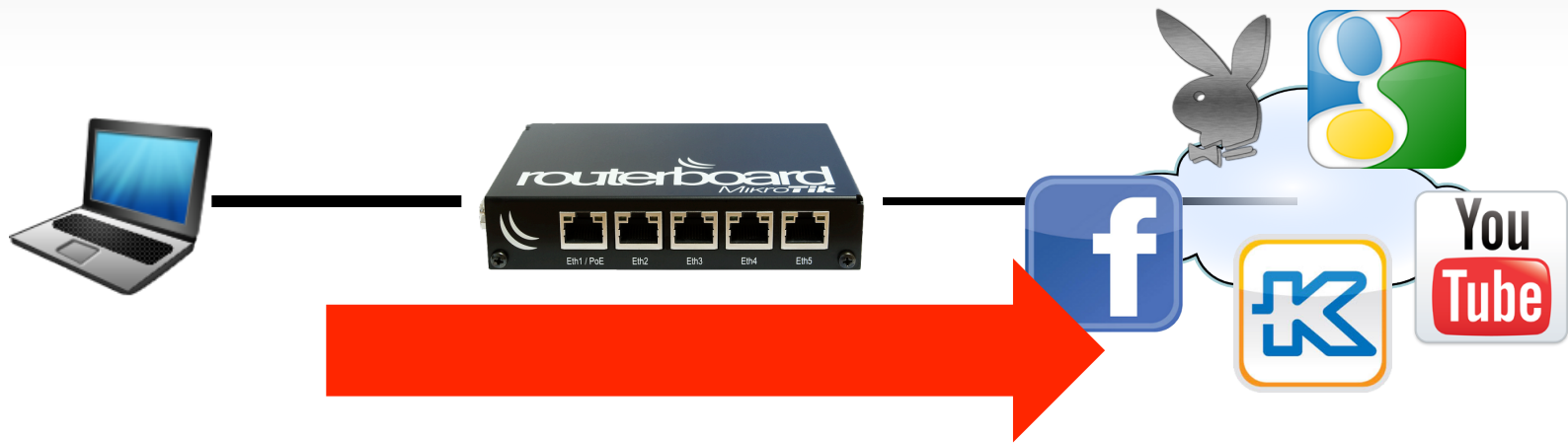
- **Pujo Dewobroto**
- Citraweb Nusa Infomedia
  - Mikrotik distributor, training partner ([mikrotik.co.id](http://mikrotik.co.id))
  - ISP ([citra.net.id](http://citra.net.id))
  - Web developer ([citra.web.id](http://citra.web.id))
- MTCNA, MTCTCE, MTCWE, MTCUME, MTCRE, Certified Trainer

# Proxy Server

- Proxy server merupakan sebuah perangkat yang bisa menjadi penghubung antara komunikasi host dengan host / server lain.

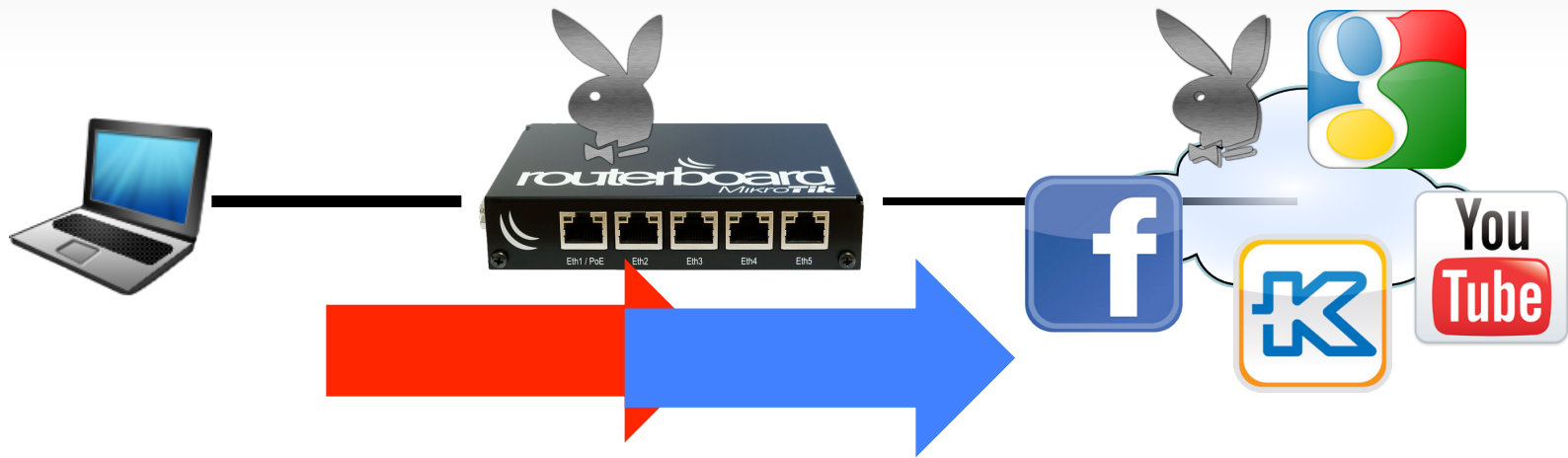
# Cara Kerja

## Komunikasi Langsung



# Cara Kerja

## Komunikasi via Proxy



# Proxy Mikrotik

- Proxy yang tersedia didalam OS Mikrotik
  - DNS proxy (DNS Cache)
  - Socks proxy
  - Webproxy (HTTP Proxy)
  - IGMP Proxy

# DNS Proxy

- DNS proxy merupakan metode untuk menerima request DNS dari client yang akan diteruskan ke DNS server lain atau mengambil dari local cachanya sendiri
- Keuntungan :
  - meminimalisir DNS resolution time
  - meminimalisir penggunaan Bandwidth
  - Security

# Konfigurasi DNS

DNS Settings

Servers: 202.65.112.21

202.65.112.22

Dynamic Servers:

Allow Remote Requests

Max UDP Packet Size: 512

Cache Size: 2048 KiB

Cache Used: 734

OK

Cancel

Apply

Static

Cache

**DNS server yang akan digunakan Mikrotik untuk meresolve nama domain**

**Aktifkan option “allow remote request” untuk mengijinkan request resolve domain dari client**



# DNS Cache

Name	Type	Data	TTI
f.gtld.biz	AAAA	2001:500:3682::12	
f.ntpns.org	A	50.31.240.214	
f2.nstld.com	A	192.35.51.31	
facebook.com	NS	b.ns.facebook.com	
facebook.com	NS	a.ns.facebook.com	
fastly.net	NS	ns4.p04.dynect.net	
fastly.net	NS	ns3.p04.dynect.net	
fastly.net	NS	ns2.p04.dynect.net	
fastly.net	NS	ns1.p04.dynect.net	
fbcdn-creative-a.akamaihd.net	CNAME	fbcdn-creative-a.akamaihd.net	
fbcdn-creative-a.akamaihd.net.edgesuite.net	CNAME	a1073.dsw4.akamai.net	
fbcdn-profile-a.akamaihd.net	CNAME	fbcdn-profile-a.akamaihd.net	
fbcdn-profile-a.akamaihd.net.edgesuite.net	CNAME	fbcdn-profile-a.akamaihd.net	
fbstatic-a.akamaihd.net	CNAME	fbstatic-a.akamaihd.net	
fbstatic-a.akamaihd.net	CNAME	fbstatic-a.akamaihd.net	

2737 items (1 selected)

**Router akan melookup tabel local cache terlebih dahulu sebelum meresolve ke DNS Server**

# DNS Static

DNS Static

#	Name	Address
0	ujian.mikrotik.co.id	117
1 X	www.routeros.co.id	192
2	voip.mikrotik.co.id	192
3	ipcam1.mikrotik.co.id	192
4	ipcam2.mikrotik.co.id	192
5 X	mikrotik.co.id	192
6 X	www.mikrotik.co.id	192
7	ipcam-jkt.mikrotik.co.id	192
8 X	www.facebook.com	120
9 X	facebook.com	120
10	utama.mikrotik.co.id	192
11	backup.mikrotik.co.id	192
12	rma.mikrotik.co.id	192
13	spv.mikrotik.co.id	192
14 R	.*\{facebook.com	127

DNS Static Entry <backup.mikrotik.co.id>

Name: backup.mikrotik.co.id  
Address: 192.168.130.2  
TTL: 1d 00:00:00 s

DNS Static Entry <.\*\{facebook.com>

Name: .\*\{facebook.com  
Address: 127.0.0.1  
TTL: 1d 00:00:00 s

**Penambahan static dns akan mengoverwrite cache yang ada**

# Tips

- Gunakan NAT untuk meredirect semua request DNS client anda
- Filter untuk request dari luar network anda

```
Terminal
/ip firewall filter
add action=drop chain=input connection-state=new dst-port=53 in-interface=\
!ether1-lokal protocol=tcp
add action=drop chain=input connection-state=new dst-port=53 in-interface=\
!ether1-lokal protocol=udp
/ip firewall nat
add action=redirect chain=dstnat dst-port=53 in-interface=ether1-lokal \
protocol=tcp to-ports=53
add action=redirect chain=dstnat dst-port=53 in-interface=ether1-lokal \
protocol=udp to-ports=53
[admin@Ro-MKI] >
```

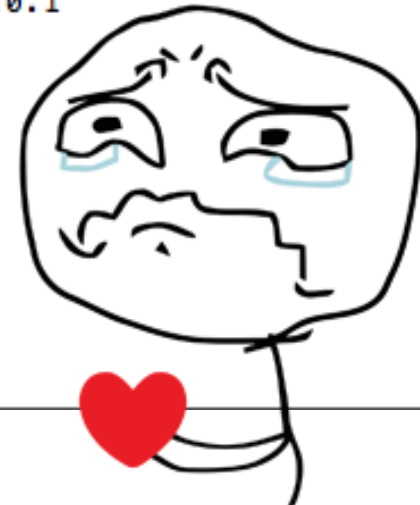
# Efek NAT+Static DNS

```
pujodb — nslookup — 40x22
Pujos-MacBook-Pro:~ pujodb$ nslookup
> server 8.8.8.8
Default server: 8.8.8.8
Address: 8.8.8.8#53
> m.youtube.com
Server:          8.8.8.8
Address:         8.8.8.8#53

Non-authoritative answer:
Name:   m.youtube.com
Address: 74.125.200.101
Name:   m.youtube.com
Address: 74.125.200.102
Name:   m.youtube.com
Address: 74.125.200.113
Name:   m.youtube.com
Address: 74.125.200.138
Name:   m.youtube.com
Address: 74.125.200.139
Name:   m.youtube.com
Address: 74.125.200.100
>
```

```
pujodb — nslookup — 42x22
Last login: Tue Nov 19 11:35:07 on ttys000
Pujos-MacBook-Pro:~ pujodb$ nslookup
> server 8.8.8.8
Default server: 8.8.8.8
Address: 8.8.8.8#53
> m.youtube.com
Server:          8.8.8.8
Address:         8.8.8.8#53

Non-authoritative answer:
Name:   m.youtube.com
Address: 127.0.0.1
>
```



