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# Setting the EN-4000's Modem to Use AT Commands

This document describes how to set the EN-4000's modem for use of Hayes Attention (AT) commands.

## D.1 Opening a Modem Port

- 1 Download putty.exe (Putty shareware) from the Internet and install it on a laptop.
- 2 Connect the laptop's Ethernet port to a LAN port on the EN-4000 router.
- 3 Enable DHCP client mode on the laptop.
  - ❖ This laptop will request its IP address from the EN-4000.
- 4 Connect power to the EN-4000 router. Wait for a minute.
  - ❖ This EN-4000 assigns an IP address to the laptop.
- 5 Open an Internet browser, and type the EN-4000's LAN IP address (**192.168.10.1**) in the browser's address bar.
  - ❖ If the connection is good, you will see Encore Networks' logo and the login prompt.
- 6 Use the credentials to log into the EN-4000 from the browser.

**Note:** For EN-4000™ routers, the default login name (or user name) is **root**. (For all other EN™ routers, the default user name is **admin**.) In addition:

- Devices shipped before July 09, 2018, use the default password **encore!1**.
- Devices shipped from the factory on or after July 09, 2018, use a randomly generated default password. That password is contained in information on a sticker on the bottom of the router's chassis. Retain that sticker; you will need that default password if the router must be reset. (For details, see the document *Password Policy for EN™ Routers*.)

**Note:** Encore Networks, Inc., advises users to change a router's password upon first configuration of the router. Check with your network administrator for all names and passwords.

**7** If the login is successful, continue to [step 8](#). Otherwise, see the [Troubleshooting](#) section ([step 22](#)).

**8** Run putty.exe (downloaded in [step 1](#)).

**Note:** Use the EN-4000 log-in credentials (described in the [Note](#) in [step 6](#)) to log into the EN-4000 from Putty.

**9** If the Putty application gives a security warning, click **yes**.

**10** After a successful log-in, type the following command in Putty:

```
Killall endefaultsdnew
```

**11** In Putty, type **picocom /dev/ttyUSB2** and press the **Enter** key.

❖ A session to the modem port of PVS8 opens.

**12** Now you can type AT commands (including **AT+CSQ?**).

**Note:** You may exit the picocom command at any time by pressing **CTRL A** and then **CTRL Q**. Do not do this unless you need to exit picocom.

## D.2 Loading Factory Defaults on PVS8 for Sprint

**13** Open the modem port (unless it is already open), as described in the section [Opening a Modem Port](#).

**14** Type the following AT command:

```
AT$RTN=000000
```

**15** When the modem replies with OK, type **CTRL A** and then **CTRL Q**.

❖ The modem resets. As it does so, the operating system (OS) disconnects the modem, so the modem port ttyUSB2 will not be available until the modem finishes the reset sequence.

**16** Wait about 30 seconds.

**17** Then use Putty to open picocom again as follows:

```
picocom /dev/ttyUSB2
```

❖ Now you are ready to set the modem for Sprint configuration.

**18** Type all of the following AT commands to load Sprint settings:

```
AT^SCFG="MeopMode/Airplane","On"
```

```
AT^SCFG="CDMA/Operator/Store",2,"Sprint"
```

```
AT^SCFG="MEopMode/Airplane","off"
```

```
AT+CFUN=1,1
```

**Note:** Each command should report **OK** after it is entered. If you do not see the report **OK**, repeat the command.

❖ After the last command is done, the modem resets again. To exit picocom gracefully, type **CTRL A** and then **CTRL Q**.

- 19** After you have successfully loaded the Sprint configuration, use Putty to type the following Linux command:

**reboot**

- 20** Wait for about a minute. Then you can log back in, as described in the section [Opening a Modem Port](#).

❖ Now the Sprint account for the modem is configured properly.

- 21** Make sure the antennas are hooked up. Use the picocom command via Putty to open the modem port.

❖ The modem will go through the Open Mobile Alliance Device Management (OMA DM) session. The progress of the session will be reported verbosely on the modem port screen.

The modem will report whether the OMA session finishes successfully or there is a failure.

**Note:** In case of failures, the user may need to contact the system administrator or the carrier for account verification.

In any event, to gracefully exit the session, press **CTRL A**, then **CTRL Q**.

❖ After a successful OMA DM session, the modem is ready to be programmed for Internet communication.

