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Document Release notes Version 1.9.10.1	Date 25-06-2026

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## Legal Information

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## 1 1.9.10.1 (25-06-2026)

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### 1.1 General

- This is an enhancement and bug fix release.

All version of Rev 3 hardware

- BRD-355 S/N > 03425 BRD355\_HW3\_V1.9.10.1.img
- MRD-405 S/N > 11325 MRD405\_HW3\_V1.9.10.1.img
- MRD-415 S/N > 950 MRD415\_HW3\_V1.9.10.1.img
- MRD-455 S/N > 23425 MRD455\_HW3\_V1.9.10.1.img

The following versions of Rev 1 and 2 hardware. Westermo strongly advise to only use > V1.9.10.0.img to update hardware revision 1 & 2 devices. Previous version could fail due to bad memory pages in the Bootloader area of the flash.

- BRD-355 Rev 1&2 S/N < 03424 BRD355\_HW1-2\_V1.9.10.1.img
- MRD-405 Rev 1&2 S/N < 11325 MRD405\_HW2\_V1.9.10.1.img
- MRD-415 Rev 2 S/N < 950 MRD415\_HW1-2\_V1.9.10.1.img
- MRD-455 Rev 1&2 S/N < 23425 MRD455\_HW1-2\_V1.9.10.1.img
- ADSL-350 ADSL350\_HW1\_V1.9.10.1.img

\*Note: all Rev 1 & 2 xRD devices will need to be updated to version 1.8.8.9 before updating to version 1.9.10.1

The transition from Version 1.8.8.9 to Version 1.9.10.1 can take up to 15 minutes. The LEDs will flash to indicate the update is still in progress. **DO NOT** power cycle before the LEDs have returned to the normal operational state. Prematurely power cycling will render the xRD inoperable and can only be recovered by a return to the factory, which is **not covered** by the warranty.

### 1.2 New features

- No new features.

### 1.3 Enhancements

- Security updates and improvements.
- Serial server improvements.
- Web interface improvements.
- L2TP improvements.
- Improved hardware revision reporting.

### 1.4 Bug Fixes

- Fix for potential serial stall issues.
- Fix for L2TP start up issues.

## 1.5 Known Issues

- No known issues.

## 2 1.9.10.0 (24-04-2026)

---

### 2.1 General

- This is a feature, enhancement and bug fix release.

### 2.2 New features

- SHH Client added
  - Allows units to connect to a remote SSH server
  - Can be enabled or disabled from the web interface

### 2.3 Enhancements

- Improvements to roaming functionality.
- The Telnet & SSH clients can be enabled or disabled via the web interface.
- Improvements to the Command Line Interface (CLI).
- Added a timestamp to the technical support filename to ensure a unique filename for each technical support file when generated.
- Added the PCND character set to modem emulator mode.

### 2.4 Bug Fixes

- Correctly report HTTP 404 error when trying to access a webpage that doesn't exist including CGI URLs.

### 2.5 Known Issues

- No known issues.

## 3 1.9.9.0 (19-12-2025)

---

### 3.1 General

- This is an feature, enhancement and bug fix release.

### 3.2 New features

- NTP server support added.
- Serial server trace log added.
- Factory reset button added to web interface.

### 3.3 Enhancements

- NTP client improvements
- NTP client and manual time selection now enforce timezone/region configuration.
  - This ensures that the correct local time is always displayed.
- Timezone can be enabled on wireless interface overriding the timezone provided by the network
  - Useful for roaming units to maintain correct local time
- Timezone regions now supported.
- Logging improvements for better clarity.
- Hardware revision and bootloader version added to the SNMP MIB.
- Minor web page improvements.
- Added support for MRD-455
- Added support for MRD-405 and MRD-415

### 3.4 Bug Fixes

- Fixed issue for when an IPsec certificate common name only contained numbers.
- Fixed issue with configuration reset switch not being read correctly on BRD-355 Hardware Revision 2.
- Fixed issue with login redirection injection.
- Fixed band selection issues.
- Modem emulator fixes and improvements:
  - +GSN shows IMEI on wireless modems now
  - +CGSN now supported on non wireless units
  - +CESQ bug fix

### 3.5 Known Issues

- No known issues.

## 4 1.9.8.2 (03-11-2025)

---

### 4.1 General

- This is an enhancement and bug fix release.