# Socks Proxy

- Socks merupakan proxy multi fungsi yang menjembatani koneksi TCP antara client dan server.
- Bisa menjadi alternatif pada saat dibutuhkan filtering yang ketat
- Mikrotik Support SOCKSv4 (Server Only)

# Pengaturan Server

Socks Settings

Enabled

Port: 1080

Connection Idle Timeout: 00:02:00

Max Connections: 200

OK

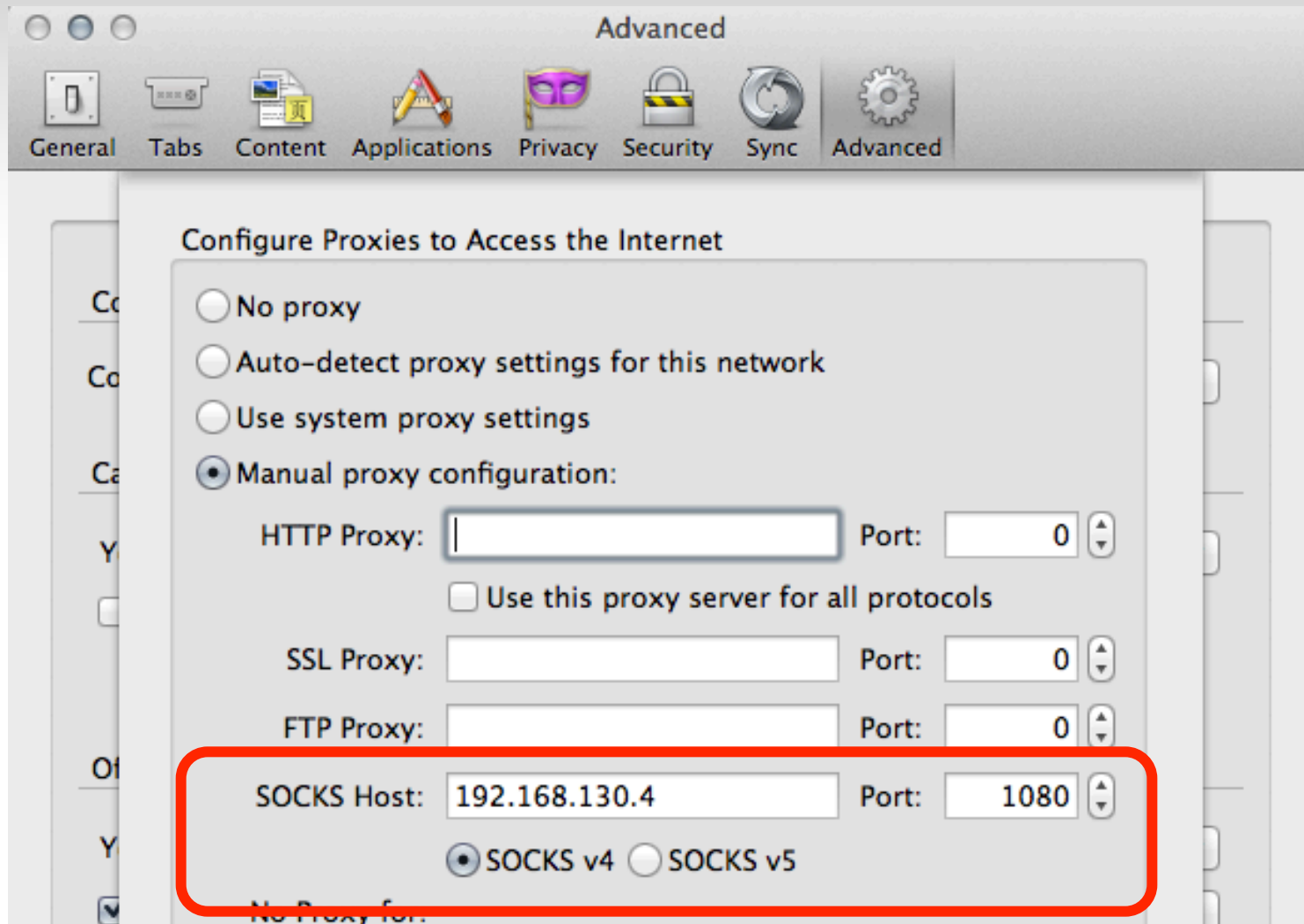
Cancel

Apply

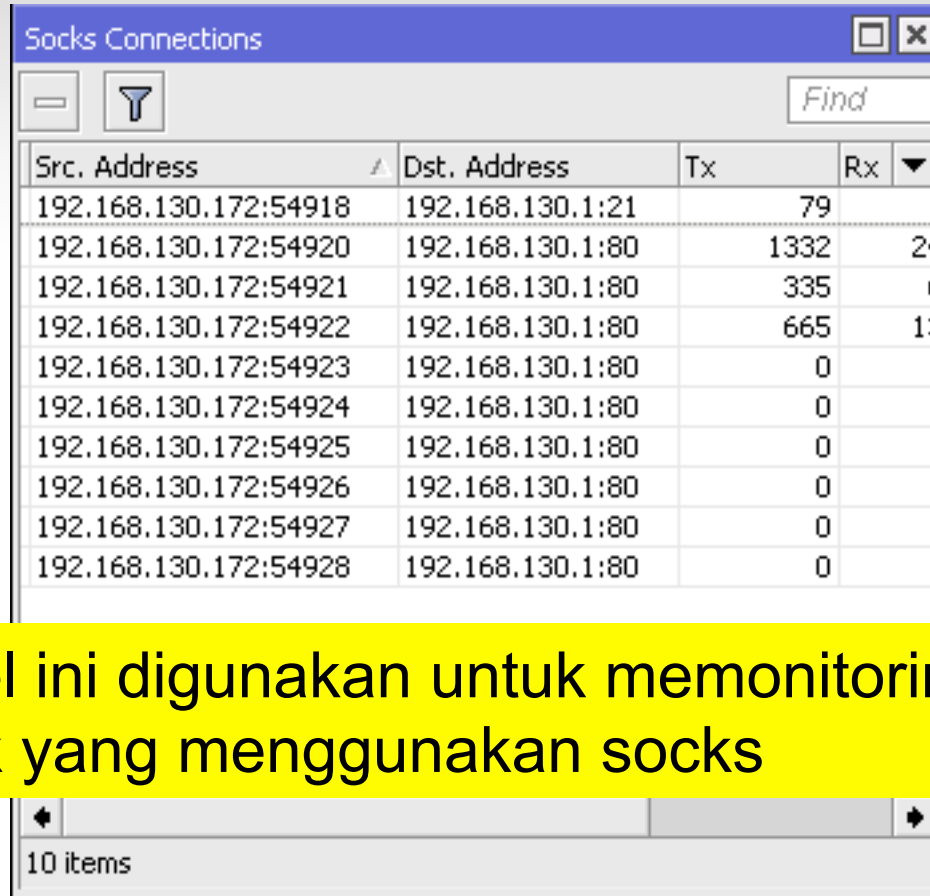
Access

Connections

# Pengaturan Client



# Socks Connection



Src. Address	Dst. Address	Tx	Rx
192.168.130.172:54918	192.168.130.1:21	79	
192.168.130.172:54920	192.168.130.1:80	1332	24
192.168.130.172:54921	192.168.130.1:80	335	6
192.168.130.172:54922	192.168.130.1:80	665	13
192.168.130.172:54923	192.168.130.1:80	0	
192.168.130.172:54924	192.168.130.1:80	0	
192.168.130.172:54925	192.168.130.1:80	0	
192.168.130.172:54926	192.168.130.1:80	0	
192.168.130.172:54927	192.168.130.1:80	0	
192.168.130.172:54928	192.168.130.1:80	0	

