

How to use the Router Application Kit (RAK) Firmware with Modems

The DIL/NetPC DNP/9200 Router Application Kit (RAK) supports simple modem-based links (RAK with analogue or ISDN modem) to the Internet. This kind of links needs an Internet Service Provider (ISP) account or access to an Internet-by-Call provider service telephone number.

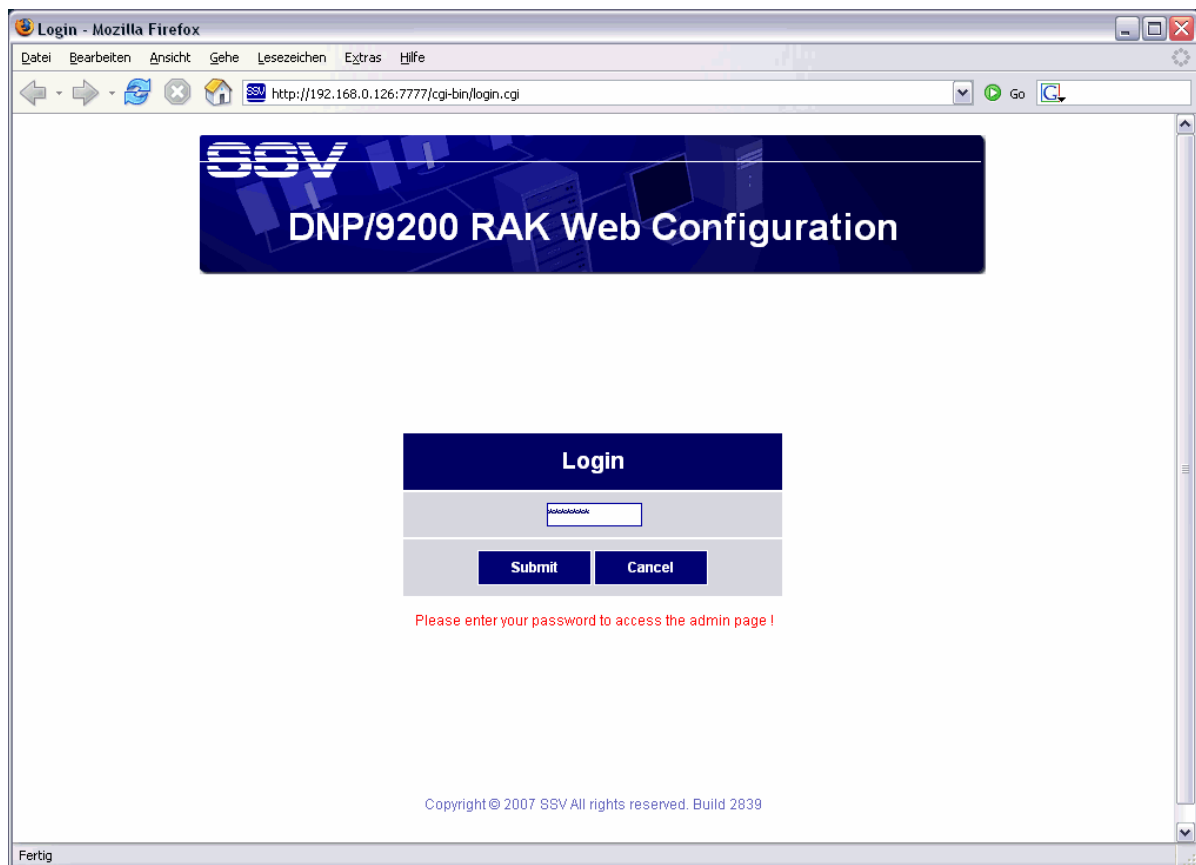
Within the German telephone network, there are many Internet-by-Call providers reachable. Each provider offers a service telephone number, a user name and a password. These parameters are necessary for the RAK firmware configuration.

The following table shows the information for two Internet-by-Call ISPs (Arcor, Avivo Internet) as a sample.

