

Red Hat Linux 7.3 VT8231/VT8233/VT8235/VT6105 Fast Ethernet Controller Driver Installation Guide

Version 0.9, July 23, 2002

Copyright © 2001,2002 VIA Technologies, Inc.

1. Summary

This guide describes the procedures to enable the integrated Ethernet controller in VIA's south bridge chips VT8231, VT8233, and VT8235; and the stand-alone VT6105 PCI Ethernet card under Red Hat Linux 7.3. Three solutions are provided: (1) using the OS built-in driver, (2) installing VIA's pre-compiled driver binary, and (3) compiling VIA's driver source code.

Disclaimer: The information in this document is provided "AS IS," without guarantee of any kind.

2. File description

This package contains 6 files as described below.

39,275	06-06-02 12:15	rhi nefet. tar	VIA driver source ver 4.11
11,296	06-06-02 12:15	linux. txt	source compiling instruction
34,069	07-11-02 21:25	rhi nefet-C3. o	driver binary for VIA C3
32,620	07-10-02 22:08	rhi nefet-Amd. o	driver binary for AMD Duron
32,876	07-11-02 21:25	rhi nefet-P3&P4. o	driver binary for Intel Pentium3/4
		README. DOC	this file

Users are advised to visit VIA's website or contact VIA's representative to obtain the latest driver source code for the Ethernet controller.

3. Using the OS built-in driver

The Red Hat Linux 7.3 has the native driver to support the Ethernet controller integrated in VT8231, VT8233, and VT8235 chips; and the VT6105 PCI Lan card. It will automatically enable the controller after installation. Users may also manually enable the network adapter through *//Programs/System/Network Configuration*. After the "Network Configurator" window pops up, follow the steps below:

- (1) Click on "Device" → "Add".
- (2) Select Device Type "Ethernet Connection" → Select "Ethernet Adapter" (Choose the "VIA VT86c100A Rhine-II PCI") → "Finish" → "Apply".

- (3) To edit the Ethernet/bus interface, contact your network administrator to insert appropriate settings. “Activate device when computer starts” and “Allow all users to enable and disable the device” are optional. If you do not choose to activate the Ethernet at boot time, run `ifup eth0 <IP address>` in the command line to bring up the network every time when you restart the system. If you have a DHCP server installed, you don't need to key in any IP address.
- (4) After saving the configuration, you will see a new line beginning with “eth0”. Click the “Activate” button, and then save and quit.

4. Installing VIA's pre-compiled driver binary

NOTE: Be careful to choose the right driver binary according to your CPU used. If not, it might result in a kernel panic failure. If you use a different CPU type, it's highly recommended that you compile the driver source yourselves.

This package provides three pre-compiled driver object files to ease your installation, including “rhinefet-C3.o” for VIA C3 CPU, “rhinefet-Amd.o” for AMD K7/Duron, and “rhinefet-P3&P4.o” for Intel Celeron/Pentium3/Pentium4 processors.

First, pick an appropriate driver object file, rename it to “rhinefet.o”, and copy it to the location under `./lib/modules/<kernel version>/kernel/drivers/net`. Next, follow the installation instruction in the “linux.txt” document. However, there are two situations that may need your special attention.

- (1) If your system has already activated the OS built-in Ethernet driver, skip Steps 1 to 4 in the installation section, and follow only Steps 5 to 9. However, if using DHCP, skip Step 8 as well. Remember to delete or comment off the line `alias eth0 via-rhine` when editing the `modules.conf` file.
- (2) If your system does not activate the OS built-in driver, ignore all Steps except Step 5 in the installation section. That is, you need only to edit the `modules.conf` file.

5. Compiling VIA's driver source code

Refer to the linux.txt in this package to compile the driver source code. The kernel-source is required for compiling the driver source. Therefore, remember to go through the “Select Individual Packages” step and select the kernel-source under the `/Development/System/kernel-source` directory. As a result, a list of dependent packages will be installed automatically.

If during your first installation process you didn't tick the “Select individual

packages” box to install `.../Development/System/kernel-source`, the system included no kernel-source. Fortunately, you may run Gnome RPM (selecting through Programs/System/GnoRPM) to install the kernel-source anytime from the installation CD; alternatively, you may run `rpm -i` to import them. Remember to install other necessary dependent packages, if any.

Next, follow the installation instruction in the “linux.txt” document. However, there are two situations that may need your special attention.

- (1) If your system has already activated the OS built-in Ethernet driver, you don't need to launch the network configuration tool to configure your network again, because previous network setup information still remains valid for the latter driver to use. But remember to delete or comment off the line `'alias eth0 via-rhine'` when editing the `'modules.conf'` file.
- (2) If your system has never activated the OS built-in driver, follow Steps 1 to 5 in the installation section and skip Steps 6 to 9.

6. Verifying success of driver installation

Three methods can be used to verify success of driver installation.

- (1) Inspect boot up messages

Read the boot up message in the `../var/log/messages` file to verify success of driver installation. The messages should look like below.

```
<date, time> local host kernel: eth0: VIA VT6102 Rhine-II Fast Ethernet Adapter
<date, time> local host kernel: eth0: MAC: 00: 54: 26: D0: 00: 33 IO: 0xe800, Mem: 0xc8820000,
      IRQ11
```

- (2) Check currently loaded driver module

Run `'lsmod'` in the command line to check the currently loaded Ethernet driver module: `'via-rhine'` for the OS built-in, and `'rhinefet'` for VIA's.

- (3) Verify network connection

To verify the network status, run `'ifconfig'` in the command line. Messages related to the network interface including the IP address will be displayed. Next, run the `'ping <Network host address>'` command to send ICMP packets over the networks.

7. Test configuration

The following tables summarize the system configurations used for test.

Motherboard	VT5426D (VT8601A+VT8231)	VT5442C (VT8633+VT8233)	VT5572C (KM266+VT8233)
CPU	Celeron 533 MHz	VIA C3 733 MHz	AMD Duron 850 MHz
RAM	128 MB SDR	128 MB DDR	128 MB DDR

Mainboard	VT5426C (PC133+VT8231)	VT5698A1 (CLE266+VT8235)	VT 5572V (KM266+VT8233)
CPU	VIA C3 866 MHz	VIA Eden 667 MHz	AMD Duron 1 GHz
RAM	256 MB SDR	256 MB DDR	256 MB DDR
VT6105 Ethernet Card	VT5556D	VT5556D	VT5556D