Tabel ini digunakan untuk memonitoring trafik yang menggunakan socks



# Socks Access

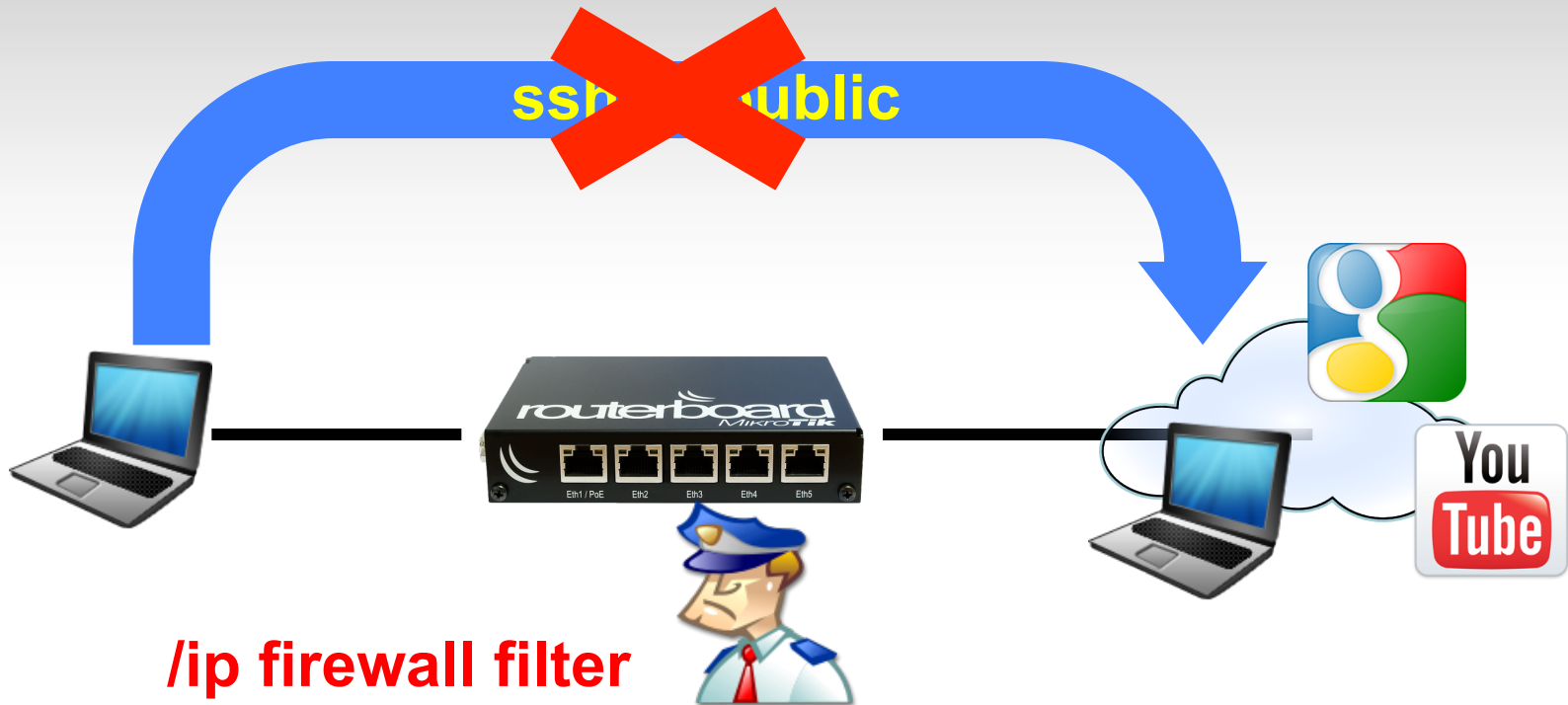
The screenshot shows the Mikrotik Socks Access configuration interface. At the top, there are icons for adding (+), removing (-), enabling (checkmark), disabling (cross), saving (floppy), and filtering (funnel), along with a 'Find' search box. Below this is a table with the following data:

#	Src. Address	Src Port	Dst. Address	Dst. Port	Action
0	192.168.0.0/16				accept
1			192.168.0.0/16		accept
2					deny

A 'Socks Rule <>' dialog box is open over the table, showing the configuration for the selected rule (row 2). The fields are: Src. Address (empty), Src Port (empty), Dst. Address (empty), Dst. Port (empty), and Action (deny). Buttons for OK, Cancel, Apply, Disable, and Comment are visible on the right. At the bottom of the dialog, the status 'enabled' is shown.

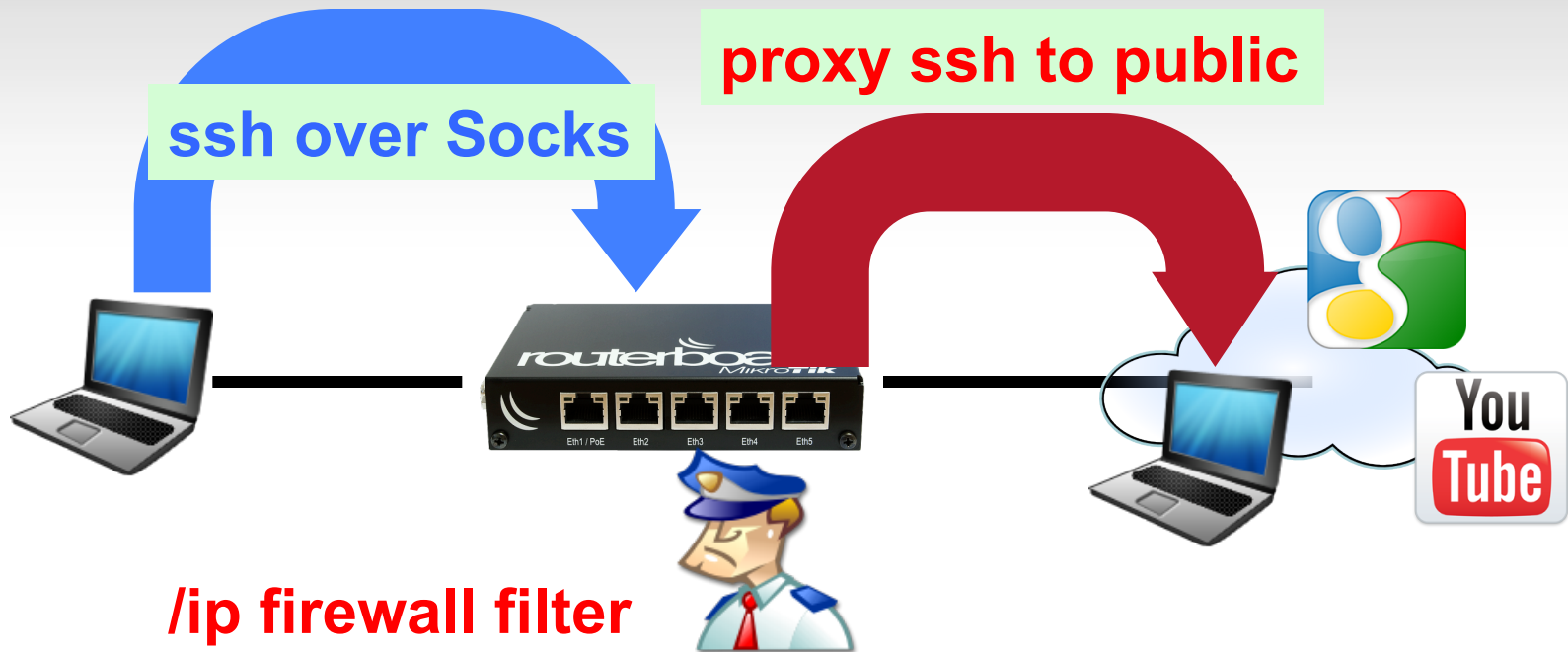
**Pastikan socks proxy kita tidak digunakan oleh “intruder” !!**

# Implementasi Socks (1)



```
/ip firewall filter  
add chain=forward protocol=tcp  
dst-port=22,23,80,443 action=drop
```

# Implementasi Socks (2)



```
/ip firewall filter  
add chain=forward protocol=tcp  
dst-port=22,23,80,443 action=drop
```

# Webproxy

- Fungsi yang bisa diterapkan di webproxy mikrotik meliputi :
  - Regular HTTP Proxy (support FTP, HTTP & HTTPS Proxy)
  - Transparent HTTP Proxy
  - Access list (filtering HTTP based)
  - Caching
  - Monitoring / logging
  - Parent Proxy

# Konfigurasi

Web Proxy Settings

General Status Lookups Inserts Refreshes

Enabled

Src. Address:

Port:

Parent Proxy:

Parent Proxy Port:

Cache Administrator:

Max. Cache Size:  KiB

Max Cache Object Size:  KiB

Cache On Disk

Max. Client Connections:

Max. Server Connections:

Max Fresh Time:

Serialize Connections

Always From Cache

Cache Hit DSCP (TOS):

Cache Drive:

