

RuggedRouter ROX 1.12.6 Release Notes

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Overview

This minor release fixes a problem concerning I²C bus lock ups that could occasionally prevent the reading of some devices found on that bus.

This upgrade requires a reboot afterwards in order to reload the WAN drivers, if the upgrade is done from a 1.12.3 or earlier release.

Estimated download time (min:sec) for an upgrade from 1.12.3:

DDS: 24:33

T1: 0:55

E1: 0:41.

User Guides

All user guides are available from the RuggedCom Web site at www.ruggedcom.com. Use the RuggedRouter ROX 1.12.6 user guide with this release.

Changes In RuggedRouter ROX 1.12.6

This release fixes a problem concerning I²C bus lock ups that could occasionally prevent the reading of some devices found on that bus.

Changes In RuggedRouter ROX 1.12.5

This release offers the following enhancements:

Gauntlet 2.1.18.3 – Performance enhancements.

Changes In RuggedRouter ROX 1.12.4

This release offers the following enhancements:

- Link Backup - Enhancements to main network path testing, multi-threaded operation and reconfiguration, bug fixes to netlink communications, memory allocation, and process signalling.
- WAN interfaces – Reduced interrupt reporting on noisy lines.
- Internal Modem – Performance improvement.
- Fix for sporadic PHY reset problem at boot time.
- PTP/IRIGB - GPS Cable Compensation. NTP PID. Assignment of stratum numbers.

Changes In RuggedRouter ROX 1.12.0

This release offered the following enhancements:

- Link Backup – An ability to designate trunks in main:backup relationship, raising the backup trunk on failure of the main trunk and lowering it after recovery. The main links can be TE1 or DDS while the backup link is a modem. Many “profiles” of dialed numbers can exist (each serving as a distinct backup link).
- GOOSE Tunnels – The IEC61850 Generic Object Oriented Substation Event (GOOSE) protocol uses Layer 2 multicast frames to distribute its messages and hence, is incapable of operating outside of a switched Ethernet Network. The GOOSE tunnel feature provides a capability to bridge GOOSE frames over a WAN.
- Alert System – A system that generates alerts, displaying them locally and/or forward them via email messages and SNMP Traps/Informs. Active alerts are locally displayed and can be cleared manually. Multiple forwarders can be configured, a configurable filter level controls alert forwarding to each forwarder.
- Web Help Menus – A context sensitive “help” link has been provided from each web management menu. Following the link loads help for that page.
- Support DHCP on bridged mode ADSL – Customers needing to assign their public interface address from their carrier via DHCP can now do so.

The ROX1.12.0 release repaired the following minor problems:

- VRRP support. The VRRP restart button would not apply the configuration if the daemon was started before a configuration existed. (Bug 1092). The web management menu also allowed an illegal value (of 0) to be assigned to the VRID (Bug 1133). VRRP combined with proxy arp caused arp problems for the VRRP locally monitored network. (Bug 1073). Finally, when an NTP request was made to an NTP server on a VRRP address the server would incorrectly respond on the interface address and not the VRRP address (Bug 1161).
- Web management Ethernet menus showed non-existent interfaces (Bug 1140).
- IPsec failed to setup some routes at boot, mainly because it could start to operate before all interfaces existed. IPsec now waits for the interfaces to exist (Bug 1128). Additionally, the web management menu was improved to allow route-only connections to be created (Bug 975).
- If SNMP had been configured to operate before ROX1.10.0, the web management GUI would not reflect the old configuration (Bug 1139). Additionally, the GUI incorrectly offered to “listen” for snmp packets on IPsec tunnel addresses (Bug 1201).
- The Frame Relay configuration GUI allowed duplicated DLCIs to be entered (Bug 1168).
- The Serial Server RawSocket feature required a change to compatible with RuggedServer keepalives (Bug 1192).
- The dynamic routes web management menu did not present all of the information available for OSPF multi-path routes (Bug 979).

Changes In RuggedRouter ROX 1.11.2

This release offered enhancements to the RX1100 Gauntlet Security Appliance feature.

