

MikroTik Web proxy with External Storage



MikroTik Web-Proxy and Save Data to External Storage

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August -2016

Objective

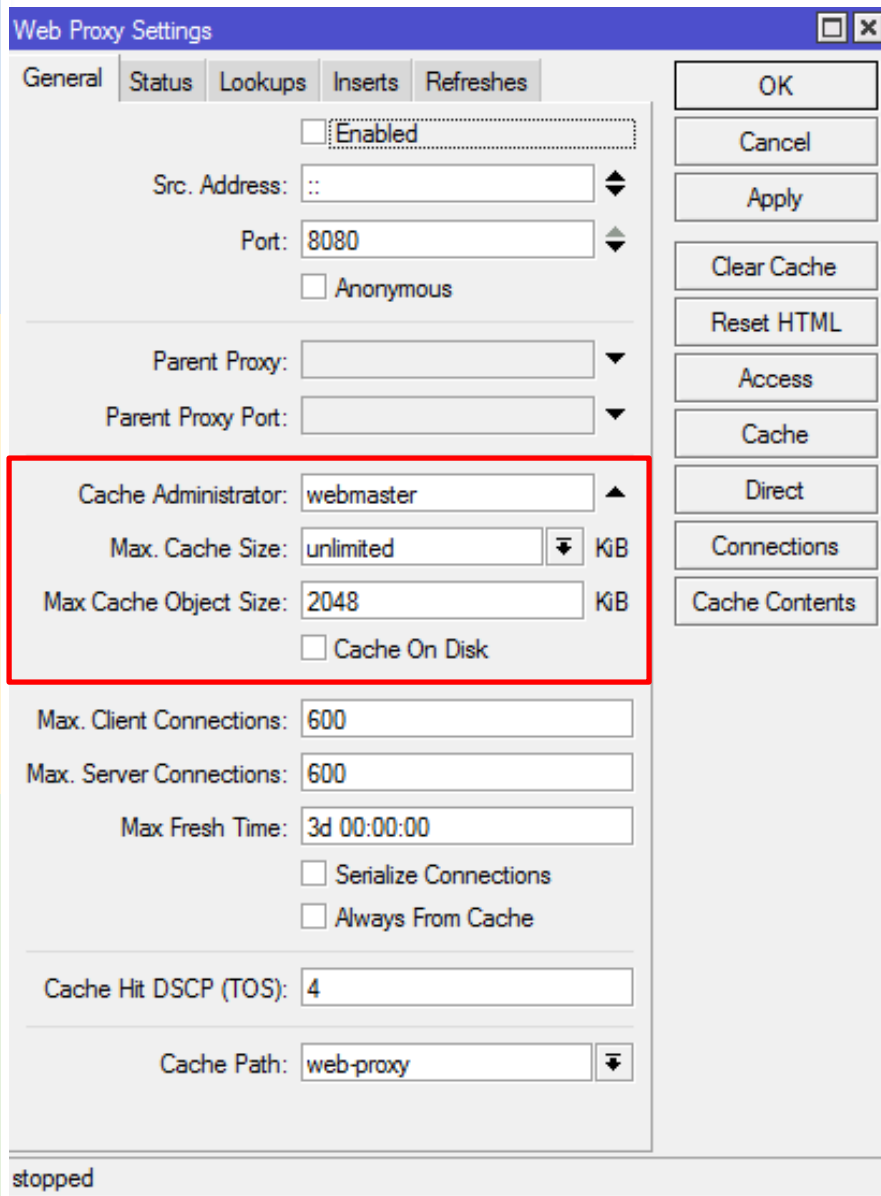
- Activate Web-Proxy.
- Redirect HTTP Traffic to MikroTik Web-Proxy.
- Save HTTP Data to External Storage.
- **Optional** --- DNS and Name Filtering.

Local Web-Proxy

Web Proxy

- Web-proxy have 3 mayor features:
 - ❖ HTTP and FTP traffic caching.
 - ❖ DNS name filtering.
 - ❖ DNS redirection.
- Web-proxy have two operation modes:
 - ❖ **Regular** – browser must be configured to use this proxy.
 - ❖ **Transparent** – this proxy is not visible for customers NAT rules must be applied.

