

*Sys-DataCom*



The screenshot displays the Mikrotik WinBox interface with several windows open:

- Interface List:** Shows a list of network interfaces including wireless and ethernet types.
- Interface <napojka>:** Displays traffic graphs for Rx (2.5 Mbps) and Tx (719.7 kbps).
- Route List:** Shows a detailed routing table with columns for Destination, Gateway, Pref. Source, Distance, and Interface.
- Resources:** Shows system statistics such as Uptime (138:39:04), Free Memory (465456 kB), Total Memory (499520 kB), CPU (Intel(R)), CPU Frequency (2793 MHz), CPU Load (29%), Free HDD Space (21177 kB), Total HDD Size (61908 kB), Sector Writes Since Reboot (5310), and Total Sector Writes (1575802).
- NTP Server:** Shows NTP server configuration options like Broadcast, Multicast, and Manycast.

**Sys-DataCom**

Jaromír Čihák

[www.mikrotik.cz](http://www.mikrotik.cz)

[www.sys-data.com](http://www.sys-data.com)





# ISP In Czech Republic

- Papers, regulations
- Clients behavior
- Competitors

# *Sys-DataCom*

## **Market positions**

- **targets**
- **technologies**



***Sys-DataCom***

**Why Wireless ?**



# Clients

- Needs
- Technical solutions



admin@172.27.6.254 (cukrak\_nahore) - WinBox v2.8.12

Interfaces:

- IP
- Ports
- Queues
- Drivers
- System
- Files
- Log
- SNMP
- Users
- Radius
- Tools
- Terminal
- Password

Interface List

Name	Type
R <--> 5G Praha	Wireless (Atheros AR5212)
R <--> 5G sektor Marina	Wireless (Atheros AR5212)
R <--> cernošice	Wireless (Prism)
R <--> homolkova	Wireless (Prism)
R <--> napojka	Ethernet
R <--> praha	Wireless (Prism)

Interface <napojka>

General Ethernet Status Traffic

Rx: 2.5 Mbps  
Tx: 719.7 kbps



Local Area Wireless (172.27.6.254)

bps:	542356812	724213	40	-67	138:38:41
bps:	150261158	265540	50	-77	138:38:42
bps:	1824752135	4331063	90	-66	138:38:41
bps:	111494375	293818	40	-66	138:38:42
bps:	24287521	81698	50	-68	138:38:41
bps:	128	2	50	-68	72:14:03
bps:	35316204	150666	50	-66	138:38:42
bps:	629689	8073	50	-68	38:57:17
bps:	439209785	782421			
bps:	560472491	1585941			
bps:	355014273	717076			
bps:	65226497	171779			
bps:	243107648	539599			
bps:	457703194	1335246			
bps:	457703330	1335249			
bps:	997992599	67994			

NTP Server

Mode:

