

RSB (Resilient SipBox) user guide



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Device description

Resilient Sip Box (RSB) - VOIP Application Layer Gateway –

An effective high-performing device, meant for provision of telephone connection to the remote objects in case of emergency at the data transmission channels in infrastructures using IP PBX by different manufacturers.

Main benefits

- Provision of fail-safety and smart routing
- No need for configuration of a local dial plan (working within Broadworks)
- Communication channel quality control
- Support of basic network services
- Tools for diagnostics
- Provision of connection with PSTN
- CDR formation

Exploitation

RSB provides the basic set of telephone services (CALL, TRANSFER, HOLD, N-WAY CONFERENCE, MOH), and also connection to PSTN. Smart routing configuration allows setting an access to long distance and international directions in case of unavailability of IP PBX, and CDR generation allows rendering the correct invoice for the made calls. The device supports up to 200 simultaneous calls in case of IP PBX unavailability.

Smart routing of calls

The mechanism of control over communication channel quality allows to automatically reroute SIP traffic to an alternative SIP Proxy or Voice Gateway. An administrator can set up to 255 different directions, controlling the timers and switching thresholds between routes. At that, there's no need to adjust any user terminal, and the switching, transparent for the user, does not interrupt communication.

Analysis and troubleshooting

RSB is equipped with tools for network connection diagnostics, allows to collect traffic with tcpdump tool and save it to local flash-drive for further analysis. There is also a suitable access to statistical information on SIP device operation, with which RSB interacts, and also to system logs.

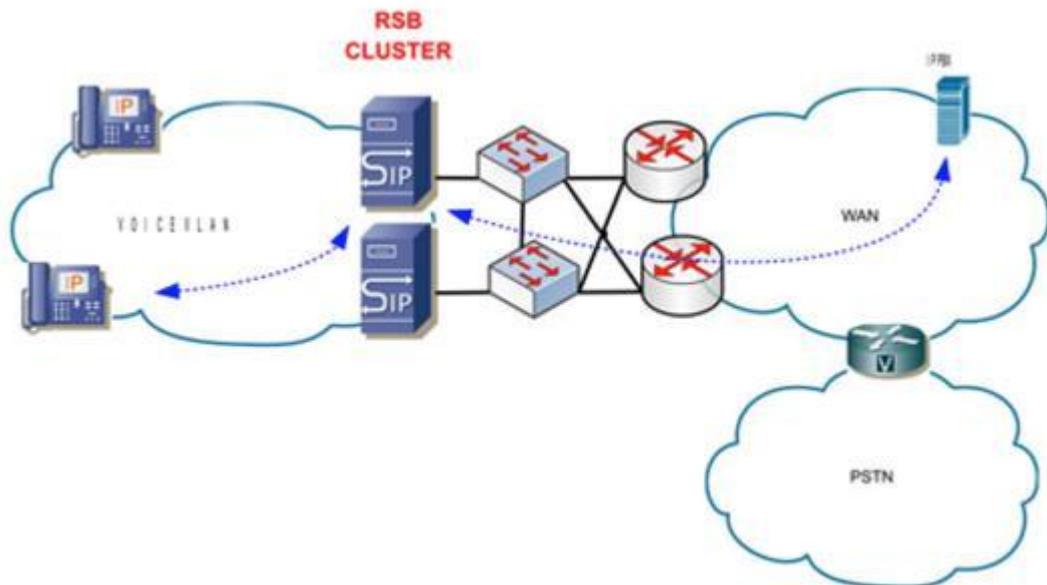
Additional functions

RSB allows to localize mechanisms of user device provisioning for economy of WAN channel bandwidth. For this purposes a local flash-drive is used and support of FTP/TFTP protocols is provided. RSB also provides DHCP, DNS and NTP services. Such functions allow localizing on RSB all the ip-telephony services, crucial for work, setting the network equipment free from outlying functions.

Fail-safety

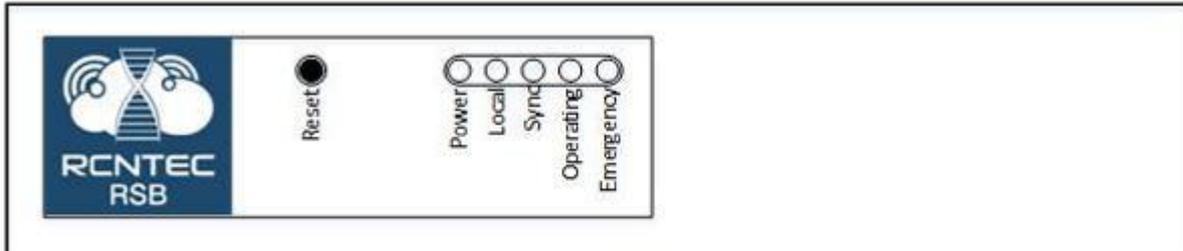
RSB provides work in cluster configuration. By that, switching between cluster nodes is performed without interrupting the current conversations. There is also possible to reinstall RSB software without interruption of communication in cluster mode.

Scheme of network connection



Technical configuration

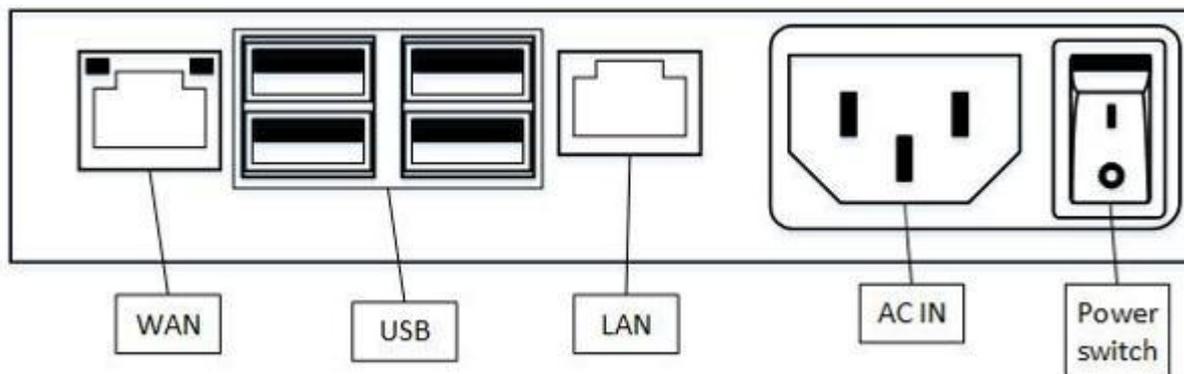
The clipboard layout is represented below at the scheme. There are some indicators showing the main working conditions of the device and the button for reset to the factory settings (Reset).



Indicators.

| Indicator | Description |
|----------------|--|
| Emergency mode | Malfunction while loading the device, not all the services are operational. To check the status you need to enter the device and check it's condition. |
| Local | Local RSB operation (survivability functionality) |
| Sync | Synchronization with the neighboring RSB in cluster is normal |
| Operating | The device is functioning in normal mode |
| Power | Power feeding indicator |

The back panel of RSB contains Ethernet interfaces and power plug.



Connector description

| Indicator | Description | | | | |
|-----------|--|-------|---|--------|---|
| LAN | LAN RSB interface | | | | |
| WAN | WAN RSB interface Indicator <table border="1" data-bbox="624 954 1394 1151"> <tbody> <tr> <td>Green</td> <td>Blinks if 100 Mbit/s connection is used</td> </tr> <tr> <td>Yellow</td> <td>Blinks if 100 Mbit/s connection is used</td> </tr> </tbody> </table> | Green | Blinks if 100 Mbit/s connection is used | Yellow | Blinks if 100 Mbit/s connection is used |
| Green | Blinks if 100 Mbit/s connection is used | | | | |
| Yellow | Blinks if 100 Mbit/s connection is used | | | | |
| USB | Not in use | | | | |
| AC IN | AC 100 – 240 V | | | | |

Technical specifications

| <i>Ethernet interfaces</i> | | |
|--------------------------------------|--|---|
| Quantity | 2 | |
| Connector type | RJ-45 | |
| WAN interface standard | 10/100/1000 Base-T | |
| | Indicator | |
| | Green | Blinks if 100 Mbit/s connection is used |
| | Yellow | Blinks if 100 Mbit/s connection is used |
| LAN interface standard | 10/100 Base -T | |
| <i>VoIP protocols</i> | | |
| Protocol | SIP v2 | |
| Data transmission standards | IEEE 802.3 MAC Address, IPv4, DHCP, ARP, STP, DNS, ICMP, TCP, UDP, RTP, DiffServ, SNTP, 802.1q, ToS, QoS | |
| Recommendations | RFC 3261, RFC 2833 | |
| <i>Control/administering</i> | | |
| CLI (SSH), Web Management (via HTTP) | | |
| SNMPv2, Syslog (RFC 3164) | | |
| <i>Electrical power</i> | | |
| AC 100 – 240 B | | |
| <i>Input power</i> | | |
| RSB < 10 B _T | | |
| <i>Service conditions</i> | | |
| Heat condition | | |
| Storage | -40° - +70°C | |
| Exploitation | -25° - +70°C | |
| <i>Dimensional specifications</i> | | |
| HxWxD | 32x138x111 | |

First activation

Managing and administering of RSB device can be performed with the help of WEB interface or command line (CLI).

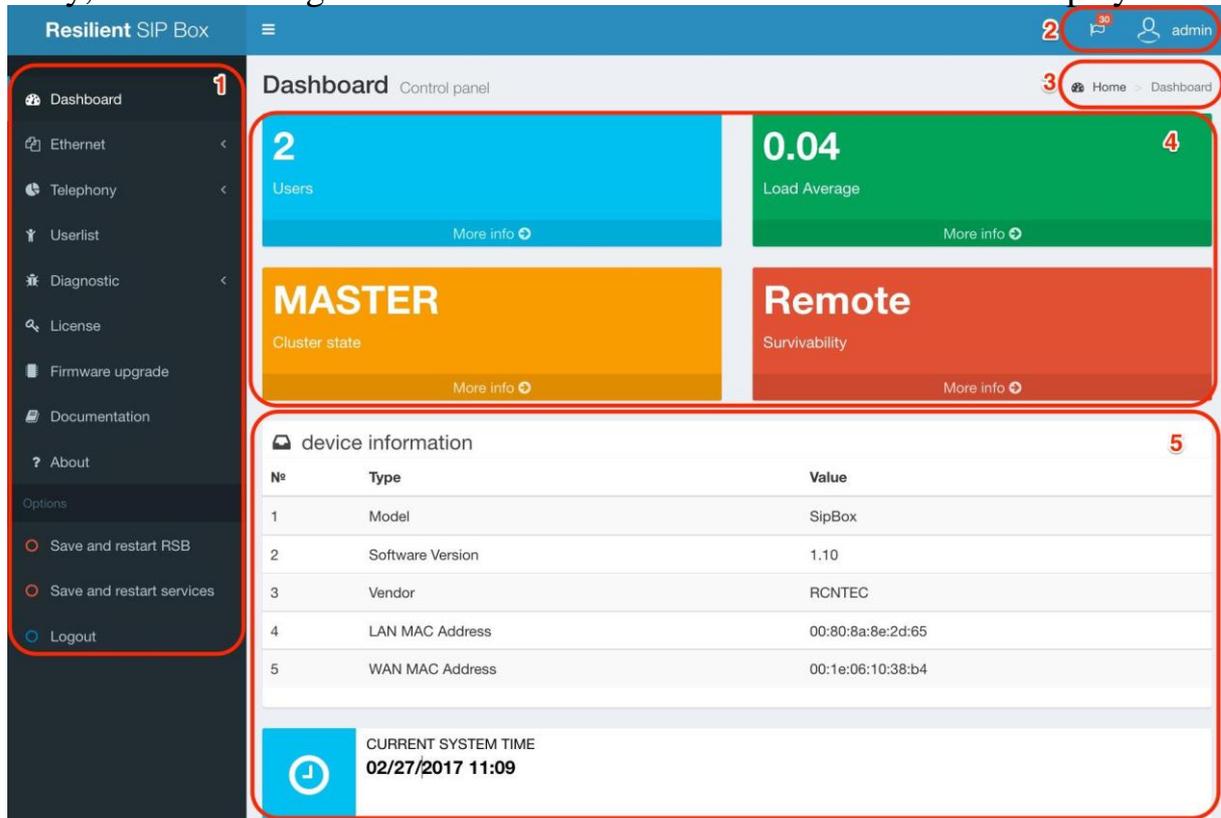
The first connection is performed by connecting to WAN interface.