Web Proxy



Web Proxy Settings

General Status Lookups Inserts Refreshes

Enabled

Src. Address: ::

Port: 8080

Anonymous

Parent Proxy:

Parent Proxy Port:

Cache Administrator: webmaster

Max. Cache Size: unlimited KiB

Max Cache Object Size: 2048 KiB

Cache On Disk

Max. Client Connections: 600

Max. Server Connections: 600

Max Fresh Time: 3d 00:00:00

Serialize Connections

Always From Cache

Cache Hit DSCP (TOS): 4

Cache Path: web-proxy

OK

Cancel

Apply

Clear Cache

Reset HTML

Access

Cache

Direct

Connections

Cache Contents

stopped

No Caching:

- Max-cache-size = none

Cache to RAM:

- Max-cache-size \neq none

- Cache-on-disk = no

Cache to HDD:

- Max-cache-size \neq none

- Cache-on-disk = yes

Cache Drive.

Web Proxy

Web Proxy Settings

General | Status | Lookups | Inserts | Refreshes

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Port: 8080

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stopped

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

Maximal-client-connections - number of connections accepted from clients.

Maximal-server-connections - number of connections made by server.

Web-Proxy Options

- **Serialize-connections** – use only one connection for proxy and server communication (if server supports persistent HTTP connection).
- **Always-from-cache** - ignore client refresh requests if the cache content is considered fresh.
 - ❖ **Max-fresh-time** - specifies how long objects without an explicit expiry time will be considered fresh.
- **Cache-hit-DSCP** – specify DSCP value for all packets generated from the web-proxy cache.

Web-Proxy Options

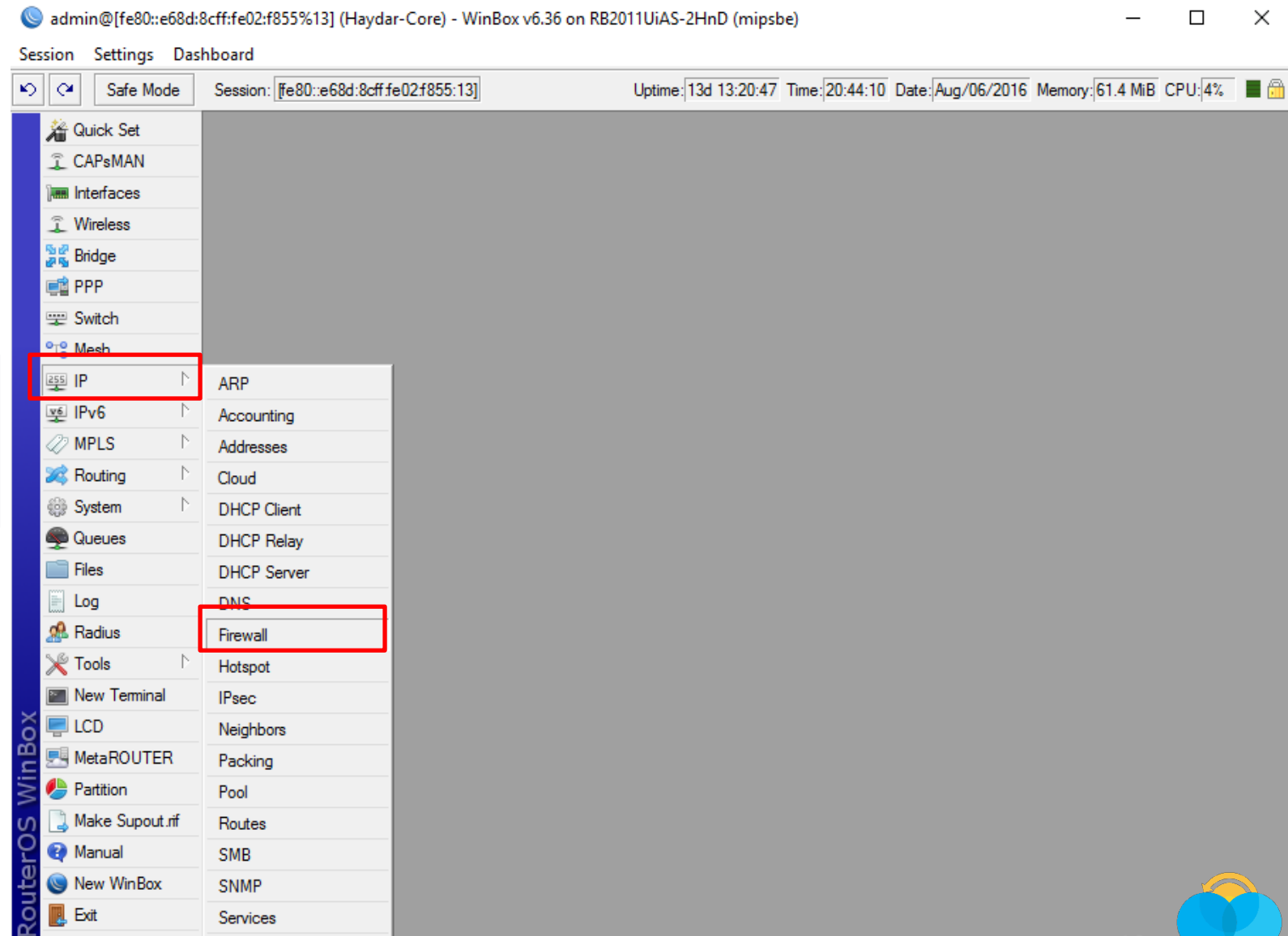
The image displays three screenshots of the 'Web Proxy Settings' application, each showing a different tab. The 'General' tab shows system and usage statistics. The 'Status' tab shows request and cache statistics. The 'Lookups' tab shows detailed request statistics. Each screenshot is marked with a red box highlighting its respective data.