## D.3 Troubleshooting

- 22** If the Internet browser fails to connect to the EN-4000 router, then most likely the Ethernet connection is not good.

❖ If the Ethernet cable is faulty, please try another Ethernet cable. You may need to get help from your system administration to verify the Ethernet cable is good. Use Ethernet CAT5E cable.

- 23** You can use the DOS command **ipconfig** to verify whether the laptop received an IP address. (Please refer to Windows manual for help on ipconfig.)

❖ When the ipconfig routine reports an IP address such as 192.168.10.170, the laptop has received the proper IP address from the EN-4000.

- 24** To test the connectivity, use the DOS ping command: ping 192.168.10.1, where the address 192.168.10.1 is the EN-4000's LAN IP address.

❖ If the ping reports a successful reply, the IP connection has been established. Go to the section [Opening a Modem Port](#) and try the steps again.

- 25 If putty.exe fails to connect, please check your firewall. Please refer to Windows' manuals for firewall settings.
- 26 If picocom reports that the modem is disconnected or that the terminal is closed, then most likely one of the following commands has reset the modem:  
  
AT\$RTN  
  
At+cfun=1,1  
  
So, after typing these commands and getting **OK**, exit the picocom session by pressing **CTRL A** and then **CTRL Q**.
- 27 If picocom reports a failure to open the ttyUSB2 port, most likely the modem had rebooted and/or disconnected from the system.
  - ❖ Reboot the EN-4000 and again try the command used before the modem reset.

## D.4 Using AT Commands to Set the EN-4000's APN

This sections describes how to use AT commands to set the EN-4000's Access Point Name (APN) for a private cellular wireless network.

**Note:** The APN can be configured quickly and easily on the EN-4000's management screens. See [Setting the APN](#), on page 17 of the document [Configuring General Settings for the EN-4000](#).

- 1 Connect a laptop (a management terminal) to the EN-4000's LAN eth1/1 port.
- 2 Use the PUTTY application (putty.exe) to log into the firmware interface:
  - a Type IP address **192.168.10.1**.
  - b Select **SSH port 22**.
  - c Type the user name **root**.
  - d Type the EN-4000 password.  
  
**Note:** In [step 6](#) on page 1, see the [note](#) about passwords for EN-4000 routers.
- 3 Do the following to kill the initquanta process:
  - a At the prompt, type **ps|grep initqu** and press the **Enter** key.<sup>1</sup>
  - b Look for the first number (the process ID) on the row that contains the word **initquanta**.
  - c At the prompt, type **kill [processid]** and press the **Enter** key (where [processid] represents the number identified in step 3.b).

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1. On many keyboards, to print the vertical bar, |, hold down the **Shift** key while pressing the backslash key, \.

- 4** Do the following to kill the endefaultsdnew process:
  - a** At the prompt, type **ps|grep endefaultsd** and press the **Enter** key.<sup>1</sup>
  - b** Look for the first number (the process id) on the row that contains the word **endefaultsdnew**.
  - c** At the prompt, type **kill [processid]** and press the **Enter** key (where [processid] represents the number identified in step 4.b).
- 5** Do the following:
  - a** At the prompt, type **picocom /dev/ttyACM0** [number 0, not letter O] and press the **Enter** key.
  - b** Wait until the program says the terminal is ready.
    - ❖ Now you can send AT commands.
- 6** At the prompt, type the following command to set the Access Point Name:  
**at%setacfg=APNTable.Class3.Name,ne01.VZWSTATIC**  
where "ne01.VZWSTATIC" represents the Access Point Name.  
(You may use another Access Point Name.)
- 7** After issuing all desired AT commands, the box must be power cycled. To exit out of the AT command terminal:
  - a** Hold down the **CTRL** key and, in quick but not hurried succession, press and release the **a** key, then press and release the **q** key.
  - b** Then release the **CTRL** key.
  - c** At the prompt, type the following command to reboot the device:  
**reboot**
    - ❖ The EN-4000 reboots.
- 8** To view the Access Point Name, do the following:
  - a** If the box has not yet been power cycled after performing [step 6](#), perform all parts of [step 7](#).
  - b** Then perform [step 2](#) through [step 5](#) to log back into the box.
  - c** Then, at the prompt, type the following command:  
**at+cgdcont?**
    - ❖ The Access Point Name is displayed.