Connection settings.

| | WEB | CLI (SSH) |
|----------|---------------|------------|
| IP | 192.168.1.1 | |
| Mask | 255.255.255.0 | |
| Port | 80 TCP/UDP | 22 TCP/UDP |
| Login | admin | |
| Password | default | |

Device configuration – WEB interface

The welcome page of the device web interface is the Dashboard menu entry, where all the general info of the current state of the device is displayed.



Block 1 contains menu points and the basic administrative commands of RSB.

In block 2 there is the quantity of the device configuration changes, over the flag indicator. To activate them, restart of the device is needed (over the flag indicator). There is also the information of the current device user login.

After choosing of the relevant entry, the page with the list of current configuration correction is opened, or the device administrators control page.

Block 3 shows the way to the current menu entry.

In block 4 there is the information of the current status of the device:

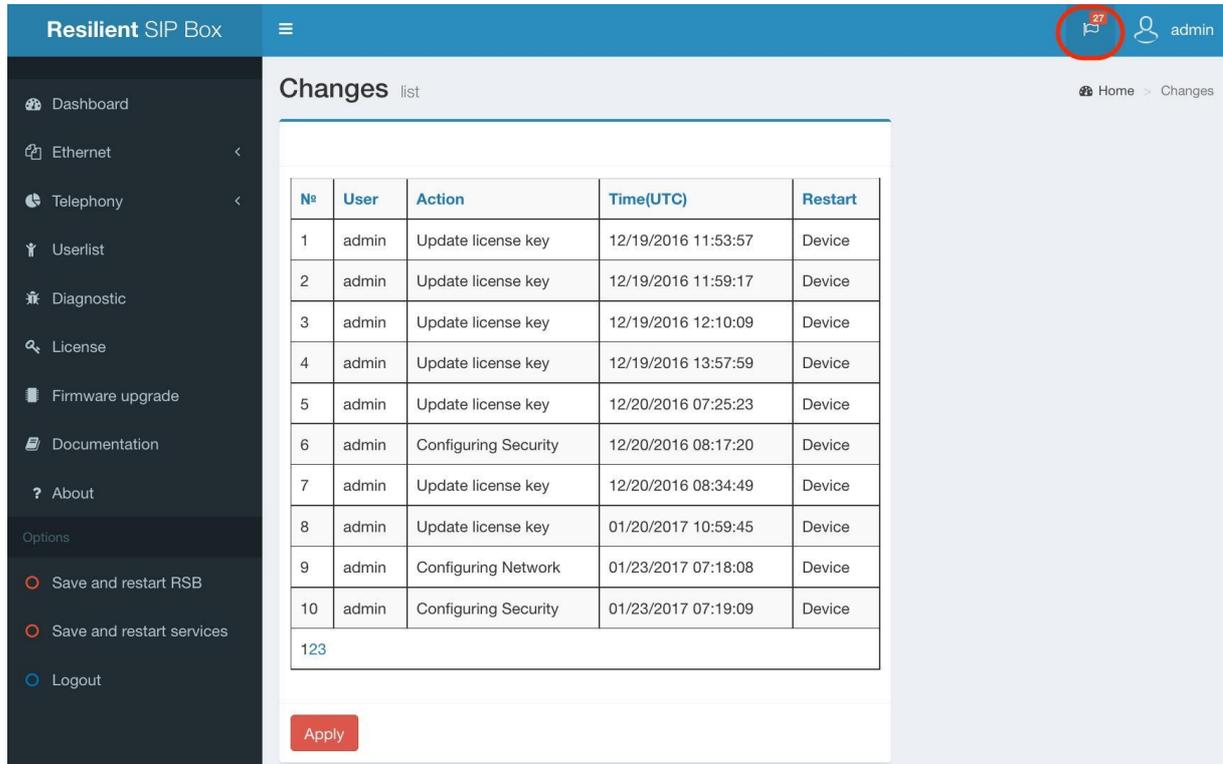
- quantity of the registered accounts;
- processor charge;
- cluster performance mode;
- performance mode of Survivability function.

For additional information on the relevant marker, the user can choose «More info».

Block 5 shows general information of the device.

List of the delayed operations

List of the performed operations on changing of configuration, awaiting execution.



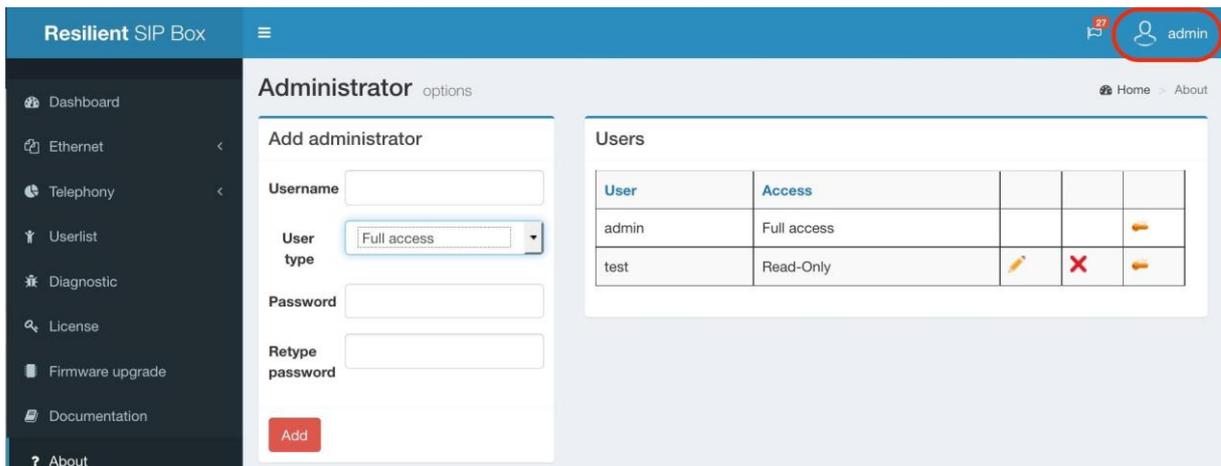
| No | User | Action | Time(UTC) | Restart |
|----|-------|----------------------|---------------------|---------|
| 1 | admin | Update license key | 12/19/2016 11:53:57 | Device |
| 2 | admin | Update license key | 12/19/2016 11:59:17 | Device |
| 3 | admin | Update license key | 12/19/2016 12:10:09 | Device |
| 4 | admin | Update license key | 12/19/2016 13:57:59 | Device |
| 5 | admin | Update license key | 12/20/2016 07:25:23 | Device |
| 6 | admin | Configuring Security | 12/20/2016 08:17:20 | Device |
| 7 | admin | Update license key | 12/20/2016 08:34:49 | Device |
| 8 | admin | Update license key | 01/20/2017 10:59:45 | Device |
| 9 | admin | Configuring Network | 01/23/2017 07:18:08 | Device |
| 10 | admin | Configuring Security | 01/23/2017 07:19:09 | Device |

| Parameter | Description |
|----------------|--|
| Changes | |
| No | Index number of the operation |
| User | Login, under which the operation was performed |
| Action | The performed operation |
| Time(UTC) | Date and time of operation performance (Greenwich civil time is used) |
| Restart | The demanded restart level <i>Device/Service</i> |
| Apply | Execution of all the delayed operation with with reboot of the demanded level |

When clicking on the column name, table lines will be sorted according to the given table field.

Device administrators

Correction and control over the administrators of the device.



| User | Access | | | |
|-------|-------------|--|--|--|
| admin | Full access | | | |
| test | Read-Only | | | |

| Parameter | Description |
|-------------------|---|
| Add administrator | |
| Username | Administrator account login |
| User type | Access type <i>Full access</i> <i>Read-only</i> |
| Password | Administrator password |
| Retype password | Additional input of the administrator password |
| Add | Add an account |

In the «Users» block there is a list of administrators of the device, whose data can be edited or deleted.

When clicking on the column name, table lines will be sorted according to the given table field.