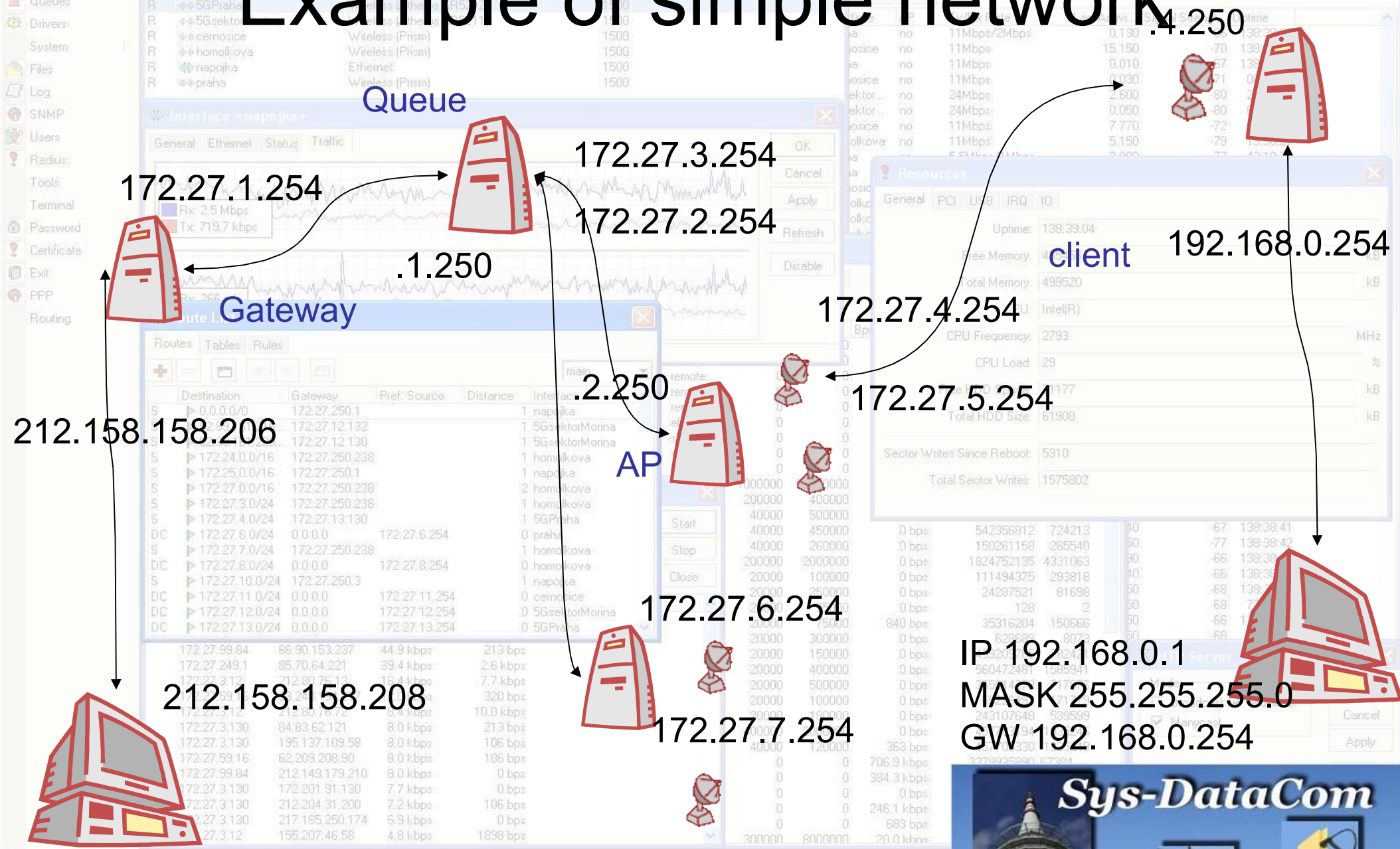
Broadcast  Multicast

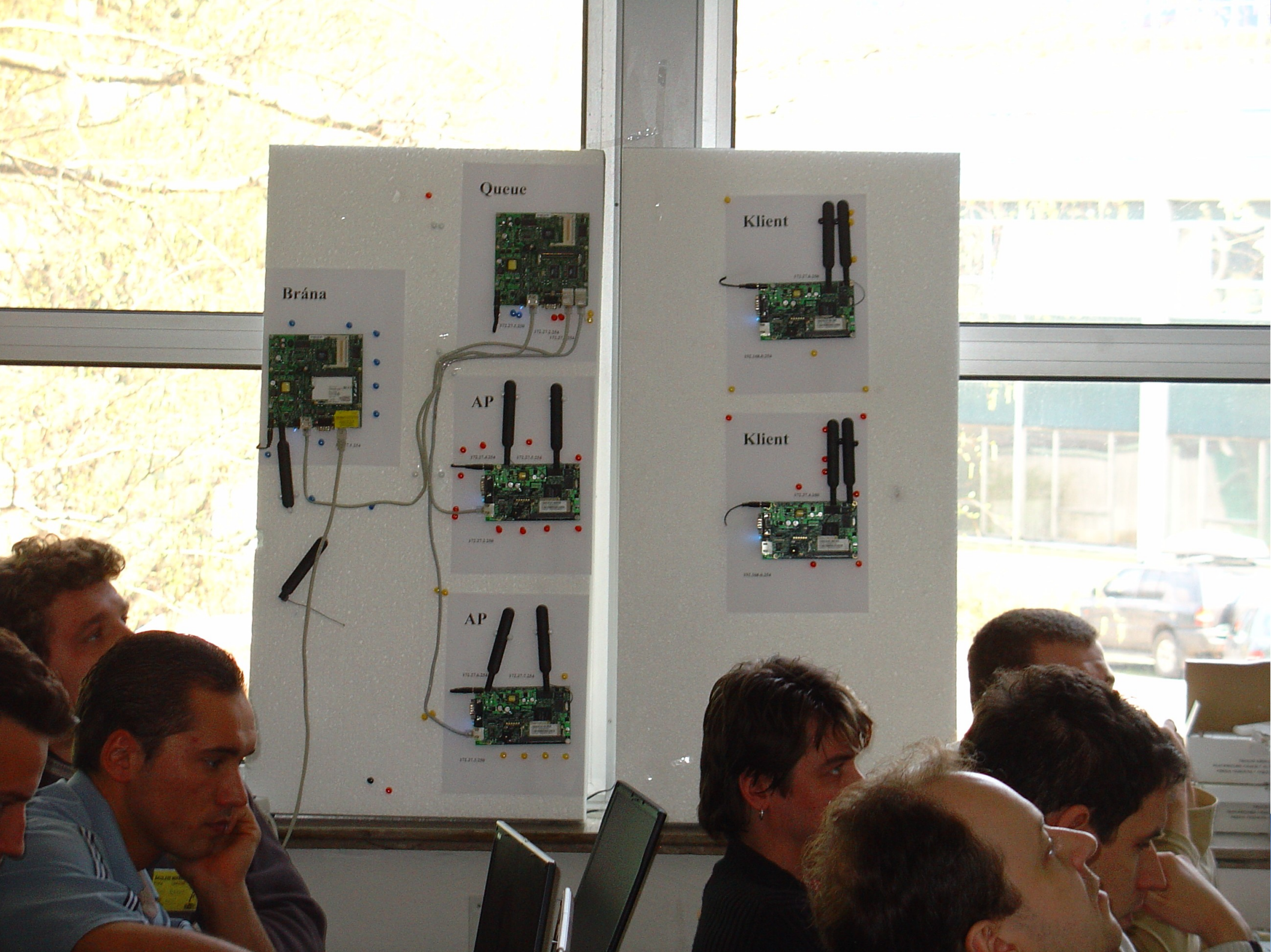
Manycast

172.27.6.254

Sys-DataCom

# Example of simple network





Queue

Brána

Klient

AP

Klient

AP

# Budislav Village example

The screenshot displays the WinBox interface with several windows open:

- Interface List:** A table listing network interfaces.
- Resources:** A window showing system statistics.
- Route List:** A window showing the routing table.
- Traffic Graph:** A window showing network traffic statistics.