Additionally, support was added for a new revision of PTP cards (Rev 2).

Changes In RuggedRouter ROX 1.11.1

The ROX 1.11.1 release was a manufacturing release that allowed a new version of PTP card to ship.

Changes In RuggedRouter ROX 1.11.0

This release offers the following new features:

- Gauntlet Security Appliance – A system for RX1100 customers, providing centrally administered access in compliance with the North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) Cyber Security standard.
- Radius Authentication – The ability to authenticate:
 - User logins via the **LOGIN** service,
 - PPP connections via the **PPP** service and
 - Web management via the **WEBMIN** service. The WEBMIN service allows operator actions to be logged under their login name (as opposed to “root”).
 - Each service may be provided by its own dedicated radius server or all services may be provided by a single server.
- VLAN Support – Including support specifically for:
 - Static Route and Default Route
 - Static Multicast Routing
 - End To End backup
 - PPPoE
 - Shorewall Firewall
 - IPSec
 - VRRP
 - Traffic Prioritization
 - Dynamic Routing
 - GRE Tunnel
 - DHCP Server
- Intrusion Detection Systems – A GUI and system of detecting capable of performing real-time traffic analysis using the snort IDS. It can perform protocol analysis, content searching/matching and can be used to detect a variety of attacks and probes, such as buffer overflows, stealth port scans, OS fingerprinting attempts, amongst others.
- DHCP configuration GUI – A GUI to support DHCP configuration including Option 82 support.
- SNMP Interface up-down traps are now generated in real time.

This release repairs the following minor problems:

- The Router Version Downgrade feature would fail when Microsoft IIS was used to serve the downgrade image file. Bug 526.
- The rsetup utility did not allow the user to configure the eth5 interface available on the Precise Timing Platform (PTP) card. Additionally, the utility allowed eth3 and eth4 ports to be configured, even if they do not exist. Bug 955.
- The End to end backup feature would not start at boot time because of an overly restrictive path definition. Bug 969.
- A Command with incorrect syntax in Run-On-Boot field of the Webmin Bootup and Shutdown menu would not return an error message when saved. Bug 940

- The web management static route configuration menu would not allow a default route to be configured if it had to be reached through a static route. Bug 945.
- The PTP card had an FPGA code upgrade to fix its problem of not providing valid IRIGB timestamps. Bug 961.
- Add support for Sangoma Maxim based Single port T1 and AFT DDS cards. Bug 943.
- The process monitoring daemon, restartd, would sometimes fail leading to subsequent ledtask failure. Bug 970
- In network topologies where a firewall was used to restrict traffic between two Ethernet zones the firewall would allow connections while starting at boot. Bug 992
- The SerServer converted CR to NL on input. Bug 996
- Traffic prioritization filters were not removed upon deletion. Bug 977
- Infrequently RIP will fail. RIP is now restarted. Bug 1043

Changes In RuggedRouter ROX 1.10.0

This release offers the following features:

- Precise Timing Platform (PTP) Card, with IRIGB providing:
 - Synchronization of NTP to a stratum 0 reference via GPS receiver.
 - Two TTL Level Pulse Width Modulated (PWM) or Pulse Per Second (PPS) IRIG-B output ports.
 - One Amplitude Modulated (AM) IRIG-B output port.
 - An additional 10/100 BaseT Ethernet port.
- Routing Information Protocol (RIP) supporting:
 - RIP V1/2 support.
 - RIP Key Chain support.
 - Route distribution to/from OSPF.
- SNMP Web Configuration
 - SNMP V1-3 User creation and Access Control.
 - Trap Configuration.
- Support for policy based VPNs, allowing the routing of IPSEC traffic based on matching of IPsec tunnel definitions as opposed to route based VPN, which simply employs the routing table.
- Radius Authentication, supporting:
 - Authentication of rrsetup, console, ssh and Webmin logins.
 - Authentication of incoming PPP connections