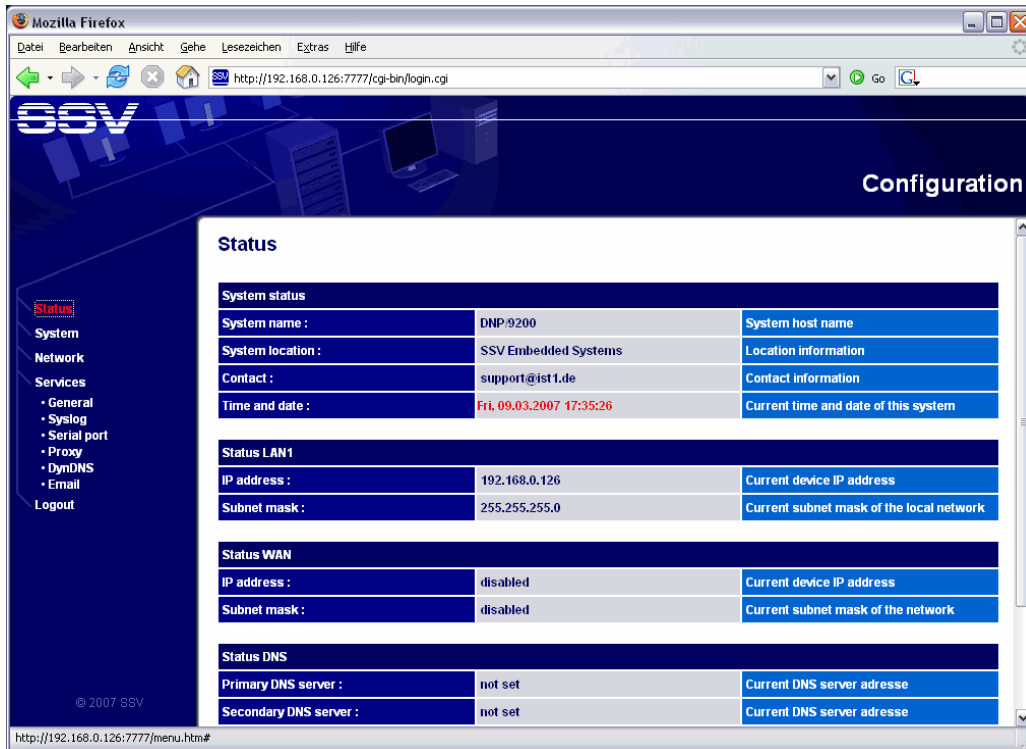
	Arcor Internet by Call	Avivo Internet
Phone number	01920785	019352150
User name	acor	eins
Password	internet	eins

Please note: The usages of Internet-by-Call provider service numbers is not free of charge. Please check the details before using Internet-by-Call service numbers. In most cases the ISP web side offers more information.

