

# NAT

**: system**  
: Level1( - 1), Level3  
**: /ip firewall nat**  
: IP, RFC1631, RFC2663

## NAT

IP  
natted . NAT (NAT NAT ) NAT  
/ .

NAT:

- natted NAT srcnat. NAT
  - natted NAT dstnat. NAT , ,  
natted . , ,  
. NAT dstnat
- IP IP .

## NAT

NAT  
NAT, NAT AH , IPsec. RouterOS

dstnat srcnat, . srcnat  
masquerade masquerade srcnat **to-address IP**  
IP  
**to-ports,**  
(  
web proxy).  
**action=redirect),** dstnat (  
( ) **action=nat**  
( web

```

dstnat web IP , ( ). Starting from HTTP/1.1 IP
HTTP , IP , web , (
HTTP ) , web (
HTTP
" "
( web ) " " ;

```

**action** (accept | add-dst-to-address-list | add-src-to-address-list | dst-nat | jump | log | masquerade | netmap | passthrough | redirect | return | same | src -nat; default: **accept**)

- **accept** -
- **add-dst-to-address-list** - IP address-list
- **add-src-to-address-list** - IP address-list
- **dst-nat** - IP to-address to-ports.
- **jump** - " " jump-target
- **log** -

- **masquerade** - IP
- **netmap** - 1:1 IP  
( ).
- **passthrough** - ( ) .
- **redirect** - IP .
- **return** - " " **jump**
- **same** - IP /
- **src-nat** - IP  
**to-address**  
**to-ports.**

**address-list**(name) - IP

**action=adddst-to-address-list** **action=add-src-to-address-tist.**

**address-list-timeout**(time; default: **00:00:00**) – ,  
**address-list.**  
**add-dst-to-address-list** **add-src-to-address-list. 00:00:00** -

**chain**(dstnat | srcnat | name) - .

. **dstnat** -

IP . srcnat -

**comment**(text) -

**connection-bytes**(integerinteger) -

0 - : : **connection-bytes=2000000-0**  
2

**connection-limit**(integer, netmask) - ( )

**connection-mark**(name) -

mangle.

**connection-type**(ftp | gre | h323 | irc | mms | pptp | quake3 | tftp) -

( )

**/ip firewall service-port**

**content**(text) -

**dst-address**(IP address/netmask | IP address-IP address) -

IP

address/netmask . . : **1.1.1./24**

**1.1.1.0/24**

**dst-address-list**(name) -

**dst-address-type**(unicast | local | broadcast | multicast) -

IP :

- **unicast** - IP ,
- **local** - ,
- **broadcast** - IP
- **multicast** - IP

**dst-limit**(integer/time{0,1},integer,dst-address | dst-port | src-address{+},time{0,1}) -

( (pps))

**limit**

/

( ):

- **Count** - (pps), **Time**
- **Time** -
- **Burst** - ( )
- **Mode** -
- **Expire** - IP /

**dst-port**(integer: 0..65535-integer: 0..65535{\*}) -

**hotspot**(multiple choice: from-client | auth | local-dst) -  
Hot-Spot.

- **from-client** - HotSpot
- **auth** -
- **local-dst** -

**icmp-options**(integer:integer) - ,

**ip4-options**(any | loose-source-routing | no-record-route | no-route-alert | no-source-routing) -  
ipv4

- **any** - ipv4
- **loose-source-routing** -
- **no-record-route** -
- **no-route-alert** - ,
- **no-source-routing** - ,
- **record-route** - ,
- **strict-source-routing** -
- **timestamp** - timestamp
- **route-alert** -

**jump-target**(dstnat | srcnat name) - " ",  
**action=jump**

**limit**(integer/time{0,1}, integer) -  
c ( ).

- **Count** - (pps), **Time**
- **Time** -
- **Burst** - ( )

**log-prefix**(text) -  
**action=log**

**nth**(integer, integer: 0..15, integer{0,1}) - Nth  
16

- **Every** - **Every+1th**, **Every=1**  
2-
- **Counter** -  
**nth**
- **Packet** -  
**0 Every**,  
**0 Every+1th**,  
**0 Every**

**out-interface** (name) -

**packet-mark** (name) - mangle

**packet-size** (integer: 0..65535-integer: 0..65535{0,1}) -

- **Min** - ,
- **Max** - ,

**phys-in-interface** (name) -  
(input)

**phys-out-interface** (name) -  
(output).

**protocol** (ddp | egp | encap | ggp | gre | hmp | icmp | idrp -cmt | igmp | ipencap | ipip | ipsec -ah | ipsec -esp | iso -tp4 | ospf | pup | rdp | rspf | st | tcp | udp | vmtp | xns -idp | xtp | integer) -  
IP

**psd**(integer,time,integer,integer) - TCP UDP

FTP

- **WeightThreshold** - TCP/UDP  
(
- **DelayThreshold** -
- **LowPortWeight** - (<=1024)
- **HighPortWeight** -

**random**(integer) -

**routing-mark**(name) - mangle,

**same-not-by-dst**(yes | no) -  
**action=same**

**src-address**(IP address/netmask | IP address -IP address) - IP  
**address/netmask** , . . . : **1.1.1.1/24**  
**1.1.1.0/24**

**src-address-list**(name) -

**src-address-type** (unicast | local | broadcast | multicast) -  
IP , :

- **unicast** - IP
- **local** -
- **broadcast** - IP  
( )

- **multicast** - IP

**src-mac-address**(MAC address) - MAC

**src-port**(integer: 0..65535-integer: 0..65535{\*}) -

**tcp-mss**(integer: 0..65535) - TCP MSS IP

**time** (IP address-IP address{0,1}; : **0.0.0.0**) - IP

**to-ports** (integer: 0..65535-integer: 0..65535{0,1}) - IP

**tos** (max-reliability | max-throughput | min-cost | min-delay | normal) - IP (tos ). ToS - Type of Service.

- **max-reliability** - (ToS=4)
- **max-throughput** - (ToS=8)
- **min-delay** - (ToS=16)
- **normal** - (ToS=16)

## NAT

NAT

- " " (Public) IP
- 1:1

## NAT(Masquerading)

" " 192.168.0.0/24 10.5.8.109  
 (masquerading) MikroTik  
 . Masquerading IP  
 192.168.0.0/24 10.5.8.109



masquerading,  
'masquerading':

```
/ip firewall nat add chain=srcnat action=masquerade out-interface=Public
```

10.5.8.109 192.168.0.0/24  
1024.

(DST -NAT).

### DST-NAT

10.5.8.200, 192.168.0.109

IP . IP :

```
/ip address add address=10.5.8.200/32 interface=Public
```

```
/ip firewall nat add chain=dstnat dst-address=10.5.8.200 action=dst-nat to-  
addresses=192.168.0.109
```

```
/ip firewall nat add chain=srcnat src-address=192.168.0.109 action=src-nat  
to-addresses=10.5.8.200
```

### 1:1

11.11.11.0/24 2.2.2.0/24,

### action=netmap

```
/ip firewall nat add chain=dstnat dst-address=11.11.11.1-11.11.11.254  
action=netmap to-addresses=2.2.2.1-2.2.2.254
```

```
/ip firewall nat add chain=srcnat src-address=2.2.2.1-2.2.2.254 action=netmap  
to-addresses=11.11.11.1-11.11.11.254
```