OK

Cancel

Apply

Clear Cache

Reset HTML

Access

Cache

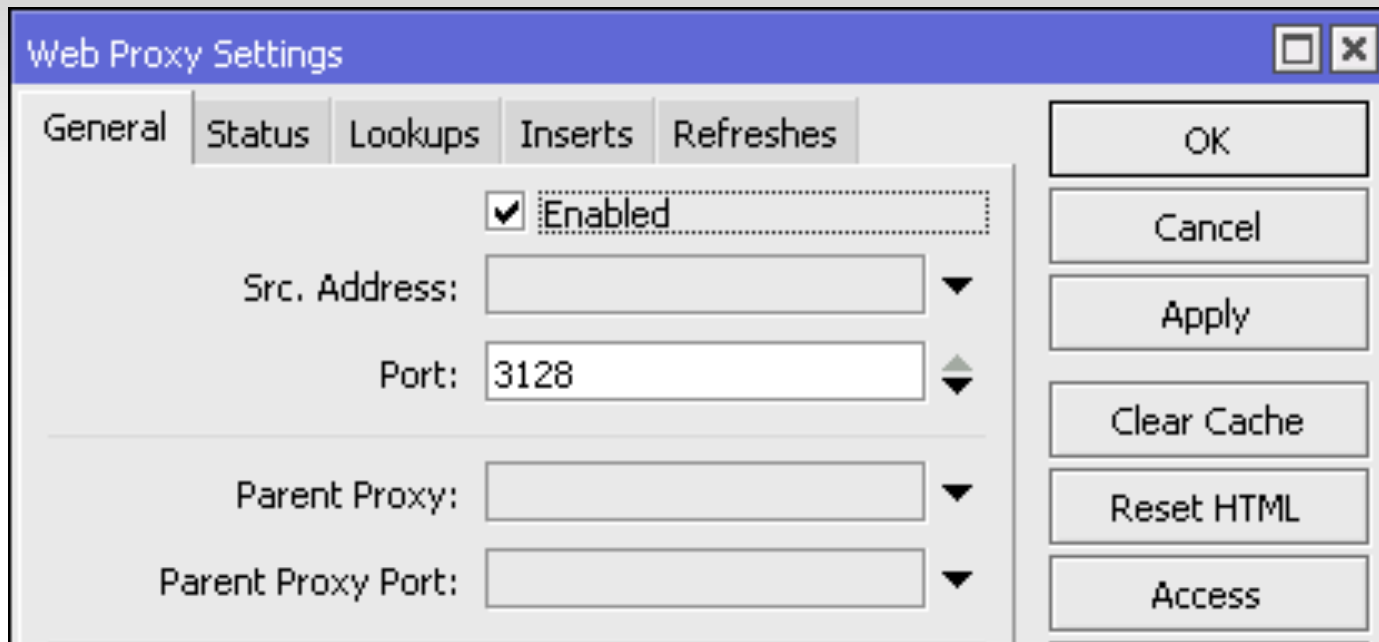
Direct

Connections

Cache Contents

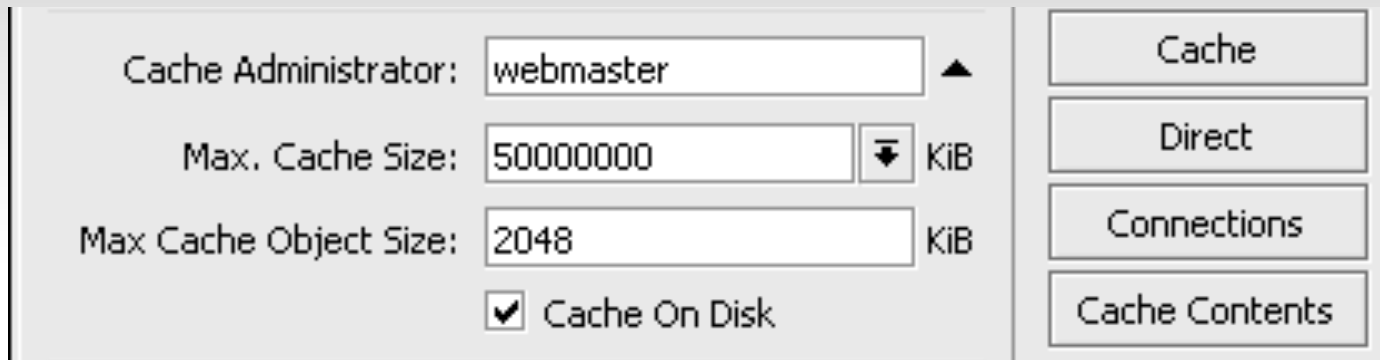
running

# Konfigurasi (1)



- Src address merupakan IP yang akan digunakan webproxy kita untuk melakukan request ke sebuah server
- Parent Proxy bisa kita gunakan jika ada proxy lain di network kita

# Konfigurasi (2)



The screenshot shows the Mikrotik cache configuration interface. On the left, there are three input fields: 'Cache Administrator' with the value 'webmaster', 'Max. Cache Size' with the value '50000000' and a unit of 'KiB', and 'Max Cache Object Size' with the value '2048' and a unit of 'KiB'. Below these fields is a checked checkbox labeled 'Cache On Disk'. On the right side, there are four buttons: 'Cache', 'Direct', 'Connections', and 'Cache Contents'.

- Pengisian Maximum Cache Size berhubungan erat dengan kapasitas storage + kapasitas RAM
- MaxCacheSize = Unlimited → Storage – 1/7 (atau 50MB) untuk system
- Setiap 1GB cache content, membutuhkan berkisar 10-15MB RAM
- Kecuali CCR Series, semua perangkat Mikrotik hanya support Up To 2GB untuk RAM

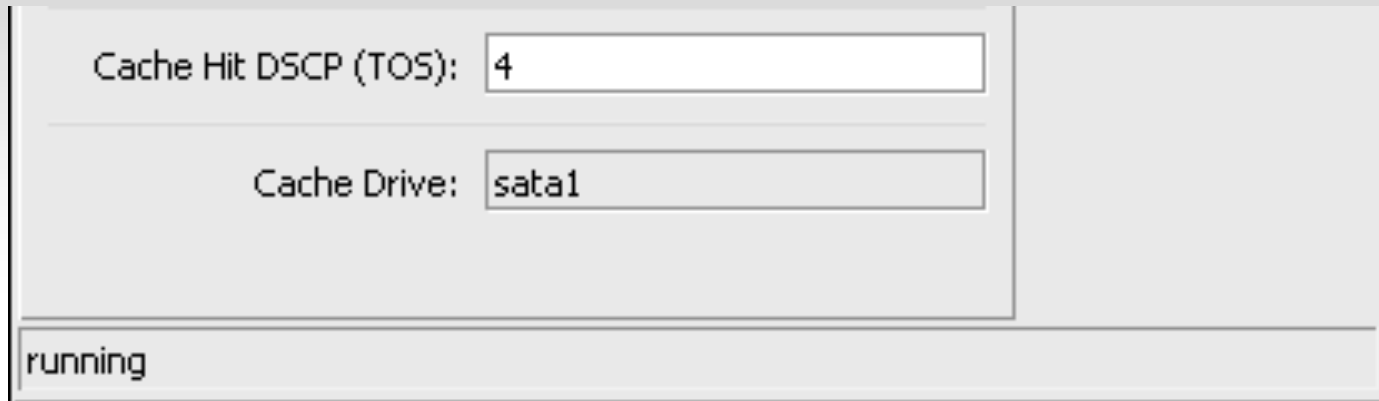
# Konfigurasi (3)

Max. Client Connections:	<input type="text" value="10000"/>
Max. Server Connections:	<input type="text" value="10000"/>
Max Fresh Time:	<input type="text" value="1d 00:00:00"/>
	<input type="checkbox"/> Serialize Connections
	<input type="checkbox"/> Always From Cache

**Untuk jaringan yang padat, sesuaikan parameter max client + max server connection**



# Konfigurasi (4)



The screenshot shows a configuration window with two input fields. The first field is labeled 'Cache Hit DSCP (TOS):' and contains the value '4'. The second field is labeled 'Cache Drive:' and contains the value 'sata1'. Below these fields, the status 'running' is displayed.

- Secara otomatis untuk content yang berasal dari local cache akan diset di kolom header DSCP sesuai digit pada parameter Cache Hit DSCP
  - Bisa kita gunakan untuk memisahkan traffik Miss / Hit dari proxy kita
- Cache Drive menunjukkan disk storage yang digunakan untuk media penyimpanan cache

# Reguler (Client)

Configure Proxies to Access the Internet

No proxy

Auto-detect proxy settings for this network

Use system proxy settings

Manual proxy configuration:

HTTP Proxy:  Port:

Use this proxy server for all protocols

SSL Proxy:  Port:

FTP Proxy:  Port:

SOCKS Host:  Port:

SOCKS v4  SOCKS v5

# Transparent

- Sisi user tidak perlu ada konfigurasi tambahan
- Kita “paksa” untuk trafik HTTP nya untuk melewati proxy kita dengan bantuan NAT
- **Filter akses dari luar !!!**

```
/ip firewall nat
```

```
add chain=dstnat in-interface=ether-local protocol=tcp \  
dst-port=80,8080,3128,8081 action=redirect to-ports=3128
```

```
/ip firewall filter
```

```
add chain=input protocol=tcp dst-port=3128 \  
in-interface=ether-public connection-state=new \  
action=drop
```

# Status

The screenshot shows the 'Web Proxy Settings' dialog box with the 'Status' tab selected. The dialog displays various performance metrics and controls. The status at the bottom is 'running'.

Category	Value
Uptime	2d 20:19:50
Requests	4430851
Hits	412884
Cache Used	8 573 421 KiB
Total RAM Used	42 642 KiB
Received From Servers	97 919 208 KiB
Sent To Clients	102 731 795 KiB
Hits Sent To Clients	2 428 699 KiB

Buttons on the right side of the dialog:

- OK
- Cancel
- Apply
- Clear Cache
- Reset HTML
- Access
- Cache
- Direct
- Connections
- Cache Contents

Status: running

# Access List

The image shows two windows from the Mikrotik WinBox interface. The 'Web Proxy Access' window on the left displays a table with two rows, where the second row is selected. The 'New Web Proxy Rule' window on the right shows configuration options for a rule, including source and destination addresses, ports, hostnames, paths, methods, actions, and redirect targets.

#	Src. Address	Dst. Address
0	●	
1	●	

**New Web Proxy Rule**

Src. Address:

Dst. Address:

Dst. Port:

Local Port:

Dst. Host:

Path:

Method:

Action:

Redirect To:

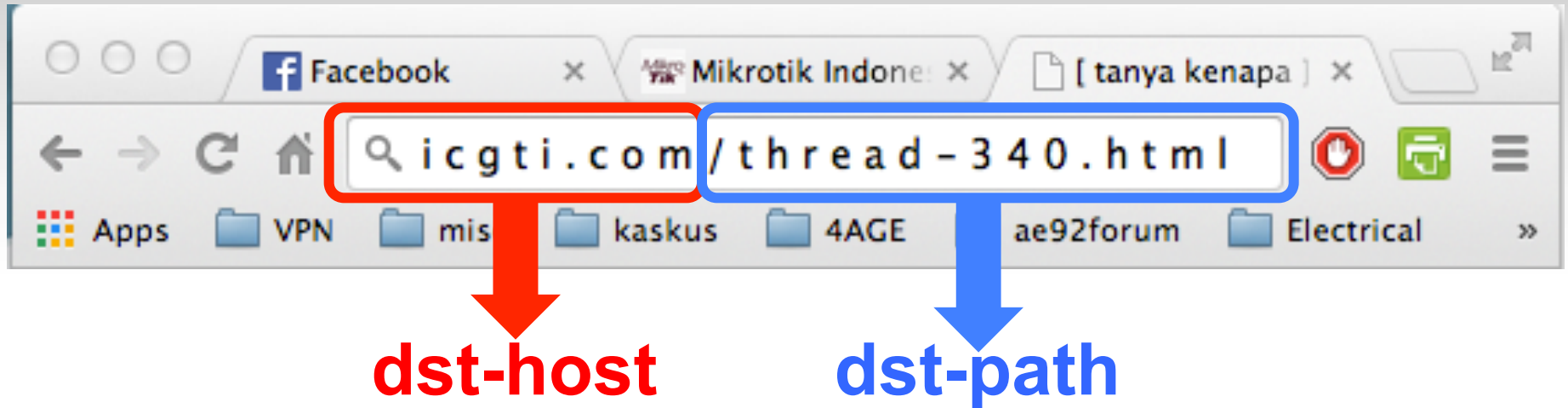
Hits:

enabled

Buttons: OK, Cancel, Apply, Disable, Comment, Copy, Remove, Reset Counters, Reset All Counters

- Access list bisa kita gunakan untuk filtering berdasarkan nama domain / path yang akan dibuka client
- Selain diblock (deny), bisa juga kita arahkan ke sebuah halaman web lain (redirect to)
- Default = Allow

