



# **SXL Software Release Notes Merlin 4100/4400/4600 Series**

**Release SXL-25.05.86.000-Beta**

|                   |                                                                                                               |
|-------------------|---------------------------------------------------------------------------------------------------------------|
| Hardware Models   | Merlin4100; Merlin4400; Merlin4600 Series                                                                     |
| Revision          | 1.00.19                                                                                                       |
| Approval status   | Pending                                                                                                       |
| Date              | 19 August 2026                                                                                                |
| Brief description | Details the release of system software SXL-25.05.86.000-Beta for Merlin4100, Merlin4400 and Merlin4600 Series |

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Revision history

| Date              | Revision | Description                             |
|-------------------|----------|-----------------------------------------|
| 02 November 2021  | 1.00.00  | Release notes for SXL-25.02.14.000      |
| 18 November 2021  | 1.00.01  | Release notes for SXL-25.02.14.002      |
| 03 March 2022     | 1.00.02  | Release notes for SXL-25.02.14.013      |
| 21 March 2022     | 1.00.03  | Release notes for SXL-25.02.14.016      |
| 24 May 2022       | 1.00.04  | Release notes for SXL-25.02.14.027      |
| 13 October 2022   | 1.00.05  | Release notes for SXL-25.02.14.032      |
| 05 January 2023   | 1.00.06  | Release notes for SXL-25.02.80.000      |
| 13 February 2023  | 1.00.07  | Release notes for SXL-25.02.99.000      |
| 23 March 2023     | 1.00.08  | Release notes for SXL-25.03.23.000      |
| 22 May 2023       | 1.00.09  | Release notes for SXL-25.03.43.000      |
| 27 September 2023 | 1.00.10  | Release notes for SXL-25.03.43.009      |
| 08 December 2023  | 1.00.11  | Release notes for SXL-25.03.43.014      |
| 17 July 2024      | 1.00.12  | Release notes for SXL-25.04.08.000      |
| 13 August 2024    | 1.00.13  | Release notes for SXL-25.04.13.000      |
| 05 September 2024 | 1.00.14  | Release notes for SXL-25.04.16.000      |
| 14 April 2025     | 1.00.15  | Release notes for SXL-25.04.63.000      |
| 18 July 2025      | 1.00.16  | Release notes for SXL-25.04.78.000      |
| 27 November 2025  | 1.00.17  | Release notes for SXL-25.05.24.000      |
| 15 June 2026      | 1.00.18  | Release notes for SXL-25.05.68.000      |
| 19 August 2026    | 1.00.19  | Release notes for SXL-25.05.86.000-Beta |

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Release statement

SXL-25.05.86.000-Beta has formally passed internal acceptance and regression testing and is available for general release on hardware platforms as stated below.

2.1

Firmware information

| Filename                        | Size (bytes) | Build Date | Checksum (md5)                   |
|---------------------------------|--------------|------------|----------------------------------|
| SXL-25.05.86.000-Beta.k01.image | 19,853,312   | 19/08/2026 | 4c777f584299e8fdd7dc6c3996635a15 |

2.2

Hardware platforms

| Hardware model | Details                                                                                                                                                 |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Merlin4100     | EN 61000-6 LTE/LTE-450 wireless router with 4 port Ethernet switch (10/100M) with dual use port for RS232 serial or digital input, TPM and secure boot. |
| Merlin4400     | EN50121-4, EN 61000-6 LTE/LTE-450 wireless router with 4 port Ethernet switch (10/100M), TPM and secure boot. Optional dual serial.                     |

Merlin4600

IEC61850-3, EN50121-4, EN 61000-6 LTE/LTE-450 wireless router with 4 port Ethernet switch (10/100M), TPM and secure boot. Optional dual serial, dual SFP (1GbE), USB host, digital IO.

## 3 Mobile module support

### 3.1 5G

| Firmware     | Code | Module            | 3G | LTE                                                                                                                | 5G                                                                                            |
|--------------|------|-------------------|----|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| 25.05.86.000 | QFB  | Quectel RG255C-GL | -  | LTE-FDD:<br>1,2,3,4,5,7,8,12,13,14,17,<br>18,19,20,25,26,28,30,66,7<br>0,71<br>LTE-TDD:<br>34,38,39,40,41,42,43,48 | Redcap NR SA:<br>1,2,3,5,7,8,12,13,14,18,20,<br>25,26,28,30,38,40,41,48,66<br>,70,71,77,78,79 |

### 3.2 LTE

| Firmware     | Code | Module                   | Region           | Cat | 2G                        | 3G    | LTE                                                           |
|--------------|------|--------------------------|------------------|-----|---------------------------|-------|---------------------------------------------------------------|
| 25.04.63.000 | PFP  | Sierra Wireless WP7611   | US               | 4   | -                         | 2,4,5 | 2,4,5,12,13,14,25,<br>26,66,71                                |
| 25.03.43.005 | QFT  | Sierra Wireless WP7702   | Global           | M1  | 850/900/<br>1800/19<br>00 | -     | 1,2,3,4,5,8,12,13,<br>17,18,19,20,26,28                       |
| 25.02.14.027 | PFJ  | Sierra Wireless WP7609-G | Australia        | 4   | -                         | 1,8   | 1,3,5,8,40,41                                                 |
|              | QFX  | SIM7070E                 | Global           | M1  | 850/900/<br>1800/19<br>00 | -     | 1,2,3,4,5,8,12,13,1<br>4,18,19,20,25,26,<br>27,28,31,66,72,85 |
| 25.02.14.000 | QFZ  | Sierra Wireless WP7607-G | EMEA             | 4   | 900/180<br>0              | 1,8   | 1,3,7,8,20,28                                                 |
|              | PFI  | Sierra Wireless WP7608-G | Asia/<br>Pacific | 4   | 900/180<br>0              | 2,4,5 | 2,4,5,12,13,14,17,<br>66                                      |
|              | PFL  | Sierra Wireless WP7610-G | North<br>America | 4   | -                         | 1,5,8 | 1,3,5,7,8,28                                                  |

### 3.3 LTE-450

| Firmware     | Code | Module                   | Cat | 2G | 3G        | LTE                                                              |
|--------------|------|--------------------------|-----|----|-----------|------------------------------------------------------------------|
| 25.05.68.000 | RFY  | Quectel EG950A           | 4   | -  | 1,2,4,5,8 | LTE:FDD:<br>1,2,3,4,5,7,8,20,28,31,66,72,87<br>LTE-TDD: 28,40,41 |
| 25.05.24.000 | RFH  | Telit Cinterion TX62-W-C | M1  | -  | -         | LTE-FDD: 1,3,8,30,28,31,72                                       |
| 25.04.63.000 | PFT  | Unitac ML620RU           | 4   | -  | -         | LTE-FDD: 3,7,20,31<br>LTE-TDD: 40                                |

|              |     |                |   |   |   |                       |
|--------------|-----|----------------|---|---|---|-----------------------|
| 25.02.80.000 | PFN | Unitac ML620DE | 4 | - | - | LTE-FDD: 3,7,20,72    |
| 25.02.14.027 | PFC | Unitac ML620EU | 4 | - | - | LTE-FDD: 3,7,20,31,72 |
|              | PFM | Unitac ML660PC | 4 | - | - | LTE-FDD: 3,20,87      |

## 4 Security fixes

| Firmware     | Module      | Description                                                                                                                                                    | Severity | Mantis       |
|--------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------|
|              | ospf        | Fix CVE-2026-28532 integer overflow vulnerability                                                                                                              | Low      | 9529         |
| 25.05.68.000 | luci        | Change HTTP method from GET to POST for various actions in web UI                                                                                              | Low      | 8290         |
|              |             | Mask password text in web UI for SCADA applications                                                                                                            | Low      | 9159<br>9276 |
|              | strongswan  | Fix vulnerabilities:<br>30_cert_cache_random_patch (CVE-2021-41991)<br>31_eap_success_patch (CVE-2021-45079)                                                   | Medium   | 9430<br>9431 |
|              | web         | Support cookie security with SameSite=Strict, HttpOnly, Secure                                                                                                 | Low      | 9606         |
| 25.05.24.000 | dropbear    | Support SSH-ed25519 host key                                                                                                                                   | Low      | 8933         |
|              | system      | Fix file security permissions                                                                                                                                  | Low      | 6406         |
|              |             | Force root password change on first log in for routers shipped with default credentials                                                                        | Low      | 8743         |
|              |             | Mask sensitive information in audit logs                                                                                                                       | Low      | 8365         |
|              |             | Support configurable data at rest encryption                                                                                                                   | Low      | 6947         |
| 25.04.63.000 | jquery      | Updated to version 3.7.1                                                                                                                                       | Medium   | 7914         |
|              | luci        | Added Security-Policy-Header (CSP) to prevent clickjacking                                                                                                     | Low      | 8087         |
|              | net-snmpd   | Updated to version 5.9.4<br>Fixes CVE-2022-44793; CVE-2020-15861; CVE-2020-15862; CVE-2019-20892; CVE-2015-8100; CVE-2018-18065; CVE-2018-18066; CVE-2014-2285 | Medium   | 7306         |
|              | openVPN     | Updated to version 2.5.11<br>Fixes CVE-2022-0547                                                                                                               | Irritant | 6238         |
|              | pam_tacplus | Avoid potential freeing of non-address<br>Fixes CVE-2020-27743 and CVE-2016-20014                                                                              | Medium   | 8002         |
| 25.03.16.000 | dnsmasq     | Updated to version 2.90<br>Fixes CVE-2023-28450 and CVE-2022-0934                                                                                              | Medium   | 7796         |
|              | dropbear    | Updated to version 2024.85                                                                                                                                     | Medium   | 7560         |