Network settings / Ethernet

Network

Dashboard

Ethernet

- Network
- Static routes
- DHCP Server
- DHCP Failover
- DNS Server
- SNMP

Telephony

Userlist

Diagnostic

License

Firmware upgrade

Documentation

About

Network options Home > Ethernet > Network

WAN Options

IP: 192.168.1.1

Gateway: 192.168.1.1

Mask: 255.255.255.0

LAN Options

IP: 192.168.2.1

Gateway: 192.168.2.1

Mask: 255.255.255.0

Advanced Options

Timezone: (GMT +3:00) Baghdad, Riyadh, Moscow, St. f

NTP1: 8.8.8.8

NTP2: 8.8.4.4

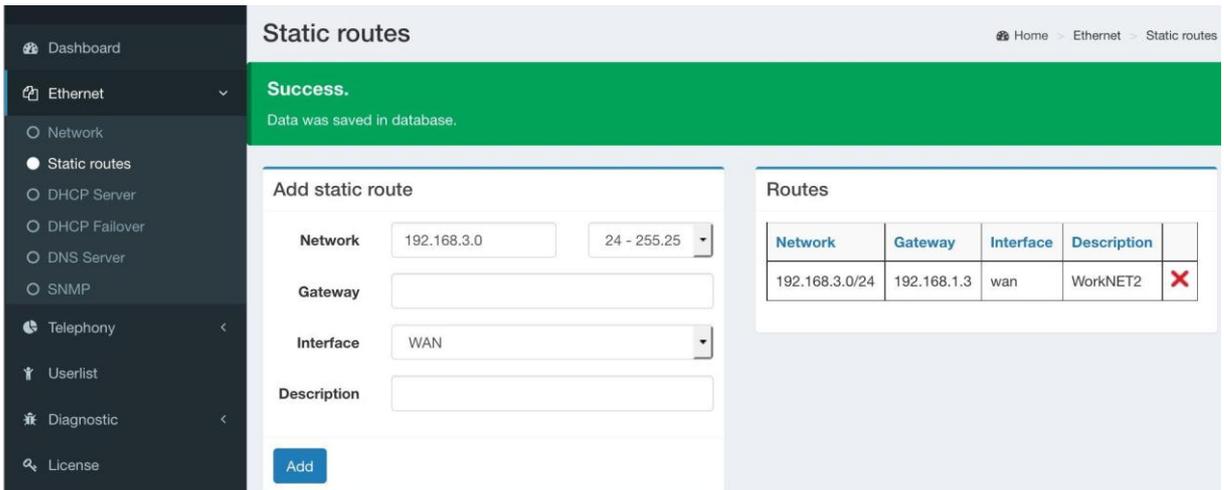
DNS1: 8.8.8.8

DNS2: 8.8.4.4

[Save](#)

| Parameter | Description |
|-------------------------|---|
| WAN Options | |
| IP | IP address of WAN interface. <i>Default - 192.168.1.1</i> |
| Gateway | IP address of network gateway of local network, connected to WAN interface. <i>Default - 192.168.1.1</i> |
| Mask | WAN subnet mask. <i>Default - 255.255.255.0</i> |
| LAN Options | |
| IP | IP address of LAN interface. |
| Gateway | IP address of network gateway of local network, connected to LAN interface. |
| Mask | LAN subnet mask. |
| Advanced Options | |
| Timezone | Timezone for correct work of RSB time service. |
| NTP 1 | IP address of the main NTP server (server of time scale synchronization) |
| NTP 2 | IP address of the spare NTP server (server of time scale synchronization) |
| DNS 1 | IP address of the main DNS server |
| DNS 2 | IP address of the spare DNS server |
| Save | Save configuration |

Static routes



The screenshot shows the 'Static routes' configuration page. On the left is a navigation menu with options like Dashboard, Ethernet, Network, Static routes, DHCP Server, DHCP Failover, DNS Server, SNMP, Telephony, Userlist, Diagnostic, and License. The main content area has a breadcrumb trail: Home > Ethernet > Static routes. A green success banner at the top says 'Success. Data was saved in database.' Below this is the 'Add static route' form with fields for Network (192.168.3.0), Gateway, Interface (WAN), and Description. To the right is a 'Routes' table with one entry: 192.168.3.0/24, 192.168.1.3, wan, WorkNET2, and a red X icon in the last column.

| Parameter | Description |
|---------------------------|---|
| Add static route / Routes | |
| Network | Specify network address and choose the used netmask. |
| Gateway | Address of gateway in front of the chosen network. |
| Interface | Choosing of the interface for accessing the chosen network. |
| Description | Short description of the network. |
| Add | Add route. |

In «**Routes**» block there are the currently added routes, which can be deleted, if necessary.

When clicking on the column name, table lines will be sorted according to the given table field.

DHCP Sever

- Dashboard
- Ethernet
 - Network
 - Static routes
 - DHCP Server**
 - DHCP Failover
 - DNS Server
 - SNMP
- Telephony
- Userlist
- Diagnostic
- License
- Firmware upgrade
- Documentation
- About
- Options
 - Save and restart RSB
 - Save and restart services

Network options
Home - DHCP

Information!
This settings will be applied without reboot.

DHCP daemon settings

Lease time:

Max lease time:

Gateway:

Network:

Mask:

Start Pool:

End Pool:

Failover:

[Apply now](#)

DHCP Options

DNS1:

DNS2:

Option 150:

Option 151:

Option 160:

TFTP:

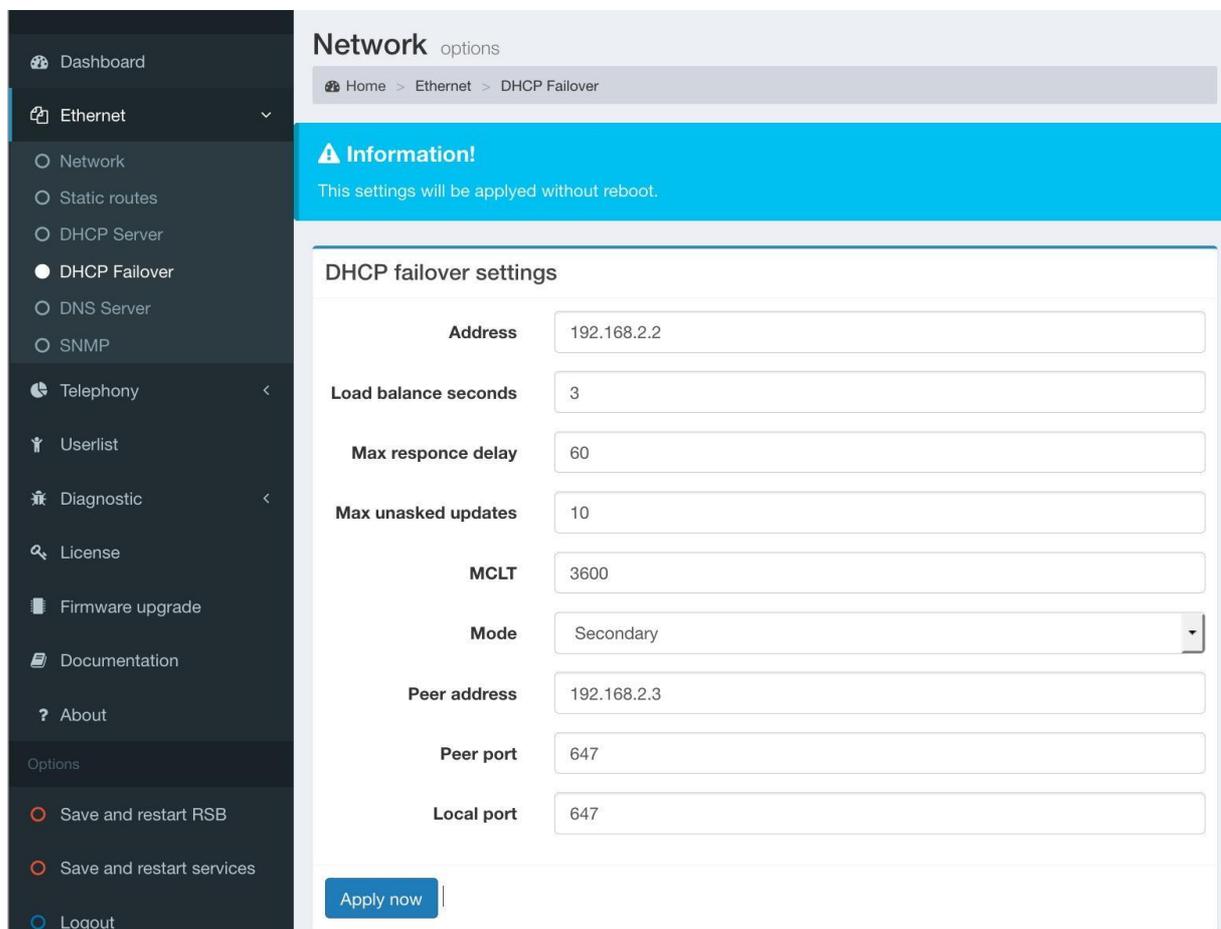
NTP:

These settings are applied without rebooting of the device.

| Parameter | Description |
|-----------------------------|--|
| DHCP daemon settings | |
| Lease time | Lease time of the given IP address in seconds <i>Default - 600sec.</i> |
| Max lease time | Maximal lease time of the given IP address in seconds. <i>Default - 7200sec.</i> |
| Gateway | IP address of gateway for VOIP equipment. IP address of LAN interface in case of single RSB. IP address of virtual LAN interface in case of cluster work |
| Network | VOIP network address, where IP addresses will be given |
| Mask | VOIP netmask. |
| Start Pool | Entering the start pool of the given IP addresses from VOIP network |
| End Pool | Entering the end pool of the given IP addresses from VOIP network |
| Failover | Enabling or disabling of the function of reservation of DHCP server in a cluster <i>Enabled/Disabled</i> |

| DHCP Options | |
|--------------|--|
| DNS 1 | IP address of the main DNS server |
| DNS 2 | IP address of the backup DNS server |
| Option 150 | Option 150 DHCP (tftp server address) |
| Option 151 | Option 151 DHCP (status-code) |
| Option 160 | Option 160 DHCP |
| TFTP | IP address of tftp server, from which the config files will be requested |
| NTP | IP address of NTP server |
| Apply now | Apply settings |

DHCP Failover



Network options

Home > Ethernet > DHCP Failover

Information!
This settings will be applied without reboot.

DHCP failover settings

Address: 192.168.2.2

Load balance seconds: 3

Max response delay: 60

Max unasked updates: 10

MCLT: 3600

Mode: Secondary

Peer address: 192.168.2.3

Peer port: 647

Local port: 647

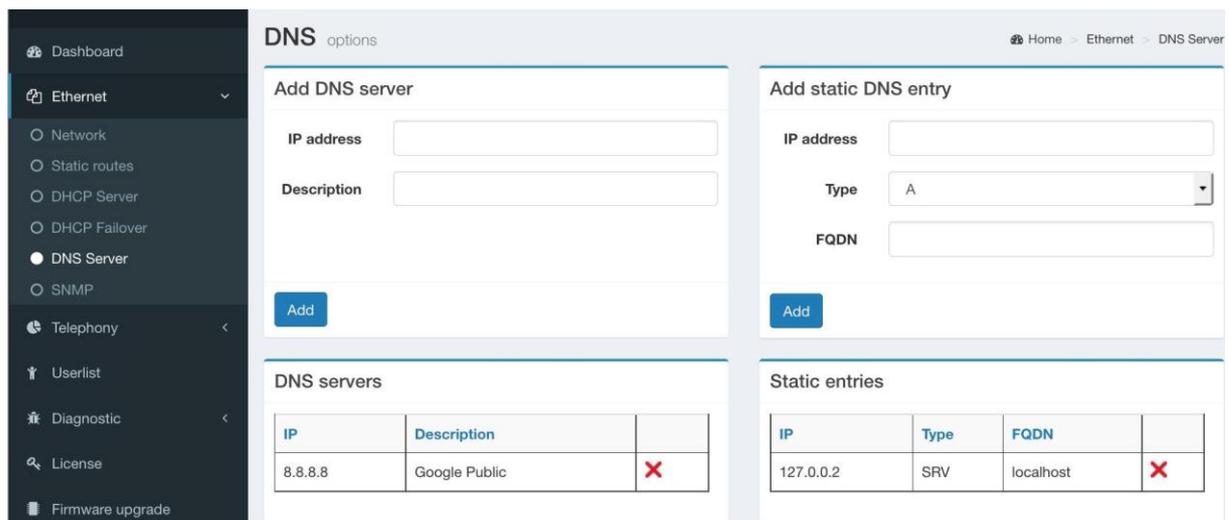
Apply now

These settings are applied without rebooting of the device.

| Parameter | Description |
|-------------------------------|---|
| DHCP failover settings | |
| Address | Home IP address of DHCP server. |
| Load balance max seconds | The time, after which the balance in seconds is disabled. <i>Default - 3sec.</i> |
| Max response delay | The server queue time till announcing it unavailable, in seconds. |

| | |
|---------------------|--|
| | <i>Default - 60sec.</i> |
| Max unacked updates | <i>Default - 10sec.</i> |
| MCLT | Te time for either extending a lease or terminating it without synchronization in seconds. <i>Default - 3600 sec.</i> |
| Mode | Operation mode of the current DHCP server Primary/Secondary |
| Peer address | IP address of the second DHCP server. |
| Peer port | The port, where the second DHCP server will wait for connection. <i>Default - 647</i> |
| Local Port | The port, where the current DHCP server will wait for Connection of the other one. <i>Default - 647.</i> |
| Apply now | Apply settings. |

DNS Server



Indicate the servers used in DNS network, it is also possible to add local DNS entries.