Tab	Field	Value
General	Uptime:	13d 12:43:00
	Client Connections:	3
	Server Connections:	0
	Requests:	122403
	Hits:	18852
	Cache Used:	8 443 167 KiB
	Total RAM Used:	9 301 KiB
	Received From Servers:	32 354 700 KiB
	Sent To Clients:	33 933 153 KiB
	Hits Sent To Clients:	1 442 116 KiB
Status	Successes:	27 257
	Not Found:	88 024
	Non Cachable:	14 470
	Denied:	0
	Expired:	657
	No Expiration Info:	160
Lookups	URL Requests:	2 508
	Request Max. Age:	121
	Expired:	2 141
	Response Max. Age:	1 915
	Config Max. Fresh:	1 777
	Heuristic:	641
	Other:	159

Redirect Users HTTP Traffic to Web-Proxy

Redirect HTTP Traffic

To redirect HTTP traffic to web-proxy you must go to IP menu and the **Firewall**



Redirect HTTP Traffic

Now you must go **NAT** menu and add new Nat rule with dstnat chain according to the image.

The screenshot shows the Mikrotik WinBox interface. The main window displays the Firewall NAT rules table. A new NAT rule is being configured in the 'NAT Rule <80>' dialog box. The 'Chain' is set to 'dstnat', the 'Protocol' is '6 (tcp)', and the 'Dst. Port' is '80'. The 'Action' is 'redirect'. The 'Chain' field is highlighted with a red box.

#	Action	Chain	Src. Address
0	masquerade	srcnat	::: Internet-DNS
1	masquerade	srcnat	::: Others
2	redirect	dstnat	::: DNS-Redirect-UDP
3	redirect	dstnat	::: DNS-Redirect-TCP
4	redirect	dstnat	::: Web-Proxy

NAT Rule <80>

Chain: **dstnat**

Src. Address: []

Dst. Address: []

Protocol: 6 (tcp)

Src. Port: []

Dst. Port: 80

Any. Port: []

In. Interface: []

Out. Interface: []

In. Interface List: []

Out. Interface List: []

Packet Mark: []

Connection Mark: []

Routing Mark: []

Routing Table: []

Connection Type: []

Redirect HTTP Traffic

After that you must go to **Action** menu.

The screenshot shows the WinBox interface for configuring a NAT rule. The 'NAT Rule <80>' dialog box is open, and the 'Action' tab is selected. The 'Action' dropdown menu is set to 'redirect', and the 'To Ports' field is set to '8080'. The 'Log' checkbox is unchecked. The 'Log Prefix' field is empty. The 'OK' button is visible. In the background, the Firewall NAT table is visible, showing a list of NAT rules. Rule 4 is selected, which is a 'redirect' action on the 'dstnat' chain.