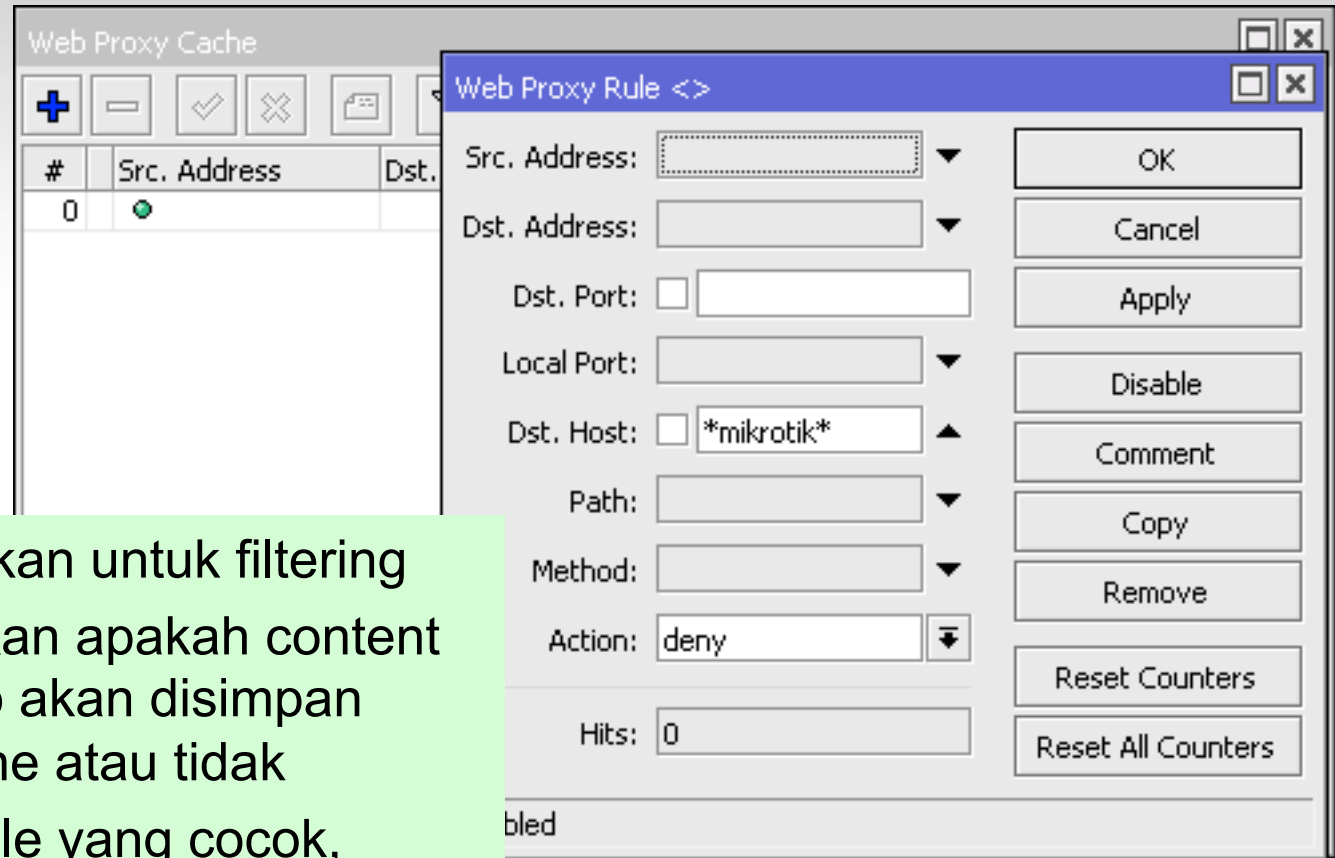
# Access List (2)



- Penulisan host/path bisa menggunakan tanda :
  - \* → menggantikan sebuah karakter atau lebih
  - ? → menggantikan sebuah karakter
- Bisa juga menggunakan regex (POSIX base) dan diawali tanda “ : ”

<http://www.regular-expressions.info/reference.html>

# Cache List



- Cache list ini bukan untuk filtering
- Untuk menentukan apakah content dari sebuah web akan disimpan dalam local cache atau tidak
- Jika tidak ada rule yang cocok, secara default akan disimpan didalam local cache (allow)

# Cache Content



The screenshot shows a window titled "Web Proxy Cache Contents" with a search bar and a table of cached items. The table has three main columns: "URI", "File Size", and "Last Modified". The items listed include various web pages and images from sources like yimg.com, kompas.com, detik.com, msn.com, and tiket.com. The status bar at the bottom indicates "123062 items".

URI	File Size	Last Modified
http://e.yimg.com/pf/api/res/1.2/1J3q...	10 KiB	Nov/20/2013 04:45:47
http://e.yimg.com/pf/api/res/1.2/hUp...	9 KiB	Nov/20/2013 04:45:46
http://assets.kompas.com/data/2013...	78 KiB	Nov/20/2013 04:45:45
http://tv.detik.com/__utm.gif?utmwv...	0 KiB	Nov/20/2013 04:45:45
http://assets.kompas.com/data/2013...	6 KiB	Nov/20/2013 04:45:39
http://i1.yimg.com/vi/-p5KvOuteY0/...	10 KiB	Nov/20/2013 04:45:39
http://i1.yimg.com/vi/90e_Bo3kAE/m...	9 KiB	Nov/20/2013 04:45:39
http://promotion.msn.com.tw/news/C...	3 KiB	Nov/20/2013 04:45:39
http://p.twitter.com/t.gif?_=1384923...	1 KiB	Nov/20/2013 04:45:38
http://pekanbaru.tribunnews.com/fot...	16 KiB	Nov/20/2013 04:45:38
http://images.detik.com/tv/2013/01/1...	9 KiB	Nov/20/2013 04:45:35
http://images.detik.com/tv/2013/05/1...	7 KiB	Nov/20/2013 04:45:35
http://tv.detik.com/__utm.gif?utmwv...	0 KiB	Nov/20/2013 04:45:35
http://img01.tiket.com/images/tiket2/i...	109 KiB	Nov/20/2013 04:45:32

Tabel yang berisi informasi object-object yang tersimpan didalam router kita



# Media Penyimpanan

- Untuk object cache bisa disimpan media :
  1. Memory (RAM) router
  2. Primary storage (NAND)
  3. Secondary storage\* (hdd, usb fd, microsd, CF)
- Pengaturan storage ada didalam menu system → store

\*Syarat dan ketentuan berlaku

# Store List

The screenshot shows the 'Store List' window with the 'Stores' tab selected. The table lists two storage devices:

Name	Total Space	Free Space	Status
sata1	293.4 GiB	283.3 GiB	ready
sata2	965.1 MiB	923.2 MiB	ready

Below the table, it indicates '2 items'.

The screenshot shows the 'Store List' window with the 'Disks' tab selected. The table lists one proxy store:

Name	Type	Disk	Status
proxy-store	web-proxy	sata1	active

Below the table, it indicates '1 item'.

# Direct List

The image shows two windows from the Mikrotik WinBox interface. The 'Web Proxy Direct' window on the left contains a table with columns for '#', 'Src. Address', and 'Dst.'. The table has one row with the number '0' in the first column and a green dot in the second column. The 'Web Proxy Rule' dialog box on the right is titled 'Web Proxy Rule <>' and contains the following fields and controls:

- Src. Address: [Empty text box]
- Dst. Address: [Empty text box]
- Dst. Port:  [Empty text box]
- Local Port: [Empty text box]
- Dst. Host:  \*mikrotik.com
- Path: [Empty text box]
- Method: [Empty text box]
- Action: allow
- Hits: 0

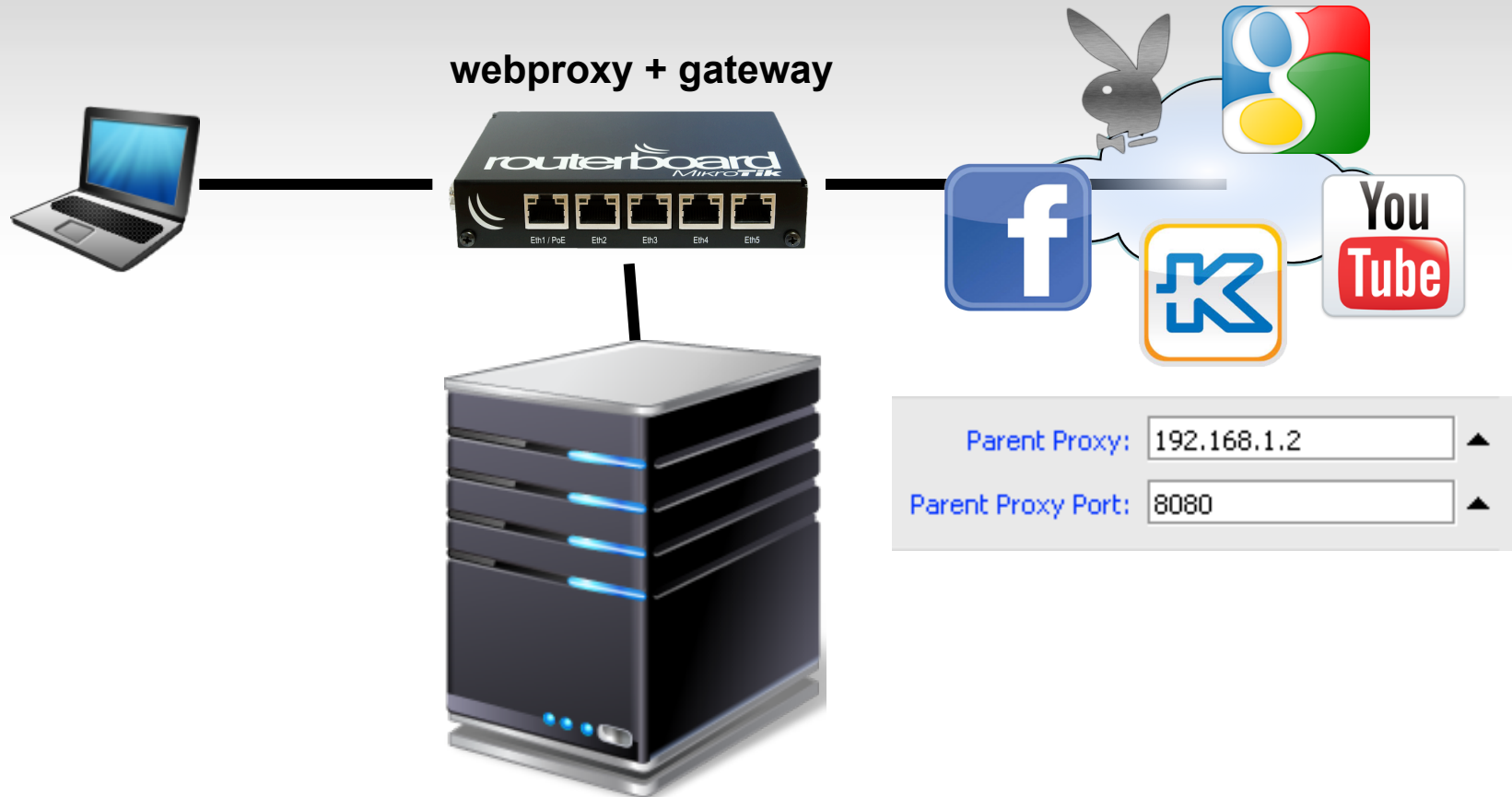
On the right side of the dialog, there are several buttons: OK, Cancel, Apply, Disable, Comment, Copy, Remove, Reset Counters, and Reset All Counters. At the bottom of the dialog, the status 'enabled' is displayed.

