



# **RX3141 Router Firmware Release Notes**

2005/7/12

Version 1.42

## Revision History

Version	Author	Date	Status
1.37	Norton Wu	05/10/2005	Release notes for firmware 1.37
1.42	Norton Wu	07/12/2005	Release notes for firmware 1.42

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# 1 Introduction

This release notes documents the change history and bug fixes for all the releases.

## 1.1 Key Features Overview

- WAN
  - 10/100M
  - Auto speed negotiation
  - Auto MDI/MDIX
- LAN – 4-port GE switch
  - Provides 4 10/100/1000Mbps Ethernet port connections.
  - Complies with IEEE 802.3 (10Base-T), IEEE 802.3u (100Base-TX), IEEE 802.3ab (1000Base-T) standards.
  - Auto negotiation of speed (10/100/1000Mbps) and duplex mode. Note that 1000Mbps supports only full duplex mode.
  - Auto MDI/MDIX
  - 4096 MAC address table with automatic learning and aging.
  - Jumbo frame support up to 9K-byte packets
  - 128KB packet buffer.
  - Flow control
    - ◆ Backpressure flow control in half duplex mode.
    - ◆ IEEE 802.3x PAUSE frame flow control in full duplex mode.
- Firewall
- NAT (IP sharing)

## 2 Hardware Features

FUNCTIONALITY	FEATURES SUPPORTED
CHIPSETS	<ul style="list-style-type: none"><li>• CPU: Winbond W90N740</li><li>• Switch Controller: Broadcom BCM5385</li></ul>
MEMORY	<ul style="list-style-type: none"><li>• 2MB flash ROM</li><li>• 16MB SDRAM</li></ul>
<b>CONNECTORS</b> – all connectors are located on the rear panel	
WAN	<ul style="list-style-type: none"><li>• 10/100M Ethernet port</li><li>• Auto-sensing MDI/MDIX (Auto Uplink)</li></ul>
LAN	<ul style="list-style-type: none"><li>• 4-port auto-sensing 10/100/1000M GE switch</li><li>• 4-port RJ45 connector</li><li>• Auto-sensing MDI/MDIX (Auto Uplink)</li></ul>
RESET BUTTON	<ul style="list-style-type: none"><li>➢ Used for rebooting the system when system crashes.</li></ul>

	<ul style="list-style-type: none"> <li>➤ Used for resetting system configuration to factory default by pressing the reset button for more than 5 seconds.</li> </ul>
POWER INPUT JACK	<ul style="list-style-type: none"> <li>• Connected to the supplied AC adaptor</li> </ul>
<b>LEDs</b>	
WAN	<ul style="list-style-type: none"> <li>• Status (Link) <ul style="list-style-type: none"> <li>➤ Green: A link is established</li> <li>➤ Off: No link is established.</li> </ul> </li> <li>• Speed <ul style="list-style-type: none"> <li>➤ Blinking Green: 100Mbps link is established and data is being transmitted or received.</li> <li>➤ Blinking Amber: 10Mbps link is established and data is being transmitted or received.</li> <li>➤ Off: No link is established</li> </ul> </li> <li>• Duplex Mode <ul style="list-style-type: none"> <li>➤ Amber: WAN port is operating in full-duplex mode.</li> <li>➤ Off: WAN port is operating in half-duplex mode.</li> </ul> </li> </ul>
LAN	<ul style="list-style-type: none"> <li>• 3 LED indicators per port.</li> <li>• Status (Link/Activity) <ul style="list-style-type: none"> <li>➤ Green: A link is established</li> <li>➤ Blinking green: A link is established and data is being transmitted or received.</li> <li>➤ Off: No link is established.</li> </ul> </li> <li>• Speed <ul style="list-style-type: none"> <li>➤ Green: 1000Mbps</li> <li>➤ Amber: 100Mbps</li> <li>➤ Off: 10Mbps or a link is not established</li> </ul> </li> <li>• Collision/Duplex Mode <ul style="list-style-type: none"> <li>➤ Amber: LAN port is operating in full-duplex mode.</li> <li>➤ Blinking amber: LAN port is operating in half-duplex mode and collisions are occurring.</li> <li>➤ Off: LAN port is operating in half-duplex mode and no collisions are observed.</li> </ul> </li> </ul>
POWER	<ul style="list-style-type: none"> <li>• Off: Power is not connected.</li> <li>• On, Green: Power is connected.</li> </ul>
<b>POWER SUPPLY</b>	<ul style="list-style-type: none"> <li>• Use external AC adapter. Three types of adapter are available for this system. Output for all adapters is 12V DC, 1.25A. <ul style="list-style-type: none"> <li>➤ China: Input – 220V/50Hz, 60mA</li> <li>➤ Europe: Input – 230V/50Hz</li> <li>➤ Japan/Taiwan/US: Input – 100-120VAC, 50/60Hz, 400mA</li> </ul> </li> </ul>