#	Action	Chain	Src. Address
0	masquerade	srcnat	
1	masquerade	srcnat	
2	redirect	dstnat	
3	redirect	dstnat	
4	redirect	dstnat	



Activate External Storage with Web-Proxy

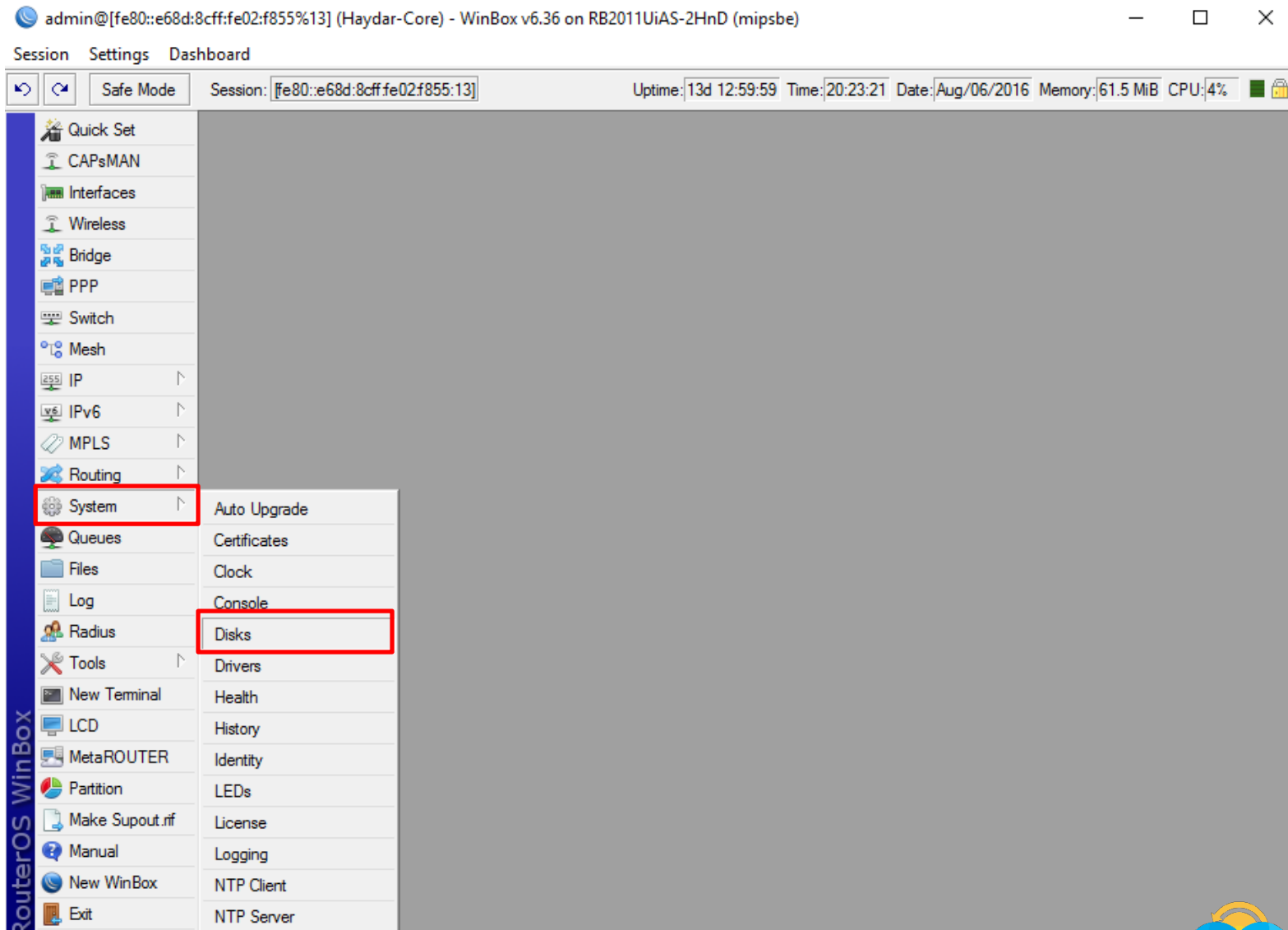


Caching to External

- Cache can be stored on the external drives.
- **Store** manages storage devices used by RouterOS various facilities.
- Cache can be stored to IDE, SATA, USB, CF, Micro SD drives.
- **Currently Store can be used for:**
 - Web proxy.
 - User Manager.
 - the Dude.

