TECH
ARTICLE

SPECTRE Router

CONFIGURATION FOR AUTOMATIC FAILOVER

Switching Between SIM Cards or Networks

You may define rules in the router for switching between two APNs on one SIM card or between two SIM cards or network providers. The router can automatically switch between the network setups when the active PPP connection is lost, the data limit is exceeded, or the binary input on the front panel goes active.

TABLE 1: SIM CARD DESCRIPTIONS	
Default SIM card	This parameter sets the default APN or SIM card for the PPP connection. If this parameter is set to none, the router boots up in off-line mode and it will be necessary to initiate the PPP connection by sending an SMS message to the router.
Backup SIM card	Defines the backup APN or SIM card.

If parameter Backup SIM card is set to **none,** then the parameters **Switch to other SIM card when connection fails, Switch to backup SIM card when roaming is detected and Switch to backup SIM card when data limit is exceeded** will switch the router to off-line mode.

TABLE 2: SIM CARD FAILOVER	
Switch to other SIM card when connection fails	If the PPP connection fails, the router will switch to the secondary SIM card or secondary APN of the SIM card. The router will switch to the backup SIM card if the router is unable to establish a PPP connection after 3 attempts or the Check the PPP connection option is selected and the router detects that the PPP connection has failed.
Switch to backup SIM card when roaming is detected	If roaming is detected, this option forces the router to switch to the secondary SIM card or secondary APN of the SIM card.
Switch to backup SIM card when data limit is exceeded	This option enables the router to switch to the secondary SIM card or secondary APN of the SIM card when the data limit of default APN is exceeded.
Switch to backup SIM card when binary input is active	This parameter forces the router to switch to the secondary SIM card or secondary APN of the SIM card when binary input 'bin0' is active.
Switch to primary SIM card after timeout	This parameter defines the method the router will use to try to switch back to the default SIM card or default APN.

The following parameters define the amount of time that must elapse before the router will attempt to go back to the default SIM card or APN.

TABLE 3: TIMEOUTS	
Initial timeout	The first attempt to switch back to the primary SIM card or APN shall be made after the time defined in the parameter Initial Timeout. The range of this parameter is from 1 to 10000 minutes.
Subsequent Timeout	After an unsuccessful attempt to switch to the default SIM card, the router will make a second attempt after the amount of time defined in the parameter Subsequent Timeout. The range is from 1 to 10000 minutes.
Additive constant	Any further attempts to switch back to the primary SIM card or APN shall be made after a timeout computed as the sum of the previous timeout period and the time defined in the parameter Additive constants. The range is from 1 to 10000 minutes.

Example: Option **Switch to primary SIM card after timeout** is checked and the parameters are set as follows: **Initial Timeout** = 60 min. **Subsequent Timeout** = 30 min. **Additive Constant** = 20 min.

The first attempt to switch back to the primary SIM card or APN shall be carried out after 60 minutes. The second attempt will be made 30 minutes later. The third attempt will be made after 50 minutes (30+20). The fourth attempt will be made after 70 minutes (30+20+20).

Backup Routes

By using the configuration form on the Backup Routes page, you can back up the primary connection with alternative connections to the Internet/mobile network. Each back up connection can be assigned a priority. Switching between connections is done based on set priorities and the state of the connections (for Primary LAN and Secondary LAN).

If the **Enable backup routes** switching option is checked, the default route is selected according to the settings below.

You can set the parameters for enabling each of the backup routes.

If the **Enable backup routes** switching option is not checked, the Backup Routes system operates in the “backward compatibility” mode. The default route is selected based on implicit priorities according to the status of each enabled network interface. The names of backup routes and corresponding network interfaces, in order of implicit priorities, are:

- Mobile WAN (pppX, usbX)
- PPPoE (ppp0)
- Secondary LAN (eth1)
- Primary LAN (eth0)

Example:
The Secondary LAN is selected as the default route only if the **Create connection to mobile network** option is not checked on the Mobile WAN page, or if the **Create PPPoE connectionoption** is not checked on the PPPoE page. For the Primary LAN to have priority the Secondary LAN DHCP client option needs to be set to **disabled** and the IP address field needs to be empty. If DHCP client is set to **enabled** or an IP address is entered in the field below **Secondary LAN** then the Secondary LAN has implicit priority before/over the Primary LAN connection.

TABLE 4: BACKUP ROUTES

Priority	Priority for the type of connection
Ping IP Address	Destination IP address of ping queries to check the connection (address cannot be specified as a domain name)
Ping Interval	Time intervals between sent ping queries

TABLE 5: BACKUP ROUTES CONFIGURATION SCREEN