Adding DNS servers.

| Parameter | Description |
|----------------|---------------------------------------|
| Add DNS server | |
| IP address | IP address of DNS server in network |
| Description | Short description of the added server |
| Add | Add DNS server |

List of the used servers is shown in «DNS Servers» table below. Polling of the established DNS servers is done in the same order as they have been established. Each server can be deleted by clicking on the relevant icon in the table.

Static DNS entries

| Parameter | Description |
|----------------------|--|
| Add static DNS entry | |
| IP address | IP address of the network device, for which the local DNS entry is created |
| Type | Type of DNS entry <i>A – Address - Address entry, matching between The name and IP-address</i> <i>SRV – Server selection - Indication of location of Servers for services</i> <i>MX - Mail Exchanger – Entry for mail server, crucial for SMTP-protocol</i> <i>PTR – Pointer - Matching of the address and the name — Inverse correspondence for A entry</i> <i>NAPTR - Naming authority pointer - Pointer at the Authority host name</i> |
| FQDN | Full domain name of the network device |
| Add | Add local DNS entry |

The list of the used local DNS entries can be found in «Static entries» table. Each entry can be deleted by clicking on the relevant icon in the table.

When clicking on the column name, table lines will be sorted according to the given table field.

SNMP

- Dashboard
- Ethernet
- Network
- Static routes
- DHCP Server
- DHCP Failover
- DNS Server
- SNMP
- Telephony
- Userlist

SNMP

Home > Ethernet > SNMP

SNMP options

SNMP Status:

RO community:

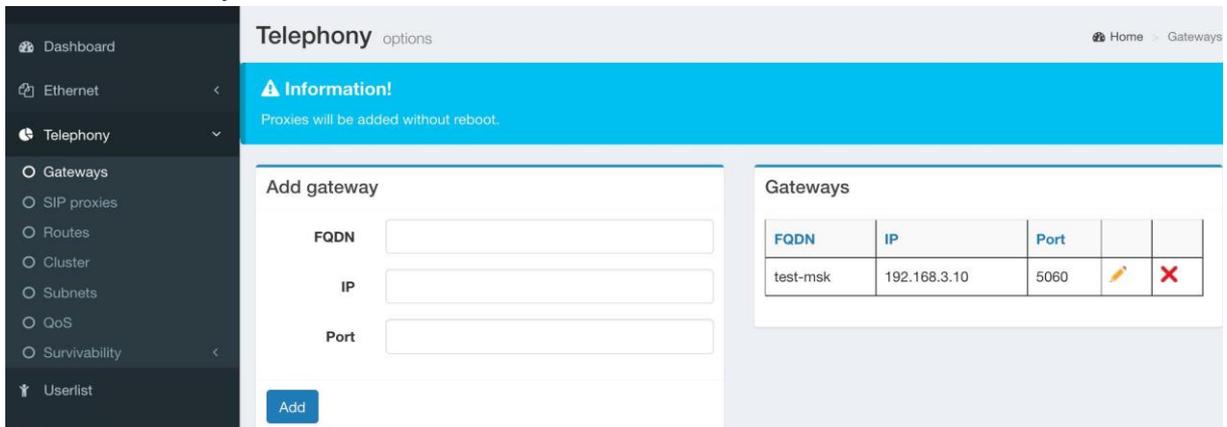
RW community:

Setting SNMP parameters

| Parameter | Description |
|---------------------|--|
| SNMP Options | |
| SNMP Status | Enabling and disabling of SNMP service <i>Enabled/Disabled</i> |
| RO community | «Shared string» for reading (read only), password for SNMP authentication requests to get the necessary information on the examined device |
| RW community | «Shared string» for writing (rewrite), password for authentication of SNMP messages to read and implement modifications In the device configuration |
| Save | Save settings |

Telephony settings / Telephony

Gateways



The screenshot shows the 'Telephony' configuration page. On the left is a sidebar menu with options like Dashboard, Ethernet, Telephony, Gateways, SIP proxies, Routes, Cluster, Subnets, QoS, Survivability, and Userlist. The main content area is titled 'Telephony options' and includes a blue information banner stating 'Proxies will be added without reboot.' Below this is an 'Add gateway' form with input fields for FQDN, IP, and Port, and an 'Add' button. To the right is a 'Gateways' table with columns for FQDN, IP, Port, and actions (edit and delete).

| FQDN | IP | Port | | |
|----------|--------------|------|---|---|
| test-msk | 192.168.3.10 | 5060 |  |  |

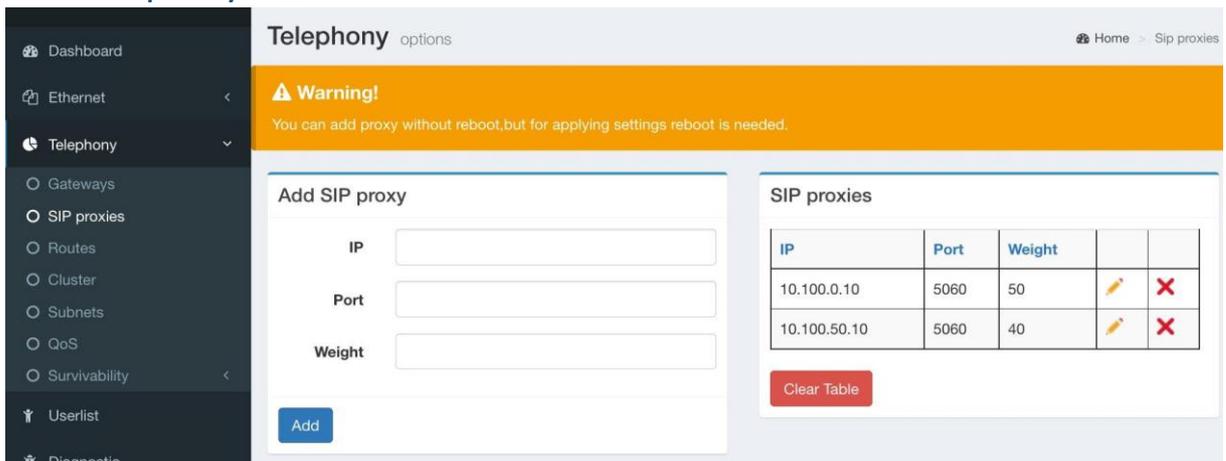
These settings are applied without rebooting of the device.

| Parameter | Description |
|------------------------|---|
| Add gateway / Gateways | |
| FQDN | Name of the voice gateway |
| IP | IP address of the voice gateway |
| Port | Receive port of SIP messages on the gateway |
| Add | Add gateway to configuration |

In Gateways block you can see the currently added gateways, the data in which can be edited or deleted.

When clicking on the column name, table lines will be sorted according to the given table field.

SIP proxy



Warning!
You can add proxy without reboot, but for applying settings reboot is needed.

Add SIP proxy

IP:

Port:

Weight:

SIP proxies

| IP | Port | Weight | | |
|--------------|------|--------|--|--|
| 10.100.0.10 | 5060 | 50 | | |
| 10.100.50.10 | 5060 | 40 | | |

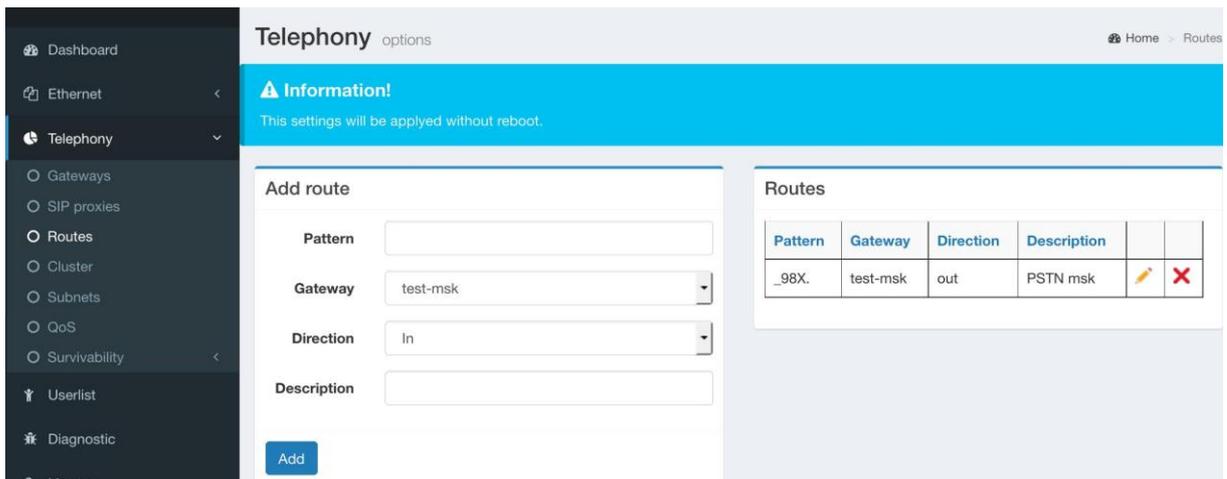
These settings are applied after rebooting of the device.

| Parameter | Description |
|------------------------------------|--|
| Add SIP proxy / SIP proxies | |
| IP | IP address of SIP server |
| Port | Receive port of SIP messages by the SIP server |
| Weight | Weight of each SIP proxy server. The more the weight, the more the priority. |
| Add | Adding of the SIP proxy server into configuration |
| Clear Table | Clear the list of SIP proxy servers |

In «SIP proxies» block you can find the currently added SIP proxy servers, the data in which can be edited and certain data can be deleted.

When clicking on the column name, table lines will be sorted according to the given table field.

Routes



These settings are applied without rebooting of the device.

| Parameter | Description |
|--------------------|--|
| Add route / Routes | |
| Pattern | The mask* of choosing the pattern on the dialed number for outgoing/incoming calls |
| Gateway | Choose gateway from the list of the added ones in entry <i>Telephony/Gateways</i> |
| Direction | Type of the added pattern <i>In/Out</i> |
| Description | Short name of the pattern |
| Add | Add gateway into configuration |

In «Routes» block you can find the currently added patterns, the data in which can be edited or deleted.