|                             |          |                                                                                                                                          |        |                      |
|-----------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------------|
|                             | frr      | Fix CVE-2024-44070. FRRouting (FRR) does not check the actual remaining stream length before taking the TLV value.                       | Medium | 7858                 |
|                             | password | New HMAC password hashing algorithm which uses the HMAC functionality in the TPM as a means of hashing passwords (IEC62443-4-2)          | Low    | 7155                 |
| 25.04.13.000                | PPP      | Updated to version 2.5.0                                                                                                                 | Low    | 4179                 |
| 25.04.08.000                | dropbear | Updated to 2022.83                                                                                                                       | Medium | 6403<br>4976         |
|                             | System   | Delete sensitive information from RAM and generate syslog message after use by luci, uhttpd, PAM, openVPN and strongswan (IEC62443-4-2). | -      | 7164<br>7166<br>7167 |
|                             | System   | Perform image digital signature verification in virtual memory prior to loading to flash when using to Web UI and Activator              | Low    | 6721                 |
|                             | uhttpd   | Support TLS v1.3 (IEC62443-4-2)                                                                                                          | -      | 6854                 |
| 25.03.43.005                | console  | Automatically log out console sessions after 30 mins if inactivity                                                                       | Low    | 6884                 |
| 25.03.23.000                | telnetd  | Remove telnetd support                                                                                                                   | Medium |                      |
|                             | password | Resetting password via web UI now requires input of current password                                                                     | Low    | 5261                 |
|                             | SSH      | Added grace period after console login failure to disrupt brute force attacks                                                            | Medium | 5853                 |
| 25.02.80.000                | dnsmasq  | Updated to 2.85 (CVE-2021-3448)                                                                                                          | -      | 6041                 |
|                             | gpsd     | Updated to 3.23.1                                                                                                                        | -      |                      |
|                             | overlay  | Implemented automatic overlay clean up to remove ad hoc modifications                                                                    | -      | 5374                 |
|                             | snmpd    | Application now runs with dedicated unique user and group id instead of root privileges                                                  | -      | 4695                 |
| 25.02.14.000                | arp-scan | Upgraded to version 1.9.7                                                                                                                | -      |                      |
|                             | iecd     | COTP: fixed possible heap buffer overflow when handling message with invalid (zero) value in length field)<br>Fixes CVE-2020-7054        | -      | 5320                 |
|                             | iproute2 | Upgrade to version 5.13.0                                                                                                                | -      |                      |
|                             | uClibc   | Upgrade to version 0.9.33.2                                                                                                              | -      |                      |
| Fixes prior to 25.02.14.000 | busybox  | Bunzip2 integer overflow fix.<br>Fixes CVE-2017-15873                                                                                    | -      | 3534                 |
|                             |          | Fix BusyBox auto completion vulnerability.<br>Fixes CVE-2017-16544                                                                       | -      |                      |
|                             |          | Heap-based buffer overflow in the DHCP client (udhcp) before 1.25.0.<br>Fixes CVE-2016-2148                                              | -      | 3747                 |
|                             |          | Integer overflow in the DHCP client (udhcp) before 1.25.0. Fixes CVE-2016-2147                                                           | -      | 3747                 |

|            |                                                                                                                                                     |   |      |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---|------|
|            | Upgraded to version 1.23.2.                                                                                                                         | - |      |
|            | Fixes CVE-2011-2716                                                                                                                                 |   |      |
| chrony     |                                                                                                                                                     |   |      |
| dropbear   |                                                                                                                                                     |   | 4964 |
| iecd       |                                                                                                                                                     |   | 4966 |
| iosrxd     |                                                                                                                                                     |   | 4968 |
| openvpn    | Applications now run with dedicated unique user and group id instead of root privileges                                                             | - | 4970 |
| rtud       |                                                                                                                                                     |   | 4971 |
| strongswan |                                                                                                                                                     |   | 4973 |
| tservd     |                                                                                                                                                     |   | 4974 |
| xl2tpd     |                                                                                                                                                     |   | 5003 |
| chrony     | Disable internet command sockets                                                                                                                    | - | 4995 |
|            | Upgraded to v3.5.1                                                                                                                                  | - |      |
| curl       | Upgraded to version 7.67.0                                                                                                                          | - |      |
| dnsmasq    | Upgraded to 2.78.                                                                                                                                   | - |      |
|            | Fixes CVE-2017-14491; CVE-2017-14492; CVE-2017-14493; CVE-2017-14494; CVE-2017-14495; CVE-2017-14496; CVE-2017-13704                                |   |      |
|            | Upgraded to v2.84 to fix vulnerabilities in DNS response validation                                                                                 | - | 5618 |
|            | Fixes CVE-2020-2568; CVE-2020-25686                                                                                                                 |   |      |
| dropbear   | DSS(DSA) key algorithm removed                                                                                                                      | - | 3809 |
|            | Disable support for MD5, 96 bit MAC and CBC mode syphers                                                                                            |   |      |
|            | Upgraded to 2017.75. Fixes CVE-2016-7406                                                                                                            | - | 2933 |
| firewall   | Updated iptable rules to provide UDP flood protection, filter out bad TCP flags and moved flood protection to mangle table for performance benefit. | - | 3570 |
| iecd       | Support for secure Modbus TCP with introduction of modbus TLS security extension                                                                    | - |      |

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |      |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------|
| IPSec      | Integrate latest strongswan security patches<br>10_openssl_ecdsa_signature_patch (CVE-2013-2944)<br>12_is_asn1_patch (CVE-2013-5018)<br>13_id_dn_match_patch (CVE-2013-6075)<br>14_ikev1_fragment_patch (CVE-2013-6076)<br>15_reject_child_sa_patch (CVE-2014-2338)<br>16_asn1_unwrap_patch (CVE-2014-2891)<br>17_modp_custom_patch (CVE-2014-9221)<br>19_enforce_remote_auth_patch (CVE-2015-4171)<br>20_eap_mschapv2_state_patch (CVE-2015-8023)<br>21_gmp_mpz_powm_sec_patch (CVE-2017-9022)<br>22_asn1_choice_patch (CVE-2017-9023)<br>23_gmp_mpz_export_patch (CVE-2017-11185)<br>25_stroke_msg_len_patch (CVE-2018-5388)<br>26_skeyseed_init_patch (CVE-2018-10811)<br>27_gmp_pkcs1_verify_patch (CVE-2012-2388;<br>CVE-2017-11185; CVE-2018-16152)<br>28_gmp_pkcs1_overflow_patch (CVE-2018-16151;<br>CVE-2018-161152) | - | 4079 |
| keepalived | Upgraded to 1.2.19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | - | 4226 |
| libpcap    | Upgraded to version 1.9.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | - |      |
| netsnmp    | Upgraded net-snmp to 5.7.3 for integer overflow fix and snmp_pdu_parse function.<br>Fixes CVE-2008-4309; CVE-2015-5621                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | - | 3609 |
| OpenNHRP   | Upgraded to version 0.14.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | - |      |
| OpenVPN    | Upgraded to version 2.4.6.<br>Fixes CVE-2018-5390                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | - |      |
| quagga     | Upgraded to version 1.1.0.<br>Fixes CVE-2013-6051; CVE-2013-2236; CVE-2016-4036; CVE-2006-2224; CVE-2006-2223; CVE-2016-1245; CVE-2008-1160                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | - | 3656 |
| reset      | Config1 and config2 are now deleted when the router is reset to factory config using the reset button press                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | - | 4996 |
| serial     | ATMEL module firmware upgraded to 1.3.18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | - | 3475 |
|            | ATMEL module firmware upgraded to 1.4.1.<br>Fixes watchdog crash when handling large packets and also support for 192kb speed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | - | 4335 |
| syslog     | Mobile connection failure message in syslog now contains encrypted password.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | - | 3493 |
| system     | Added support for UCI encryption for 3G interface password                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | - | 3639 |
|            | New configurable option to use SHA-512 for password hashing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | - | 5001 |
| tcpdump    | Updated to version 4.9.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | - |      |
| tserverd   | TLS support for TCP server and TCP client mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | - |      |

|       |                                                                                                                                                                                                                |   |      |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------|
| uboot | Fix root access via modifiable boot process priority                                                                                                                                                           | - | 3496 |
| web   | Disable RC4 cipher suite (RC4, Export, NULL and low strength cyphers (<128)) in https application and add option to set the minimum supported TLS version for the https server. Minimum TLS supported now 1.0. | - | 3809 |
|       | Disabled SSL and exclusively use TLS versions 1.0 and higher                                                                                                                                                   | - | 3809 |
|       | Mitigated remote code execution vulnerability in cmd script.                                                                                                                                                   | - | 4054 |
|       | Only a generic web error message is now sent to browser and a verbose message is logged on server side                                                                                                         | - | 3877 |
|       | Removed ability to disable critical system services via web UI                                                                                                                                                 | - | 4340 |
|       | Removed support for scheduled tasks via web UI                                                                                                                                                                 | - | 4376 |

