

IPv6 na MikroTiku

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IPv6 - adresace

- rozčlenění sítě
- potřeby zákazníka
- potřeby ISP
 - /127 vs /126 vs /64

IPv6 - zavedení IP

/ipv6 address

```
add address=2001:db8:2000:1000:1:1:1:2/126 advertise=no interface=ether1
```

The screenshot displays the Mikrotik WinBox interface. On the left, the 'IPV6' menu is expanded to show 'Addresses'. The main window shows the 'IPv6 Address List' table with two entries:










	Address	From Pool	Interface	Advertise
DL	fe80::ce2d:e0ff:fe13:bb0...		ether1	no
DL	fe80::ce2d:e0ff:fe13:bb0...		bridge	no

The 'New IPv6 Address' dialog is open, showing the following configuration:

- Address: 2001:db8:2000:1000:1:1:1:2/126
- From Pool: (empty)
- Interface: ether1
- EUI64
- Advertise
- No DAD

Buttons on the right include OK, Cancel, Apply, Disable, Comment, Copy, and Remove. At the bottom, there are 'enabled' and 'Global' checkboxes.

IPv6 - zavedení IP

IPv6 Address List					
     					
	Address		From Pool	Interface	Advertise
DL	 fe80::ce2d:e0ff:fe13:bb0d/64			ether1	no
DL	 fe80::ce2d:e0ff:fe13:bb0e/64			bridge	no
G	 2001:db8:2000:1000:1:1:1:2/126			ether1	no

IPv6 - routing

- static
- BGP 4+
- OSPFv3

IPv6 - routing

/ipv6 route

add gateway=2001:db8:2000:1000:1:1:1:1

IPv6 Route List

	Dst. Address	Gateway	Distance
AS	▶ ::/0	2001:db8:2000:1000:1:1:1:1 reachable ether1	1
DAC	▶ 2001:db8:2000:1000:1:1:...	ether1 reachable	0

IPv6 Route <::/0>

General | Attributes

Dst. Address: ::/0

Gateway: 2001:db8:2000:1000:1:1:1:1 reachable ether1

Check Gateway:

IPv6 - routing

The screenshot displays two windows from a network management application. The top window, titled "BGP", shows a list of BGP instances. The bottom window, titled "BGP Peer <peer1>", shows the configuration for a specific BGP peer.

BGP Window:

- Buttons: +, -, ✓, ✗, [icon], [icon]
- Find:

Name	AS	Router ID	Out Filter	Confeder...	Confeder...	Cluster ID
default	65530					

BGP Peer <peer1> Window:

- General | Advanced | Status
- Name:
- Instance:
- Remote Address:
- Remote Port:
- Remote AS:
- TCP MD5 Key:
- Buttons: OK, Cancel, Apply, Disable, Comment, Copy

IPv6 - routing

The screenshot displays the OSPFv3 configuration interface. At the top, there are tabs for 'Interfaces', 'Instances', 'Areas', 'Area Ranges', 'Virtual Links', and 'Neighbors'. Below these tabs is a toolbar with icons for adding (+), removing (-), checking (✓), unchecking (✗), and filtering (funnel). A table header is visible with columns for 'Area', 'Interface', 'Cost', 'Priority', and 'Network'. A 'New OSPFv3' dialog box is open, showing the following configuration:

- Area: backbone
- Interface: ether1
- Cost: 10
- Priority: 1
- Network Type: default
- Instance ID: 0
- Passive
- Use BFD
- Retransmit Interval: 5 s
- Transmit Delay: 1 s
- Hello Interval: 10 s
- Router Dead Interval: 40 s

Buttons on the right side of the dialog include OK, Cancel, Apply, Disable, Copy, and Remove. At the bottom of the dialog, there are status indicators: 'enabled', 'passive', 'inactive', and 'State: down'.

IPv6 - zavedení IP - vnitřní síť

/ipv6 address

```
add address=2001:db8:2000:2000::/64 interface=bridge advertise=yes eui-64=yes
```

The screenshot displays the Mikrotik WinBox interface for configuring IPv6 addresses. It is divided into two main sections: the 'IPv6 Address List' window and the 'New IPv6 Address' dialog box.