When clicking on the column name, table lines will be sorted according to the given table field.

* - the following parameters of number filtration are used in the mask: [0 - 9] – numbers; _ - number beginning;

. – any sequence of numbers of random length; X – any number.

Clusters

Dashboard

Ethernet

Telephony

- Gateways
- SIP proxies
- Routes
- Cluster
- Subnets
- QoS
- Survivability

Userlist

Diagnostics

License

Firmware upgrade

Documentation

About

Options

- Save and restart RSB
- Save and restart services

Logout

Telephony options Home > Cluster

Warning!
After applying the cluster balance service will be affected for several seconds!

Virtual interfaces

Cluster state

Weight

Delay

LAN ID Group

WAN ID Group

LAN IP

WAN IP

Survivability mode

Sync key

Sync interface

Apply now

Data synchronization

IP of Master DB

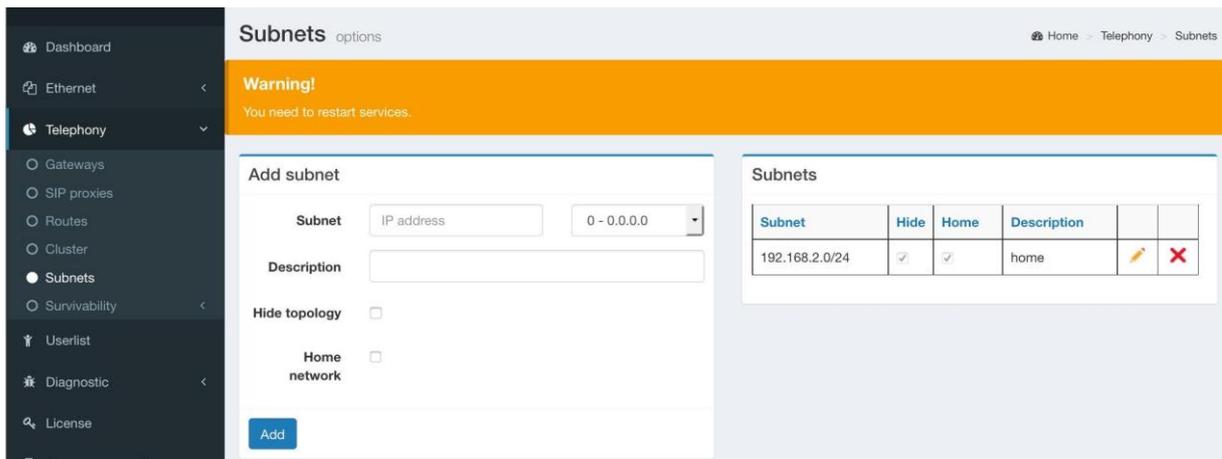
Mode

After applying of settings, the clusters will activate within several seconds.

| Parameter | Description |
|---------------------------|---|
| Virtual interfaces | |
| Cluster state | Cluster activation On\Off |
| Weight | Weight of RSB device for manual transfer of Pressure between RSB in a cluster. |
| Delay | Time of response delay from the contrary RSB till announcing it unavailable, in seconds |
| LAN ID Group | Interface identifier. The identifier is supposed to match the identifier at the neighboring RSB in the cluster. |
| WAN ID Group | WAN interface identifier. The identifier is supposed to match the identifier at the neighboring RSB in the cluster. |
| LAN IP | Virtual IP address of LAN interface In the cluster |
| WAN IP | Virtual IP address of WAN interface In the cluster |
| Survivability mode | Equipment condition under primary cluster initialization. Used only for primary setting. For manual transfer of pressure, the changes must be input into entry 9. <i>Master/Backup</i> |

| | |
|----------------------|--|
| Sync key | Identification password of the cluster |
| Sync interface | <p>Working mode of the cluster. (Sync/NoSync). In Sync mode, in case of unavailability of one of the interfaces, all the pressure is transferred to the neighboring device <i>Default - Sync</i></p> |
| Data synchronization | |
| IP of Master DB | Address of LAN interface of the backup device for replication of the configuration database. |
| Mode | <p>Working mode of the given node of the replicable database. <i>Master/Slave.</i> <i>Master</i> – can apply changes in database from other devices and transfer these changes. <i>Slave</i> – can only receive changes in databases from other devices.</p> |
| Apply Now | Apply configuration. |

Subnets



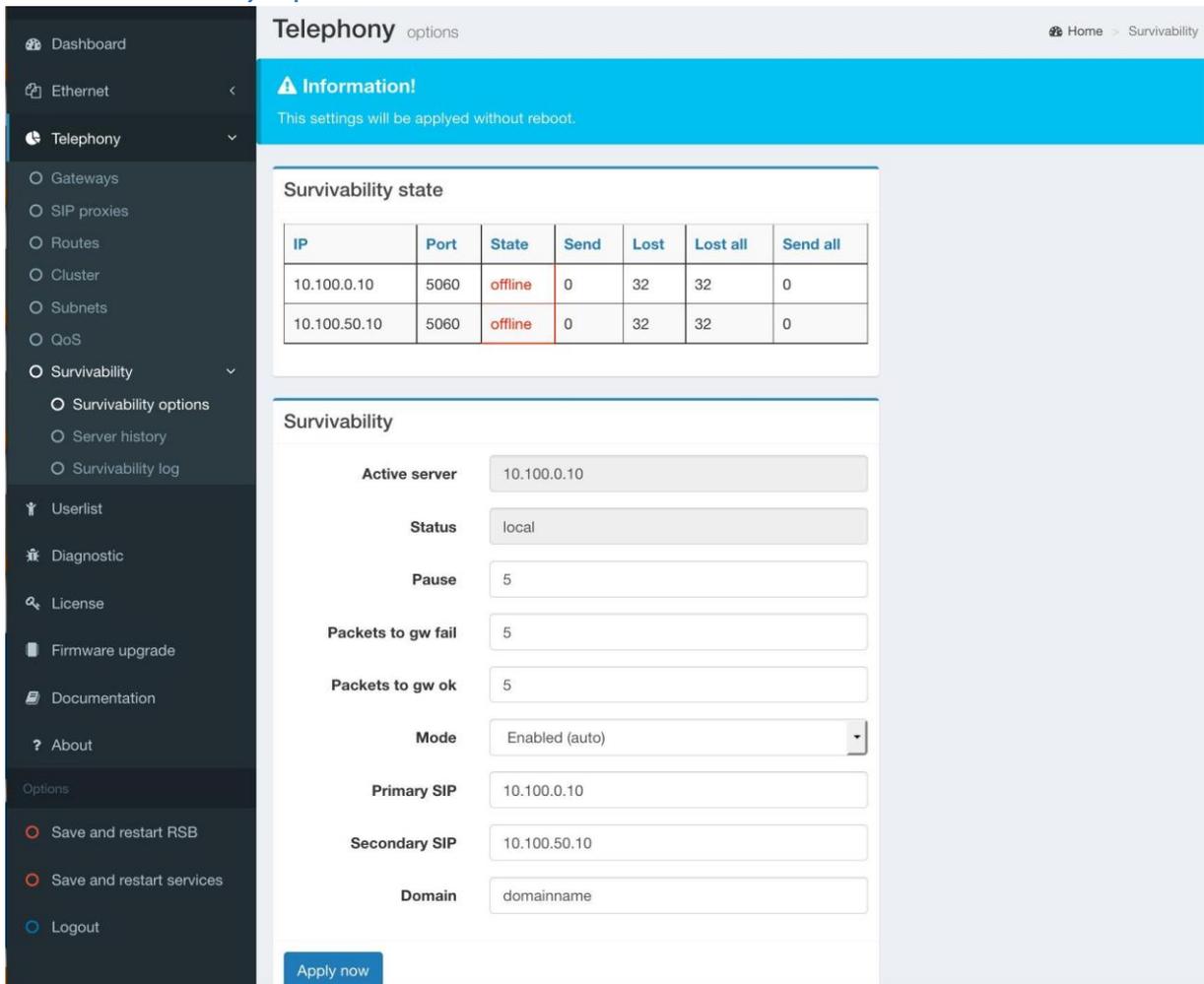
| Parameter | Description |
|-----------------------|--|
| Add subnets / Subnets | |
| Subnet | Specify the VOIP network, from which the registration requests will be allowed. |
| Description | Sort network description |
| Hide topology | Enable/disable of private topology mode for the current network. In case when concealing of topology is enabled by the initiator of SIP messages for external servers, there will be WAN interface of RSB. |
| Home network | This parameter is set in case of need for proxying of RTP traffic from LAN interface into WAN and backwards. If parameter is not set, some problems with hearing are possible, for the clients using LAN interface. |
| Add | Add network |

In «Subnets» block you can find the currently used networks, the data in which can be edited or deleted.

When clicking on the column name, table lines will be sorted according to the given table field.

Survivability

Survivability options



Telephony options Home > Survivability

Information!
This settings will be applied without reboot.

Survivability state

| IP | Port | State | Send | Lost | Lost all | Send all |
|--------------|------|---------|------|------|----------|----------|
| 10.100.0.10 | 5060 | offline | 0 | 32 | 32 | 0 |
| 10.100.50.10 | 5060 | offline | 0 | 32 | 32 | 0 |

Survivability

Active server: 10.100.0.10

Status: local

Pause: 5

Packets to gw fail: 5

Packets to gw ok: 5

Mode: Enabled (auto)

Primary SIP: 10.100.0.10

Secondary SIP: 10.100.50.10

Domain: domainname

[Apply now](#)

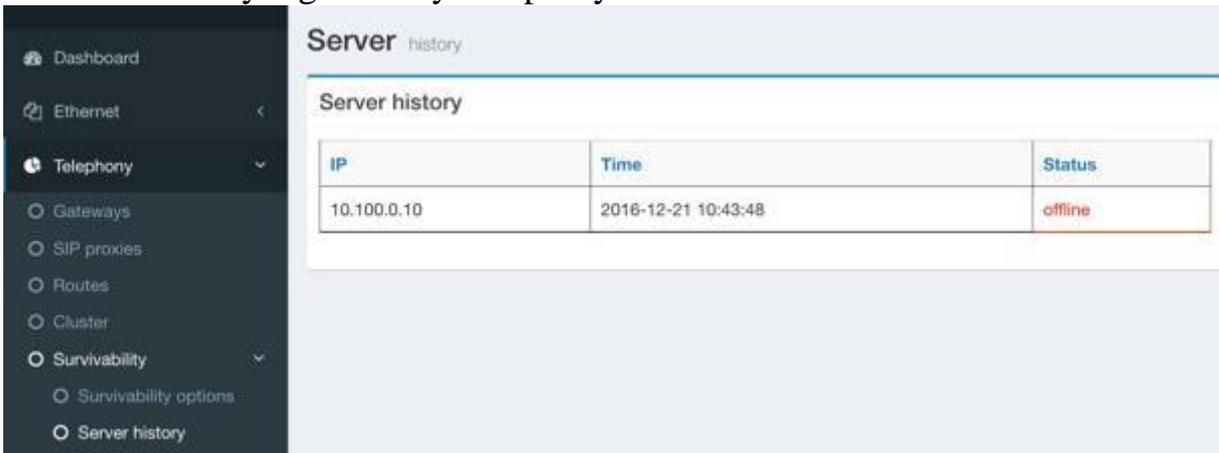
These settings are applied without rebooting of the device.