## 5 Security vulnerabilities

| Module     | Short Description                                                                                                                                                                                                                                         | Severity | Mantis       |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------|
| bgpd       | Vulnerabilities affecting current version of bgpd<br>CVE-2016-1245                                                                                                                                                                                        | Low      | 5808         |
| dropbear   | Vulnerability affecting current version of dropbear<br>CVE-2025-47203                                                                                                                                                                                     | Medium   | 8907         |
| frr        | Vulnerability affecting current version of frr<br>CVE-2024-27913                                                                                                                                                                                          | Low      | 8204         |
| openssl    | Vulnerabilities affecting current version of openssl<br>CVE-2022-1292, CVE-2022-2097, CVE-2022-4304, CVE-2022-4450, CVE-2023-0215, CVE-2023-0286, CVE-2023-0464, CVE-2023-0465, CVE-2023-0466, CVE-2023-2650, CVE-2023-3817, CVE-2023-4807, CVE-2023-5678 | Medium   | 7301         |
| strongswan | Vulnerabilities affecting current version of strongswan<br>CVE-2025-62291: 36_eap_mschapv2_failure_request_len_patch<br>CVE-2026-25075: 38_eap_tls_avp_len_patch                                                                                          | Medium   | 9432<br>9433 |

## 6 New features

### AT Command Service

Enhancement to AT Command Script execution using UDS scripts

|                  |                                                     |      |
|------------------|-----------------------------------------------------|------|
| Script Execution | - support command separation with Ctrl-Z            | 8873 |
|                  | - split execution for serial and for translate exec |      |
|                  | - add option to match translate commands by prefix  |      |

| Package | Section   | Options                  |
|---------|-----------|--------------------------|
| crsd    | translate | prefix_match; sep_ctrl_z |

### BGP

|                                         |                                                                                                            |                    |                                               |              |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------------|--------------|
| MP-BGP                                  | Support Multiprotocol Label Switching (MPLS) label exchange with BGP peer                                  |                    |                                               | 9770         |
|                                         | Package                                                                                                    | Section            | Options                                       |              |
|                                         | bgpd                                                                                                       | bgpd<br>peer       | mpls; vpn_rds<br>mpls;                        |              |
| VPNv4 routes to VRF                     | Support install of MPLS (VPNv4) routes to VRF                                                              |                    |                                               | 9821         |
| Mobile                                  |                                                                                                            |                    |                                               |              |
| Bridge mode                             | Support mobile bridging                                                                                    |                    |                                               | 9557         |
|                                         | Package                                                                                                    | Section            | Options                                       |              |
|                                         | Network                                                                                                    | interface          | bridge_ifname                                 |              |
| Quectel RG255C-GL                       | Support Quectel RG255C-GL Redcap mobile module (QFB).                                                      |                    |                                               | 9150<br>9649 |
| Sierra Wireless radio core restart      | Support automatic restart of Sierra Wireless radio core without router reboot when radio core crashes.     |                    |                                               | 9643         |
| SMS Passthrough                         | Support SMS passthrough mode where received SMS texts are passed as text or PDU to an internal application |                    |                                               | 8874         |
| Telit LE910C4 GNSS                      | Support GNSS for Telit LE910C4-WWXD mobile module                                                          |                    |                                               | 9681         |
| Network                                 |                                                                                                            |                    |                                               |              |
| MPLS                                    | Support Multiprotocol Label Switching (MPLS) data forwarding                                               |                    |                                               | 9771         |
|                                         | Package                                                                                                    | Section            | Options                                       |              |
|                                         | network                                                                                                    | interface<br>route | accept_mpls;<br>mpls_label_in; mpls_label_out |              |
| Scada                                   |                                                                                                            |                    |                                               |              |
| Configurable time offset                | Support configurable time offset to IEC104S time sync procedure                                            |                    |                                               | 9668         |
|                                         | Package                                                                                                    | Section            | Options                                       |              |
|                                         | iecd                                                                                                       | port               | iec104_sync_time_offset_secs                  |              |
| IEC104 to IEC101 Transparent Forwarding | Support transparent forwarding with data link tracking using IEC104 to IEC101 protocol conversion          |                    |                                               | 9710         |
| IEC104 to IEC101 Transparent Forwarding | Support transparent forward to IEC101 with field size and ASDU translation                                 |                    |                                               | 9755         |
| SNMP Server to Modbus                   | Support mapping Modbus points to be exposed as SNMP on the server side.                                    |                    |                                               | 9673         |
| SCEP                                    |                                                                                                            |                    |                                               |              |
| SAN option                              | Support <code>san</code> option in certificate request for browser based authentication                    |                    |                                               | 9697         |
| Syslog                                  |                                                                                                            |                    |                                               |              |

|                                   |                                                                                                                              |      |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------|------|
| Short output                      | Support shortened syslog message output<br><code>cli: logread -s</code>                                                      | 9780 |
| System                            |                                                                                                                              |      |
| Diagnostics                       | New diagnostics file download feature to download diagnostic files locally.<br><code>web: status-&gt;logs-diagnostics</code> | 7642 |
| Mobile Module compatibility check | Support protection to prevent roll back to a firmware that does not support the hardware mobile module.                      | 5726 |
| Web UI                            |                                                                                                                              |      |
| 802.1X                            | Support missing supplicant client key and client key password configuration options                                          | 9324 |
| GNSS                              | GNSS Mobile Device <code>phy</code> option now automatically detected so removed from web UI configuration                   | 9696 |
| HTTP Server                       | Split into tabs and support <code>script_timeout</code> and <code>network_timeout</code> options                             | 9672 |
| Scada                             | Added TI-15 integrated total to IEC101 type                                                                                  | 9382 |
|                                   | Improve DNP3M configuration layout to match other protocols                                                                  | 8746 |
|                                   | Improve DNP3 serial multidrop configuration                                                                                  | 9252 |
|                                   | Support Double Point option configuration for SNMP Master.                                                                   | 9115 |
|                                   | Support global options for IEC61850 SCL import                                                                               | 8805 |
|                                   | Support IEC101 command type ID to command point configuration                                                                | 9374 |

## 7 Deprecated features

| Firmware     | Package | Description                                                                                                                                                                                 | Mantis |
|--------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| 25.05.68.000 | Mobile  | Removed support for Mobile Roaming Templates. Now supported using Roaming Manager feature.                                                                                                  | 6093   |
|              | OpenVPN | Removed no longer supported <code>HTTP Proxy Retry</code> and <code>Persist Tun</code> options from web UI                                                                                  | 9559   |
|              | SCADA   | Removed no longer supported legacy applications web UI which are now supported by IECD: <code>COSEM HDLC Bridge</code> ; <code>DNPOSD</code> ; <code>IEC101MON</code> ; <code>IOSRVD</code> | 9518   |
| 25.05.24.000 | SCEP    | Deprecated <code>strongswan.scep_cert.blocking</code> option. SCEP client will now trigger a strongswan reload should the cert be in use by strongswan                                      | 8377   |
| 25.04.78.000 | mobile  | Removed support for downloading a factory config via a SIM card                                                                                                                             | 8373   |
|              | OpenVPN | Removed <code>openvpn_recipies</code> package                                                                                                                                               | 8504   |
|              | zabbix  | Removed Zabbix agent                                                                                                                                                                        | 8469   |

|              |            |                                                                                                                                                                                          |      |
|--------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 25.04.63.000 | network    | Mobile operator lock <code>option opformat</code> deprecated. Operator locking ( <code>option operator</code> ) now only uses PLMN ID.                                                   | 8254 |
|              | mobile     | Mobile roaming templates deprecated in favour of Mobile Roaming Manager feature                                                                                                          |      |
|              | Web/IECD   | Removed serial baud rates below 1200 from web UI configuration pages. These values are available via Modbus #1 Serial Speed                                                              | 8000 |
| 25.04.08.000 | mobile     | Deprecated PPP mode for Quectel and Sierra Wireless modules                                                                                                                              | 7337 |
|              |            |                                                                                                                                                                                          | 7517 |
|              |            | Deprecated Quectel EC20 mobile module support                                                                                                                                            | 7337 |
|              | strongswan | <code>strongswan.connection.authby</code> deprecated. Now supported by new options <code>localauth</code> ; <code>localauth2</code> ; <code>remoteauth</code> ; <code>remoteauth2</code> | 6294 |
|              | X25        | Deprecated <code>x25d</code> , <code>x25ipd</code> and <code>x25val</code> packages                                                                                                      | 7467 |
| 25.02.14.013 | network    | Configuration section <code>va_switch</code> deprecated. Ethernet configuration should be done using option <code>ifname</code> configured with driver port names                        |      |
|              | wireless   | <code>wireless.wifi-device.type</code> option deprecated                                                                                                                                 |      |