### 4.2 New features

- No new features.

### 4.3 Enhancements

- Improved serial server transmission latency on low baud rates.
- Radius message authenticator implemented for improved safety security when also enabled on RADIUS server.

### 4.4 Bug Fixes

- Minor link local address fixes.
- NAPT firewall fix for LAN1 and LAN2.
- Firewall access control fix for when non default port configured. Now blocks the original default port from being accessible when default port is Deny.
- Fix for serial framing being able to be set to a negative value which would result in serial port framing issues.
- Fix for Radius login sometimes not working correctly.

### 4.5 Known Issues

- No known issues.

## 5 1.9.8.1 (15-08-2025)

---

### 5.1 General

- This is an enhancement and bug fix release.

### 5.2 New features

- No new features.

### 5.3 Enhancements

- Improved startup log messages for Rev 3 hardware
- Input voltage monitor warnings are now written to the log for models MRD-405/415/455 Hardware Revision 3, if the supply voltage is outside the specified operating range for the unit.
- Added ability to upload web server certificate.
- APN added to SNMP MIB
- Wireless interface connection tester establishment timeout improvements.
- IPsec added to configure connection tester establishment poll period.
- Traffic diagnostics for LAN 2 now available when in independent port mode.

### 5.4 Bug Fixes

- Fixed issue where IPsec did not start correctly when reloading with certain configuration options.

### 5.5 Known Issues

- No known issues.

## 6 1.9.8.0 (15-08-2025)

---

### 6.1 General

- This is an enhancement and bug fix release.

### 6.2 New features

- No new features.

### 6.3 Enhancements

- Improve security requirements for unit passwords.
  - Enforce the setting of an administration password upon first login.
  - Enforce an update of admin password when still set to default value.
  - Minimum length increased to 8 characters.
  - Implemented authentication delays when multiple invalid login attempts are detected.
- Logging:
  - Moved logging of location to a separate log and allow this log to be manually cleared.
  - Improved readability in system log.
- Add controls to enable/disable SSH and Telnet interfaces.
  - SSH/Telnet turned off by default.
  - When upgrading from firmware versions prior to V1.9.8.0 SSH & Telnet will be enabled to continue with previous behavior.
- Add the ability to fail-over to an alternative APN.
  - Will fail-over to an alternative APN if primary APN is unsuccessful in establishing a connection.
  - IPSec can be configured to also trigger the APN fail-over if a connection cannot be established.

### 6.4 Bug Fixes

- SNMP:
  - Fixed an issue where SNMP Engine ID could be reset upon power loss.
- GRE:
  - Fixed an issue where GRE traffic would be blocked incorrectly.
- IPSec:
  - Connection improvements with multiple active tunnels.
- Serial Server:
  - Only set Loopback IP if required
- Location:
  - Resolve issue with MRD-405 Rev3.1/3.2 units not having location services enabled.

## 6.5 Known Issues

- No known issues.

## 7 1.9.7.1 (22-05-2025)

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### 7.1 General

- This is an enhancement and bug fix release.

### 7.2 New features

- No new features.

### 7.3 Enhancements

- Modem Emulator:
  - AT+CSQ Command Update: The AT+CSQ command has been modified to only report a Bit Error Rate (BER) value if a valid BER measurement is available.
  - AT+CESQ Command Addition: A new AT+CESQ command has been implemented. This command provides detailed information about the signal quality of 2G, 3G, and 4G cellular connections, offering more comprehensive diagnostic capabilities for wireless connectivity.
- System:
  - Boot Sequence Update (HW Rev1/Rev2): The boot sequence for Hardware Revision 1 and Revision 2 units has been updated. This modification is intended to prevent a rare startup problem that could occur after upgrading the firmware to version 1.9.

### 7.4 Bug Fixes

- Networking:
  - Resolved an issue where the LAN Maximum Transmission Unit (MTU) was not being configured correctly when the device was operating in switch mode. •
- Login:
  - Addressed a problem that prevented the login page from accurately interpreting characters from the UTF-8 character set. This enhancement ensures that passwords containing UTF-8 characters can log in successfully.
- IPSec:
  - Corrected an issue where XAuth passwords with special characters were not correctly escaped. This fix allows XAuth authentication to succeed with a wider range of characters.
- OpenVPN:
  - Resolved an issue that prevented OpenVPN from functioning correctly when configured in bridge mode

### 7.5 Known Issues

- No known issues.

