



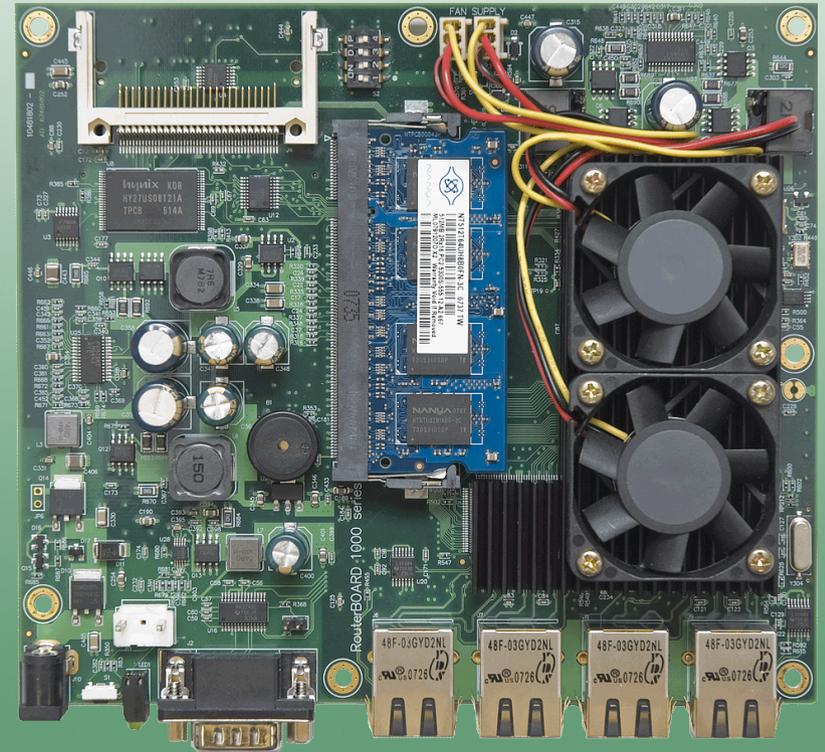
# RouterBOARD 1000

product overview

September, 2008

# key features

- ✓ 1333 MHz CPU (1000/1200/1333/1500 MHz optional)
- ✓ adjustable CPU clock
- ✓ lead free parts
- ✓ compact size - 140x160mm)
- ✓ four 10/100/1000 Mbit/s Gigabit Ethernet ports
- ✓ Auto-MDI/X
- ✓ dual fan for failover
- ✓ onboard NAND memory chip
- ✓ MikroTik RouterOS v3 Level 6 license
- ✓ SODIMM DDR Slot
- ✓ two compact flash slots for cache and backups
- ✓ beeper
- ✓ wide powering range: 10 – 28v (12v recommended)
- ✓ low power consumption: 12 - 15W



# specification

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<b>CPU</b>	PPC8547 1333MHz network processor
<b>Memory</b>	SODIMM DDR Slot, 512MB installed
<b>Boot loader</b>	RouterBOOT, 1Mbit Flash chip
<b>Data storage</b>	Onboard NAND memory chip
<b>Ethernet</b>	Four 10/100/1000 Mbit/s Gigabit Ethernet with Auto-MDI/X
<b>miniPCI</b>	None
<b>Compact Flash</b>	Two CompactFlash slot (TrueIDE Microdrive supported)
<b>Serial port</b>	One DB9 RS232C asynchronous serial port
<b>Beeper</b>	Present
<b>Power options</b>	Power jack: 12V DC (includes power supply)
<b>Fan</b>	Dual fan with failover support
<b>Case</b>	Desktop or Rackmount
<b>Dimensions</b>	14 cm x 16 cm
<b>Operating System</b>	MikroTik RouterOS v3, Level6 license