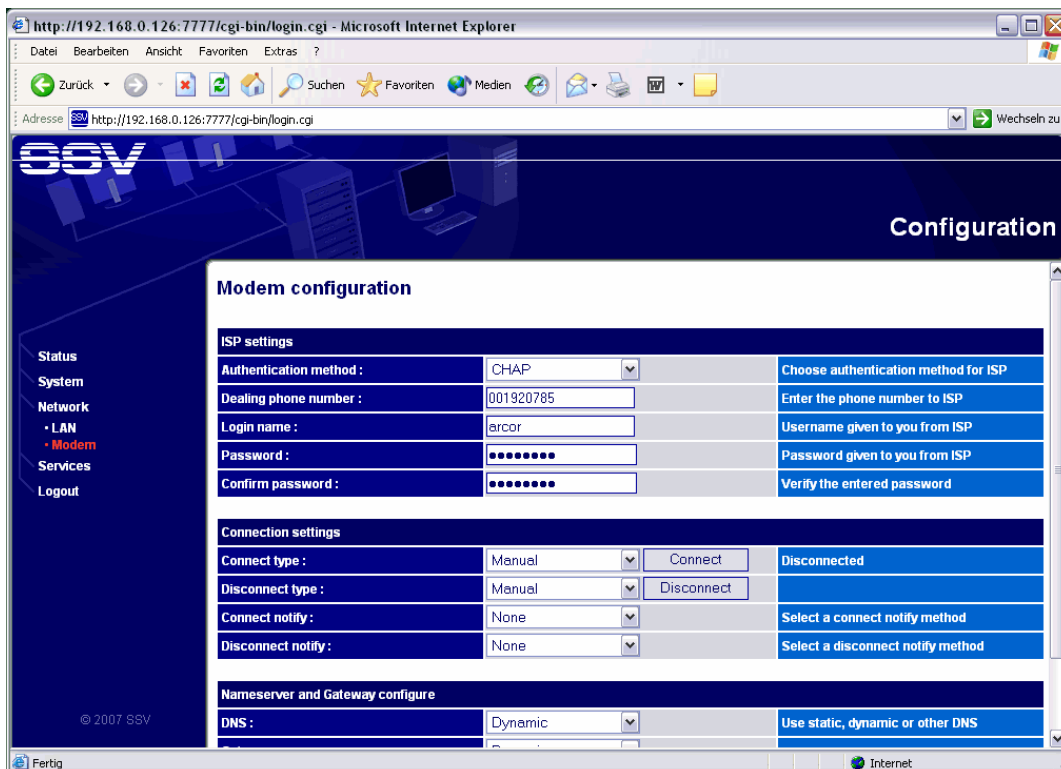
- **1. Step:** Run your web browser and access the web-based interface of the RAK firmware. Just enter: **http://192.168.0.126:7777** within the URL field of your web browser.



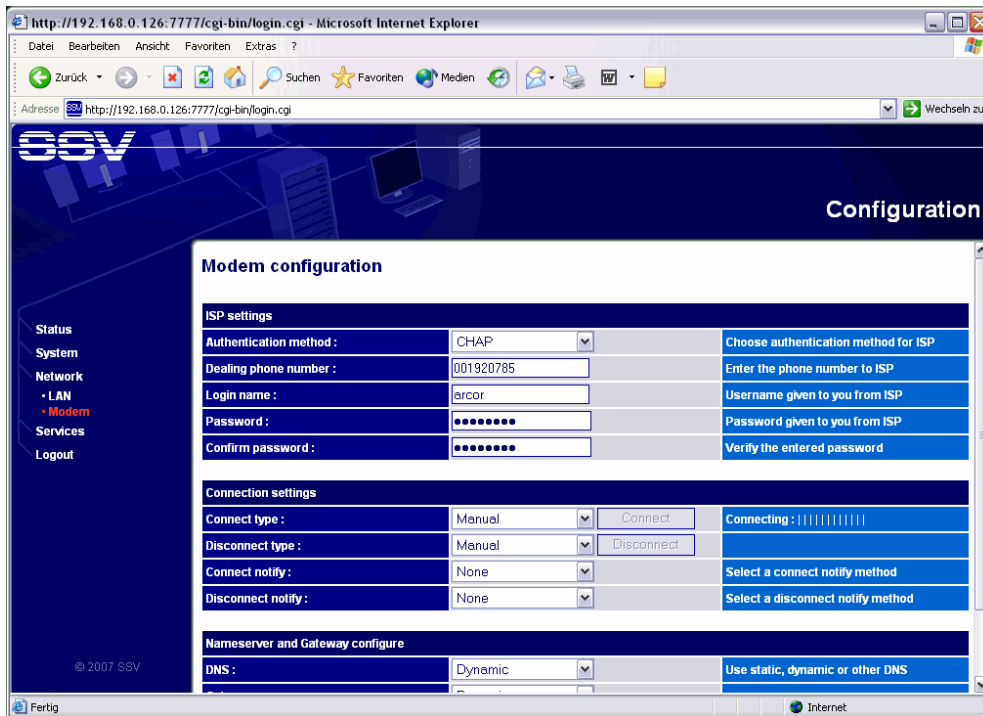
- **2. Step:** Please use the password *dnp9200* for your login. Please use only lowercase letters within the password. Then press the *Submit* button.