- Rule ini akan dibaca jika proxy diset parentnya
- Direct list akan menentukan apakah request dari proxy akan dilewatkan ke parent atau langsung ke server (direct)
- Default = deny

# Parent Proxy

- Digunakan apabila kita juga mempunyai mesin proxy lain yang berbeda mesin dari router kita
- Bisa menjadi alternatif untuk mengatasi resource hardware router kita
- Dengan mengaktifkan parent proxy, maka semua request webproxy akan dilewatkan ke parent terlebih dahulu (kecuali direct list allow)

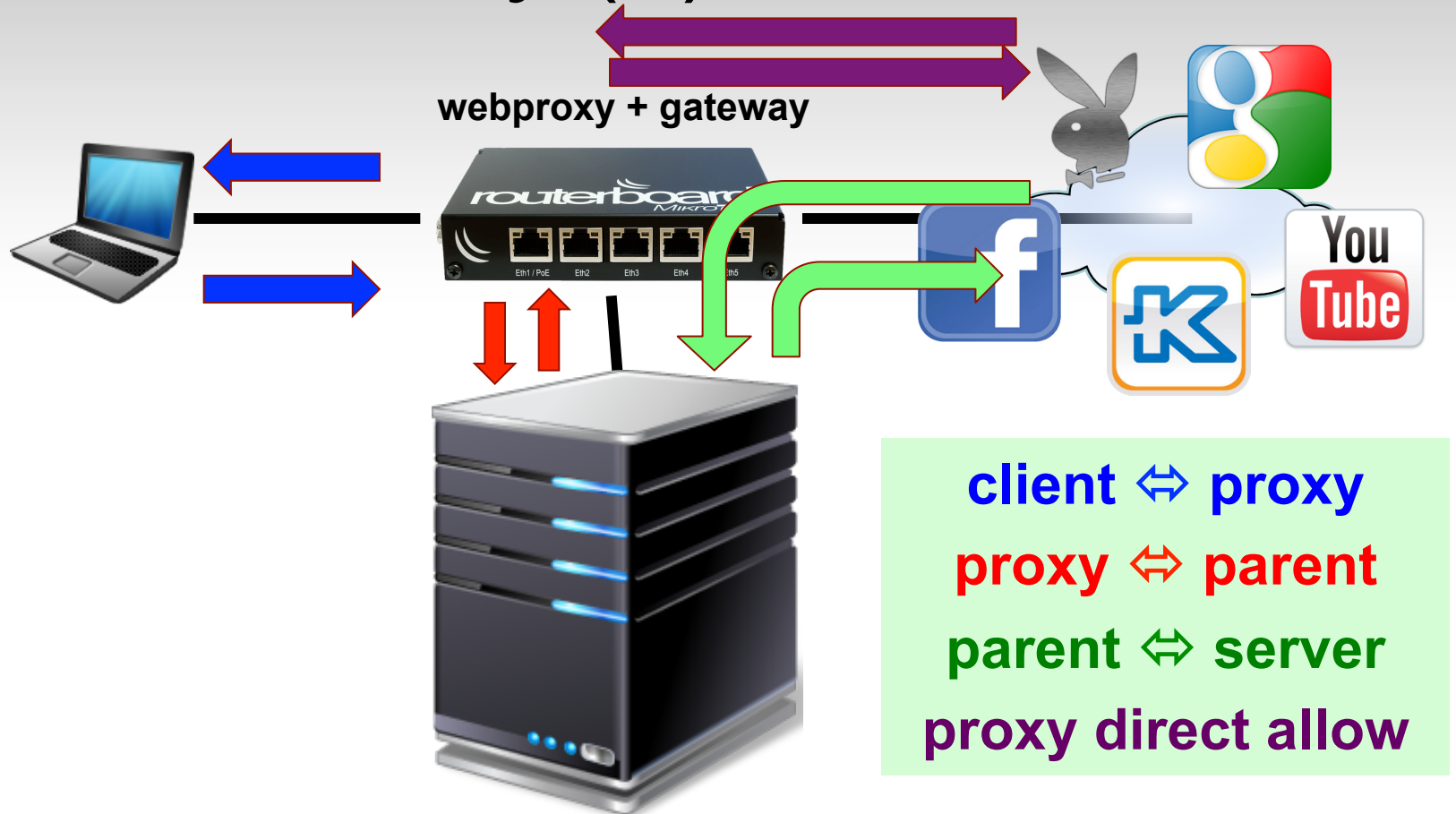
# Parent Proxy (2)



super ultimate powerfull proxy engine+hardware

IP : 192.168.1.2 Port : 8080

# Parent Proxy (3)



super ultimate powerfull proxy engine+hardware

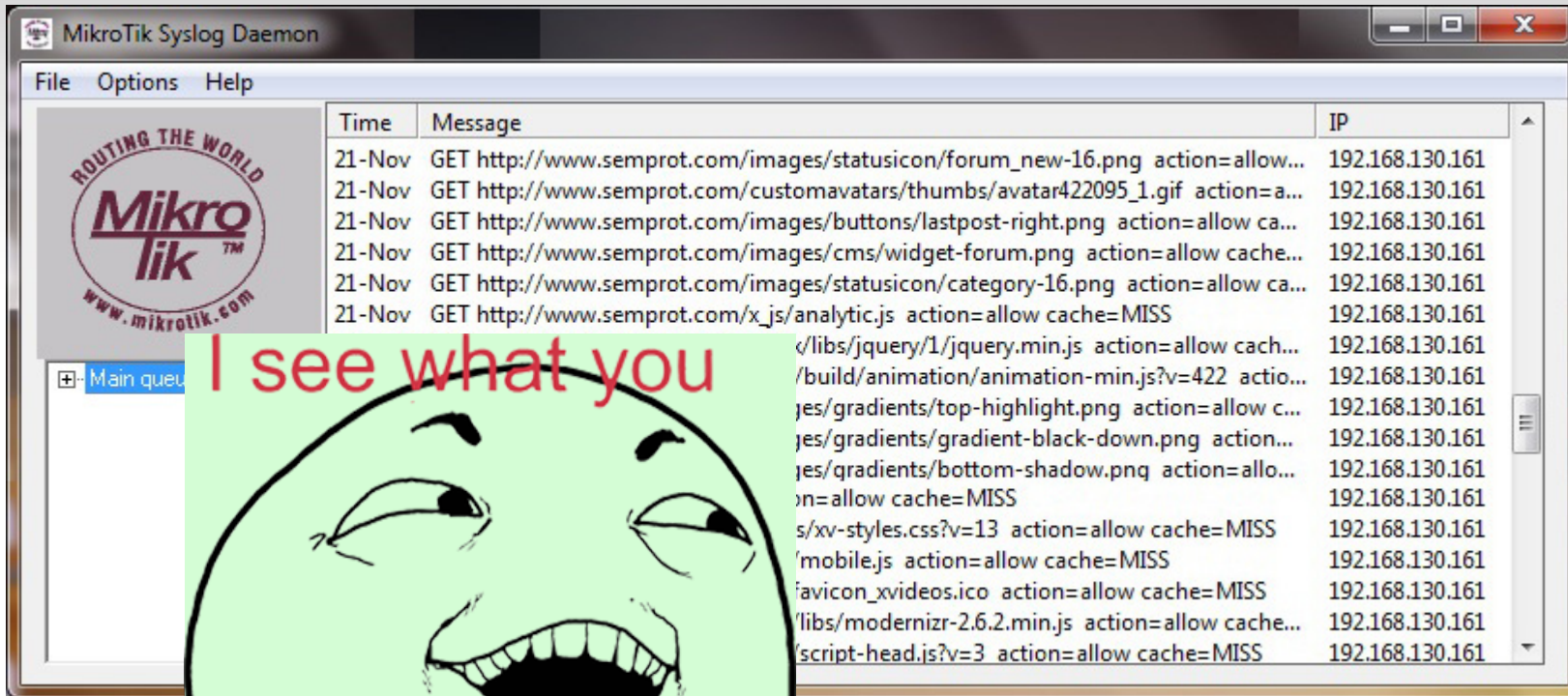
IP : 192.168.1.2 Port : 8080

# Logging

- Apabila client sudah menggunakan webproxy pada router kita, kita bisa memonitoring client kita sedang mengakses website apa dengan mengaktifkan fitur log di router kita
- Log tersebut bisa kita simpan kedalam ram, file, email atau kita stream ke Syslog server
- How to :

[http://mikrotik.co.id/artikel\\_lihat.php?id=50](http://mikrotik.co.id/artikel_lihat.php?id=50)