# RouterBOARD 1000 variations

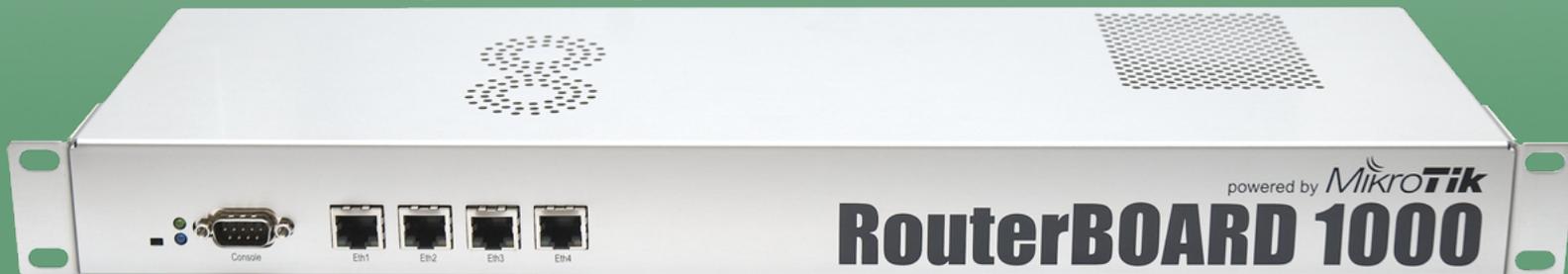
## Desktop version

- ✓ anodized aluminium case (150x180x43mm)
- ✓ compact flash disk opening



## 1U Rackmount version

- ✓ 1U anodized aluminium case (442x44x152mm)
- ✓ removable rack mounting fastenings



RB1000 is powered by MikroTik RouterOS v3

## Router OS main features

- ✓ Routing
- ✓ Load Balancing
- ✓ Tunnels and VPN
- ✓ Bridging
- ✓ Bandwidth Management
- ✓ Cache
- ✓ Firewall
- ✓ HotSpot
- ✓ Router and Network Administration
- ✓ Remote access via Telnet and GUI – WinBox

The screenshot displays the MikroTik WinBox GUI for Router OS v3. The main window shows the configuration for the 'ether1' interface, with the following statistics:

Metric	Value
Tx	63.7 kbps
Rx	14.3 kbps
Tx Packet	22 p/s
Rx Packet	18 p/s

The interface status is 'running'. A terminal window is open, displaying a list of Router OS commands and their descriptions:

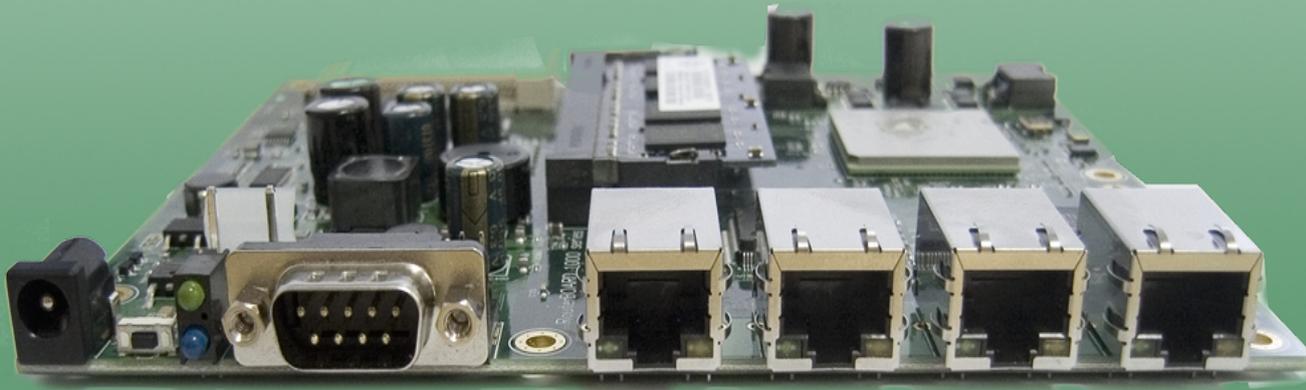
```
ip --  
log -- System logs  
password -- Change password  
ping -- Send ICMP Echo packets  
port -- Serial ports  
ppp -- Point to Point Protocol  
queue -- Bandwidth management  
quit -- Quit console  
radius -- Radius client settings  
redo -- Redo previously undone action  
routing --  
setup -- Do basic setup of system  
snmp -- SNMP settings  
special-login -- Special login users  
system --  
tool -- Diagnostics tools  
undo -- Undo previous action  
user --  
export -- Print or save an export script
```

The terminal prompt is [normis@demo2.mt.lv] >.