## 8 1.9.7.0 (22-04-2025)

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### 8.1 General

- This is an enhancement and bug fix release.

### 8.2 New features

- No new features.

### 8.3 Enhancements

- Improvements to the firmware upgrader. (Upgrader is now able to handle bad memory pages in the bootloader memory locations.)
- Technical support file improvements.
- Logging:
  - General improvements to increase clarity.
  - Length of log doubled in size.
  - Now able to export up to 10,000 log lines.
- IPsec XAuth Server now has options for configurable username and password.
- DHCP leases cleared on config reset.
- Improved handling of large numbers of incoming SMS.
- Modem emulator:
  - LATIN1 char set added
  - "Custom" char set option added for GDW11 compatibility mode.
  - Default to ME storage for SMS read and incoming SMS.
  - SM storage has been moved to a virtual SM storage and will no longer be stored directly on the sim.
  - Max ME storage for modem emulator now configurable (1-1000)
  - Faster delete of large number of SMS messages at once.
  - AT command CPMS saves on write of command.

### 8.4 Bug Fixes

- Fix for IPsec XAuth to use configured authentication, which will be local or RADIUS.
- Fix issue with DHCP leases not being shown if only LAN2 DHCP server enabled.
- Fix for AT command CMGL to ensure all messages are listed correctly.

### 8.5 Known Issues

- No known issues.

## 9 1.9.6.2 (21-01-2025)

---

### 9.1 General

- This is an enhancement and bug fix release.

### 9.2 New features

- No new features

### 9.3 Enhancements

- IPsec:
  - Improved startup from boot.
  - Improve startup after boot.
  - Reduced unnecessary restarts.
- Logging:
  - Improved messages after re-power or re-boot.
  - Clean ups to enhance reliability.
- Improved handling of PPPoE and PPPoA in BRD-355 Rev1 Units
- Display the SHA256 hash when using the CLI Upgrader.
- Improved interface event handling for some services.

### 9.4 Bug Fixes

- Correctly display the Temperature on all capable models.
- Correctly report IMSI of the active SIM.
- Resolved an SMS issue where invalid UTF8 bytes would result in a blank message.
- Bug fix for independent LAN ports config change sometimes causing a crash on DSL units.
- Fix for LAN gateway sometimes not being applied to routing table
- Fix for Serial port on some models sometimes not starting up properly after firmware upgrade.
- Resolved an issue in modem emulator where, when AT+CSCS was set to PCCP437 or GSM, some characters were being translated to UTF8 characters rather than the correct PCCP437/GSM character.

### 9.5 Known Issues

- No known issues.

## 10 1.9.6.1 (14-11-2024)

---

### 10.1 General

- This is a bug fix release.

### 10.2 New features

- No new features

### 10.3 Enhancements

- No enhancements.

### 10.4 Bug Fixes

- Fixed issue with incorrect Telstra bearers.
  - Relevant for models MRD-405 and MRD-415.
  - Bearers originally specified by Telstra did not work correctly after 3G network shutdown.
  - Not all Telstra connections are impacted.

### 10.5 Known Issues

- No known issues.

## 11 1.9.6.0 (25-10-2024)

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### 11.1 General

- This is a feature, enhancement and bug fix release.

### 11.2 New features

- No new features

### 11.3 Enhancements

- Serial
  - Improvements to Rev3 Hardware serial port functionality
  - Equivalent functionality to Rev 2 hardware.
- SNMP
  - New Wireless OIDs:
    - Wireless band
    - Wireless packet IP address
    - Wireless packet MTU
    - Roaming status
  - New DSL OIDs:
    - DSL modulation type
    - DSL annex
    - DSL profile
    - DSL framing
    - DSL packet MTU
  - Added wireless and DSL packet statistics
- Added SHA256 HASH of firmware upgrade files on upgrade webpage
- Improved handling of serial firmware upgrades on Rev3 hardware.