IPv6 Address List (Left Window):

	Address	From Pool	Interface
DL	fe80::ce2d:e0ff:fe13:bb0d/64		ether1
G	2001:db8:2000:1000:1:1:2/126		ether1
DL	fe80::ce2d:e0ff:fe13:bb0e/64		bridge1

New IPv6 Address (Dialog Box):

Address: 2001:db8:2000:2000::/64

From Pool: [Empty]

Interface: bridge

EUI64

Advertise

No DAD

Buttons: OK, Cancel, Apply, Disable, Comment, Copy, Remove

Footer: enabled Global

IPv6 Address List (Right Window):

	Address	From Pool	Interface
DL	fe80::ce2d:e0ff:fe13:bb0d/64		ether1
G	2001:db8:2000:1000:1:1:2/126		ether1
G	2001:db8:2000:2000:ce2d:e0ff:fe13:bb0e/64		bridge1
DL	fe80::ce2d:e0ff:fe13:bb0e/64		bridge1

IPv6 - DHCP server

```
/ipv6 pool
```

```
add name=lokalita1 prefix=2001:db8:3333::/48 prefix-length=56
```

```
/ipv6 dhcp-server
```

```
add address-pool=lokalita1 interface=bridge lease-time=1d name=server1
```

IPv6 - DHCP server

The screenshot displays the Mikrotik WinBox interface for configuring an IPv6 DHCP server. The left sidebar shows the navigation menu with 'Pool' under the 'Radius' category circled in red. The main window shows the 'IPv6 Pool' configuration page with a table for 'Used Prefixes' and a 'Find' search box. A 'New IPv6 Pool' dialog box is open, showing the following configuration:

Field	Value
Name	lokalita1
Prefix	2001:db8:3333::/48
Prefix Length	56
Expire Time	

The dialog box includes buttons for OK, Cancel, Apply, Copy, and Remove.

IPv6 - DHCP server

The screenshot shows the Mikrotik WinBox interface for configuring a DHCPv6 Server. The left sidebar contains a tree view with the following items: Quick Set, CAPsMAN, Interfaces, Wireless, Bridge, PPP, Switch, Mesh, IP, IPv6, MPLS, Routing, System, Queues, Files, Log, Radius, Tools, and New Terminal. The 'System' item is expanded, and 'DHCP Server' is circled in red. The main window displays the 'DHCPv6 Server' configuration page with tabs for DHCP, Bindings, Options, and Option Sets. The 'DHCP' tab is active, showing a table with columns for Name, Interface, Address Pool6, and Lease Time. A toolbar above the table includes a plus sign (+) and a minus sign (-), both of which are circled in red. A 'New DHCPv6 Server' dialog box is open in the foreground, containing the following fields and buttons:

- Name: server1
- Interface: bridge
- Address Pool6: lokalita1
- Lease Time: 1d 00:00:00
- DHCP Options: (empty field)
- Buttons: OK, Cancel, Apply, Disable, Comment, Copy, Remove
- Status: enabled

IPv6 - DHCP client

```
/ipv6 dhcp-client
```

```
add add-default-route=yes interface=ether1 pool-name=LAN pool-prefix-length=60  
request=prefix
```

```
/ipv6 address
```

```
add address=::/64 eui-64=yes from-pool=LAN interface=bridge
```

IPv6 - DHCP client

The image shows a configuration window titled "New DHCPv6 Client". It has three tabs: "DHCP", "Advanced", and "Status". The "DHCP" tab is active. The configuration includes:

- Interface: ether1
- Request: info, address, prefix
- Pool Name: LAN
- Pool Prefix Length: 60
- Prefix Hint: (empty dropdown)
- Use Peer DNS
- Add Default Route

On the right side, there are buttons for: OK, Cancel, Apply, Disable, Comment, Copy, Remove, Release, and Renew.

At the bottom, there are two status indicators: "enabled" and "Status: stopped".

IPv6 - DHCP client

The screenshot displays the DHCPv6 Client configuration interface. At the top, there is a toolbar with icons for adding, removing, and refreshing configurations, along with 'Release' and 'Renew' buttons. Below the toolbar is a table listing the configuration for the 'ether1' interface.