Note that in order to allow Radius Authentication of Webmin logins and to facilitate changes in upcoming versions of Webmin, you must adopt the systems root user password for Webmin login. A system alarm will be present after upgrading to ROX1.10.0. After converting the Webmin Password, your webmin password will in future be the same as the root user password. **Appendix A, at the end of this document, describes how to use the pre-upgrade script feature to automatically make this change on your behalf.**

- Extended Diagnostics GUI supporting:
 - Loopback tests on TE1 and DDS WAN interfaces.
 - More detailed WAN interface statistics for T1/E1, DDS, TE3 and ADSL.
 - LAN/WAN/Serial Port/Frame Relay port packet tracing with filter capabilities.
 - Pinging.
 - Host lookup.
- Router version downgrade allowing the router to be reinstalled with a specific version of software, optionally allowing a previous configuration file to be installed at the same time. Information about the process can be found in the “Downgrading Router Software” Appendix of the User Guide.

This release repairs the following minor problems:

- The command line “ifconfig” utility always indicated that ADSL was running, even when not connected. It not indicates the true link state.

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Changes In RuggedRouter ROX 1.9.1

- RuggedCom has recommended when firmware upgrades to wan cards should be made. These firmware upgrades are not necessary and the alarms raised will not be present after the next boot.
- During the ROX1.9.0 software upgrade, a message recommends that a path specification used by the GRUB bootloader be modified. This version withdraws the warning.
- The ROX1.9.0 could fail to remove an old version of the kernel.

Changes In RuggedRouter ROX 1.9.0

This release offers the following features:

- RuggedCom Serial Protocol Server, providing you with the following features:

Raw Socket Protocol -A means to transport streams of characters from one serial port on the router, to a specific remote IP address and TCP port.

Up to 8 independent serial ports per product (4 ports per serial card).

Baud rates of 1200, 2400, 9600, 19200, 38400, 57600, 115200 or 230400 bps.

Supports RS232, RS485 and RS485 party line operation.

XON/XOFF flow control.

Support a point-to-point connection mode and a broadcast connection mode in which up to 32 remote servers may connect to a central server.

TCP/IP incoming, outgoing or both incoming/outgoing connections mode, configurable local and remote TCP port numbers.

Packetize and send data on a full packet, a specific character or upon a timeout.

Support a “turnaround” time to enforce minimum times between messages sent out the serial port.

Debugging facilities include connection tracing and statistics.

- A redesigned Configuration Backup And Restore Feature with the following features:

An Automatic nightly backup is performed, capturing all configuration changes over the previous 24 hours,

Archive creation may be still performed manually, and include user comments,

The nightly backup archives can be automatically exported to a server,

The nightly backup archives are kept on the router for a configurable number of days and then deleted,

Archives can be transferred to the router and restored. If the archive is older than the router release, the router will prevent the restore.

Archive filename is user definable and can include any of date/time, host name and/or release version,

An archive difference tool is provided, showing the difference between one archive and either another archive or the current configuration. Changes in configuration can be tracked and “unwound” by applying the previous state of a router on a file by file basis.

- A Static Multicast Routing Daemon and associated configuration GUI.
- PPPoE for Native Ethernet Interfaces (Using an external ADSL Modem).
- Frame Relay and PPP over T3/E3 Interfaces.
- The router provides a simple way to run commands and scripts at boot time via the **System** menu **Bootup And Shutdown** sub-menu **Run On Boot** window.

This release makes a change to the way SNMP is supported:

- If SNMP is not configured, it is not started at boot.

- Previously, snmp listened on a public IP address on tcp port 199 (SMUX). SNMP now binds the SMUX protocol, which is used to capture SNMP information from agents within the router, to the private port 127.0.0.1.

This release increases security by activating shadow passwords.

This release makes changes to the way a new kernel releases are handled during an upgrade. Some kernel releases (but not all) require that the router be rebooted immediately after the upgrade. You will be requested to authorize the reboot before proceeding.