Name	Type	MTU
5GPraha	Wireless (Atheros AR5212)	1500
5GsektorMorina	Wireless (Atheros AR5211)	1500
cernosice	Wireless (Prism)	1500
homolkova	Wireless (Prism)	1500
napojka	Ethernet	1500
praha	Wireless (Prism)	1500

Destination	Gateway	Pref. Source	Distance	Interface
0.0.0.0/0	172.27.250.1		1	napojka
82.99.161.216...	172.27.12.132		1	5GsektorMorina
82.99.161.220...	172.27.12.130		1	5GsektorMorina
172.24.0.0/16	172.27.250.238		1	homolkova
172.25.0.0/16	172.27.250.1		1	napojka
172.27.0.0/16	172.27.250.238		2	homolkova
172.27.3.0/24	172.27.250.238		1	homolkova
172.27.4.0/24	172.27.13.130		1	5GPraha
172.27.6.0/24	0.0.0.0	172.27.6.254	0	praha
172.27.7.0/24	172.27.250.238		1	homolkova
172.27.8.0/24	0.0.0.0	172.27.8.254	0	homolkova
172.27.10.0/24	172.27.250.3		1	napojka
172.27.11.0/24	0.0.0.0	172.27.11.254	0	cernosice
172.27.12.0/24	0.0.0.0	172.27.12.254	0	5GsektorMorina
172.27.13.0/24	0.0.0.0	172.27.13.254	0	5GPraha

Uptime	Free Memory	Total Memory	CPU	CPU Frequency	CPU Load	Free HDD Space	Total HDD Size	Sector Writes Since Reboot	Total Sector Writes
138:39:04	465456 kB	499520 kB	Intel(R)	2793 MHz	29 %	21177 kB	61908 kB	5310	1575802



# Competitor's equipment

Interfaces

IP	Ports	Queues	Drivers	System	Files	Log	SNMP	Users	Radius	Tools	Terminal	Password
Interface List												
R	5GPraha	Wireless (Atheros AR5212)	1500									
R	5GsektorMorina	Wireless (Atheros AR5211)	1500									
R	cermosice	Wireless (Prism)	1500									
R	homolkova	Wireless (Prism)	1500									
R	napojka	Ethernet	1500									
R	praha	Wireless (Prism)	1500									

Interface <napojka>

General Ethernet Status Traffic

Rx: 2.5 Mbps  
Tx: 719.7 kbps

OK  
Cancel  
Apply  
Refresh



5316204	150666	60	-66	138:88:42
629689	8073	60	-68	38:57:17
8209785	782421			
0472481	1585941			
6014273	717076			
5226497	171779			
107648	539599			
7703194	1335246			
7033330	1335249			
6026590	67904			

NTP Server

Mode:

Broadcast  Multicast

Manycast

OK  
Cancel  
Apply



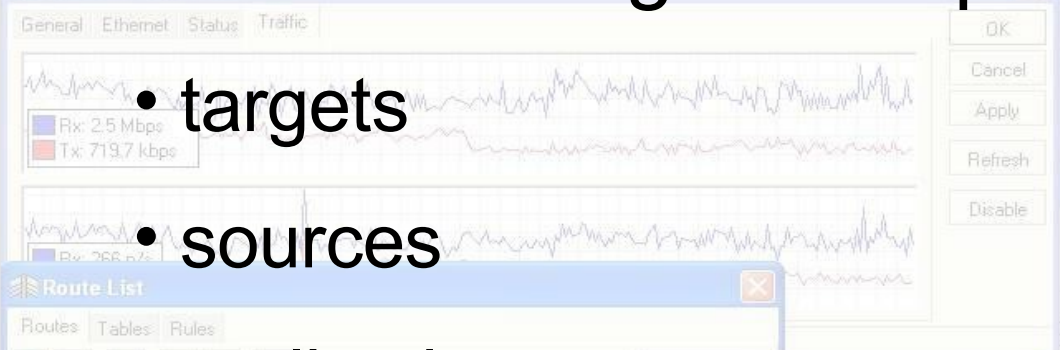
- Interfaces
- IP
- Ports
- Queues
- Drivers
- System
- Files
- Log
- SNMP
- Users
- Radius
- Tools
- Terminal
- Password
- Certificate
- Exit
- PPP
- Routing

### Interface List

Name	Type	MTU
R 5GPraha	Wireless (Atheros AR5212)	1500
R 5GsektorMorina	Wireless (Atheros AR5211)	1500
R cernošice	Wireless (Prism)	1500
R homolkova	Wireless (Prism)	1500
R napojka	Ethernet	1500
R praha	Wireless (Prism)	1500