<b>ENVIRONMENTAL SPECIFICATION</b>	<ul style="list-style-type: none"> <li>• Temperature <ul style="list-style-type: none"> <li>➢ Operating: 0°C – 40°C (32°F – 104°F)</li> <li>➢ Storage: -20°C – 70°C (-4°F – 158°F)</li> </ul> </li> <li>• Relative humidity <ul style="list-style-type: none"> <li>➢ Operating: 10% – 90% non-condensing</li> <li>➢ Storage: 10% – 95% non-condensing</li> </ul> </li> <li>• Vibration: IEC 68-2-36</li> <li>• Shock: IEC 68-2-29 <ul style="list-style-type: none"> <li>➢ Drop: IEC 68-2-32</li> </ul> </li> </ul>
<b>REGULATORY</b> (May change depending on customer's requirement)	<ul style="list-style-type: none"> <li>• Safety: UL1950, TUV <ul style="list-style-type: none"> <li>➢ EMC (Electro Magnetic Compatibility): FCC Class B, CE.</li> </ul> </li> </ul>

### 3 Software Features

FUNCTIONALITY	FEATURES SUPPORTED
<b>ROUTER AND WAN SOFTWARE</b>	<ul style="list-style-type: none"> <li>• PPPoE unnumbered</li> <li>• PPPoE Multi-Session on Ethernet interface with max of 2 PPPoE sessions per port</li> <li>• PPPoE MSS clamp</li> <li>• PPP Keep alive</li> <li>• PPP Dial on demand</li> </ul>
<b>NETWORKING APPLICATIONS</b>	<ul style="list-style-type: none"> <li>• Web server</li> <li>• DHCP server on the Internal interface (LAN).</li> <li>• DHCP client on the External interface (WAN)</li> <li>• DNS relay</li> <li>• DDNS: support for Dyn DNS</li> <li>• SNTP</li> </ul>
<b>FIREWALL</b>	<ul style="list-style-type: none"> <li>• Stateful packet inspection</li> <li>• Packet filter (via access control list – IP, port, protocol, ICMP type, domain name)</li> <li>• DoS attack prevention</li> <li>• Wired speed network address port translation (NAPT)</li> <li>• Special Applications</li> <li>• Virtual Server</li> <li>• Policy list management</li> <li>• Stealth mode</li> </ul>
<b>MANAGEMENT</b>	<ul style="list-style-type: none"> <li>• Web GUI</li> <li>• Remote management via LAN or WAN</li> </ul>

## 4 Limitations

### 4.1 General

- Stop all the services and logging before performing firmware upgrade.
- 2000 concurrent session is supported, but only 64 concurrent sessions can achieve wire speed in NAPT mode.
- Multiple PPPoE
  - UPNP only works at PPPoE 0, and doesn't work at PPPoE 1
- In multiple-PPPoE-session environment, default DNS servers will be the DNS servers assigned for the PPPoE 0 session. The DNS servers assigned in PPPoE 1 session will only be used when an ACL rules specifies both the domain name in the IP address fields and also the PPPoE 1 as the interface to send the packets.
- Virtual server
  - No wired speed support for virtual server services
- Inbound traffic throughput
  - No wired speed support to inbound session. i.e. connection initial from remote side to LAN side will not has wired speed support. Only connection initial from LAN to WAN will has wired speed support.
- DNS reverse lookup to IP address in second PPPoE session network is not supported.
- UPNP is not fully compliant with standard.