Interface	Request	Pool Name	Pool Pr...	Use P...	Add D...	Prefix	Prefix Expir...	DUID	Status
ether1	prefix	LAN	60	yes	yes	2001:db8:3333::/56	23:59:11	0x00030001cc2d...	bound

An overlay window titled 'DHCPv6 Client <ether1>' is open, showing the configuration for the selected interface. It has tabs for 'DHCP', 'Advanced', and 'Status'. The configuration fields are as follows:

- Prefix: 2001:db8:3333::/56
- Prefix Expires After: 23:59:11
- Address: (empty)
- Address Expires After: (empty)
- DUID: 0x00030001cc2de0097e8e
- Server: fe80::ce2d:e0ff:fe13:bb0e

On the right side of the dialog, there are buttons for 'OK', 'Cancel', 'Apply', 'Disable', 'Comment', 'Copy', and 'Remove'. The 'OK' button is highlighted with a dotted border.

IPv6 - DHCP client

The screenshot displays the 'IPv6 Address List' configuration window. It features a table with columns for Address, From Pool, Interface, and Advertise. A modal dialog is open over the table, showing the configuration for the selected address: 2001:db8:3333:0:ce2d:e0ff:fe09:7e8f/64. The dialog includes fields for Address, From Pool, and Interface, along with checkboxes for EUI64, Advertise, and No DAD. A status bar at the bottom indicates 'enabled' and 'Global'.

	Address	From Pool	Interface	Advertise
G	2001:db8:3333:0:ce2d:e0ff:fe09:7e8f	LAN	bridge	yes
DL	fe80::ce2d:e0ff:fe09:7e8f		ether1	no
DL	fe80::ce2d:e0ff:fe09:7e8f		bridge	no

IPv6 Address <2001:db8:3333:0:ce2d:e0ff:fe09:7e8f/64>

Address:

From Pool:

Interface:

EUI64

Advertise

No DAD

Buttons: OK, Cancel, Apply, Disable, Comment, Copy, Remove

Status: enabled Global

IPv6 - DHCP server - STAV

The screenshot displays the DHCPv6 Server configuration window. At the top, there are tabs for 'DHCP', 'Bindings', 'Options', and 'Option Sets'. Below the tabs is a toolbar with icons for adding, removing, and editing bindings. The main area shows a table of bindings:

Address	DUID	IAID	Server	Prefix Pool	Expire Time	Status
2001:db8:3333::/56	0xcc2de0097e8e	2	server1	lokalita1	23:48:57	bound

A dialog box titled 'DHCPv6 Binding <2001:db8:3333::/56>' is open, showing the configuration for the selected binding:

- Address: 2001:db8:3333::/56
- DUID: 0xcc2de0097e8e
- IAID: 2
- Server: server1
- Life Time: 1d 00:00:00
- Prefix Pool: lokalita1
- DHCP Options: (empty)
- Expire Time: 23:48:57
- Last Seen: 00:11:03

At the bottom of the dialog, the binding type is set to 'dynamic' and the status is 'bound'. Action buttons include 'OK', 'Copy', 'Remove', and 'Make Static'.

IPv6 - DHCP server - STAV

The screenshot displays three windows from Mikrotik WinBox:

- DHCPv6 Server:** Shows a single binding for the address 2001:db8:3333::/56. The binding is associated with DUID 0xcc2de0097e8e, IAID 2, server1, and prefix pool lokalita1. The status is bound.
- IPv6 Route List:** Shows the routing table for the IPv6 address 2001:db8:3333::/56. The routes are:

	Dst. Address	Gateway	Distance
AS	::/0	2001:db8:2000:1000:1:1:1:1 reachable ether1	1
DAC	2001:db8:2000:1000:1:1:1:1	ether1 reachable	0
DAC	2001:db8:2000:2000::/64	bridge reachable	0
DAS	2001:db8:3333::/56	fe80::ce2d:e0ff:fe09:7e8e%bridge reachable	1

- IPv6 Route <2001:db8:3333::/56>:** Shows the details for the selected route. The destination address is 2001:db8:3333::/56, the gateway is fe80::ce2d:e0ff:fe09:7e8e%bridge, and the type is unicast.

IPv6 - DHCP client za DHCP klientem

Problém: zákaznické zařízení za naším routerem

```
/ipv6 pool
```

```
add name=LAN prefix=2000::/60 prefix-length=64
```

```
/ipv6 dhcp-server
```

```
add address-pool=LAN interface=bridge lease-time=1d name=server1
```

```
/ipv6 pool
```

```
rem 0
```