Caching to External

To activate External Storage you must go to **system** menu and then **Disks**.



The screenshot shows the WinBox interface for a Mikrotik router. The top bar displays the session information: 'admin@[fe80::e68d:8cff:fe02:f855%13] (Haydar-Core) - WinBox v6.36 on RB2011UiAS-2HnD (mipsbe)'. Below the top bar, there are tabs for 'Session', 'Settings', and 'Dashboard'. The main interface is divided into a left sidebar and a main content area. The sidebar contains a list of menu items: Quick Set, CAPsMAN, Interfaces, Wireless, Bridge, PPP, Switch, Mesh, IP, IPv6, MPLS, Routing, System, Queues, Files, Log, Radius, Tools, New Terminal, LCD, MetaROUTER, Partition, Make Supout.tif, Manual, New WinBox, and Exit. The 'System' menu item is highlighted with a red box. A sub-menu is open for 'System', showing options: Auto Upgrade, Certificates, Clock, Console, Disks, Drivers, Health, History, Identity, LEDs, License, Logging, NTP Client, and NTP Server. The 'Disks' option in the sub-menu is also highlighted with a red box. The main content area is currently empty.

Caching to External

- When you insert Disk it's will appear in Disks menu after that you must **select** this Disk and press **Eject Drive** and then **Format Drive**.
- At this step the Disk is ready to contain web proxy data.

The screenshot shows the WinBox interface for a Mikrotik device. The top bar displays the session information: admin@[fe80::e68d:8cff:fe02:f855%13] (Haydar-Core) - WinBox v6.36 on RB2011UiAS-2HnD (mipsbe). The main menu on the left includes options like Quick Set, CAPsMAN, Interfaces, Wireless, Bridge, PPP, Switch, Mesh, IP, IPv6, MPLS, Routing, System, Queues, Files, Log, Radius, Tools, New Terminal, LCD, MetaROUTER, Partition, Make Supout.rif, Manual, New WinBox, and Exit. The main window shows the Disk List window, which is a table with columns: Name, Label, Type, Disk, Free, and Size. The table contains one entry: disk1, NO NAME, fat32, USB Flash Drive, 20.3 GiB, 28.9 GiB. The 'Eject Drive' and 'Format Drive' buttons are highlighted with a red box. The status bar at the bottom of the Disk List window shows '1 item (1 selected)'. The top right of the interface shows system statistics: Uptime: 13d 13:03:02, Time: 20:26:25, Date: Aug/06/2016, Memory: 61.5 MiB, CPU: 3%.