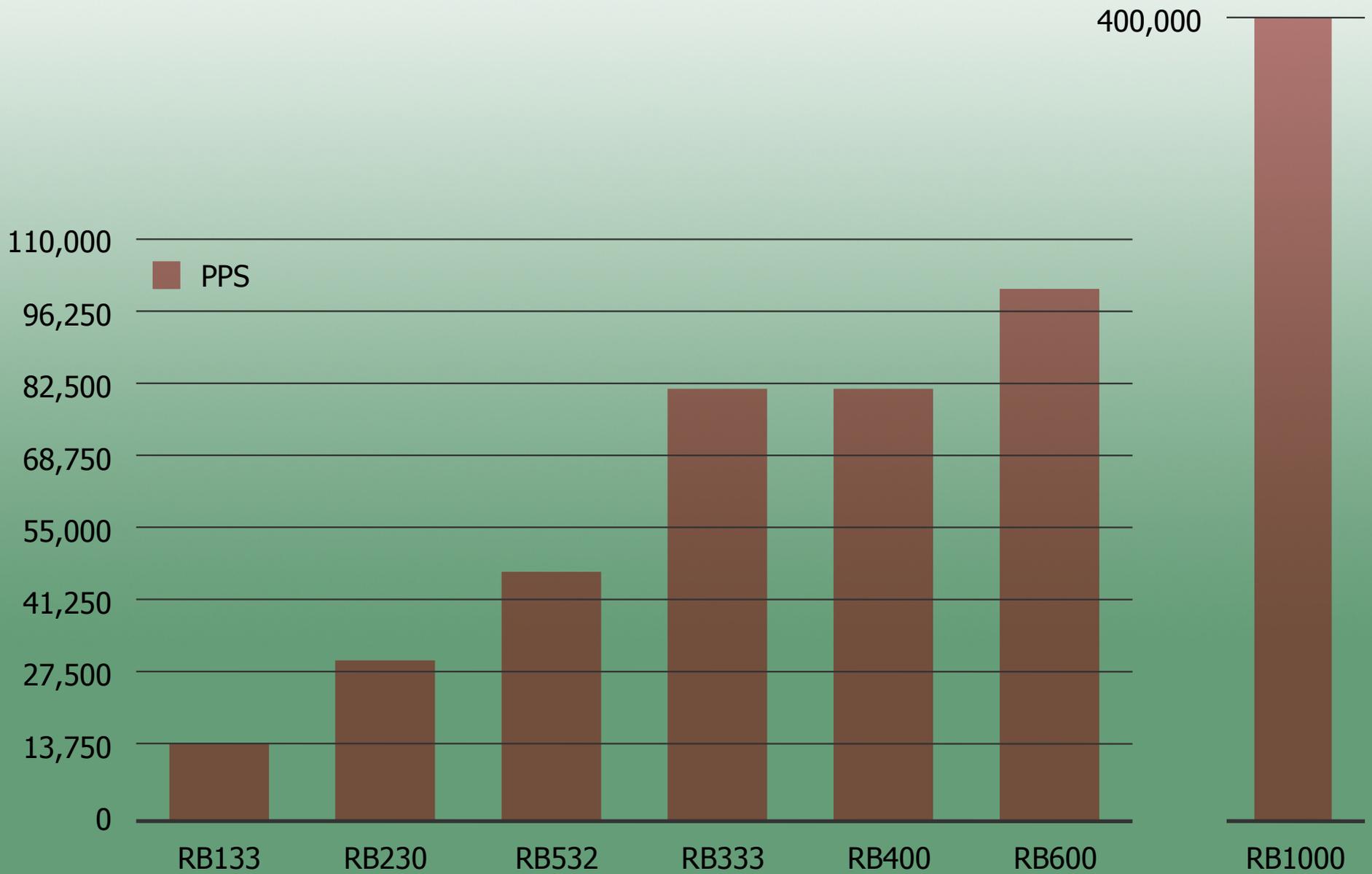
# throughput

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- ✓ Superior processing power over almost every single core x86 PC.
- ✓ Has four independent (not on PCI bus) Gbps ports (x86 machines have maximum two).