# Budislav village example

- targets
- sources
- realization



### Route List

Destination	Gateway	Distance	Interface
0.0.0.0/0	172.27.250.1	1	napojka
82.99.161.216...	172.27.12.132	1	5GsektorMorina
82.99.161.220...	172.27.12.130	1	5GsektorMorina
172.24.0.0/16	172.27.250.238	1	homolkova
172.25.0.0/16	172.27.250.1	1	napojka
172.27.0.0/16	172.27.250.238	2	homolkova
172.27.3.0/24	172.27.250.238	1	homolkova
172.27.4.0/24	172.27.13.130	1	5GPraha
172.27.6.0/24	0.0.0.0	172.27.6.254	0 praha
172.27.7.0/24	172.27.250.238	1	homolkova
172.27.8.0/24	0.0.0.0	172.27.8.254	0 homolkova
172.27.10.0/24	172.27.250.3	1	napojka
172.27.11.0/24	0.0.0.0	172.27.11.254	0 cernošice
172.27.12.0/24	0.0.0.0	172.27.12.254	0 5GsektorMorina
172.27.13.0/24	0.0.0.0	172.27.13.254	0 5GPraha

Interface	AP	Tx/Rx Rate	Last Activ...	Signal Strengt...	Uptime
na	no	11Mbps/2Mbps	0.130	-66	138:38:30
osice	no	11Mbps	15.150	-70	138:38:00
na	no	11Mbps	0.010	-67	138:34:26
osice	no	11Mbps	0.030	-71	08:44:32
sektor...	no	24Mbps	2.600	-80	21:25:46
sektor...	no	24Mbps	0.050	-80	00:30:56
osice	no	11Mbps	7.770	-72	03:23:00
olkova	no	11Mbps	5.150	-79	19:36:27
na	no	5Mbps	2.000	-77	02:10:24

### Resources

General

- Uptime: 138:39:04
- Free Memory: 465456 kB
- Total Memory: 499520 kB
- CPU: Intel(R)
- CPU Frequency: 2793 MHz
- CPU Load: 29 %
- Free HDD Space: 21177 kB
- Total HDD Size: 61908 kB
- Sector Writes Since Reboot: 5310
- Total Sector Writes: 1575802

remote...	0	0	0 bps	542356812	724213	40	-67	138:38:41
remote...	0	0	0 bps	150261158	265540	50	-77	138:38:42
remote...	0	0	0 bps	1824752135	4331063	50	-66	138:38:41
selekra...	0	0	0 bps	111494375	293818	40	-66	138:38:42
skola...	0	0	0 bps	24287521	81698	50	-68	138:38:41
vraz_p...	0	0	0 bps	128	2	50	-68	72:14:03
Cerno...	0	0	0 bps	35316204	150666	50	-66	138:38:42
	1000000	25000000	840 bps	628689	8073	50	-68	38:57:17
	200000	400000	0 bps	439209785	782421			
	40000	450000	0 bps	560472481	1585941			
	40000	260000	0 bps	355014273	717076			
	200000	500000	0 bps	55226497	171779			
	20000	100000	0 bps	243107648	539599			
	20000	190000	0 bps	457703194	1335246			
	400000	2000000	0 bps	457703330	1335249			
	40000	120000	363 bps	327992599	87394			
	0	0	706.9 kbps					
	0	0	384.3 kbps					
	0	0	0 bps					
	0	0	246.1 kbps					
	0	0	683 bps					
	0	0	20.0 kbps					

### NTP Server

Mode:

- Broadcast
- Multicast
- Multicast
- Manycast

Buttons: OK, Cancel, Apply



# End of fiber line in area

Interfaces

- IP
- Ports
- Queues
- Drivers
- System
- Files
- Log
- SNMP
- Users
- Radius
- Tools
- Terminal
- Password
- Certificate
- Exit
- PPP
- Routing

Interface List

Name
R ↔ 5GPraha
R ↔ 5GsektorMorina
R ↔ cernošice
R ↔ homolškova
R ↔ napojka
R ↔ praha

Interface <napojka>

General Ethernet Status Traffic

Rx: 2.5 Mbps  
Tx: 719.7 kbps

Route List

Floutes	Tables	Rules
Destination	Gateway	
S ▶ 0.0.0.0/0	172.27.2	
S ▶ 82.99.161.216...	172.27.1	
S ▶ 82.99.161.220...	172.27.1	
S ▶ 172.24.0.0/16	172.27.2	
S ▶ 172.25.0.0/16	172.27.2	
S ▶ 172.27.0.0/16	172.27.2	
S ▶ 172.27.3.0/24	172.27.2	
S ▶ 172.27.4.0/24	172.27.1	
DC ▶ 172.27.6.0/24	0.0.0.0	
S ▶ 172.27.7.0/24	172.27.2	
DC ▶ 172.27.8.0/24	0.0.0.0	
S ▶ 172.27.10.0/24	172.27.2	
DC ▶ 172.27.11.0/24	0.0.0.0	
DC ▶ 172.27.12.0/24	0.0.0.0	
DC ▶ 172.27.13.0/24	0.0.0.0	
172.27.99.84	66.90.153	
172.27.249.1	85.70.64.2	
172.27.3.12	212.80.76	
172.27.59.16	83.248.19	
172.27.3.12	212.80.76	
172.27.3.130	84.83.62.1	
172.27.3.130	195.137.10	
172.27.59.16	62.209.209	
172.27.99.84	212.149.17	
172.27.3.130	172.201.91	
172.27.3.130	212.204.3	
172.27.3.130	217.185.29	
172.27.3.12	155.207.48	



Last Activi...	Signal Strengt...	Uptime
0.130	-66	138:38:30
15.150	-70	138:38:00
0.030	-67	138:34:26
2.600	-80	21:25:46
0.050	-80	00:30:56
7.770	-72	03:23:00
5.150	-79	19:36:27
2.000	77	43:10:34