### 11.4 Bug Fixes

- Fixed issue with SIMs not rotating correctly on Rev 1 & 2 hardware
- Fixed issue where disabled serial port could be reported as a fault on boot.
- DSL Models – Rev 2 & 3 Hardware:
  - Fixed issue with untagged bridged mode.
  - Resolved issue with bridged mode with split Ethernet ports.
  - Resolved untagged IPoE/MER DHCP issue.
  - Resolved untagged packet connections with static IP address issue.
  - Fixed MER not working.
  - Fix untagged PPPoE not working.
  - Fixed issue where old packet IP addresses were sometimes not cleared properly.

- Resolved an issue with the MRD-405/MRD-415 Hardware Rev 3 units where the system and status LEDs would turn off during the boot cycle.

## 11.5 Known Issues

- No known issues.

## 12 1.9.5.4 (05-07-2024)

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### 12.1 General

This is a bug fix release.

### 12.2 New Features

- No new features.

### 12.3 Enhancements

- No enhancements.

### 12.4 Bug Fixes

- Fixed issue where VRRP sometimes incorrectly triggers to become backup after long periods of being the primary.

### 12.5 Known Issues

- No known issues

## 13 1.9.5.3 (01-07-2024)

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### 13.1 General

This is an enhancement and bug fix release.

### 13.2 New Features

- No new features.

### 13.3 Enhancements

- Improved wireless interface error detection on Hardware Rev 1 & 2
- Serial port hardware handshaking improvements.
- Added popup on DSL models to warn when an interface firmware upgrade will occur.

### 13.4 Bug Fixes

- PPPoA fixed issues with PPPoA Authentication.
- Fixed issue with Hardware Handshaking not working on Serial Ports 2 and 3 (MRD-415).
- Fixed issue with Ethernet ports sometimes not working correctly after boot. (Hardware Rev 1 & 2)

### 13.5 Known Issues

- No known issues.

## 14 1.9.5.2 (29-05-2024)

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### 14.1 General

This is an enhancement and bug fix release.

### 14.2 New Features

- No new features.

### 14.3 Enhancements

- **Serial server Modem Emulator:**
  - PCCP437 char set added
  - Hex char set properly added
  - +CSDH support added
  - +CSAS now saves CSMP and CNMI
  - SMSC (+CSAS) improvements
- IPsec key lifetime now has limits
- Reboot improvements

### 14.4 Bug Fixes

- DNP3 CSD not reporting fixed.
- PPPoA fixes on DSL models Hardware Rev 1 & 2.
- Network status LED for Sim2 issue fixed.
- Temperature reporting issue fixed for hardware Rev 3 units.
- Fixed issue with DSL interface firmware upgrade.

### 14.5 Known Issues

- No known issues.

## 15 1.9.5.1 (12-04-24)

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### 15.1 General

### 15.2 New Features

- No new features.

### 15.3 Enhancements

- Improved the upgrade process
- Improved logging
- Improved handling of the network restarts when connection maintenance fails
- Added limit to the number SSH connections

### 15.4 Bug Fixes

- Fixed connectivity issues for MRD-455 Rev 1 units
- Improved handling of MRD-455 Rev 1 GNSS data-
  - Serial server: Fixed Serial Port Control line issues on Rev 1/2 Hardware
  - Improved serial throughput and latency in Rev 3 Hardware
- IPSec:
  - Fixed issues with IPSec routing
  - Fixed issues with IPSec startup/restarts
  - General IPSec improvements
- Fixed issues with email not being sent.
- DSL:
  - Fixed an issue with Rev 2 / Rev 3 hardware upgrades failing causing the DSL interface to fail
  - Add a configuration setting to allow for specific incoming subnet routes via PPPoA
  - Improved Rev 2 / Rev 3 hardware interface handling and stability
  - Fixed issues with some Rev 2 hardware being unable to start up the DSL interface
  - Fixed issues with the MTU settings in a subset DSL configurations
- Fixed issues with Policy routes not functioning correctly
- Fixed issues with SNMP load protection
- LAN2 is now hidden on the firewall webpages unless independent LAN ports is enabled
- Correctly display the Loopback interface on status pages when enabled

## 15.5 Known Issues

- No known issues.

## 16 1.9.5.0 (15-11-23)

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### 16.1 General

### 16.2 New Features

- No new features.
- 

### 16.3 Enhancements

- Support added for Hardware Rev 1 and 2 models.
- Improved logging
- Roaming:
  - Rotate SIMs when roaming temporary deny list is full and sim rotate is enabled.
  - Timed roaming rescan capability added.