# RouterBOARD throughput comparison table



# application examples

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- ✓ Backbone router
- ✓ Bandwidth Controller
- ✓ Firewall
- ✓ VPN (PPPoE, PPTP, L2TP) server
- ✓ IPSec encryption
- ✓ HotSpot gateway
- ✓ User Manager
- ✓ Dude Server



## application examples

**Bandwidth Controller** - RouterBOARD 1000 will let you take control of your network traffic bandwidth and give you more power and flexibility due to it's superior CPU and customizable RAM size. Limit the data rates of all traffic flowing through the device! Suitable for service providers, corporate networks and large ISPs. It can handle thousands of queues!

The image shows two overlapping windows from the Mikrotik WinBox interface. The background window is the 'Queue List' window, which displays a table of network queues. The foreground window is the 'Simple Queue <Network Supervisor>' configuration window, which shows the configuration for a specific queue.

**Queue List Table:**

#	Name	Target Ad...	Rx Max Limit	Tx Max Limit
50	Networ...	10.5.8.238	2M	unlimited
8	Apart...	192.168...	1M	1M
7	Apart...	192.168...	1M	1M
6	Apart...	192.168...	1M	1M
5	Apart...	192.168...	1M	1M
49	Apart...	192.168...	1M	1M
4	Apart...	192.168...	1M	1M
48	Apart...	192.168...	1M	1M
47	Apart...	192.168...	1M	1M
46	Apart...	192.168...	1M	1M
45	Apart...	192.168...	1M	1M
44	Apart...	192.168...	1M	1M
43	Apart...	192.168...	1M	1M
42	Apart...	192.168...	1M	1M
41	Apart...	192.168...	1M	1M
40	Apart...	192.168...	1M	1M
39	Apart...	192.168...	1M	1M
3	Apart...	192.168...	1M	1M
38	Apart...	192.168...	1M	1M
37	Apart...	192.168...	1M	1M
36	Apart...	192.168...	1M	1M
35	Apart...	192.168...	1M	1M
34	Apart...	192.168...	1M	1M
33	Apart...	192.168...	1M	1M
32	Apart...	192.168...	1M	1M
31	Apart...	192.168...	1M	1M
30	Apart...	192.168...	1M	1M
29	Apart...	192.168...	1M	1M
2	Apart...	192.168...	1M	1M

**Simple Queue <Network Supervisor> Configuration:**

- Target Upload Rate: 2.4 Mbps
- Target Download Rate: 221.1 Mbps
- Packet Rate: 211 p/s (Rx), 18 436 p/s (Tx)
- Target Upload Packet Rate: 211 p/s
- Target Download Packet Rate: 18 436 p/s

The configuration window also includes a traffic graph showing Rx (blue) and Tx (red) traffic over time, and a 'disabled' checkbox at the bottom.

## application examples

**VPN server** - connect remote sites or users together, instead of using a dedicated, real-world connection, such as leased lines, use VPN to connect company's private network to the remote site, or, employee through the Internet. RB1000 can handle hundreds of VPN connections!

Branch Office



Home Users



INTERNET

VPN Server



Corporate HQ

## application examples

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Use RB1000 as a **Backbone router** or **Firewall**! It can handle up to 400,000 pps or 3.2Gbps full duplex!