138:39:04:	
465456	kB
499520	kB
Intel(R)	
2793	MHz
29	%
21177	kB
61908	kB
5310	
1575802	

724213	40	-67	138:38:41
265540	50	-77	138:38:42
4331063	90	-66	138:38:41
293818	40	-66	138:38:42
81698	50	-68	138:38:41
2	50	-68	72:14:03
150666	50	-66	138:38:42
8073	50	-68	38:57:17
782421			
1585941			
717076			
171779			
539599			
1335246			
1335249			
57904			

NTP Server

Mode:

Broadcast  Multicast

Manycast

OK Cancel Apply



admin@172.27.6.254 (cukrak\_nahore) - WinBox v2.8.12

# Church

Interfaces

Name	Type
↔ 5G Praha	Wireless (Atheros AR5212)
↔ 5G sektor Morina	Wireless (Atheros AR5211)
↔ cernošice	Wireless (Prism)
↔ homolkova	Wireless (Prism)
↔ napojka	Ethernet
↔ praha	Wireless (Prism)

Interface <napojka>

General Ethernet Status Traffic

Rx: 2.5 Mbps  
Tx: 719.7 kbps

Route List

Destination	Gateway	Pref.	Source	Distance
0.0.0.0/0	172.27.250.1			
82.99.161.216..	172.27.12.132			
82.99.161.220..	172.27.12.130			
172.24.0.0/16	172.27.250.238			
172.25.0.0/16	172.27.250.1			
172.27.0.0/16	172.27.250.238			
172.27.3.0/24	172.27.250.238			



0	0	706.3 kbps
0	0	384.3 kbps
0	0	0 bps
0	0	246.1 kbps
0	0	683 bps
300000	8000000	20.0 kbps

## Sys-DataCom

# Church inside

Interfaces

IP

Ports

Queues

Drivers

System

Files

Log

SNMP

Users

Radius

Tools

Terminal

Password

Certificate

Exit

PPP

Routing

Name	Type	MTU
R <> 5G Praha	Wireless (Atheros AR5212)	1500
R <> 5G sektor Morina	Wireless (Atheros AR5211)	1500
R <> cernošice	Wireless (Prism)	1500
R <> homolkova	Wireless (Prism)	1500
R <> napojka	Ethernet	1500
R <> praha	Wireless (Prism)	1500

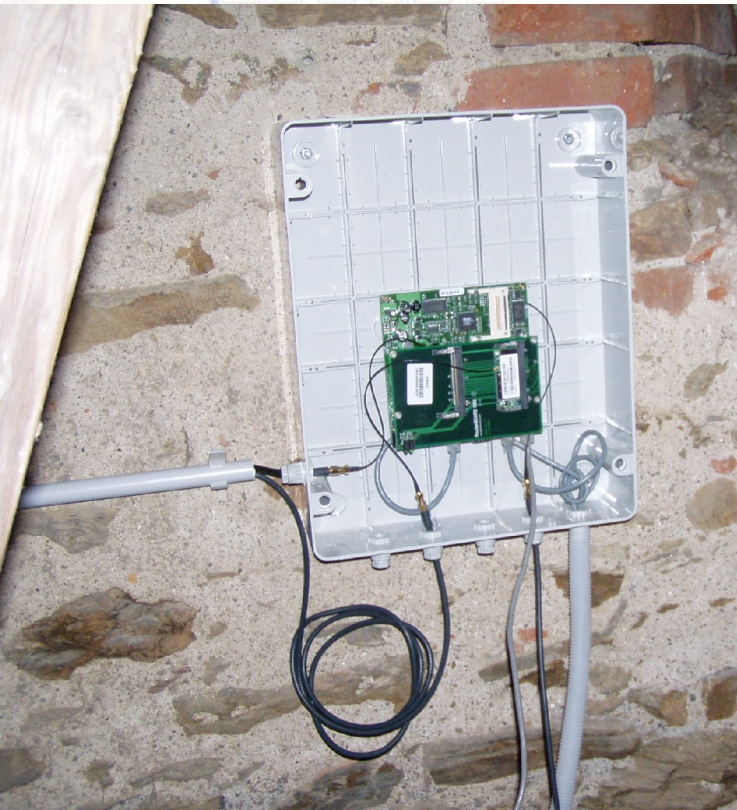
Interface <napojka>

General Ethernet Status Traffic

Rx: 2.5 Mbps  
Tx: 719.7 kbps

Route List

Routes Tables Rules



0	0	384.3 kbps
0	0	0 bps
0	0	246.1 kbps
0	0	683 bps
3000000	8000000	20.0 kbps

dataCom s.r.o. ... admin@172.27.