# Logging (2)



MikroTik Syslog Daemon

File Options Help

Time	Message	IP
21-Nov	GET http://www.semprot.com/images/statusicon/forum_new-16.png action=allow...	192.168.130.161
21-Nov	GET http://www.semprot.com/customavatars/thumbs/avatar422095_1.gif action=a...	192.168.130.161
21-Nov	GET http://www.semprot.com/images/buttons/lastpost-right.png action=allow ca...	192.168.130.161
21-Nov	GET http://www.semprot.com/images/cms/widget-forum.png action=allow cache...	192.168.130.161
21-Nov	GET http://www.semprot.com/images/statusicon/category-16.png action=allow ca...	192.168.130.161
21-Nov	GET http://www.semprot.com/x_js/analytic.js action=allow cache=MISS	192.168.130.161
	</libs/jquery/1/jquery.min.js action=allow cach...	192.168.130.161
	/build/animation/animation-min.js?v=422 actio...	192.168.130.161
	jes/gradients/top-highlight.png action=allow c...	192.168.130.161
	jes/gradients/gradient-black-down.png action...	192.168.130.161
	jes/qadients/bottom-shadow.png action=allo...	192.168.130.161
	n=allow cache=MISS	192.168.130.161
	s/xv-styles.css?v=13 action=allow cache=MISS	192.168.130.161
	'mobile.js action=allow cache=MISS	192.168.130.161
	'favicon_xvideos.ico action=allow cache=MISS	192.168.130.161
	'libs/modernizr-2.6.2.min.js action=allow cache...	192.168.130.161
	'script-head.js?v=3 action=allow cache=MISS	192.168.130.161

ROUTING THE WORLD  
**MikroTik**  
www.mikrotik.com

Main queue

I see what you did there



# Contoh Kompleks

- Di sebuah jaringan memiliki kebijakan :
  - Group OB di jam kerja tidak boleh akses .go.id
  - Group Bos di jam kerja tidak boleh akses porntube 😊
  - Diluar jam kerja semua web diblock :p
- Di router kita hanya memiliki 1 ip publik, tetapi ada 2 webserver local dengan nama domain berbeda harus bisa diakses dari luar
  - kedua domain tersebut harus sudah terdaftar dahulu

# Pertanyaan (1)

- Di sebuah jaringan yang memiliki kebijakan :
  - Group OB di jam kerja tidak boleh akses .go.id
  - Group Bos di jam kerja tidak boleh akses porntube 😊
  - Diluar jam kerja semua web diblock :p

Menggunakan scheduler untuk enable-disable access list sesuai jamnya

**atau**

**menggunakan parameter time dan src-address-list di dalam nat redirect**

# Pertanyaan (2)

- Di access list src address hanya bisa berdasarkan single IP atau single network.
- Kasus kita ternyata src addressnya berdasarkan grouping IP



**Webproxy Multi port 😊**

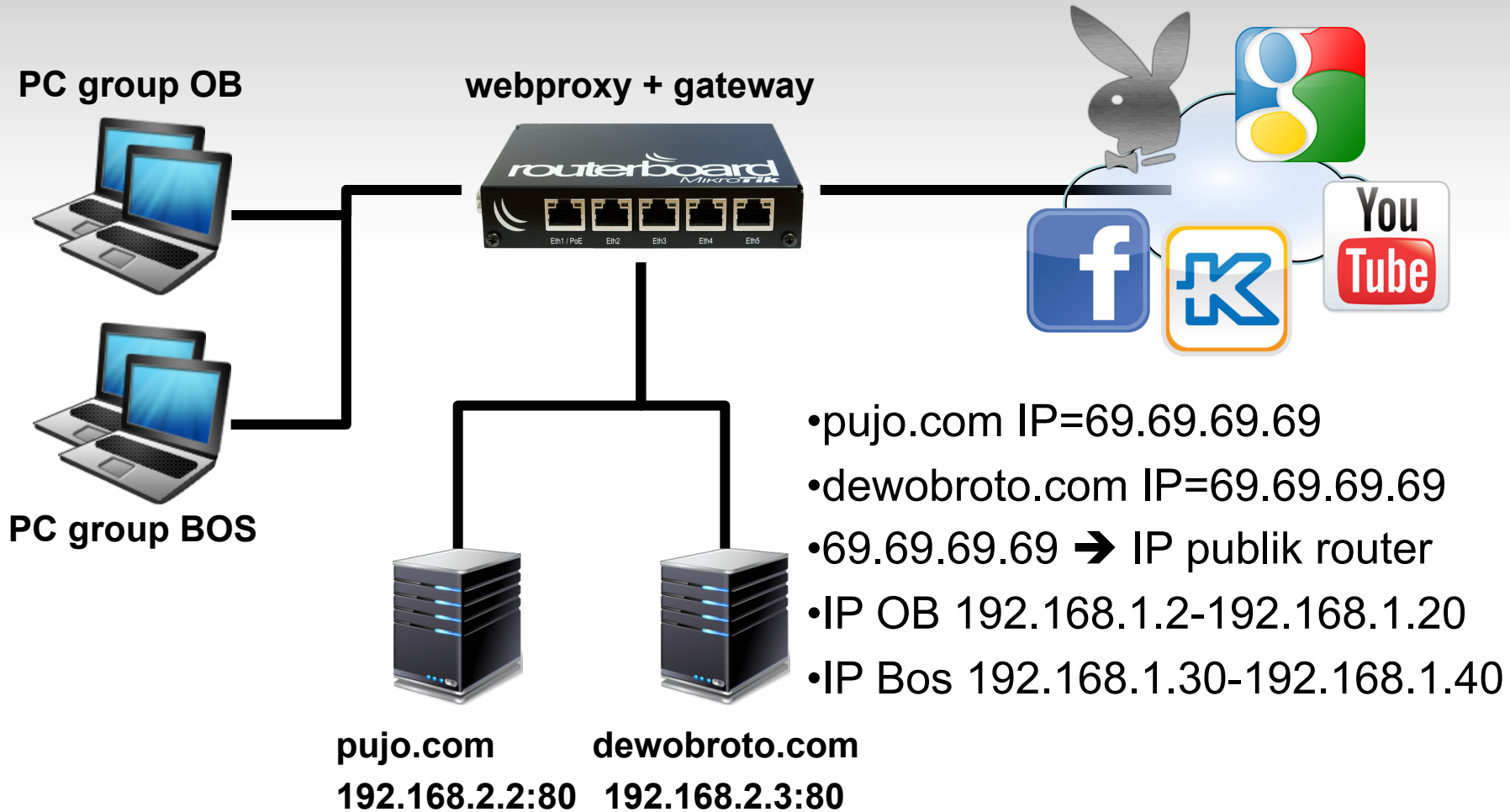
# Pertanyaan (3)

- Di router kita hanya memiliki 1 ip publik, tetapi ada 2 webserver dengan nama domain berbeda harus bisa diakses dari luar