- **3. Step:** Please select the menu item *Network* → *Modem* (see left frame of the web-based user interface). Select the authentication method *CHAP*. Then enter the service telephone number, a user name and the password. Retype the password. Finally press the *Apply* button.



- **4. Step:** Press the embedded *Connect* button (see field *Connect type*) and wait until the RAK is connected to the Internet.



Please note: Without an Internet connection, there is no interface device with the name *ppp0*. Verify this with the help of a Telnet session. Use *ifconfig* for more details.

- **5. Step:** The web-based user interface shows a connect message if the RAK is connected to the Internet. Within your Telnet session you find then *ppp0*. It's now possible to access host computers within the Internet over the modem link.

```

Telnet 192.168.0.126
- SSV Embedded Linux - Version 0.62.26
DNP/9200 login: root
Password:
[root@DNP/9200 /root]#ifconfig
eth0      Link encap:Ethernet HWaddr 02:80:AD:20:CA:78
          inet addr:192.168.0.126 Bcast:192.168.0.255 Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
          RX packets:4060 errors:0 dropped:0 overruns:0 frame:0
          TX packets:2666 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          Interrupt:24 Base address:0xc000

lo        Link encap:Local Loopback
          inet addr:127.0.0.1 Mask:255.0.0.0
          UP LOOPBACK RUNNING MTU:16436 Metric:1
          RX packets:8 errors:0 dropped:0 overruns:0 frame:0
          TX packets:8 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0

ppp0     Link encap:Point-to-Point Protocol
          inet addr:145.254.152.254 P-t-P:145.253.1.185 Mask:255.255.255.255
          UP POINTOPOINT RUNNING NOARP MULTICAST MTU:1500 Metric:1
          RX packets:34 errors:0 dropped:0 overruns:0 frame:0
          TX packets:34 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:3

[root@DNP/9200 /root]#ping dilnetpc.com
PING dilnetpc.com (212.227.224.85): 56 data bytes
64 bytes from 212.227.224.85: icmp_seq=0 ttl=53 time=128.5 ms
64 bytes from 212.227.224.85: icmp_seq=1 ttl=53 time=140.1 ms
64 bytes from 212.227.224.85: icmp_seq=2 ttl=53 time=130.2 ms
64 bytes from 212.227.224.85: icmp_seq=3 ttl=53 time=130.2 ms
64 bytes from 212.227.224.85: icmp_seq=4 ttl=53 time=130.2 ms
64 bytes from 212.227.224.85: icmp_seq=5 ttl=53 time=120.2 ms

--- dilnetpc.com ping statistics ---
7 packets transmitted, 6 packets received, 14% packet loss
round-trip min/avg/max = 120.2/129.9/140.1 ms
[root@DNP/9200 /root]#

```

It is also possible to reach the RAK over the Internet. The *ifconfig* command shows the IP address of the RAK within the Internet (IP address of the *ppp0* device).