## 8 Known issues

| Module      | Short Description                                                                                                      | Mantis |
|-------------|------------------------------------------------------------------------------------------------------------------------|--------|
| DHCP Server | DHCP server won't assign an address when client moved from one port to another without restart of <code>dnsmasq</code> | 8532   |
| GPS         | No GPS support for SIMCOM7070                                                                                          |        |
| IECD        | IEC61850 master RCB reference is always set to unbuffered mode (RP)                                                    | 8798   |
| Mobile      | Do not display RSSI in mobile stats for 5G mobile modules                                                              | 7060   |
|             | Intermittent mobile crash detected on hardware using Seirra Wireless WP7607 with Quectel EG25G module                  | 8650   |
|             | Merlin4407 sometimes reported connection for NB-IOT when <code>service_order</code> set to LTE using WP7607-4 module   | 8968   |
|             | Merlin4407 takes several attempts to make connection on band 28 using WP7607-4 module                                  | 8985   |
| Multiwan    | Syslog messages showing incorrect interface and SIM combination in certain scenarios                                   | 8623   |
| OSPF        | When the remote connection (from a remote OSPF peer) is dropped, OSPF crashes intermittently.                          | 5677   |
| SCEP        | Syslog shows a misconfigured DN in SCEP                                                                                | 8485   |
| Strongswan  | Strongswan memory footprint increases slowly with tunnel restart                                                       | 5866   |
| Syslog      | No web UI support for syslog filter rules                                                                              | 3705   |
| System      | Audit logs do not contain user ID information                                                                          | 9589   |
|             | HTTPS multi factor authentication not enforced                                                                         | 8051   |

|     |                                                                                                                                                                                                           |      |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
|     | Misleading diagnostic message <code>`failed to kill...for device portWAN'</code> generated on network restart or <code>ifup</code>                                                                        | 7817 |
|     | SSH MFA not being enforced                                                                                                                                                                                | 8047 |
| TPM | When <code>uhttpd</code> certificate is erased a new one is not automatically generated when the key is stored in the TPM                                                                                 | 8284 |
| Web |                                                                                                                                                                                                           |      |
|     | DNP3S data points not displayed on IECD status page                                                                                                                                                       | 9047 |
|     | Firewall does not allow port ranges to be entered in the form <code>start:end</code>                                                                                                                      | 9440 |
|     | Firewall rules page sort buttons missing arrows                                                                                                                                                           | 9517 |
|     | GRE keepalive options missing from web UI                                                                                                                                                                 | 8840 |
|     | L2TP missing options for configuring MTU                                                                                                                                                                  | 9614 |
|     | IEC61850M link loading issue when SCL file is uploaded                                                                                                                                                    | 8558 |
|     | Importing a config via web UI leaves previous artefacts intact                                                                                                                                            | 9592 |
|     | SCEP certificate status not updated upon deletion                                                                                                                                                         | 8998 |
|     | SCEP certificate status not updated upon deletion                                                                                                                                                         | 8998 |
|     | SCEP client missing option <code>key_path</code>                                                                                                                                                          | 9415 |
|     | SNMP: Unable to configure custom SNMP Group Name                                                                                                                                                          | 9488 |
|     | Unable to configure management users via web UI                                                                                                                                                           | 5503 |
|     | Unable to configure monitor inventory section via the web UI                                                                                                                                              | 9644 |
|     | Unable to configure <code>strongswan.connection.disable_mobike,</code><br><code>strongswan.connection.mobike_send_additional_self</code> or<br><code>strongswan.connection.disable_natt</code> via web UI | 5437 |
|     | Unable to load .P12 or .PXF certificate files via the web UI                                                                                                                                              | 8519 |
|     | Web login while in <code>factconf</code> overwrites <code>config1</code>                                                                                                                                  | 9596 |

## 9 Problems resolved

### 9.1 General

| Module       | Short Description                                                                                                | Mantis       |
|--------------|------------------------------------------------------------------------------------------------------------------|--------------|
| Event System | Fix SMS send error event logging to syslog                                                                       | 7090         |
| FlexVPN      | Install address with <code>/32</code> prefix when netmask not present                                            | 9815         |
| LLDP         | Do not forward LLDP frames when bridged                                                                          | 9670         |
| Mobile       | Disable IMS on Quectel RG255C-GL module                                                                          | 9666         |
|              | Disable IPv6 on <code>wwan0</code> and <code>rmnet0</code> interfaces for QMI                                    | 8374<br>8980 |
|              | Fix crash when Telit Cinterion LE910C4 module is in GPRS/GSM mode                                                | 9680         |
|              | Fix crash when Telit Cinterion LE910C4 module is in UMTS mode                                                    | 9679         |
|              | Fix mobile diagnostics showing intermittent error when both SIMs are connected in Merlin4600 dual radio hardware | 9625         |
|              | Fix multiwan SIM switch crash on failover using Telit Cinterion LE910C4 module                                   | 9678         |
|              | Fix SIM3 slot PIN validation                                                                                     | 9766         |

|            |                                                                                                                            |      |
|------------|----------------------------------------------------------------------------------------------------------------------------|------|
|            | FIX SMS operation when mobile package config section not called<br>main                                                    | 9656 |
|            | Fix SMS processing from known callers                                                                                      | 9656 |
|            | Handle bearer configuration change %GEVRPT BST for Unitac mobile modules                                                   | 9783 |
|            | Support RMNET/QMI for Telit Cinterion LE910C4                                                                              | 9694 |
| Monitor    | Fix Monitor access to IPsec and Mobile status web UI pages                                                                 | 9560 |
| Network    | Do not remove 127.0.0.1 address when an alias is configured configuration on a loopback interface.                         | 9802 |
|            | Fix network_status diagnostic command showing uptime for IPv6 connections                                                  | 9782 |
| Routing    | Fix FRR zebra config permissions                                                                                           | 9777 |
| Serial     | Terminal Server serial name now matches the name on the front plate for Merlin3400 series. Previously serial, now serial1. | 9745 |
| SNMP       | Fix SNMP default inventory data                                                                                            | 9651 |
| Strongswan | Fix IPsec connections in a VRF when using transport mode                                                                   | 9350 |
| Syslog     | Fix boot time error message unrecognized option t                                                                          | 9732 |
|            | Support more detailed HTTP Server error messages                                                                           | 9630 |
|            | Only log TLS errors when debug mode is enabled                                                                             | 9807 |

## 9.2 Scada

| Module | Short Description                                                                                | Mantis |
|--------|--------------------------------------------------------------------------------------------------|--------|
| DNP3   | Fix DNP3 output model setting using MQTTS to DNP3M protocol conversion                           | 9268   |
| IEC101 | Added clear event to indicate IEC101 connecting, connected                                       | 9667   |
|        | Fix issues with spontaneous events for TI20 and TI21                                             | 9375   |
|        | Improve IEC101 client RTU polling logic for better performance                                   | 9271   |
|        | Update local point values in IEC101 to MQTT protocol conversion                                  | 9386   |
| IEC104 | Decouple iec104_track_rtu_dl from health points                                                  | 9690   |
|        | Disable timestamp check for commands in IEC104 transparent mode                                  | 9733   |
|        | Ensure SBO check is performed with option pass_thru when processing IEC104S commands             | 9378   |
|        | Fixed resource leak in IEC104S caused by multiple interface close-open (DL tracking mode)        | 9673   |
|        | Stop responding to IEC104 frames when IEC101 is down                                             | 9710   |
| Modbus | Fix per point update timeout for Modbus client                                                   | 9392   |
|        | Fixed error in handling of Modbus client point going offline                                     | 9769   |
| MQTT   | CRL check now independent of peer certificate validation config option                           | 8705   |
|        | Updated MQTT rom configuration file with all options                                             | 9277   |
| RTUD   | Support DNP3 G1 and G2 data variations                                                           | 9612   |
| SNMP   | Start IECD after SNMP daemon for SNMP agent to avoid race condition leading to interoperability. | 9767   |
|        | Support SNMP walk for IECD to SNMP Server mode                                                   | 9768   |