Pakai dst-nat berdasar dst-port tidak bisa berdasarkan domain

**Kembali ke webproxy  
untuk meredirect berdasar domain**

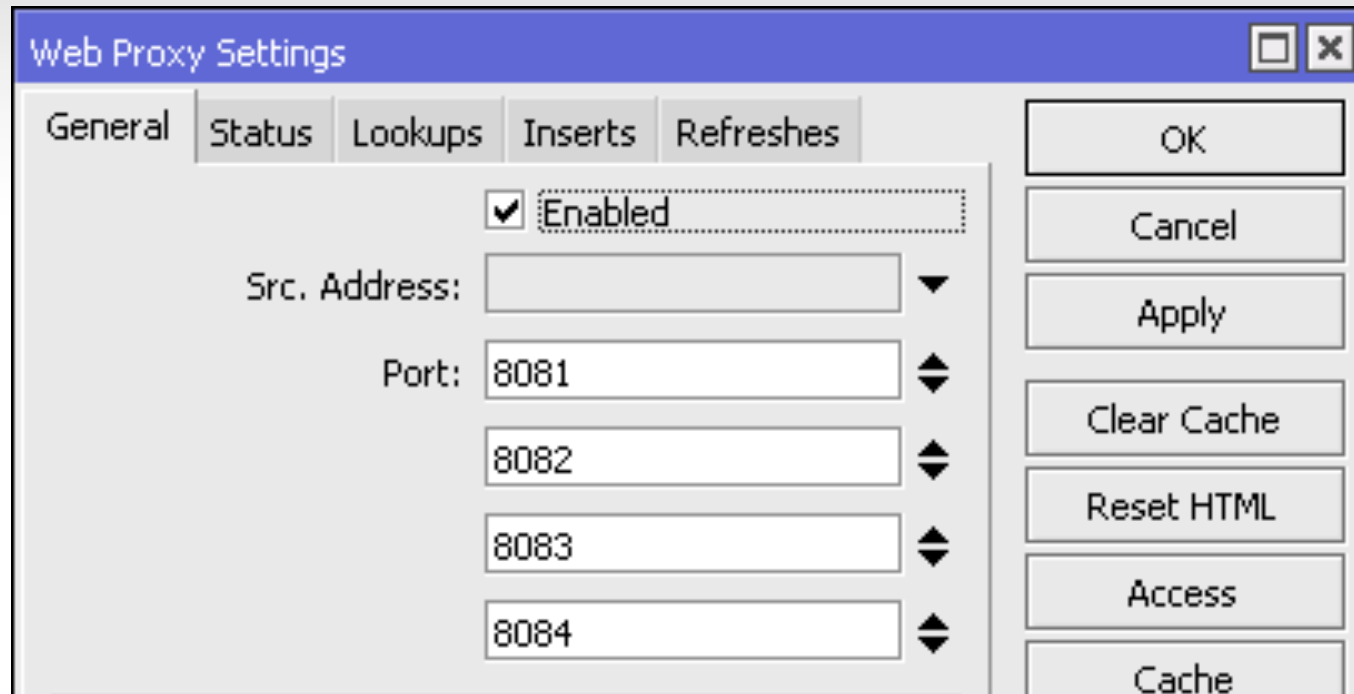
# Topologi



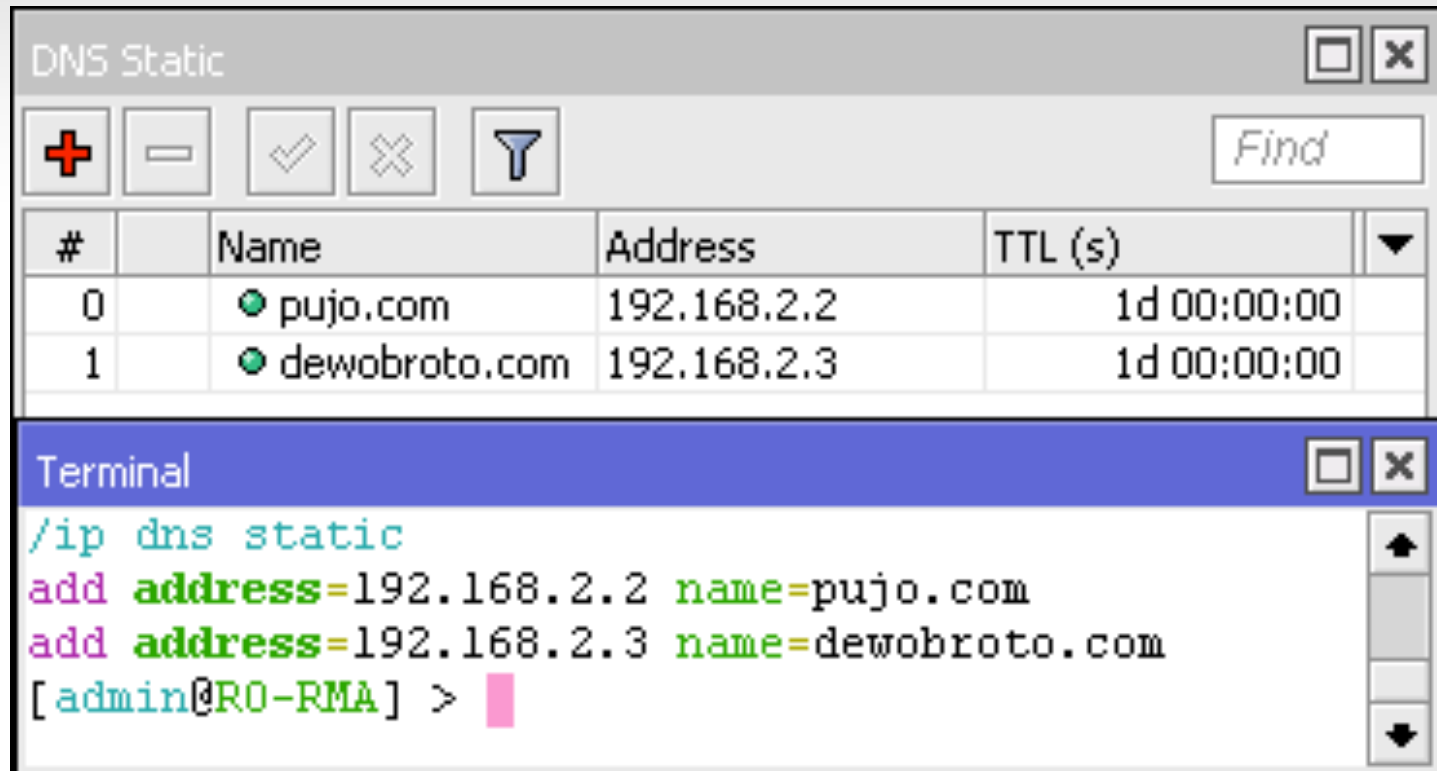
# Solusi (1)

```
Terminal
/ip firewall nat
add action=redirect chain=dstnat comment="OB jam kerja" dst-port=80 \
  protocol=tcp src-address-list=GroupOB time=8h-17h,mon,tue,wed,thu,fri \
  to-ports=8081
add action=redirect chain=dstnat comment="BOS jam kerja" dst-port=80 \
  protocol=tcp src-address-list=GroupBos time=8h-17h,mon,tue,wed,thu,fri \
  to-ports=8082
add action=redirect chain=dstnat comment="OB + Bos diluar jam kerja" \
  dst-port=80 protocol=tcp src-address=192.168.1.0/24 to-ports=8083
add action=redirect chain=dstnat comment="reverse webserver" dst-port=80 \
  in-interface=ether1 protocol=tcp to-ports=8084
[admin@RO-RMA] > █
```

# Solusi (2)



# Solusi (3)



The image shows a screenshot of the Mikrotik WinBox interface. The top window is titled "DNS Static" and contains a table with the following data:

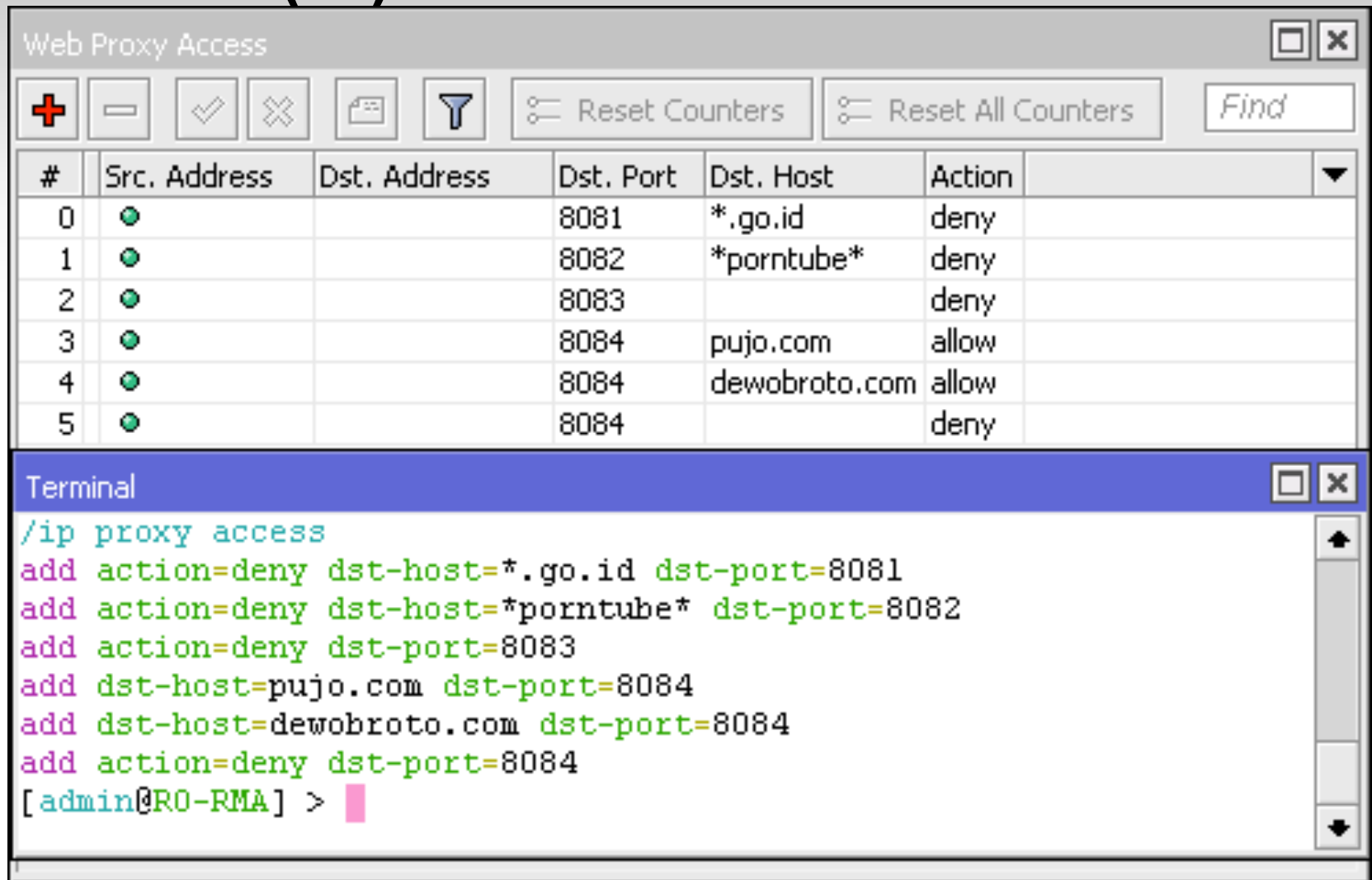
#	Name	Address	TTL (s)
0	pujo.com	192.168.2.2	1d 00:00:00
1	dewobroto.com	192.168.2.3	1d 00:00:00

Below the table is a terminal window titled "Terminal" showing the following commands and output:

```
/ip dns static  
add address=192.168.2.2 name=pujo.com  
add address=192.168.2.3 name=dewobroto.com  
[admin@RO-RMA] >
```



# Solusi (4)



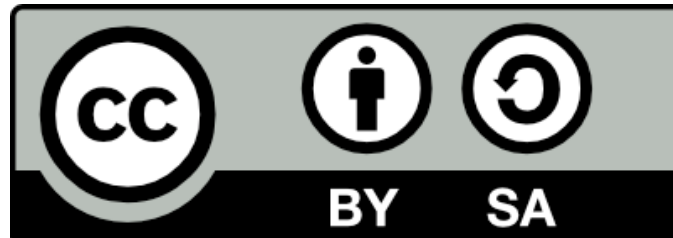
The screenshot displays the Mikrotik WinBox interface. The top window is titled "Web Proxy Access" and contains a configuration table with the following data:

#	Src. Address	Dst. Address	Dst. Port	Dst. Host	Action
0	●		8081	*.go.id	deny
1	●		8082	*porntube*	deny
2	●		8083		deny
3	●		8084	pujo.com	allow
4	●		8084	dewobroto.com	allow
5	●		8084		deny

Below the table is a terminal window titled "Terminal" showing the following commands:

```
/ip proxy access
add action=deny dst-host=*.go.id dst-port=8081
add action=deny dst-host=*porntube* dst-port=8082
add action=deny dst-port=8083
add dst-host=pujo.com dst-port=8084
add dst-host=dewobroto.com dst-port=8084
add action=deny dst-port=8084
[admin@RO-RMA] >
```

Matur Suwun mas dab!  
Terima Kasih mas bro!  
Thank You guys!  
Paldies!



Dijinkan menggunakan sebagian atau seluruh materi pada modul ini, baik berupa ide, foto, tulisan, konfigurasi dan diagram selama untuk kepentingan pengajaran, dan memberikan kredit kepada penulis serta link ke [www.mikrotik.co.id](http://www.mikrotik.co.id)