**Sys-DataCom**

admin@172.27.6.254 (cukrak\_nahore) - WinBox 2.8.12

Interfaces:

- IP
- Ports
- Queues
- Drivers
- System
- Files
- Log
- SNMP
- Users
- Radius
- Tools
- Terminal
- Password
- Certificate
- Exit
- PPP

Interface List

Name	Type	Speed
↔ 5G Praha	Wireless (Atheros AR5212)	1500
↔ 5G sektor Morina	Wireless (Atheros AR5211)	1500
↔ cernošice	Wireless (Prism)	1500
↔ homolkova	Wireless (Prism)	1500
↔ napojka	Ethernet	1500
↔ prah	Wireless (Prism)	1500

General Ethernet Status Traffic

**Sys-DataCom**

- Typical Clients
- Equipped with routerboards



6: 51908 kB

6: 5310

6: 1575802

12	724213	40	-67	138:38:41
38	265540	50	-77	138:38:42
35	4331063	90	-66	138:38:41
75	293818	40	-66	138:38:42
21	81698	50	-68	138:38:41
28	2	50	-68	72:14:03
14	150666	50	-66	138:38:42
39	8073	50	-68	38:57:17
35	782421			
31	1585941			
73	717076			
37	171779			
18	539599			
34	1335246			
30	1335249			
30	67394			

NTP Server

Mode:

Broadcast  Multicast

Manycast

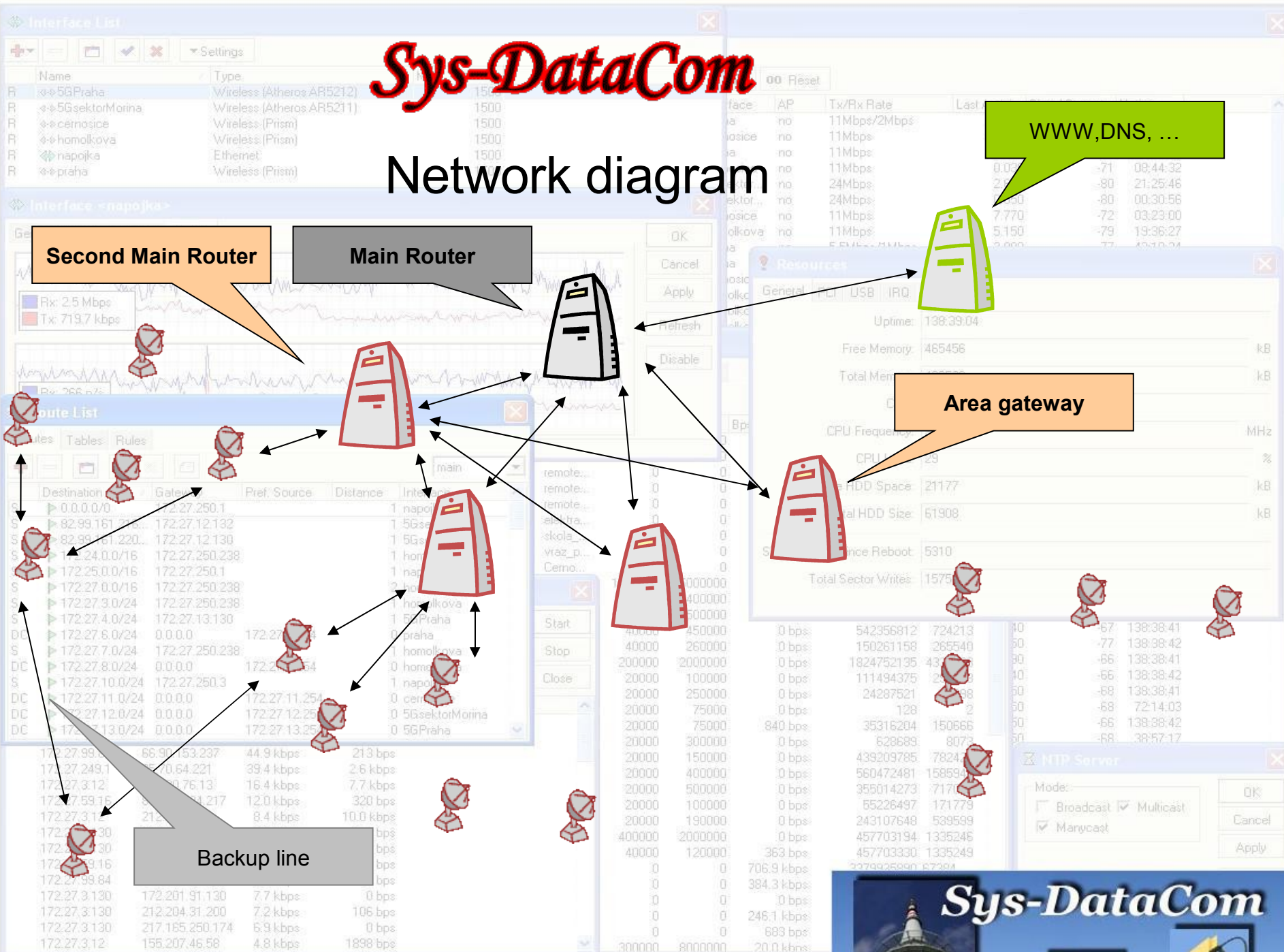
OK Cancel Apply

**Sys-DataCom**



# Sys-DataCom

## Network diagram



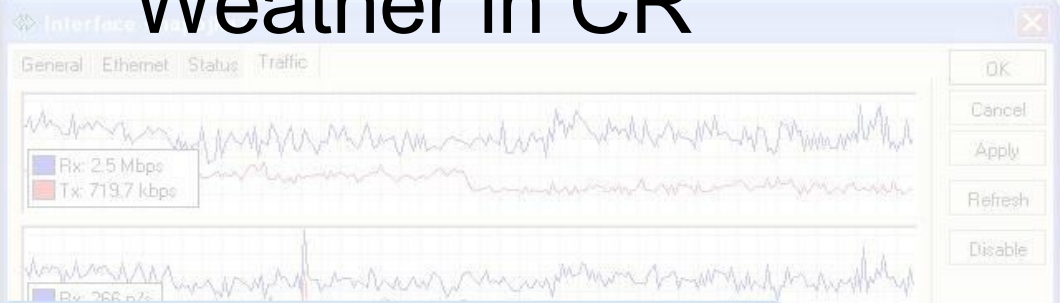
# Sys-DataCom

## Weather in CR

- Interfaces
- IP
- Ports
- Queues
- Drivers
- System
- Files
- Log
- SNMP
- Users
- Radius
- Tools
- Terminal
- Password
- Certificate
- Exit
- PPP
- Routing