## 9.3 Web UI

| Module     | Short Description                                                              | Mantis |
|------------|--------------------------------------------------------------------------------|--------|
| 801.1X     | Support missing supplicant client key and client key password options          | 9324   |
| BGP        | Support multiple BGP routing sections                                          | 9817   |
| Interfaces | Fix PPP link connection restart from web UI                                    | 8921   |
| IPsec      | Fix IPsec status view on IPsec failure                                         | 9301   |
|            | Support <code>any</code> for IPsec connection WAN interface configuration      | 9715   |
| Mobile     | Prevent NSA option being displayed for SA mode only mobile module              | 9635   |
|            | Remove GPRS configuration for Quectel EC25-AUT as not supported by this module | 9657   |
|            | Remove indication of UMTS support for Quectel RG255 mobile module              | 9635   |
|            | SMS status no longer displayed when SMS option not in config                   | 9655   |
| OpenVPN    | Fix typo in Static Key and CA File descriptions                                | 9790   |
| Scada      | Fix default value for <code>iec104_track_rtu_dl_block_uplink</code>            | 9710   |
|            | Minor renaming of tags in points diagnostics for Modbus                        | 9259   |
|            | Only show IEC61850 applications that are supported by the hardware             | 8418   |
|            | Support missing IEC61850 dynamic dataset configuration flag                    | 8799   |
| UI         | Fix broken unsaved changes link                                                | 7814   |

## 10 Appendix 1: New features history

### 10.1 Release 25.05.68.000

| BGP                 |                                                                           |          |         |      |
|---------------------|---------------------------------------------------------------------------|----------|---------|------|
| Multiple route maps | Support multiple rules to a BGP route map using BGP route map name option |          |         | 9179 |
|                     | Package                                                                   | Section  | Options |      |
|                     | bgpd                                                                      | routemap | name    |      |
| Firewall            |                                                                           |          |         |      |
| Validation          | Firewall validation error information now logged to syslog with rule name |          |         | 9004 |
| Mobile              |                                                                           |          |         |      |
| Eagle I425          | Support Eagle I425 mobile module (QFV; QFW)                               |          |         | 9542 |
| Quectel EG950A      | Support Quectel EG950A mobile module                                      |          |         |      |
| SMS                 | Support concatenation of SMS for better formatting of long SMS messages   |          |         | 9444 |
| Password Management |                                                                           |          |         |      |

|                             |                                                                                                                                                      |           |                        |      |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------|------|
| Password Hint               | New option to show password requirements when password change is enforce.                                                                            |           |                        | 9157 |
|                             | Package                                                                                                                                              | Section   | Options                |      |
|                             | system                                                                                                                                               | system    | password_change_hint   |      |
| Password History            | Support configuration of password history depth                                                                                                      |           |                        | 9398 |
|                             | Package                                                                                                                                              | Section   | Options                |      |
|                             | system                                                                                                                                               | system    | password_history_depth |      |
| Password history check      | Password history check now disabled by default.                                                                                                      |           |                        | 9444 |
| PPP                         |                                                                                                                                                      |           |                        |      |
| Upstream Rate Limit         | New option to rate limit upstream bandwidth on a PPP link.                                                                                           |           |                        | 4179 |
|                             | Package                                                                                                                                              | Section   | Options                |      |
|                             | network                                                                                                                                              | interface | upstream_rate          |      |
| Scada                       |                                                                                                                                                      |           |                        |      |
| Data Point export           | Data and command points can now be exported using web UI                                                                                             |           |                        | 9561 |
| DNP3 Groups                 | Added support for DNP3 Groups 110 and 111                                                                                                            |           |                        | 9157 |
| Genisys II protocol support | Support Genisys II protocol slave for I/O polling                                                                                                    |           |                        | 9467 |
|                             |                                                                                                                                                      |           |                        | 9573 |
|                             |                                                                                                                                                      |           |                        | 9618 |
|                             |                                                                                                                                                      |           |                        | 9619 |
|                             |                                                                                                                                                      |           |                        | 9620 |
|                             |                                                                                                                                                      |           |                        | 9621 |
| IEC104 to IEC104            | Support IEC104 to IEC104 with transparent forwarding to allow forwarding between SCADA IEC104 to RTU IEC104 without having to configure data points. |           |                        | 9609 |
| IEC60870-5-103 client       | Support IEC60870-5-103 Master to DNP3 Slave protocol conversion<br>web: scada->iecd->Master Protocols->Master Protocol                               |           |                        | 8437 |
|                             |                                                                                                                                                      |           |                        | 9090 |
|                             |                                                                                                                                                      |           |                        | 9089 |
|                             |                                                                                                                                                      |           |                        | 9212 |
| MQTT Broker                 | Support a minimal implementation of MQTT broker<br>web: scada->mqtt broker                                                                           |           |                        | 9155 |
| MQTT client ID check        | Support Client ID check for user accounts                                                                                                            |           |                        | 9283 |
| MQTT remote address filter  | Support configuration for checking client source IP address against configured IP address in the user record                                         |           |                        | 9281 |
| MQTT Master                 | Support MQTT Master protocol conversion<br>web: scada->iecd->Master Protocols->Master Protocol                                                       |           |                        | 9156 |
| MQTT parsing                | Support parsing out multiple values from MQTMM publish payload                                                                                       |           |                        | 9354 |
| SNMP integer data types     | Support SNMP data types - Gauge32, Counter32, TimeTicks and Opaque - for SNMP master protocol conversion                                             |           |                        | 9061 |
|                             |                                                                                                                                                      |           |                        | 9075 |
| SNMP TCP Routes             | Support TCP Route block to SNMP Master protocol conversion to allow multiple instances                                                               |           |                        | 9275 |
| SNMP to DNP3                | Support conversion from SNMPC and FILE to DNP3 octet strings                                                                                         |           |                        | 9158 |

|                         |                                                                                                                                                                                     |              |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Virtual Points          | Support IECD virtual points.                                                                                                                                                        | 9086<br>9088 |
| SNMP                    |                                                                                                                                                                                     |              |
| VA-TRAPS-G02            | Added NTP query failed to VA-TRAPS-G02 MIB                                                                                                                                          | 7313         |
| System                  |                                                                                                                                                                                     |              |
| Factory Reset           | Report factory reset and decommissioning events to system log and all connected consoles                                                                                            | 9419         |
| Smart EMS               | Support Welotec Smart EMS Management System                                                                                                                                         | 8489<br>9076 |
| Terminal Server         |                                                                                                                                                                                     |              |
| Serial to GRE mirroring | Support mirroring serial data to gre-tap transport mode interface                                                                                                                   | 9370         |
| UDS                     |                                                                                                                                                                                     |              |
| AT Command scripts      | Support new script type CRSD to execute scripts in response to AT commands<br>web: services->user-defined scripts->execution type 'CRSD script'<br>opt: uds.script.exec_type 'crsd' | 8873         |
| Web UI                  |                                                                                                                                                                                     |              |
| Administration          | Move password hash algorithm configuration option from system->system to security->administration                                                                                   | 9319         |
|                         | Support configuring password regex via web UI                                                                                                                                       | 9178         |
|                         | Support user password change error feedback                                                                                                                                         | 9314         |
| Certificates            | Support Certificate Signing Request (CSR) generation                                                                                                                                | 9180         |
| Cookie Security         | Cookie security is now improved with SameSite=Strict, HttpOnly, Secure to protect against Cross-Site Scripting (XSS) and Cross-Site Request Forgery (CSRF) attacks                  | 9606         |
| Decommission            | Added warning pop up for confirming Reset for Decommissioning press                                                                                                                 | 8677         |
| Dynamic DNS             | Support missing Use HTTPS and CA Certificate file or path                                                                                                                           | 9195         |
|                         | Split web UI dynamic DNS configuration into tabs                                                                                                                                    | 6973         |
| Event System            | Now split into tabs for more structured configuration                                                                                                                               | 9446         |
| Firewall                | Web UI now reports invalid firewall rule configuration changes. Port options are now only visible when TCP/UDP protocol is selected.                                                | 9004         |
| Mobile Manager          | Allow adding/removing mobile manager sections                                                                                                                                       | 9222         |
| Status                  | Move logs – syslog, interface log, changes, dmesg - onto a status page with multiple tabs                                                                                           | 9040         |