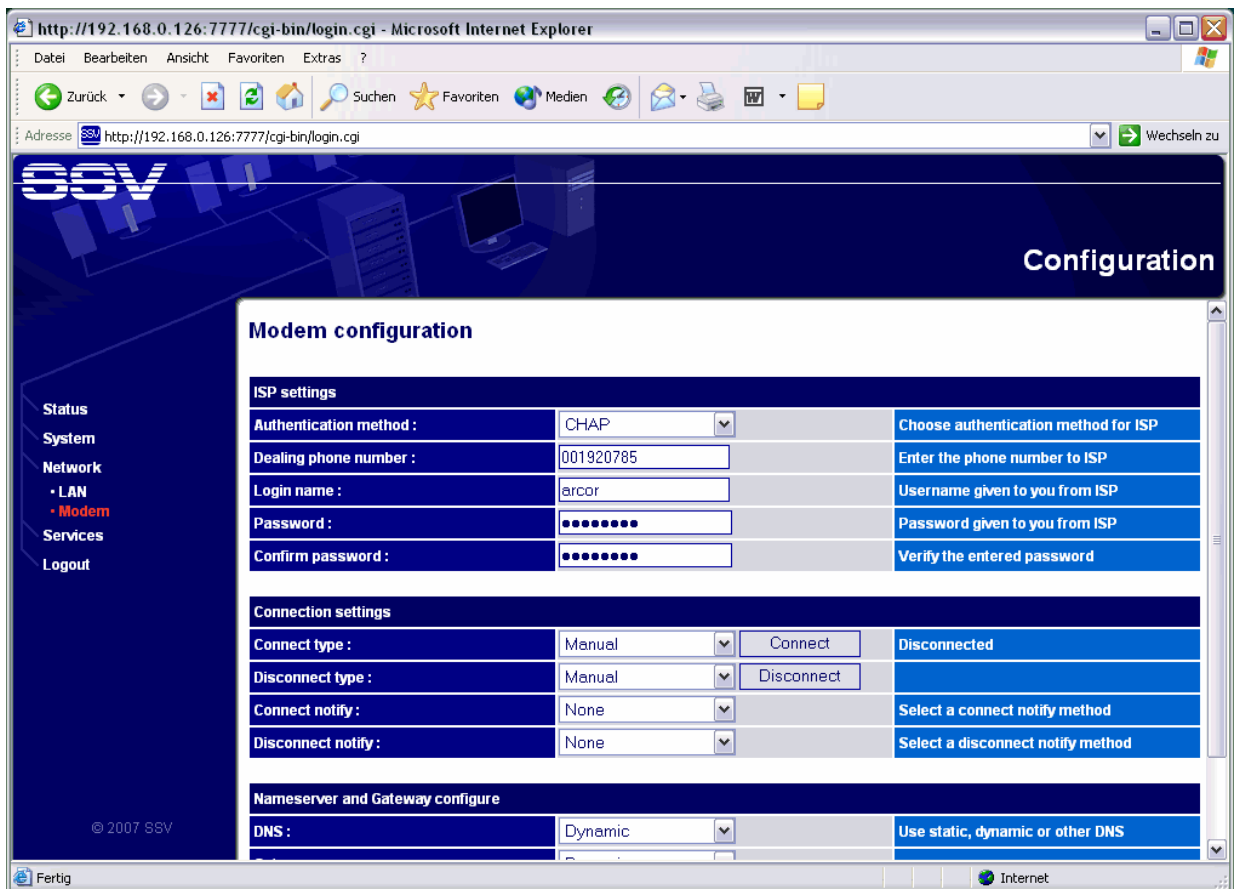
- **6. Step:** Please try out the Internet connection. Run a *ping* command to *dilnet.com* or any other server. E.g.:

```
ping dilnetpc.com
```

The DNP/9200 Linux contains three other commands for Internet server access. The following table shows more details.

Command	Function
wget	Read file from or write file to a HTTP server.
ftpput	Linux command line tool for automating FTP (file) transfers.
ftpget	Linux command line tool for automating FTP (file) transfers.

- **7. Step:** Finally disconnect the RAK connection to the Internet. Please press the embedded *Disconnect* button (see field *Disconnect type*) and wait until the RAK is disconnected from the Internet.



Please note: Within the disconnect process the DNP/9200 Linux removes the *ppp0* interface from the internal device list.

```
Telnet 192.168.0.126
- SSV Embedded Linux - Version 0.62.26
DNP/9200 login: root
Password:
[root@DNP/9200 /root]#ifconfig
eth0      Link encap:Ethernet  HWaddr 02:80:AD:20:CA:78
          inet addr:192.168.0.126  Bcast:192.168.0.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:4235 errors:0 dropped:0 overruns:0 frame:0
          TX packets:2780 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          Interrupt:24 Base address:0xc000

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:8 errors:0 dropped:0 overruns:0 frame:0
          TX packets:8 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0

[root@DNP/9200 /root]#
```

That's all.