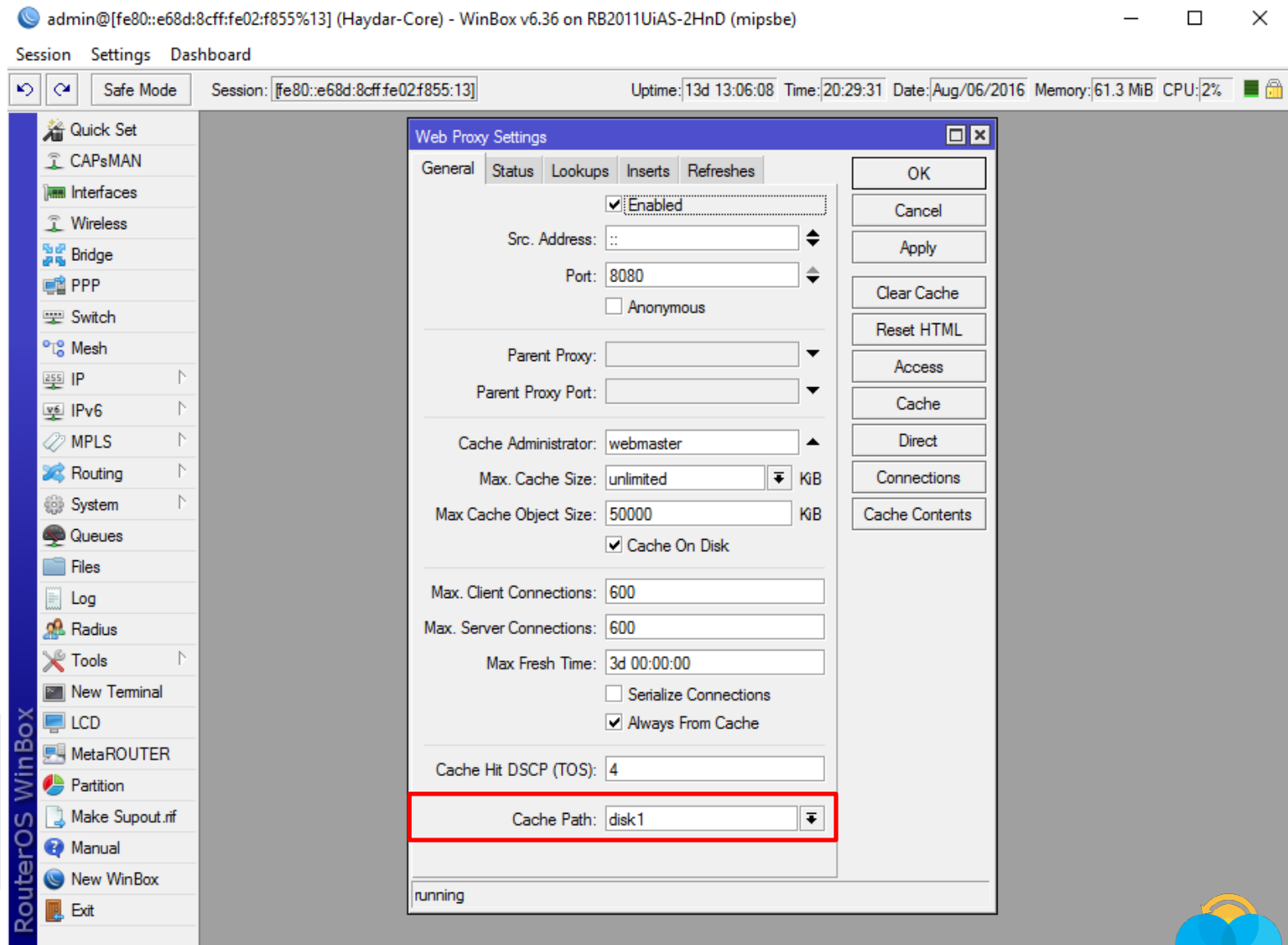
Name	Label	Type	Disk	Free	Size
disk1	NO NAME	fat32	USB Flash Drive	20.3 GiB	28.9 GiB



Caching to External

- The Final Step is by Going to **IP—Webproxy** and then from **cache Path Select Disk1** which is the disk name of external Storage

At this step your router is ready to use web proxy with full functionality **Congratulations**



The screenshot shows the WinBox interface for RouterOS. The main window displays the 'Web Proxy Settings' configuration page. The 'General' tab is active, showing various settings for the web proxy. The 'Cache Path' field is highlighted with a red box and set to 'disk1'. Other settings include 'Enabled' checked, 'Src. Address' set to '::', 'Port' set to '8080', 'Anonymous' unchecked, 'Parent Proxy' and 'Parent Proxy Port' empty, 'Cache Administrator' set to 'webmaster', 'Max. Cache Size' set to 'unlimited', 'Max Cache Object Size' set to '50000', 'Cache On Disk' checked, 'Max. Client Connections' set to '600', 'Max. Server Connections' set to '600', 'Max Fresh Time' set to '3d 00:00:00', 'Serialize Connections' unchecked, 'Always From Cache' checked, and 'Cache Hit DSCP (TOS)' set to '4'. The 'Cache Path' field is highlighted with a red box and set to 'disk1'. The status bar at the bottom indicates the system is 'running'.