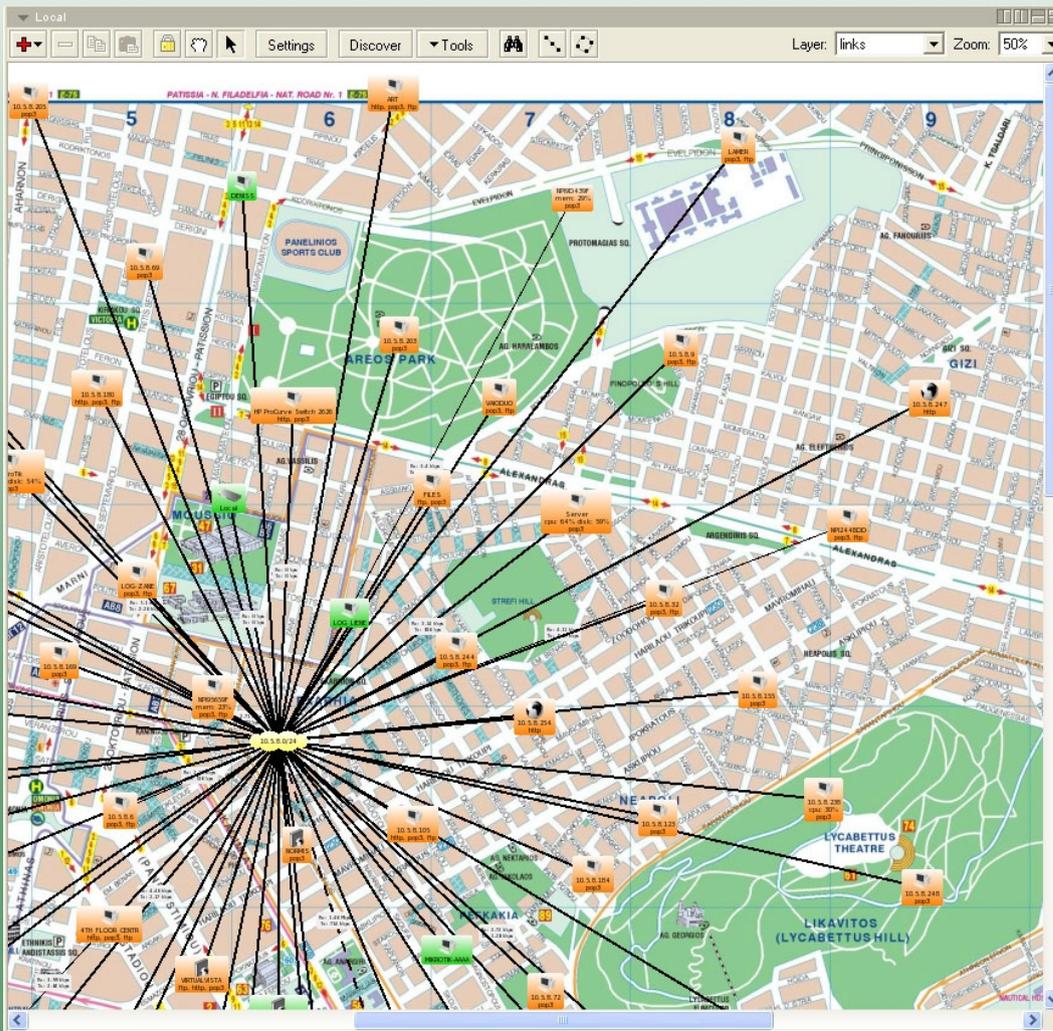
# application examples - dude server

**RouterBOARD 1000 as a Dude server** - powerful network monitoring and management tool which dramatically improves the way you manage your network. It will automatically scan all devices, draw and layout a map of your network, monitor services of your devices and alert you in case some service has problems.

The screenshot displays the 'Local Server - The Dude v2.0beta1' interface. The top window shows a list of devices with columns for Name, Addresses, Type, Maps, Services Down, and Notes. Below this, the 'Local Map' window shows a geographical map with network devices and their connections. A tree view on the right shows the network structure.