### 4.2 Web GUI

- Every time the firmware is upgraded, clear the cache in the local browser. This will avoid GUI failure issues seen due to changes in the GUI pages with the latest release.
- Microsoft Internet Explorer 6.x is supported, other browsers is not well support.

### 4.3 Firewall

- File transfer and voice chat for ICQ200x, MS NetMeeting 3.x require user to manually configure virtual server rule.
- File transfer and voice chat for AOL is not supported.
- UDP/ESP hardware NAT accelerator will be reset after user commits firewall rule.
- ACL rule domain name parameter
  - Only destination IP address supports domain name type
  - Maximum 30 domain name parameter is supported, wild character is supported
  - Each domain name parameter can associate up to 256 IP addresses.
  - Each domain name parameter associated IP address will be updated only when client in LAN issues domain name DNS query to RX3141 and successfully gets answer from DNS server.
  - IP address associated to a domain name parameter will be deleted automatically depending on the TTL value in DNS reply packet.
  - If client in LAN connects to host A without issuing host A DNS query to RX3141, policy route and firewall ACL will not match domain A variable.
  - Each domain name will not be associated with any IP address after system restart.

## 5 Features not supported

### 5.1 Security Related

- Following DoS Attacks are not supported in Firewall:
  - Octopus
  - Blind Spoofing
- SYN flooding to RX3141 can be protected by SYN-cookies mechanism but the hosts behind RX3141 are not protected.
- SYN/UDP/ICMP flooding can be detected and logged but RX3141 will not drop them.

## 6 Known Issues

### 6.1 Bugs

### 6.2 New Features, Bug Fixes and Changes

#### Release 1.42

- Bug fixes:
  - Time zone: Fixed time zone < +0:00 issue
  - Static route: Fixed user configure static route entry will be delete if user click static route page before WAN dialed up.
  - ALG: Fixed windows messenger file transfer ALG fail to transfer file if client ACK/NEG MSG
  - Fixed unable to input IP address > 223.0.0.0 issue
- Changes:
  - Support multiple network behind LAN interface
  - Support wired speed throughput in routing mode
  - UI: single click menu item supported
  - Update security, ACL, virtual server web pages
  - Virtual server: traffic go through virtual server rule will bypass inbound ACL, no additional rule needed now
  - WAN:
    - ◆ Support MTU setting (default MTU of PPPoE: 1454), adjust MSS of SYNACK TCP packet according to incoming interface MTU
    - ◆ Add unnumbered ip/mask/network user input validation
    - ◆ Update acceptable character for PPPoE user account (63 bytes) & password (31 bytes)
      - **Note: old PPPoE setting will be lost after firmware upgrade!!**

#### Release 1.37

- Bug fixes:
  - Fixed UPNP service incompatible with Windows XP sp2 issue
  - Shorten DNS query session lifetime to 30 seconds. TCP connection states will be purged correctly after connection closed. (MAX session states is 6000)
  - Update policy route code in order to avoid race condition which may cause system crash



- Shorten DNS query session lifetime to 30 seconds. TCP connection states will be purged correctly after connection closed. (MAX session states is 6000)
- Update policy route code in order to avoid race condition which may cause system crash
- Ftp data connection fails to bypass outbound ACL issue. This issue happen when user deny all traffic except FTP port (TCP port 21) in outbound ACL.
- One connection should not have multiple log records.
- Web GUI allow user to input any valid IP address to DNS server and WINS server fields in DHCP server configuration.

## **7 To Do's**