### Interface List

Name	Type	Speed
5GPraha	Wireless (Atheros AR5212)	1500
5GsektorMorina	Wireless (Atheros AR5211)	1500
cernosice	Wireless (Prism)	1500
homolkova	Wireless (Prism)	1500
napojka	Ethernet	1500
praha	Wireless (Prism)	1500



Interface	AP	Tx/Rx Rate	Last Activ...	Signal Strengt...	Uptime
5GPraha	no	11Mbps/2Mbps	0.130	-66	138:38:30
5GsektorMorina	no	11Mbps	15.150	-70	138:38:00
cernosice	no	11Mbps	0.010	-67	138:34:26
homolkova	no	11Mbps	0.030	-71	08:44:32
napojka	no	24Mbps	2.600	-80	21:25:46
praha	no	24Mbps	0.050	-80	00:30:56
5GPraha	no	11Mbps	7.770	-72	03:23:00
5GsektorMorina	no	11Mbps	5.150	-79	19:36:27
cernosice	no	11Mbps	2.000	-77	03:10:24

### Route List

Routes Tables Rules

Destination	Gateway	Pref. Source	Distance	Interface
0.0.0.0/0	172.27.250.1		1	napojka
82.99.161.216...	172.27.12.132		1	5GsektorMorina
82.99.161.220...	172.27.12.130		1	5GsektorMorina
172.24.0.0/16	172.27.250.238		1	homolkova
172.25.0.0/16	172.27.250.1		1	napojka
172.27.0.0/16	172.27.250.238		2	homolkova
172.27.3.0/24	172.27.250.238		1	homolkova
172.27.4.0/24	172.27.13.130		1	5GPraha
172.27.6.0/24	0.0.0.0	172.27.6.254	0	praha
172.27.7.0/24	172.27.250.238		1	homolkova
172.27.8.0/24	0.0.0.0	172.27.8.254	0	homolkova
172.27.10.0/24	172.27.250.3		1	napojka
172.27.11.0/24	0.0.0.0	172.27.11.254	0	cernosice
172.27.12.0/24	0.0.0.0	172.27.12.254	0	5GsektorMorina
172.27.13.0/24	0.0.0.0	172.27.13.254	0	5GPraha

remote...	0	0
remote...	0	0
remote...	0	0
selektra...	0	0
skola...	0	0
vraz_p...	0	0
Cerno...	0	0

### Resources

General PCI USB IRQ IO

- Uptime: 138:39:04
- Free Memory: 465456 kB
- Total Memory: 499520 kB
- CPU: Intel(R)
- CPU Frequency: 2793 MHz
- CPU Load: 29 %
- Free HDD Space: 21177 kB
- Total HDD Size: 61908 kB
- Sector Writes Since Reboot: 5310
- Total Sector Writes: 1575802

0 bps	542356812	724213	40	-67	138:38:41
0 bps	150261158	265540	50	-77	138:38:42
0 bps	1824752135	4331063	50	-66	138:38:41
0 bps	111494375	293818	40	-66	138:38:42
0 bps	24287521	81698	50	-68	138:38:41
0 bps	128	2	50	-68	72:14:03
0 bps	35316204	150666	50	-66	138:38:42
840 bps	628689	8073	50	-68	38:57:17
0 bps	439209785	782421	40	-67	138:38:41
0 bps	560472481	1585941	50	-77	138:38:42
0 bps	355014273	717076	50	-66	138:38:41
0 bps	55226497	171779	50	-66	138:38:42
0 bps	243107648	539599	50	-68	72:14:03
0 bps	457703194	1335246	50	-66	138:38:42
363 bps	457703330	1335249	50	-68	38:57:17
0	0	706.9 kbps	0		
0	0	384.3 kbps	0		
0	0	0 bps	0		
0	0	246.1 kbps	0		
0	0	683 bps	0		
300000	8000000	20.0 kbps	0		

### NTP Server

Mode:

- Broadcast
- Multicast
- Manycast

Buttons: OK, Cancel, Apply





## **Weather in summer**

- **over 40°C on towers**
- **storms**

## Weather in winter

- up to  $-30^{\circ}\text{C}$
- Clouds, sometimes heavy snowing





admin@172.27.6.254 (cukrak\_nahore) - WinBox 2.8.12

Interfaces

Interface List

Name	Type
↔ 5GPraha	Wireless (Atheros AR5212)
↔ 5GsektorMorina	Wireless (Atheros AR5211)
↔ cernošice	Wireless (Prism)
↔ homolkova	Wireless (Prism)
↔ napojka	Ethernet
↔ praha	Wireless (Prism)