| Parameter | Description |
|----------------------------|---|
| Survivability state | |
| IP | List of IP addresses of SIP proxy servers |
| Port | Receive port of SIP messages by SIP server |
| State | Information on servers availability <i>online/offline</i> |
| Send | Quantity of the successfully sent OPTIONS packages in a row to the given proxy server. In case of package loss, the counter is reset to zero. |
| Lost | Quantity of OPTIONS packages, on which the response wasn't received. The counter is reset to zero as soon as response is received. |
| Lost all | Quantity of OPTIONS packages, on which the response wasn't received after the latter reboot of the device. |

| | |
|--------------------|---|
| Send all | Quantity of the successfully sent OPTIONS packages to the given proxy server after the latter reboot |
| Survivability | |
| Active server | The current active SIP proxy server |
| Status | Status of Survivability function <i>remote/local</i> |
| Pause | Time or recurrent sending of text messages to check availability of registration servers in seconds. <i>Default - 5sec</i> <i>Thus, in case of server unavailability after 25 seconds (5sec*5packages) RSB will transfer to work with another server.</i> <i>Access recovery works analogically.</i> |
| Packets to gw fail | Quantity of lost packages, after which RSB considers the server to be unavailable <i>Default - 5.</i> |
| Packets to gw ok | Quantity of successfully transferred packages, after which RSB considers the server to be available. <i>Default - 5.</i> |
| Mode | Enable/disable of survivability function <i>Always local/Enabled(Auto)</i> |
| Primary SIP | IP address of the main registration server. It is used to change source ip from VOIP devices, when sending sip messages. |
| Secondary SIP | IP address of the backup registration server. It is used to change source ip from VOIP devices, when sending sip messages. |
| Domain | Shows domain name, which will be inserted into OPTIONS requests to the used SIP proxy. |
| Apply now | Apply configuration |

Server history

Availability log of every SIP proxy server



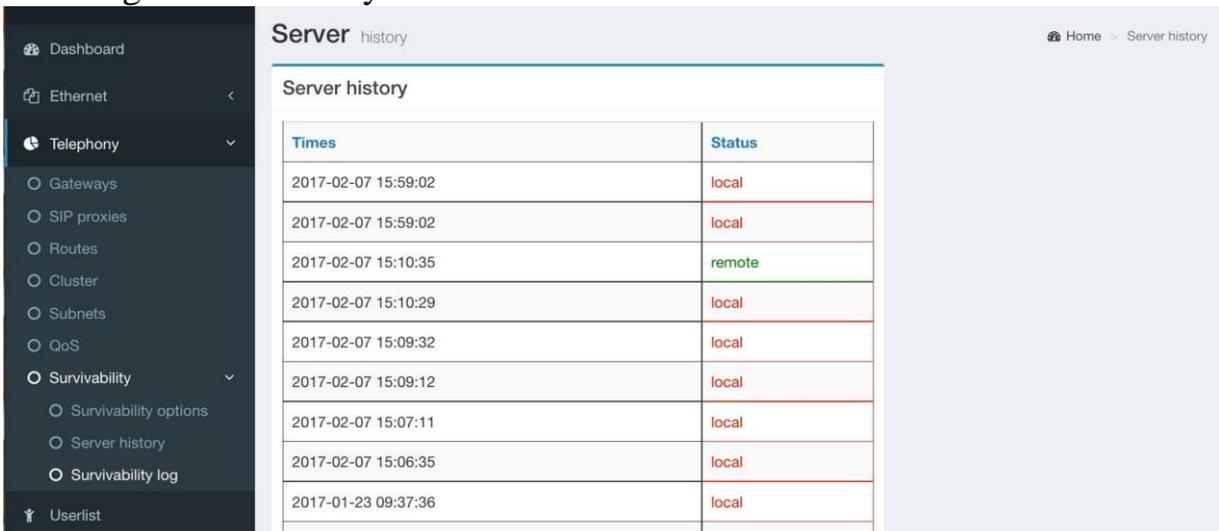
| IP | Time | Status |
|-------------|---------------------|---------|
| 10.100.0.10 | 2016-12-21 10:43:48 | offline |

Shows the time of change of the availability state for each of the servers.

Logs can contain no more than 100 records.

Survivability log

Log of survivability function statuses

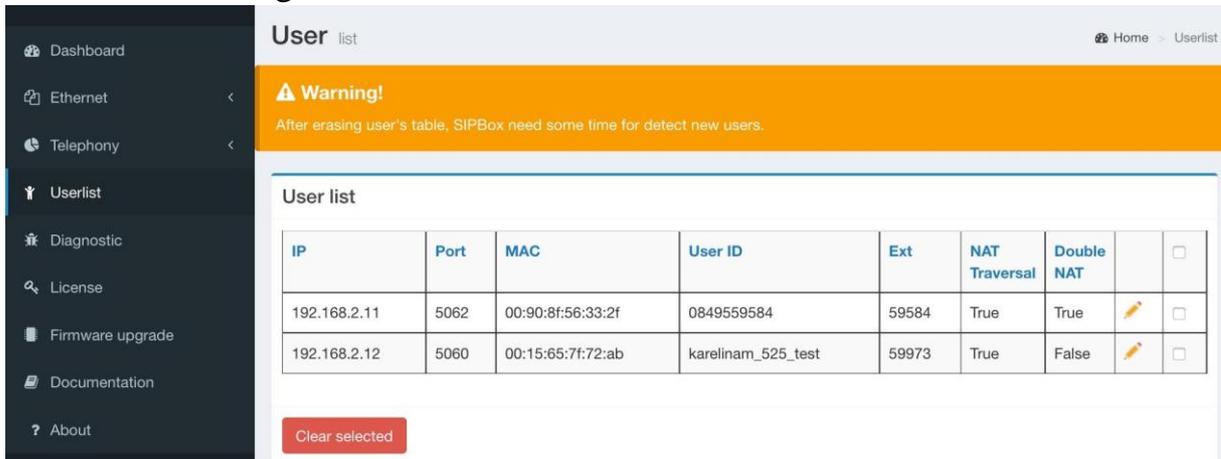


| Times | Status |
|---------------------|--------|
| 2017-02-07 15:59:02 | local |
| 2017-02-07 15:59:02 | local |
| 2017-02-07 15:10:35 | remote |
| 2017-02-07 15:10:29 | local |
| 2017-02-07 15:09:32 | local |
| 2017-02-07 15:09:12 | local |
| 2017-02-07 15:07:11 | local |
| 2017-02-07 15:06:35 | local |
| 2017-01-23 09:37:36 | local |

Shows the time of change of survivability function statuses. Logs can contain no more than 100 records.

The registered phone lines

List of the registered lines at the RSB.



The screenshot shows the 'User list' page in a web interface. On the left is a dark sidebar with navigation options: Dashboard, Ethernet, Telephony, Userlist (selected), Diagnostic, License, Firmware upgrade, Documentation, and About. The main content area has a title 'User list' and a breadcrumb 'Home > Userlist'. A prominent orange warning banner reads: 'Warning! After erasing user's table, SIPBox need some time for detect new users.' Below the warning is a table titled 'User list' with the following data:

| IP | Port | MAC | User ID | Ext | NAT Traversal | Double NAT | | |
|--------------|------|-------------------|--------------------|-------|---------------|------------|--|--------------------------|
| 192.168.2.11 | 5062 | 00:90:8f:56:33:2f | 0849559584 | 59584 | True | True | | <input type="checkbox"/> |
| 192.168.2.12 | 5060 | 00:15:65:7f:72:ab | karelinam_525_test | 59973 | True | False | | <input type="checkbox"/> |

Below the table is a red button labeled 'Clear selected'.

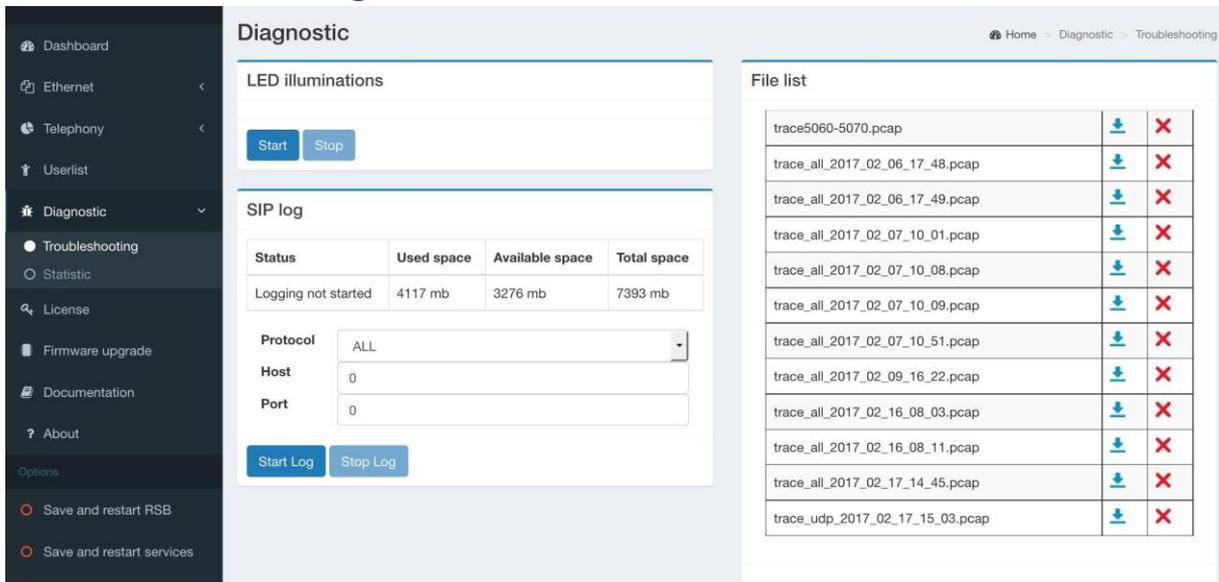
After clearing the table, it will take some time to refill it.

| Parameter | Description |
|----------------|---|
| User list | |
| IP | IP address of the device, on which the account is created |
| Port | The port, from which SIP messages on this device are sent |
| MAC | MAC address of the device, on which the account is created |
| User ID | User account identifier |
| Ext | Subscriber number |
| NAT Traversal | Is chosen in case when the registered user is behind NAT |
| Double NAT | Is chosen in case when both RSB and the registered user are behind NAT |
| Clear selected | Can clear one, several or all of the registered lines under appropriate selection |

When clicking on the column name, table lines will be sorted according to the given table field.