#### SNMP:

- Added SIM and IMEI information to the MIB.

### 16.4 Bug Fixes

- Fixed issue with Model 455 not starting up correctly under some circumstances.
- Fixed potential connection poller memory leak.
- LLDP: Chassis ID fix.
- Fixed issue where if LAN gateway was configured it did not appear as a default route option.
- Modem emulator: AT parsing error fix.
- Resolved Firewall connection tracking issue.
- BRD355 Rev3: ADSL improvement when using separated LAN ports

#### IPsec:

- Resolved issue with IPsec restarting before wireless/dsl connection is up.
- Resolved issue with IPsec routes sometimes being dropped.
- Certificate import improvements.
- 3DES now works for phase 2 (ESP).

### 16.5 Known Issues

- Routing issue as a consequence of running PPPoA which affects the loopback. Issue occurs when there is more than one hop to the PPPoA instance.

- Some very old Rev1 device will not update due to the file system being uncompressed. This issue will be addressed in a later release.

## 17 1.9.4.0 (12-5-23)

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### 17.1 General

- All version of Rev 3 hardware
  - BRD-355
  - MRD-405
  - MRD-410
  - MRD-455

### 17.2 New Features

- No new features.

### 17.3 Enhancements

- SNMP: Improvements to interface consistency.
- Temperature: Added temperature support.
- Dynamic DNS: Added support for DuckDNS
- GNSS: Added support for 3V3 Active Power GPS to MRD-415 Rev 3 and MRD-455 Rev3 models

### 17.4 Bug Fixes

Diagnostics: Fixed issue with being unable to download TCPDump diagnostics.

- IPSEC:
  - Fixed issues with XAuth not authenticating correctly.
  - Fixed an issue with IPSec stability while using AES128.
- Fixed issue where occasionally the technical support file was zero bytes.
- Upgrade: Fix an issue where some upgrades would result in unexpected reboot
- Logs: Improved logging messages for better readability.
- LLDP:
  - Fixed incorrect start up issue.
  - Improved the information reported via SNMP
- Interfaces: Fix an issue where sometimes routing between LAN ports wasn't enabled when selected.
- LED indicators: Improved the timings for greater consistency across products.
- Dynamic DNS: Fix an issue with EasyDNS interaction

17.5 Known Issues

## 18 1.9.3.6 (2023-3-28) BRD-355 only

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### 18.1 New Features

- No new features.

### 18.2 Enhancements

#### 18.2.1 Support OPENreach MCT compatibility testing

Support for BT BT Openreach MCT Compatibility test , and defaults for BT Openreach SoGEA lines

### 18.3 Bug Fixes

#### 18.3.1 Logging

- Fixed an issue with excessive and unnecessary logging of marks on the firewall..

#### 18.3.2 SCEP

18.3.3 Fixed an issue where certificates could report the wrong date. Mainly relating to certificates handled by SCEP.

#### 18.3.4 General

## 19 1.9.3.5 (2023-3-13)

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### 19.1 New Features

- No new features.

### 19.2 Enhancements

### 19.3 Bug Fixes

#### 19.3.1 Logging

- Fixed an issue with excessive and unnecessary logging of marks on the firewall..

#### 19.3.2 SCEP

19.3.3 Fixed an issue where certificates could report the wrong date. Mainly relating to certificates handled by SCEP.

#### 19.3.4 General

## 20 1.9.3.4 (2023-02-06)

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This is an enhancement and bug fix release.

### 20.1 New Features

- No new features.

### 20.2 Enhancements

#### 20.2.1 Openreach

- Improvement in handling of OAM and CFM protocol in Openreach mode.

#### 20.2.2 IPSec

- DES, Blowfish and Twofish support reintroduced.
  - This was done for firmware Version 1.8.x.x compatibility. It should be noted that these encryption methods are considered deprecated.

#### 20.2.3 General

- Logging clean-ups.

### 20.3 Bug Fixes

#### 20.3.1 Serial Server

- PPP Server and PPP Dialout Client startup fixed.

#### 20.3.2 SNMP

- Issue with selecting v3 fixed.
- Issue when restarting or reconfiguring fixed.
- Fixed issue with DSL units without sync not reporting correctly in MIB.

#### 20.3.3 General

- MRD-415 not correctly reporting hardware revision issue fixed.
- Logging clean-up.