## 10.2Release 25.05.24.000

| 802.1x                       |                                                                                                                        |               |                                                                                                                                |          |                                                              |      |
|------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------|------|
| Port based 802.1x            | New option to specify bridge ports where 802.1x is only required on selected ports                                     |               |                                                                                                                                |          |                                                              | 8234 |
|                              | Package                                                                                                                | Section       | Options                                                                                                                        |          |                                                              |      |
|                              | ieee8021x                                                                                                              | authenticator | ports                                                                                                                          |          |                                                              |      |
| Cwatch                       |                                                                                                                        |               |                                                                                                                                |          |                                                              |      |
| Jitter and latency detection | Support new options to specify maximum permitted jitter and latency                                                    |               |                                                                                                                                |          |                                                              | 8095 |
|                              | Package                                                                                                                | Section       | Options                                                                                                                        |          |                                                              |      |
|                              | cwatch                                                                                                                 | watch         | icmp_jitter_check_enabled;<br>icmp_max_jitter;<br>icmp_latency_check_enabled;<br>icmp_max_latency;<br>icmp_max_average_latency |          |                                                              |      |
| Ping interval configuration  | Support configuration of cwatch ping interval. Previously hardcoded to 10 seconds.                                     |               |                                                                                                                                |          |                                                              | 7350 |
|                              | Package                                                                                                                | Section       | Options                                                                                                                        |          |                                                              |      |
|                              | cwatch                                                                                                                 | watch         | icmp_interval                                                                                                                  |          |                                                              |      |
| Dropbear                     |                                                                                                                        |               |                                                                                                                                |          |                                                              |      |
| Ed25519 support              | Support SSH-ed25519 host key for SSH server authentication                                                             |               |                                                                                                                                |          |                                                              | 8933 |
| SSH algorithm configuration  | Support configuration of cipher, host key and key exchange algorithms for SSH connections                              |               |                                                                                                                                |          |                                                              | 8344 |
|                              | Package                                                                                                                | Section       | Options                                                                                                                        |          |                                                              |      |
|                              | dropbear                                                                                                               | dropbear      | cipher; sign_algo; kex_algo                                                                                                    |          |                                                              |      |
| Event System                 |                                                                                                                        |               |                                                                                                                                |          |                                                              |      |
| Multiwan events              | Added multiwan class and events for group start, interface acquisition and interface state changes to the Event System |               |                                                                                                                                |          |                                                              | 8807 |
|                              | Class                                                                                                                  | Id            | Name                                                                                                                           | Severity | Event Template                                               |      |
|                              | multiwan                                                                                                               | 1             | MultiwanGroupStart                                                                                                             | informa  | Multiwan group %{p1} started with %{p2} interfaces           |      |
|                              | multiwan                                                                                                               | 2             | MultiwanInterfaceAcquired                                                                                                      | informa  | Multiwan group %{p1}: interface %{p2} initial state is %{p3} |      |
|                              | multiwan                                                                                                               | 3             | MultiwanInterfaceStateChange                                                                                                   | informa  | Multiwan group %{p1}: interface %{p2} was %{p3} now %{p4}    |      |
| HTTP Client                  |                                                                                                                        |               |                                                                                                                                |          |                                                              |      |
| SSL cipher configuration     | Added support for configuration of supported SSL ciphers                                                               |               |                                                                                                                                |          |                                                              | 8367 |
|                              | Package                                                                                                                | Section       | Options                                                                                                                        |          |                                                              |      |
|                              | httpclient                                                                                                             | core          | TLS13Cipher; LegacyCiphers                                                                                                     |          |                                                              |      |
| HTTP Server                  |                                                                                                                        |               |                                                                                                                                |          |                                                              |      |

|                                       |                                                                                                                                                                                                                          |            |                                                                                                                                |      |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------|------|
| TLS cipher configuration              | Added support for limiting allowed TLS ciphers                                                                                                                                                                           |            |                                                                                                                                | 7121 |
|                                       | Package                                                                                                                                                                                                                  | Section    | Options                                                                                                                        |      |
|                                       | uhttpd                                                                                                                                                                                                                   | uhttpd     | tls_ciphers                                                                                                                    |      |
| Mobile                                |                                                                                                                                                                                                                          |            |                                                                                                                                |      |
| LWM2M FOTA support                    | Support Verizon LWM2M FOTA upgrade                                                                                                                                                                                       |            |                                                                                                                                | 8927 |
| Telit Cinterion support               | Support Telit Cinterion TX62-W-C LTE-M mobile module                                                                                                                                                                     |            |                                                                                                                                | 8988 |
| Multiwan                              |                                                                                                                                                                                                                          |            |                                                                                                                                |      |
| Jitter and latency detection          | Support new options to specify maximum permitted jitter and latency for a multiwan interface                                                                                                                             |            |                                                                                                                                | 8435 |
|                                       | Package                                                                                                                                                                                                                  | Section    | Options                                                                                                                        |      |
|                                       | multiwan                                                                                                                                                                                                                 | interface  | icmp_jitter_check_enabled;<br>icmp_max_jitter;<br>icmp_latency_check_enabled;<br>icmp_max_latency;<br>icmp_max_average_latency |      |
| Network                               |                                                                                                                                                                                                                          |            |                                                                                                                                |      |
| Link Layer Discovery Protocol         | Added support for LLDP functionality.                                                                                                                                                                                    |            |                                                                                                                                | 8505 |
|                                       | Package                                                                                                                                                                                                                  | Section    | Options                                                                                                                        |      |
|                                       | lldp                                                                                                                                                                                                                     | lldp       | enabled; readonly_mode;<br>interfaces; mgmt_ip; description                                                                    |      |
| NTP                                   |                                                                                                                                                                                                                          |            |                                                                                                                                |      |
| Time sync on boot only                | Support time sync on boot only for scenario where SCADA time source is used but NTP required to sync on boot                                                                                                             |            |                                                                                                                                | 8929 |
|                                       | Package                                                                                                                                                                                                                  | Section    | Options                                                                                                                        |      |
|                                       | system                                                                                                                                                                                                                   | timeserver | initial_sync_only_enabled                                                                                                      |      |
| Password Management                   |                                                                                                                                                                                                                          |            |                                                                                                                                |      |
| ERE regex support                     | Support Extended Regular Expressions (ERE) for password regex rules                                                                                                                                                      |            |                                                                                                                                | 8905 |
| Force password change on expiration   | Support password change on expiration so that when a management user is logging in with an expired password, they are immediately prompted to change the password                                                        |            |                                                                                                                                | 8770 |
| Force password change on first log in | Routers shipped with the default root password now require the root password is changed on first log in using a password policy of >= 16 chars. This is required on first connection attempt via console, SSH or web UI. |            |                                                                                                                                | 8743 |
|                                       | Package                                                                                                                                                                                                                  | Section    | Options                                                                                                                        |      |
|                                       | managemen<br>t_user                                                                                                                                                                                                      | user       | change_password_on_first_login                                                                                                 |      |
| Root password lifetime                | Extend password lifetime support to cover root management users                                                                                                                                                          |            |                                                                                                                                | 8749 |
| OpenVPN                               |                                                                                                                                                                                                                          |            |                                                                                                                                |      |

|                                    |                                                                                                                                                                                                  |            |                                                    |      |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------------------------------------------|------|
| Two factor authentication          | Added support for 2FA for OpenVPN using PAM module. New server-side authentication of client provided username and password against local PAM.                                                   |            |                                                    | 8098 |
|                                    | Package                                                                                                                                                                                          | Section    | Options                                            | 8543 |
|                                    | openvpn                                                                                                                                                                                          | openvpn    | pamauth_enabled                                    |      |
|                                    | system                                                                                                                                                                                           | pam_auth   | pamservice 'openvpn'                               |      |
| Scada                              |                                                                                                                                                                                                  |            |                                                    |      |
| DNP3 class assignment              | Support for class assignment to DNP3 data points on server side.                                                                                                                                 |            |                                                    | 8889 |
| DNP3 Deadband                      | Support deadband functionality to DNP3S points.                                                                                                                                                  |            |                                                    | 8890 |
| Health Point multiple RTU tracking | Added support for health point list to track data link state of multiple RTUs                                                                                                                    |            |                                                    | 8687 |
|                                    | Package                                                                                                                                                                                          | Section    | Options                                            |      |
|                                    | iecd                                                                                                                                                                                             | point      | iec104_track_rtu_hp_ioa                            |      |
| IEC104S ActTerm                    | Added ability to skip waiting for <code>ACTTERM</code> message as some clients and servers do not support it                                                                                     |            |                                                    | 8624 |
|                                    | Package                                                                                                                                                                                          | Section    | Options                                            |      |
|                                    | iecd                                                                                                                                                                                             | port       | iec104_no_tx_act_term;<br>iec104m_nowait_act_term  |      |
| IEC61850 extended RTU support      | Added support for up to 30 local RTUs for IEC104 to IEC61850 protocol conversion                                                                                                                 |            |                                                    | 8353 |
|                                    |                                                                                                                                                                                                  |            |                                                    | 8570 |
| MQTT upload certs                  | Support upload of certificates for MQTT Server                                                                                                                                                   |            |                                                    |      |
| MQTT SNI extension                 | Support for Server Name Indication (SNI) extension. SNI is part of TLS client hello and contains a copy of server hostname - required by some MQTT brokers to authenticate the connecting client |            |                                                    | 8851 |
| SNMP Master Protocol               | Support SNMP protocol as a new master RTU protocol                                                                                                                                               |            |                                                    | 8928 |
| SCEP                               |                                                                                                                                                                                                  |            |                                                    |      |
| Cisco CA Type                      | Support CA Type <code>'cisco'</code> in SCEP Client                                                                                                                                              |            |                                                    | 8464 |
|                                    | Package                                                                                                                                                                                          | Section    | Options                                            |      |
|                                    | strongswan                                                                                                                                                                                       | scep_cert  | caimpl 'cisco'                                     |      |
| SNMP                               |                                                                                                                                                                                                  |            |                                                    |      |
| VA-MULIT-IO MIB                    | SNMP support for digital IO's using VA-MULTI-IO MIB                                                                                                                                              |            |                                                    | 6478 |
| Strongswan                         |                                                                                                                                                                                                  |            |                                                    |      |
| XAUTH-PAM authentication           | Support xauth-pam authentication. A responder-side authentication variant for ikev1 where credentials are accepted via XAuth and checked against PAM                                             |            |                                                    | 8420 |
|                                    | Package                                                                                                                                                                                          | Section    | Options                                            | 8543 |
|                                    | strongswan                                                                                                                                                                                       | connection | remoteauth 'xauth-pam';<br>remoteauth2 'xauth-pam' |      |
|                                    | system                                                                                                                                                                                           | pam_auth   | pamservice 'ipsec'                                 |      |
| System                             |                                                                                                                                                                                                  |            |                                                    |      |