Web-Proxy DNS Filtering

URL Filtering

- To redirect specific and unwanted website to another **web-proxy** access list is used for that

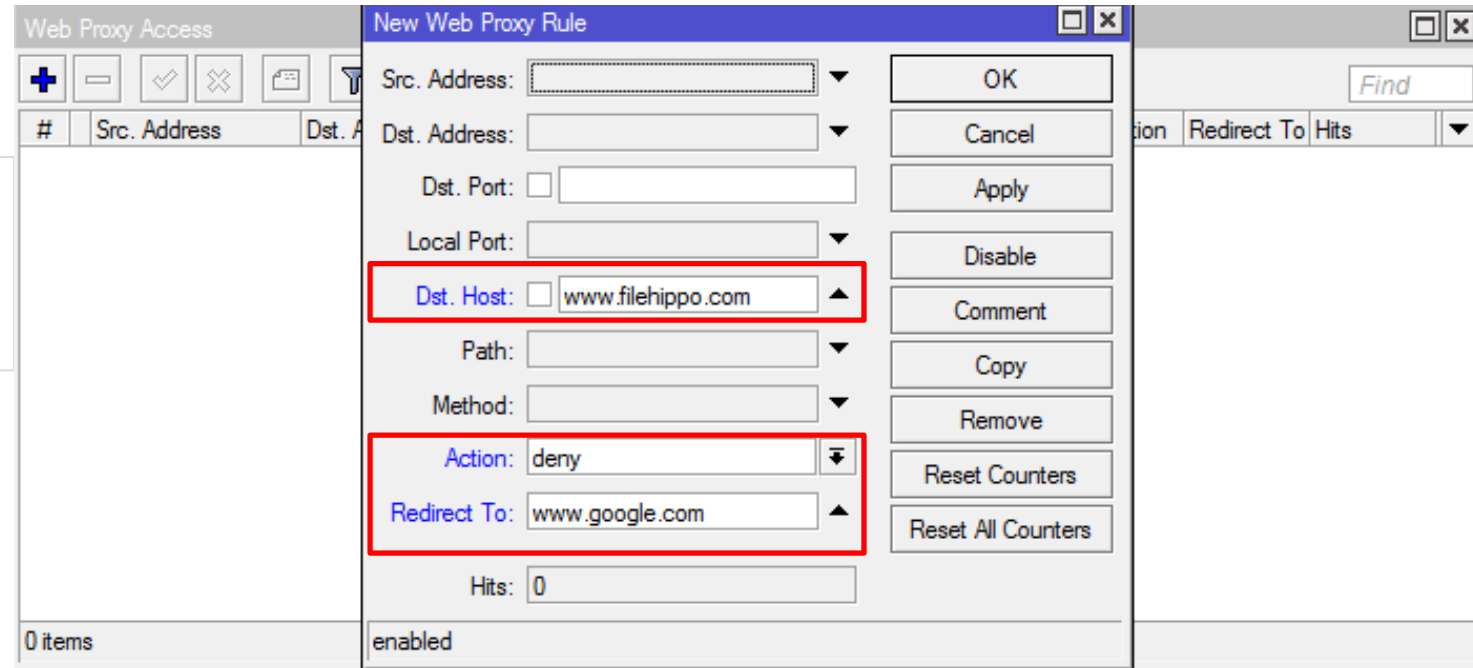
The screenshot shows the RouterOS WinBox interface with the 'Web Proxy Settings' dialog box open. The 'General' tab is selected, and the 'Enabled' checkbox is checked. The 'Access' button in the right-hand panel is highlighted with a red rectangle. The dialog box contains the following settings:

- General:**
 - Enabled
 - Src. Address: ::
 - Port: 8080
 - Anonymous
- Parent Proxy:**
 - Parent Proxy: [empty]
 - Parent Proxy Port: [empty]
- Cache Administrator:**
 - Cache Administrator: webmaster
 - Max. Cache Size: unlimited KIB
 - Max Cache Object Size: 50000 KIB
 - Cache On Disk
- Connections:**
 - Max. Client Connections: 600
 - Max. Server Connections: 600
 - Max Fresh Time: 3d 00:00:00
 - Serialize Connections
 - Always From Cache
- Cache Hit DSCP (TOS):** 4
- Cache Path:** disk1

The right-hand panel of the dialog box contains the following buttons: OK, Cancel, Apply, Clear Cache, Reset HTML, Access (highlighted), Cache, Direct, Connections, and Cache Contents.

URL Filtering

- In our example we will redirect request for **filehippo** URL to **google**



URL Filtering

- As shown in the image as soon as request for filehippo will arrive to the web proxy it's will be redirected to Google and **Hits** will increment according to the number of request.