Name	Addresses	Type	Maps	Services Down	Notes
1.1.1.1	1.1.1.1	Local	Local		
1.1.1.1	1.1.1.1	Local	Network Map	ping	
10.0.0.116	10.0.0.116	DNS Server	Local	dns	
10.0.0.127	10.0.0.127	DNS Server	Local	dns	
10.0.0.130	10.0.0.130	DNS Server	Local	dns	
10.0.0.16	10.0.0.16	DNS Server	Local	dns	
10.0.0.2	10.0.0.2	DNS Server	Local	dns	
10.0.0.30	10.0.0.30	DNS Server	Local	dns	
10.0.0.35	10.0.0.35	DNS Server	Local	dns	
10.0.0.73	10.0.0.73	DNS Server	Local	dns	
10.1.0.1	10.1.0.1	Some Device	Local		
10.1.0.131	10.1.0.131	Some Device	Local	ssh, telnet, dns, ping, http, ftp	
10.1.0.140	10.1.0.140	Some Device	Local	dns, http	
10.1.0.143	10.1.0.143	Some Device	Local	dns, http	
10.1.0.194	10.1.0.194	Some Device	Local		
10.1.0.201	10.1.0.201	Some Device	Local	dns	
10.1.0.219	10.1.0.219	Some Device	Local	dns	
10.1.0.235	10.1.0.235	Some Device	Local	ping, ssh, telnet, dns, http, ftp	
10.1.0.240	10.1.0.240	Some Device	Local	dns	
10.1.0.241	10.1.0.241	Some Device	Local	dns, http	
10.1.0.30	10.1.0.30	Some Device	Local	ping, ssh, telnet, dns, http, ftp	
10.1.0.81	10.1.0.81	Some Device	Local	dns	
10.11.12.2	10.11.12.2	DNS Server	Local	dns	
10.20.30.1	10.20.30.1	DNS Server	Local	dns	
10.5.10.20	10.5.10.20	DNS Server	Local	dns	
10.5.10.21	10.5.10.21	DNS Server	Local	dns	

# dude features



- ✓ Auto network discovery and layout
- ✓ Discovers any type or brand of device
- ✓ Device, Link monitoring, and notifications
- ✓ SVG icons for devices, custom icons and backgrounds
- ✓ Easy installation and usage
- ✓ Draw your own maps and add custom devices
- ✓ SNMP, ICMP, DNS and TCP monitoring support
- ✓ Individual Link usage monitoring and graphs
- ✓ Direct access to remote control tools for device management
- ✓ Runs in Linux Wine, Mac OS Darwine and Windows

**RouterBOARD 1000 as a HotSpot gateway** - Easy user authentication and accounting in public, private, wired or wireless networks. HotSpot technology allows to offer Internet access, while applying certain Internet use rules and limitations.

### features:

- ✓ User accounting by time, data transferred/received
- ✓ Cookie (remembers user name, password)
- ✓ Tx speed limit (Bandwidth shaping)
- ✓ Quota (session-timeout, downloaded/uploaded traffic limit)
- ✓ Real-time user status information
- ✓ Customized HTML pages for login (create your own design)
- ✓ DHCP server assigned IP addresses
- ✓ Easy client administration using RADIUS/local user database
- ✓ Compatible with RouterOS PPTP tunnels, IPsec, and other features



## RouterBOARD 1000 as a User Manager - Centralized Authorization and Accounting system that can be used to administer HotSpot users, PPP (PPTP/PPPoE) users, DHCP users, Wireless users, RouterOS users.

The screenshot displays the MikroTik RouterOS User Manager web interface. On the left is a navigation menu with options: Status, Routers, Credits, Users, Sessions, Customers, Reports, Logs, and Logout. The main content area is divided into two sections. The top section, titled 'Sessions', shows a table of active sessions with columns for ID, Username, User IP, Router IP, From Time, Till Time, and Uptime. A 'View user' pop-up window is overlaid on this table, showing details for a user named 'mark', including their password (12345), IP address, and usage statistics (Uptime Used: 9h 36m 45s, Download Used: 103.6 MB, Upload Used: 34.5 MB). The bottom section, titled 'User sessions', shows a table of sessions for the user 'mark', with columns for ID, User IP, Router IP, From Time, Till Time, Uptime, and Download. The table lists several sessions with their respective durations and data usage.