Diagnostics of the device operation

Troubleshooting



In «LED illuminations» block the functional check of light emitted diodes on the clipboard is started. After start of the test, all the LEDs must glow.

In «SIP log» block you can start logging procedure of signal messages exchange.

| Parameter | Description |
|-----------------|--|
| SIP log | |
| Status | Logging status <i>Logging started</i> <i>Logging not started</i> |
| Used space | Volume of the used memory |
| Available space | Volume of available memory |
| Total space | Total memory volume |
| Protocol | Transport protocol <i>ALL/UDP/TCP</i> |
| Host | IP address of the remote device, which needs logging to be made. |
| Port | Network port of SIP protocol |
| Start Log | Start collecting logs |
| Stop Log | Stop collecting logs |

In «File list» block the list of already collected logs is shown. Log name contains transport protocol and the time of log collection. All the collected logs can be downloaded to personal computer or deleted, using the appropriate icon.

Statistic



The graph «Daily Load Average» features timely averaged scheme of processor load for the latter 24 hours. The system value «load average 15» is taken by default.

The graph «Weekly Load Average» - the scheme of averaged daily processor load for the latter seven days.

Licensing

The page with information of the current license and license update.

- Dashboard
- Ethernet <
- Telephony <
- Userlist
- Diagnostic
- License**
- Firmware upgrade
- Documentation
- About
- Options

License information Home > License

Update license

Signature

Update

Active key

Signature

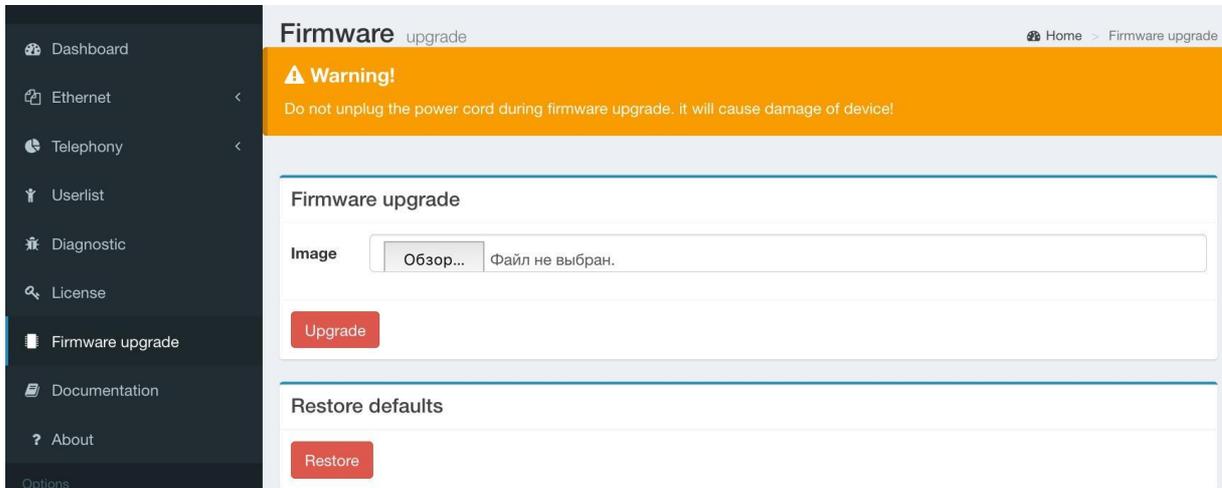
device ID

Calls

| Parameter | Description |
|-----------------------|--|
| Active key | |
| Signature | Current license code |
| Device ID | Identification number of the device |
| Calls | Maximal quantity of calls according to the current license |
| Update license | |
| Signature | New license code |
| Update | Apply the new license code |

Updating of the device

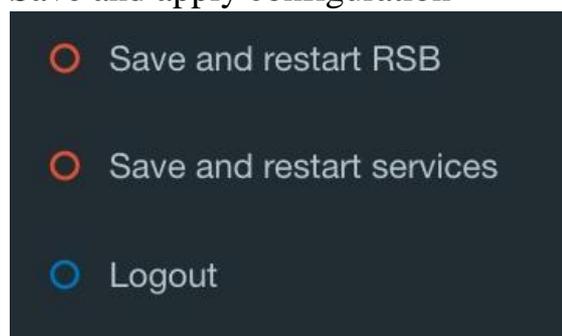
ATTENTION! Updating the device, do not shut off the device from power in order not to brake the RSB.



| Parameter | Description |
|-------------------------------------|--|
| Firmware upgrade / Restore defaults | |
| Image | Choose the image file with a new upgrade on your computer. |
| Upgrade | Start upgrade procedure. |
| Restore | Restore factory settings. |

Configuration upload

Save and apply configuration



| Parameter | Description |
|---------------------------|--------------------------------------|
| Save and restart RSB | Save settings and restart the device |
| Save and restart services | Save settings and restart services |
| Logout | Logout |

Device configuration – CLI

Configuring principles

Control and administering of RSB device is performed with CLI command line, which can be connected to by a standard SSH client.

After entering login and password, the start page of the device is shown, where you can see the main menu-tree entries and information of the current state of the device.

```

RCNTEC
SIPBOX
Ver:1.09
Menu:
 1) Network conf
 2) SIP conf
 3) DHCP conf
 4) Cluster conf
 5) DNS conf
 6) Survivability conf
 7) Userlist
 8) Dump, log, CDR
 9) Sync data
10) Security
11) Save and Restart
12) Firmware update
13) License
14) Monitoring
15) Other conf
16) help

Server: 10.100.0.10:5060
State: local SURV: enable
VRRP: MASTER ID: 2
CLI>
```

In the field 1 the menu entries list, available for administering, is shown.

There is also the information on the current software version.

In the field 2 the current status of RSB device is shown:

- active registration server (Server);
- state of survivability function (State: remote/local);
- working mode of survivability function (SURV: enable/local);
- VRRP working mode (VRRP: MASTER/BACKUP);
- RSB device number in the cluster (ID).

```

Current network conf 1
-----
# | Option | Value
-----
1 | Wan IP | 192.168.1.1
2 | Wan mask | 255.255.255.0
3 | Wan gw | 192.168.1.1
4 | Wan DNS1 | 8.8.8.8
5 | Wan DNS2 | 8.8.4.4
6 | Lan IP | 192.168.2.2
7 | Lan mask | 255.255.255.0
8 | Lan gw | 192.168.2.1
9 | NTP 1 | 8.8.8.8
10 | NTP 2 | 8.8.4.4
-----

--> Network configuration 2
-----
1) Set ip WAN
2) Set mask WAN
3) Set gw WAN
4) Set dns primary WAN
5) Set dns secondary WAN
6) Set ip LAN
7) Set mask LAN
8) Set gw LAN
9) Set ntp1
10) Set ntp2
-----
11) Apply
-----

CLI> (network)# 3

```

In the field 3 there is the line for input of menu entries and/or the necessary configuration parameters.

To move to the necessary menu entry, you input the appropriate entry number and press Enter.

All the following submenus consist of 3 fields.

Field 1 – shows the current configuration status and settings on this menu entry.

Field 2 – list of available commands or entries of transfer to the next sublevel.

Field 3 – field for inputting values or menu entries.

In case when the system is waiting for the administrator to input a value, the hint is shown in the input field about the necessary parameter, and also the information that RSB is now in configuring mode (sign *).

```

[CLI> (network)#9
Input ntp1
CLI*> (network)#82.118.130.36

```

To go back to the above menu level, a variant of exit command should be input: ex, exi, exit.

The «-->» sign means that this is the transfer to the next sublevel.

Network configuration

The way to this menu entry:

1) Network conf

In this entry the network parameters of WAN and LAN interfaces are assigned, as well as the addresses of external DNS and NTP servers.

| Menu entry | Parameter | Description |
|------------|-----------------------|---|
| 1. | Set ip WAN | IP address of WAN interface. <i>Default - 192.168.1.1</i> |
| 2. | Set mask WAN | Subnet mask of WAN interface. <i>Default - 255.255.255.0</i> |
| 3. | Set gw WAN | IP address of local network gateway connected to WAN interface. |
| 4. | Set dns primary WAN | IP address of the main DNS server |
| 5. | Set dns secondary WAN | IP address of the backup DNS server |
| 6. | Set ip LAN | IP address of LAN interface. |
| 7. | Set mask LAN | Subnet mask of LAN interface. |
| 8. | Set gw LAN | IP address of LAN interface in case of a single RSB. IP address of virtual LAN interface in case of work in a cluster. |
| 9. | Set ntp1 | IP address of the main NTP server (the server of time scale synchronization) |
| 10. | Set ntp2 | IP address of the backup NTP server (the server of time scale synchronization) |
| 11. | Apply | Apply configuration changes |

Interaction with voice gateways / SIP conf

The way to this menu entry:

2) SIP conf

In this entry all of the voice gateways of public domain network are assigned, either of other private networks if the gateway transfers into a local mode. Transformation rules for outgoing and incoming calls are also assigned here.

| Menu entry | Parameter | Description |
|------------|---------------|--|
| 1. | Add SIP gw | Set the voice gateway parameters: <i>name</i> – gateway name <i>ip</i> – ip address <i>port</i> – port of SIP messages reception on the gateway. All the parameters are added in a single line, separated by a gap. |
| 2. | Add in route | Set parameters for incoming calls in a local mode: <i>route</i> – mask* of choosing the route on the dialed number for incoming calls <i>gw</i> – set name of the gateway, from which the call will be made (<i>name</i> from e.1) <i>name</i> – short description of the route. |
| 3. | Add out route | Set parameters for outgoing calls in a local mode: <i>route</i> – mask* of choosing the route on the dialed number for outgoing calls. <i>gw</i> – set name of the gateway, from which the call will come (<i>name</i> from e.1) <i>name</i> – short description of the route. |
| 4. | Remove gw | Delete the voice gateway. Set the name of the relevant gateway. |
| 5. | Remove route | Delete the route. Set the name of the relevant route. |
| 6. | Apply | Apply configuration changes |

* - the following parameters of number filtration are used in the mask:

0-9 – numbers; [...] – value range, separated by «-» or a list, separated by «,»;

_ - number beginning tag;

. – any number sequence of volitional length;

X – any single number.