## 21 1.9.3.3 (2023-01-18)

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This is a bug fix release.

### 21.1 New Features

- No new features.

### 21.2 Enhancements

- No enhancements.

### 21.3 Bug Fixes

#### 21.3.1 General

- Resolved an issue with P12 certificate where there was only a common name entry as the subject.
- Resolved an issue with common names not always being read properly for OpenVPN configurations that contain certificates.
- Resolved an issue with some MRD-415 units sometimes showing a POST fault on startup.
- Resolves an issue with the DSL firmware version not being displayed correctly.

## 22 1.9.3.2 (2023-01-04)

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This is an enhancement release.

### 22.1 New Features

- No new features.

### 22.2 Enhancements

#### 22.2.1 Openreach

- OAM loopback added to BRD-355.

### 22.3 Bug Fixes

- No bug fixes.

## 23 1.9.3.1 (2022-12-21)

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This is a bug fix release.

### 23.1 New Features

- No new features.

### 23.2 Enhancements

- No new enhancements

### 23.3 Bug Fixes

#### 23.3.1 Ethernet

- The correct MAC Address is assigned to LAN and LAN2 when using independent port mode. Previous versions incorrectly had the MAC addresses swapped.
- The correct MAC Address is assigned when the ports are in standard/switch mode. Previously there was a chance it would use the 2nd MAC address not the first.
- The switch ports being reversed on the MRD455 units in version 1.9.2.x has been resolved. If the configuration was saved with firmware version 1.9.2.x the “functional config” will persist as the reversal can be detected and the ports assigned correctly.

#### 23.3.2 Serial Server

- Modem emulator: response time improvements.
- Modem emulator: multi phonebook server disconnect fix.

## 24 1.9.3.0 (2022-12-01)

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This release adds support for new hardware versions.

### 24.1 New Features

- Added support for MRD-405 HW revision 3.0.
  - Serial number 11325 and higher.

### 24.2 Enhancements

- No enhancements.

### 24.3 Bug Fixes

- No bug fixes.

## 25 1.9.2.1 (2022-10-12)

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This is a bug fix release.

### 25.1 New Features

- No new features.

### 25.2 Enhancements

- No enhancements.

### 25.3 Bug Fixes

#### 25.3.1 General

- Remote syslog fixes
- CLI log fix
- Fixed configuration reset switch issue.
- DSL upgrade improvements

## 26 1.9.2.0 (2022-10-06)

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This release adds support for new hardware versions.

### 26.1 New Features

- Added support for MRD-415 HW revision 3.0.
  - Serial number 00950 and higher.

### 26.2 Enhancements

- No enhancements.

### 26.3 Bug Fixes

- No bug fixes.

## 27 1.9.1.1 (2022-10-05)

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This is a feature and enhancement release.

### 27.1 New Features

#### 27.1.1 Openreach network acceptance

- Initial support added.

### 27.2 Enhancements

#### 27.2.1 IPsec

- Remove strict encryption checkbox from IPsec settings (always behaves strict now).
- Improved importing of certificates into IPsec

### 27.3 Bug Fixes

- No bug fixes.

## 28 1.9.1.0 (2022-09-01)

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This release adds support for new hardware versions.

### 28.1 New Features

- Added support for BRD-355A/B HW revision 3.0.
  - Serial number 03425 and higher.

### 28.2 Enhancements

- No enhancements.

### 28.3 Bug Fixes

- No bug fixes.

## 29 1.9.0.1 (2022-08-19)

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This is an enhancement and bug fix release.

### 29.1 New features

- No new features.

### 29.2 Enhancements

#### 29.2.1 IPsec

- Added fragmentation support
- MODP768 support added back in

### 29.3 Bug Fixes

#### 29.3.1 IPsec

- Fixed restart issue
- Fixed IKEv2 active redundancy issue

#### 29.3.2 General

- OpenVPN certificate fix
- TechSupport file clean-up
- Dynamic routing fixes
- CLI command fixes

## 30 1.9.0.0 (2022-08-11)

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This is the first release on the 1.9 firmware branch.

### 30.1 New Features

- Added support for MRD-455 HW revision 3.0.
  - Serial number 23425 and higher.

### 30.2 Enhancements

- No enhancements.

### 30.3 Bug Fixes

- No bug fixes.