ID	Username	User IP	Router IP	From Time	Till Time	Uptime
3134	cj2et	10.5.50.248	10.5.18.200	Jan/18/2006 17:38:39	Jan/18/2006 18:38:05	59m:26s
3220	pin2s	10.5.50.248	10.5.18.200	Jan/19/2006 06:34:00	Jan/19/2006 06:34:00	0s
3122	mark	10.5.50.248	10.5.18.200	Jan/18/2006 17:12:59	Jan/18/2006 17:12:59	0s
3123	mark	10.5.50.248	10.5.18.200	Jan/18/2006 17:14:54	Jan/18/2006 17:14:54	0s
3132	mark	10.5.50.248	10.5.18.200	Jan/18/2006 17:37:04	Jan/18/2006 17:37:04	0s
3247	mark	10.5.50.248	10.5.18.200	Jan/19/2006 07:58:47	Jan/19/2006 07:58:47	0s
3260	mark	10.5.50.248	10.5.18.200	Jan/19/2006 08:15:05	Jan/19/2006 08:15:05	0s
3416	mark	10.5.50.248	10.5.18.200	Jan/19/2006 12:37:28	Jan/19/2006 12:37:28	0s
3427	mark	10.5.50.248	10.5.18.200	Jan/19/2006 12:58:58	Jan/19/2006 12:58:58	0s
3124	mum	10.5.50.248	10.5.18.200	Jan/18/2006 17:15:36	Jan/18/2006 17:15:36	0s
3125	mum	10.5.50.248	10.5.18.200	Jan/18/2006 17:15:57	Jan/18/2006 17:15:57	0s

ID	User IP	Router IP	From Time	Till Time	Uptime	Download
3122	10.5.50.248	10.5.18.200	Jan/18/2006 17:12:59	Jan/18/2006 17:14:43	1m:44s	363.2 KIB
3123	10.5.50.248	10.5.18.200	Jan/18/2006 17:14:54	Jan/18/2006 17:15:32	37s	37.5 KIB
3132	10.5.50.248	10.5.18.200	Jan/18/2006 17:37:04	Jan/18/2006 17:37:06	1s	3.6 KIB
3247	10.5.50.248	10.5.18.200	Jan/19/2006 07:58:47	Jan/19/2006 08:12:01	13m:15s	1631.4 KIB
3260	10.5.50.248	10.5.18.200	Jan/19/2006 08:15:05	Jan/19/2006 12:16:56	4h:1m:51s	41.4 MIB
3416	10.5.50.248	10.5.18.200	Jan/19/2006 12:37:28	Jan/19/2006 12:47:28	10m	10.6 MIB
3427	10.5.50.248	10.5.18.200	Jan/19/2006 12:58:58	Jan/19/2006 18:08:16	5h:9m:17s	49.5 MIB

### features:

- ✓ Multiple subscriber support and permission management
- ✓ Credits/Prepaid support for users
- ✓ Rate-limit attribute support
- ✓ User friendly WEB interface support
- ✓ Report generation by time/amount
- ✓ Detailed sessions and logs support
- ✓ Simple user adding and voucher printing support
- ✓ User status page
- ✓ User sign up system
- ✓ Authorize.net payment gateway support
- ✓ Database backup

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RouterBOARD

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Current RouterBOARD lineup comparison. Click on the "General purpose" below the picture to show specs. Also view [Product Archive](#)

Table 1: RouterBOARD Value Series.

	CROSSROADS	RB133C	RB450	RB411 / A / AH	RB493
IMAGE					
GENERAL PURPOSE	Micro CPE/AP	Small scale CPE	Mini router	Small scale CPE/AP	Multiport router

More

RB400 series is the new measure of power in CPE solutions, multiple times faster than predecessor - the RB400 series defines a new meaning for Evolution

Table 2: RouterBOARD Power Series

	RB230	RB433	RB433AH	RB600A	RB1000
IMAGE					
GENERAL PURPOSE	Multifunctional Router	High Performance AP/Router	Extreme Performance AP	Extreme Performance AP	Extreme Performance Router

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