DHCP configuration

The way to this menu entry:

3) DHCP conf

Set working parameters of DHCP service for VOIP network using LAN interface.

| Menu entry | Parameter | Description |
|------------|-------------------------|---|
| 1. | Set network | Address of VOIP network, in which the IP addresses will be assigned. |
| 2. | Set mask | VOIP network mask. |
| 3. | Set ip start pool | Enter the start address pool of the assigned IP addresses from VOIP network. |
| 4. | Set ip end pool | Enter the end address pool of the assigned IP addresses from VOIP network. |
| 5. | Set gw | IP address of gateway for VOIP equipment. IP address of LAN interface in case of a single RSB. IP address of virtual LAN interface in case of cluster work. |
| 6. | Set dns primary WAN | IP address of the main DNS server. |
| 7. | Set dns secondary WAN | IP address of the backup DNS server. |
| 8. | Set NTP | IP address of NTP server. |
| 9. | Set TFTP | IP address of tftp server, from which the configuration files will be requested. |
| 10. | Set option 150 | 150 DHCP option (tftp server address) |
| 11. | Set option 151 | 151 DHCP option (status-code) |
| 12. | Set option 160 | 160 DHCP option |
| 13. | Set default lease time | Lease time of the assigned IP address in seconds <i>Default - 600sec.</i> |
| 14. | Set max lease time | Maximal lease time of the assigned IP address in seconds. <i>Default - 7200sec.</i> |
| 15. | Failover Enable/Disable | Enabling/disabling the function of reserve of DHCP server in a cluster. |
| 16. | Clear leases | Clear the list of the assigned addresses. |
| 17. | Failover --> | Go to settings menu of DHCP reservation. |
| 18. | Apply | Apply configuration changes. |

DHCP failover

The way to this menu entry:

3) DHCP conf / 16) Failover

| Menu entry | Parameter | Description |
|------------|---------------------------|--|
| 1. | Mode Primary/Secondary | Working mode of the current DHCP server. |
| 2. | Address | Personal IP address of DHCP server. |
| 3. | Port | The port, on which the current DHCP server will wait for connection of the other one. <i>Default - 647.</i> |
| 4. | Peer address | IP address of the second DHCP |
| 5. | Peer port | The port, on which the second DHCP server will wait for connection. <i>Default - 647</i> |
| 6. | Max-response-delay | The time while the server waits for the response from the opposite one until announcing it unavailable, in seconds. <i>Default - 60sec.</i> |
| 7. | Max-unacked-updates | <i>Default - 10sec.</i> |
| 8. | Mclt | The time needed for either extending a lease or terminating it, without synchronization in seconds. <i>Default - 3600 sec.</i> |
| 9. | Load balance max seconds | The time, after which the balance is disabled, in seconds. <i>Default - 3 sec.</i> |

RSB cluster configuration / Cluster conf

The way to this menu entry:

4) Cluster conf

Set modes and parameters of the work of RSB cluster.

| Menu entry | Parameter | Description |
|------------|---------------------------------|--|
| 1. | On\Off cluster mode | Enable/disable the RSB cluster. |
| 2. | Virtual ip WAN | Virtual IP address of WAN interface for functioning of VRRP. |
| 3. | Virtual ip LAN | Virtual IP address of LAN interface for functioning of VRRP. |
| 4. | ID WAN | WAN interface identifier for setting VRRP. This identifier must match the identifier on the neighboring RSB in cluster. |
| 5. | ID LAN | LAN interface identifier for setting VRRP. This identifier must match the identifier on the neighboring RSB in cluster. |
| 6. | VRRP pass | Identification password of this cluster. |
| 7. | Time of backup server | The time while the VRRP service is waiting for response from the opposite RSB until announcing it unavailable, in seconds. |
| 8. | Set mode vrrp virtual interface | Working mode of VRRP interfaces (Sync/NoSync). In sync mode, in case of unavailability of one of the interfaces, all the pressure is transferred to the neighboring device. <i>Default - Sync.</i> |
| 9. | Set authority VRRP | The priority of RSB for manual pressure transfer between RSB in VRRP cluster. |

| | | |
|-----|-----------------|--|
| 10. | Set mode VRRP | Set the RSB working mode in VRRP. Used only for primary setting. For manual pressure transfer the changes must be set in the e.9. <i>Master/Backup</i> |
| 11. | Apply VRRP conf | Apply VRRP configuration. |

DNS configuration

The way to this menu entry:

5) DNS conf

The local DNS service can be started at the RSB. For this, the standard named.conf file is formed with DNS settings for Linux and is copied into the */tftpboot/DNS* directory on the device.

| Menu entry | Parameter | Description |
|------------|-----------|---|
| 1. | Copy | Transfer the data from the named.conf file into the configurational RSB database. |
| 2. | Apply | Apply configuration settings. |

Configuration of Survivability function / Survivability conf

The way to this menu entry:

6) Survivability conf

Set the basic parameters of survivability (reservation) RSB functionality.

| Menu entry | Parameter | Description |
|------------|--|---|
| 1. | Add server | Gradually set IP address of the registration server and receive port of SIP messages. |
| 2. | Set loss packet | Quantity of the lost packages, after which RSB will consider the server to be unavailable. <i>Default - 5.</i> |
| 3. | Set send paket | Quantity of successfully transfered packages after which RSB will consider the server to be available. <i>Default - 5.</i> |
| 4. | Set timeout | Time or fecurrent sending of test messages to check registration server availability, in seconds. <i>Default - 5sec.</i> <i>Thus, in case of server unavailability after 25 seconds (5sec*5packages) RSB will transfer to work with another server.</i> <i>Access restoration is similiar.</i> |
| 5. | Add primary sip server (Need restart!) | IP address of the main registration server. Used to change source ip from VOIP devices when sending sip messages. (ATTENTION. To apply settings the reboot of the device is needed). |
| 6. | Add secondary sip server (Need restart!) | IP address of the backup registration server. Used to change source ip from VOIP devices when sending sip messages. (ATTENTION. To apply settings the reboot of the device is needed). |
| 7. | Set domain | Domain name of SIP server. For correct generation of the OPTIONS test packages. |

| | | |
|-----|-------------------------------------|--|
| 8. | Set mode survivability | Enable/disable of survivability function <i>1 – Always local / 2 - Enabled</i> |
| 9. | History servers --> | Go to history records submenu on the availability of registration services. |
| 10. | History survivability --> | Go to history records submenu on check of the status of survivability function. |
| 11. | Delete server (Need restart!) | Delete server. (ATTENTION. To apply settings the reboot of the device is needed). |
| 12. | Clear servers table (Need restart!) | Clear servers table. (ATTENTION. To apply settings the reboot of the device is needed). |
| 13. | Reset counter | Clear the counters of sent and lost packages towards the registration servers. |
| 14. | Apply | Apply configuration settings. |

Log of server availability

The way to this menu entry:

6) Survivability conf / 9) History servers

History record of availability of registration servers, including the date and time of the availability status change.

Log of Survivability function

The way to this menu entry:

6) Survivability conf / 10) History survivability

Shows history record of change of survivability function status.

The list of authorized users

The way to this menu entry:

7) Userlist

The list of registered RSB users. This list can be reset.

| Menu entry | Parameter | Description |
|------------|--------------------|---|
| 1. | Update information | Update the list of the registered users. |
| 2. | Search users | Search for registered users (not functional in this release). |
| 3. | Delete users | Delete the registered user. |
| 4. | Clear table --> | Go to submenu of clearing the list of the registered users. |

Clearing the list of authorized users

The way to this menu entry:

7) Userlist / 4) Clear table

Clear the list of the registered users on RSB.

| Menu entry | Parameter | Description |
|------------|-------------|---|
| 1. | Clear table | Clear the list of the registered users on RSB (the RSB services will be restarted). |

Logging, CDR

The way to this menu entry:

8) Dump, log, CDR

Gathering network logs, device operational logs and tarifficational data (CDR).

| Menu entry | Parameter | Description |
|------------|------------|--|
| 1. | Dump --> | Go to gathering network logs submenu. |
| 2. | Update log | Update information in the journal file |
| 3. | Update CDR | Update tarifficational data. |

Collecting the network logs

The way to this menu entry:

8) Dump, log, CDR / 1) Dump

Start and stop of network logs, gathering filters.

| Menu entry | Parameter | Description |
|------------|-------------|---|
| 1. | Dump start | Start gathering network logs. |
| 2. | Dump stop | Stop gathering network logs. |
| 3. | Set options | Set the filter of gathering network logs. |

Replication of RSB database / Sync data

The way to this menu entry:

9) Sync data

Setting the database replication of RSB cluster.

| Menu entry | Parameter | Description |
|------------|------------------------|--|
| 1. | On\Off sync mode | Database replication working mode. |
| 2. | Ip server from backup | Address of LAN interface of the backup device for configurational database replication. |
| 3. | Apply BD conf | Apply database settings (ATTENTION. To apply settings the reboot of the device is needed). |
| 4. | Apply replication conf | Apply database replication. |

Security

The way to this menu entry:

10) Security

Parameters for RSB reboot.

| Menu entry | Parameter | Description |
|------------|---------------------------|---|
| 1. | Set Net/Mask (Attention!) | Specify VOIP network, from which registration requests will be allowed. |

RSB restart

The way to this menu entry:

11) Save and Restart

Parameters for RSB reboot.

| Menu entry | Parameter | Description |
|------------|-----------------------|---------------------------------------|
| 2. | Restart proxy | Restart the service of proxy gateway. |
| 3. | Restart survivability | Restart Survivability service. |
| 4. | Restart System | RSB system restart. |

RSB update

The way to this menu entry:

12) Firmware update

Update the RSB software

| Menu entry | Parameter | Description |
|------------|-----------------------|--------------------------------------|
| 1. | Install patch | Installation of software addons. |
| 2. | Install new firmware | Installation of new software. |
| 3. | Check current version | Check the current software version . |

RSB licensing

The way to this menu entry:

13) License

Update the RSB license key

| Menu entry | Parameter | Description |
|------------|-----------------|--|
| 1. | Install new key | Installation of a new license key. (ATTENTION. To apply settings the reboot of the device is needed). |
| 2. | Restart System | RSB system restart. |

RSB monitoring

The way to this menu entry:

14) Monitoring

Setting the RSB monitoring.

| Menu entry | Parameter | Description |
|------------|-----------|--------------------------------|
| 1. | SNMP | Go to SNMP settings submenu. |
| 2. | Syslog | Go to Syslog settings submenu. |

SNMP settings

The way to this menu entry:

14) Monitoring / 1) SNMP

Setting the SNMP monitoring parameters.

| Menu entry | Parameter | Description |
|------------|-----------------------|---|
| 1. | Add rocommunity | Add the necessary Community value and host/network, from where the RSB request is made. |
| 2. | Clear rocommunity all | Full clear of monitoring settings. |
| 3. | Apply | Apply configuration settings. |

Syslog settings

The way to this menu entry:

14) Monitoring / 2) Syslog

The Server for getting the Syslog system messages.

| Menu entry | Parameter | Description |
|------------|-----------------------|--|
| 1. | Set syslog sever | IP address of the server for getting the syslog system messages. |
| 2. | Disable syslog server | Delete information on the syslog server. |
| 3. | Apply | Apply configuration settings. |

RSB administration

The way to this menu entry:

15) Other conf

RSB administering

| Menu entry | Parameter | Description |
|------------|-----------------|----------------------------------|
| 1. | Change password | Change administrator's password. |
| 2. | Factory reset | Reset to factory settings. |

Change administrator password

The way to this menu entry:

15) Other conf / 1) Change password

Change administrator's password.

| Menu entry | Parameter | Description |
|------------|------------------|--------------------------------|
| 1. | New password | New administrator's password. |
| 2. | Default password | Reset to the default password. |
| 3. | Apply | Apply configuration settings. |



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