| CPU temperature          | Added support to show CPU temperature<br>cli: showtemp                                                                                                                                      | 6478            |         |         |        |          |                 |      |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|---------|--------|----------|-----------------|------|
| Factory Reset            | New factory reset from command line with customised reset behaviour control<br>cli: va_factory_reset.sh                                                                                     | 8974            |         |         |        |          |                 |      |
| Overlay Encryption       | Added support for data at rest encryption<br><table> <tr> <th>Package</th><th>Section</th><th>Options</th></tr> <tr> <td>system</td><td>failsafe</td><td>encrypt_overlay</td></tr> </table> | Package         | Section | Options | system | failsafe | encrypt_overlay | 6947 |
| Package                  | Section                                                                                                                                                                                     | Options         |         |         |        |          |                 |      |
| system                   | failsafe                                                                                                                                                                                    | encrypt_overlay |         |         |        |          |                 |      |
| TPM                      |                                                                                                                                                                                             |                 |         |         |        |          |                 |      |
| ECC key generation       | Added support for generation of ECC keys in TPM                                                                                                                                             | 8415            |         |         |        |          |                 |      |
| Web UI                   |                                                                                                                                                                                             |                 |         |         |        |          |                 |      |
| Authentication           | PAM configuration moved to Security section<br>web: Security->Authentication                                                                                                                | 8787            |         |         |        |          |                 |      |
| Certificate Management   | New web UI page added for management of certificates and keys<br>web: security->certificates                                                                                                | 8464            |         |         |        |          |                 |      |
| Connection Watch         | Individual tabs for each connection watch configuration and new cwatch status page added to web UI<br>web: Status->Connection Watch                                                         | 6973            |         |         |        |          |                 |      |
| Customised factory reset | Added Factory Reset, Factory Reset and Certificate Deletion and Reset for Decommissioning operations<br>web: System->Flash Operations                                                       | 8403            |         |         |        |          |                 |      |
| Event System             | Add Ethernet LinkUp/LinkDown events to event filters list                                                                                                                                   | 8792            |         |         |        |          |                 |      |
| GNSS                     | Automatically refresh GPS satellite information every 5 seconds                                                                                                                             | 8537            |         |         |        |          |                 |      |
|                          | Add sky view for GNSS satellites                                                                                                                                                            | 8537            |         |         |        |          |                 |      |
| HTTP Server              | Support disabling web UI option in web UI<br>web: Security->HTTP Server->Enable this web UI<br>cli: uhttpd.main.webui_enabled                                                               | 8730            |         |         |        |          |                 |      |
| Inventory                | Support SNMP inventory configuration<br>web: system->snmp->Inventory<br>web: system->snmp->IF Table                                                                                         | 9000            |         |         |        |          |                 |      |
| IPSec                    | Add IPSec status to Status Overview when IPSec is enabled                                                                                                                                   | 6965            |         |         |        |          |                 |      |
| Log in                   | Support force password change via web UI                                                                                                                                                    | 8743            |         |         |        |          |                 |      |
| Mobile Roaming Manager   | Support Mobile Roaming Manager network configuration via web UI<br>web: network->interfaces->mobile interface->Roaming Manager                                                              | 6976            |         |         |        |          |                 |      |
| Multiwan                 | Individual tabs for each Multiwan interface. Configured interfaces now presented as selection rather than text                                                                              | 8435            |         |         |        |          |                 |      |

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |      |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
|                      | <b>Support Mobile Roaming Manager multiwan configuration via web UI</b><br>web: network->multiwan->wan interfaces->general->Interface Scanning Timeout<br>opt: multiwan.interface.ifup_scanning_timeout_sec<br>web: network->multiwan->wan interfaces->general->Retry on first fail<br>opt: multiwan.interface.retry_on_first_fail<br>web: network->multiwan->wan interfaces->general->Connection Retry Timeout<br>opt: multiwan.interface.retry_connection_max_sec | 6976 |
| OpenVPN              | <b>Support push routes for OpenVPN server mode</b><br>web: VPN->OpenVPN->Advanced->Push<br>cli: list push 'route <ip> <mask>'                                                                                                                                                                                                                                                                                                                                       | 8712 |
| PPPoE interface      | <b>Support configuration of multiple PPPoE interfaces on the same Ethernet link</b>                                                                                                                                                                                                                                                                                                                                                                                 | 4287 |
| SCADA                | <b>Added display of statistic counters to IECD status page</b><br>cli: iec show stats                                                                                                                                                                                                                                                                                                                                                                               | 8338 |
|                      | <b>Enhancements to DNP3S point group ID selector configuration</b>                                                                                                                                                                                                                                                                                                                                                                                                  | 8514 |
|                      | <b>IECD Slave configuration changed to IECD Server</b>                                                                                                                                                                                                                                                                                                                                                                                                              | 8894 |
|                      | <b>Move MQTT Topic configuration options into a separate tab</b>                                                                                                                                                                                                                                                                                                                                                                                                    | 8685 |
|                      | <b>Move VHMI configuration into a separate tab</b>                                                                                                                                                                                                                                                                                                                                                                                                                  | 8530 |
|                      | <b>Support upload of certificates for MQTT server</b><br>web: scada->iecd->server protocol->configured mqtt->TLS                                                                                                                                                                                                                                                                                                                                                    | 8951 |
| SCEP                 | <b>Enhancements to SCEP Client configuration</b> <ul style="list-style-type: none"> <li>• moved SCEP Client configuration to Certificate Management page</li> <li>• add check for PSK length</li> <li>• added SCEP Client status</li> </ul>                                                                                                                                                                                                                         | 8464 |
| SSH                  | Removed <code>kex-strict-s-v00@openssh.com</code> from the web UI list of configurable SSH key exchange algorithms. It is now always added to the allowed key exchange algorithm list.                                                                                                                                                                                                                                                                              | 8917 |
| STP Status           | <b>Added Spanning Tree Protocol status of bridge interfaces</b><br>web: status->stp status                                                                                                                                                                                                                                                                                                                                                                          | 8791 |
| System               | <b>Support masking of passwords in configuration audit logs</b><br>web: system->audit configuration->Mask Passwords<br>cli: system.system.audit_cfg_mask_passwords                                                                                                                                                                                                                                                                                                  | 8365 |
| Time Synchronisation | <b>Support NTP time sync on boot configuration</b><br>web: system->time synchronization->Enable Boot-Time Only Time Sync                                                                                                                                                                                                                                                                                                                                            | 8929 |
| User-Defined Scripts | <b>Individual tabs for each UDS and new UDS overview page</b>                                                                                                                                                                                                                                                                                                                                                                                                       | 8361 |