Interface <napojka>

General Ethernet Status Traffic

Rx: 2.5 Mbps  
Tx: 719.7 kbps

Route List

Destination	Gateway	Pref. Source	Distance	Interface
S 0.0.0.0/0	172.27.250.1		1	napojka
S 172.24.0.0/16	172.27.12.132		1	5GsektorMorina
S 172.24.0.0/16	172.27.12.130		1	5GsektorMorina
S 172.24.0.0/16	172.27.250.238		1	homolkova
S 172.25.0.0/16	172.27.250.1		1	napojka
S 172.27.0.0/16	172.27.250.238		2	homolkova
S 172.27.3.0/24	172.27.250.238		1	homolkova
S 172.27.7.0/24	172.27.250.238		1	homolkova
DC 172.27.8.0/24	0.0.0.0	172.27.8.254	0	homolkova
S 172.27.10.0/24	172.27.250.3		1	napojka
DC 172.27.11.0/24	0.0.0.0	172.27.11.254	0	cernošice
DC 172.27.12.0/24	0.0.0.0	172.27.12.254	0	5GsektorMorina
172.27.99.84	66.90.153.237	44.9 kbps	213 bps	
172.27.249.1	85.70.64.221	39.4 kbps	2.6 kbps	
172.27.3.12	212.80.76.13	16.4 kbps	7.7 kbps	
172.27.59.16	83.248.194.217	12.0 kbps	320 bps	
172.27.3.12	212.80.76.72	8.4 kbps	10.0 kbps	
172.27.3.130	84.83.62.121	8.0 kbps	213 bps	
172.27.3.130	195.137.109.58	8.0 kbps	106 bps	
172.27.59.16	62.203.208.90	8.0 kbps	106 bps	
172.27.99.84	212.149.179.210	8.0 kbps	0 bps	
172.27.3.130	172.201.91.130	7.7 kbps	0 bps	
172.27.3.130	212.204.31.200	7.2 kbps	106 bps	
172.27.3.130	217.185.250.174	6.9 kbps	0 bps	
172.27.3.12	155.207.46.56	4.8 kbps	1898 bps	

Start

Echa\_Montana\_Mic...  
Doručena pošta - Mo...  
Microsoft PowerP...

*Sys-DataCom*

**TV tower**

**Problems**

- strong wind
- electromagnetic field
- equipped with routers on Intel based PC



# *Sys-DataCom*

## **Backbone connectivity**

- Mikrotik gateway/firewall
- Masquerading,
- NAT for public address
- hardware - Intel based PC



The screenshot displays the Mikrotik WinBox interface. On the left is a sidebar menu with options like Interfaces, IP, Ports, Queues, Drivers, System, Files, Log, SNMP, Users, Radius, Tools, Terminal, Password, Certificate, Exit, PPP, and Routing. The main window is divided into several sections: 'Interface List' showing a table of interfaces, 'Interface <napojka>' with tabs for General, Ethernet, Status, and Traffic, and 'Routes' showing a list of IP routes. At the bottom, there is a traffic statistics table.

Name	Type
5GPraha	Wireless (Atheros AR5212)
5GsektorMorina	Wireless (Atheros AR5211)
cernosice	Wireless (Prism)
homolkova	Wireless (Prism)
napojka	Ethernet
praha	Wireless (Prism)

Dest	New	Def. S	Def. S
S	82.99.161.216...	172.27.12.132	
S	82.99.161.220...	172.27.12.130	
S	172.24.0.0/16	172.27.250.238	
S	172.25.0.0	172.27.250.1	
S	172.27.4.0/24	172.27.13.130	
DC	172.27.6.0/24	0.0.0.0	172.27.6.254
S	172.27.7.0/24	172.27.250.238	
DC	172.27.8.0/24	0.0.0.0	172.27.8.254
S	172.27.10.0/24	172.27.250.3	
DC	172.27.11.0/24	0.0.0.0	172.27.11.254
DC	172.27.12.0/24	0.0.0.0	172.27.12.254
DC	172.27.13.0/24	0.0.0.0	172.27.13.254

172.27.99.84	66.90.153.237	44.9 kbps	213 bps
172.27.249.1	85.70.64.221	39.4 kbps	2.6 kbps
172.27.3.12	212.80.76.13	16.4 kbps	7.7 kbps
172.27.59.16	83.248.194.217	12.0 kbps	320 bps
172.27.3.12	212.80.76.72	8.4 kbps	10.0 kbps
172.27.3.130	84.83.62.121	8.0 kbps	213 bps
172.27.3.130	195.137.109.58	8.0 kbps	106 bps
172.27.59.16	62.203.209.90	8.0 kbps	106 bps
172.27.99.84	212.149.179.210	8.0 kbps	0 bps
172.27.3.130	172.201.91.130	7.7 kbps	0 bps
172.27.3.130	212.204.31.200	7.2 kbps	106 bps
172.27.3.130	217.185.250.174	6.9 kbps	0 bps
172.27.3.12	155.207.46.58	4.8 kbps	1898 bps

***Sys-DataCom***



# Relay stations

- distributing connectivity
- Lot of AP, Clients
- equipped with routerboards

# *Sys-DataCom*

Thank you

- [cihak@mikrotik.cz](mailto:cihak@mikrotik.cz)
- [www.sys-data.com](http://www.sys-data.com)