This release repairs the following major problems:

- Routers commanded into “power down” mode require manual intervention to restart.
- Shorewall's global ROUTE_FILTER option acts as a global rp_filter setting and breaks networks that use OSPF multipath routing. This release automatically disables Shorewall's global setting and enable the per interface settings if appropriate.
- Routers configured to use Virtual Router redundancy protocol and OSPF did not manage the advertisement of routes properly. When the primary VRRP server experienced a link down on its primary VRRP interface it would fail to stop advertising a route to the interface. This would prevent the network from routing to the secondary VRRP router. Closes Bug 846.
- PPPoE will fail to start at boot.

This release repairs the following minor problems:

- The prioritization bug fix of ROX 1.8.5 required users to re-save their WAN configuration files. This release upgrades the configuration automatically.
- A bug in the T1E1 display menu caused logical interface statuses to be incorrectly displayed in some cases.
- Only 8192 IP connections could be tracked through the firewall, this limit has been raised to 32768.
- The ADSL status when operating in bridged mode was incorrect.
- Users attempting to access unauthorized files used to be provided with “404 file not found” information, they are now redirected to the start page.
- The ntpdate command was removed in ROX 1.8.5 as it no longer required to set the date at boot time. The command is used by the GUI and by some users who not employ ntpd. It has been restored for these uses.
- A bug in ROX 1.7.4 occasionally and rarely caused a T1/E1 wan configuration file be be created badly. Users who noticed the problem recovered from it by deleting the file. Users who did not notice the problem face problems the next time they try to debug the port. This fix automatically deletes the configuration file.

Firmware/User Guide Version Numbering System

The RuggedRouter has a three digit version numbering system of the form rrX.Y.Z where each digit is a number starting from zero. The 'X', 'Y' and 'Z' digits represent the major, minor and patch version RuggedRouter firmware. The 'X' digit is incremented for a major functional updates of the product.



The 'Y' digit is incremented for a updates including new features and serious bugs. The 'Z' digit is incremented for minor bug fixes, cosmetic enhancements and other minor issues.

User guides follow the same format. In general, a user guide will have the same 'X.Y.Z' digits as the firmware to which it corresponds.

Type of Changes

Each change to the firmware is categorized according to the table below to provide a guide as to whether the change justifies upgrading. As well, each change lists an internal RuggedCom change number.

Change Type	Description
Critical	Critical changes fix problems that prevent the basic operation of the device and have no workaround. Any critical changes merit a device upgrade under all circumstances. Security fixes are also judged to be at the Critical level.
Major	Major changes fix problems that prevent the basic operation of the device but do have a workaround. Any major changes merit a device upgrade if the workaround is not acceptable.
New Feature	New features add significant new capability to the device. Such changes may change the basic operation of the device, the user interface, and how the device is configured. New features only merit a device upgrade if the feature is required.
Enhancement	Enhancements improve existing device capability and do not significantly change the basic operation of the device, the user interface, or how the device is configured. Enhancements only merit a device upgrade if the feature is required.
Minor	Minor changes fix non-vital problems that may or may not have a workaround. Minor changes do not necessarily merit a device upgrade unless the specific problem applies.
Cosmetic	Cosmetic changes have negligible impact on device operation and include such updates as spelling mistakes, user interface adjustments, and help text improvements. Cosmetic changes rarely merit a device upgrade.

Contacting Technical Support

For further information on this release or technical support of any nature, please contact RuggedCom at:

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Email: support@ruggedcom.com

Web: <http://www.ruggedcom.com>

APENDIX A - Webmin Password Conversion Pre-Upgrade Script

This pre-upgrade script can be used to help you to automatically convert your Webmin password to that of the system during upgrade. If you have a large number of routers, this will save you the time spent visiting each individually.

In order to use this script, go to the host that serves your HTTP Repository. Locate the DocumentRoot of the server, descend below it to the current directory and create a file "pre-upgrade" that contains the string

```
echo "root:x" > /etc/webmin/miniserv.users
```

As an example if your repository setting on your router is `http://10.0.0.1/RuggedCom` and your document root on 10.0.0.1 is `/var/www`, then create the file `/var/www/RuggedCom/rr1/dists/current/pre-upgrade` on that host.