The screenshot displays the Mikrotik WinBox interface for configuring a Web Proxy Rule. The 'Web Proxy Access' window shows a table with one entry:

#	Src. Address	Dst. Address
0		

The 'Web Proxy Rule' configuration window is open, showing the following settings:

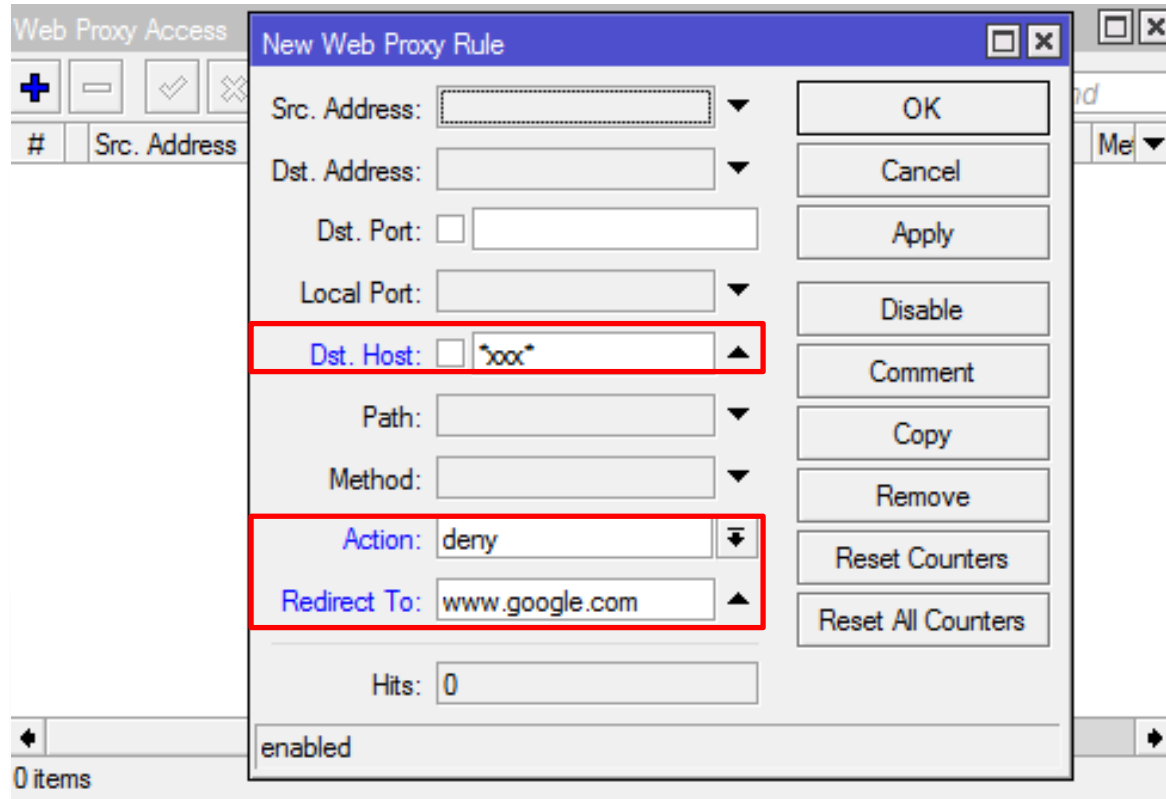
- Src. Address: (empty)
- Dst. Address: (empty)
- Dst. Port: (empty)
- Local Port: (empty)
- Dst. Host: www.filehippo.com
- Path: (empty)
- Method: (empty)
- Action: deny
- Redirect To: www.google.com
- Hits: 1 (highlighted with a red box)

The 'Web Proxy Access' window also shows a table with columns for Action, Redirect To, and Hits:

Action	Redirect To	Hits
deny	www.goo...	1

The status bar at the bottom indicates '1 item (1 selected)' and 'enabled'.

URL Filtering



- It is possible to intercept HTTP request based on:
 - TCP/IP information.
 - URL.
 - HTTP method.
- Access list also allow you to redirect denied request to specific page.

URL Filtering

http://www.mikrotik.com/docs/ros/2.9/graphics:packet_flow31.jpg

Destination host

Destination path

■ Special characters

- "*" - any number of any characters
- "?" - any character

■ Examples :

- www.mi?roti?.com
- www.mikrotik*
- * mikrotik*

The End
Thank You