## 10.3Release 25.04.63.000

|                                         |                                                                                                                                                            |    |                 |                             |                                                                                    |      |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----------------|-----------------------------|------------------------------------------------------------------------------------|------|
| Ethernet                                |                                                                                                                                                            |    |                 |                             |                                                                                    |      |
| RSTP support                            | Added support for Rapid Spanning Tree Protocol                                                                                                             |    |                 |                             | 6508                                                                               |      |
| Event System                            |                                                                                                                                                            |    |                 |                             |                                                                                    |      |
| Event System<br>firewall discard        | VA Event System now supports firewall discard event                                                                                                        |    |                 |                             |                                                                                    | 7769 |
|                                         | Class                                                                                                                                                      | Id | Name            | Severity                    | Event Template                                                                     |      |
|                                         | Firewal<br>l                                                                                                                                               | 2  | DiscardZon<br>e | warning                     | Rule %{p1} triggered:<br>%{p6} from<br>%{p4}:%{p7}(%{p2}) to<br>%{p5}:%{p8}(%{p3}) |      |
| Firewall                                |                                                                                                                                                            |    |                 |                             |                                                                                    |      |
| Firewall discard<br>event<br>forwarding | New option to support raising an event for rejected/dropped traffic in a firewall zone for onward forwarding to an event system target (snmp, syslog, etc) |    |                 |                             |                                                                                    | 7769 |
|                                         | The packet/event rate will be limited to 10/min by default. Use the log_limit option to change the default packet rate limit if required.                  |    |                 |                             |                                                                                    |      |
|                                         | Package                                                                                                                                                    |    | Section         | Options                     |                                                                                    |      |
|                                         | firewall                                                                                                                                                   |    | zone            | discard_event               |                                                                                    |      |
| Mobile                                  |                                                                                                                                                            |    |                 |                             |                                                                                    |      |
| PRI display                             | Added PRI to mobile stats for Sierra Wireless modules<br>cli: vam -a                                                                                       |    |                 |                             | 7440                                                                               |      |
| SIM7070E<br>diagnostic port             | Added support for SIMCOM7070E diagnostic port                                                                                                              |    |                 |                             | 7979                                                                               |      |
| Monitor                                 |                                                                                                                                                            |    |                 |                             |                                                                                    |      |
| EID Inventory                           | Support for inventory collection of SIM EID information                                                                                                    |    |                 |                             | 8030                                                                               |      |
| Multiwan                                |                                                                                                                                                            |    |                 |                             |                                                                                    |      |
| Suppress static<br>routes               | New option to suppress all static routes for an interface when it transitions to failed state                                                              |    |                 |                             |                                                                                    | 7809 |
|                                         | Package                                                                                                                                                    |    | Section         | Options                     |                                                                                    |      |
|                                         | multiwan                                                                                                                                                   |    | interface       | suppress_all_routes_on_fail |                                                                                    |      |
| Network                                 |                                                                                                                                                            |    |                 |                             |                                                                                    |      |
| Interface<br>Status                     | Include physical ports with eth-X interfaces in interface status                                                                                           |    |                 |                             | 7900                                                                               |      |
| Multi Path<br>Routes                    | Support wildcards on interface names to show all matches.                                                                                                  |    |                 |                             |                                                                                    | 7440 |
|                                         | cli: ifstatus eth0 (matches only eth0)                                                                                                                     |    |                 |                             |                                                                                    |      |
|                                         | cli: ifstatus eth* (matches all eth interfaces)                                                                                                            |    |                 |                             |                                                                                    |      |
| NTP                                     |                                                                                                                                                            |    |                 |                             |                                                                                    |      |
| NTP min/max<br>poll interval            | Allow configuration of minpoll and maxpoll interval using existing NTP interval hours option (space separated parameters)                                  |    |                 |                             |                                                                                    | 8318 |
|                                         | Package                                                                                                                                                    |    | Section         | Options                     |                                                                                    |      |
|                                         | system                                                                                                                                                     |    | timeserver      | interval hours              |                                                                                    |      |

| Password Scrambling                     |                                                                                                                                                                                                                                      |                |                                                                                                            |      |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------------------------------------------------------------------------------------------------|------|
| Monitor SNMP v3 passwords               | Monitor SNMP v3 password options now added to the set of passwords fields that can be scrambled                                                                                                                                      |                |                                                                                                            | 8090 |
|                                         | <u>Package</u>                                                                                                                                                                                                                       | <u>Section</u> | <u>Options</u>                                                                                             |      |
|                                         | monitor                                                                                                                                                                                                                              | keepalive      | snmp_auth_pass; snmp_priv_pass                                                                             |      |
| PPP                                     |                                                                                                                                                                                                                                      |                |                                                                                                            |      |
| BCP support                             | Added support for Bridge Control Protocol for bridging Ethernet packets through a PPP link. Supported for PPP and L2TP protocols.                                                                                                    |                |                                                                                                            | 7935 |
|                                         | <u>Package</u>                                                                                                                                                                                                                       | <u>Section</u> | <u>Options</u>                                                                                             |      |
|                                         | network                                                                                                                                                                                                                              | interface      | bcp; maclocal                                                                                              |      |
| Routing                                 |                                                                                                                                                                                                                                      |                |                                                                                                            |      |
| PIM Multicast                           | PIM multicast support is now available via the FRR module                                                                                                                                                                            |                |                                                                                                            | 8362 |
| Scada                                   |                                                                                                                                                                                                                                      |                |                                                                                                            |      |
| Automatic IEC104 point configuration    | Support automatic IEC104 point configuration after IEC61850 SCL file import                                                                                                                                                          |                |                                                                                                            | 8248 |
| DNP3 G10 and G41                        | Support conversion from DNP3 Binary Output Command G10 and G41 to IEC60870-5-101                                                                                                                                                     |                |                                                                                                            | 8100 |
|                                         | <u>Package</u>                                                                                                                                                                                                                       | <u>Section</u> | <u>Options</u>                                                                                             |      |
|                                         | iecd                                                                                                                                                                                                                                 | point          | iec101_qu                                                                                                  |      |
| DNP3 Multidrop                          | DNP3 master now supports communication with two RTU over a single serial link. All existing DNP3 master options now have <u>_link2_ options</u>                                                                                      |                |                                                                                                            | 8313 |
|                                         | <u>Package</u>                                                                                                                                                                                                                       | <u>Section</u> | <u>Options</u>                                                                                             |      |
|                                         | iecd                                                                                                                                                                                                                                 | port           | dnp3_num_links;<br>dnp3_transport_protocol<br>'multidrop';<br>dnp3_link2_transport_protocol<br>'multidrop' |      |
| IEC101 to IEC104 Fully Transparent mode | Support IEC104 to IEC101 transparent mode which allows any ASDU CA when ca configured in the link is zero. Also provides ability to replace IEC101 message TypeID with another configured TypeID before it is transmitted to IEC104. |                |                                                                                                            | 8161 |
| IEC104 Type ID 51 and 64                | Support for IEC104 Slave to IEC104 Master Bitstring command conversion                                                                                                                                                               |                |                                                                                                            | 8192 |
| Modbus TCP                              | Added TCP port number to route config                                                                                                                                                                                                |                |                                                                                                            | 7977 |
|                                         | <u>Package</u>                                                                                                                                                                                                                       | <u>Section</u> | <u>Options</u>                                                                                             |      |
|                                         | iecd                                                                                                                                                                                                                                 | port           | modbus_tcp_server_port                                                                                     |      |
| Optional DNP3 G40 status                | Support optional reporting of DNP3 G40 analog output during integrity poll                                                                                                                                                           |                |                                                                                                            | 7999 |
|                                         | <u>Package</u>                                                                                                                                                                                                                       | <u>Section</u> | <u>Options</u>                                                                                             |      |
|                                         | iecd                                                                                                                                                                                                                                 | port           | dnp3s_g40_exclude_intpoll                                                                                  |      |
| VRTU data types                         | Support VRTU data types and periodic auto updating per point                                                                                                                                                                         |                |                                                                                                            | 8233 |
|                                         | <u>Package</u>                                                                                                                                                                                                                       | <u>Section</u> | <u>Options</u>                                                                                             |      |
|                                         | iecd                                                                                                                                                                                                                                 | point          | vrtu_value_type; vrtu_value_init;<br>vrtu_periodic_value_change                                            |      |

| SNMP                                             |                                                                                                                                                                                                         |           |      |                    |
|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------|--------------------|
| EID OID                                          | SIM EID now supported in VA-MODEM-MIB                                                                                                                                                                   |           | 8029 |                    |
| VA-UCI-MIB<br>alias ifNumber                     | Defines the Alias ifNumber for the uciIfTable (VA-UCI-MIB) for ensuring interfaces in the uciIfTable persistent across reboots and configuration changes.                                               |           | 8094 |                    |
|                                                  | Package                                                                                                                                                                                                 | Section   |      | Options            |
|                                                  | network                                                                                                                                                                                                 | interface |      | uci_alias_ifnumber |
| Strongswan                                       |                                                                                                                                                                                                         |           |      |                    |
| VRF support                                      | New option to bind an IPSec tunnel to a VRF.<br>Note: this is only supported for IPv4 ESP tunnel mode.                                                                                                  |           | 4307 |                    |
|                                                  | Package                                                                                                                                                                                                 | Section   |      | Options            |
|                                                  | strongswan                                                                                                                                                                                              | general   |      | vrf                |
| System                                           |                                                                                                                                                                                                         |           |      |                    |
| Firmware and<br>configuration<br>rollback        | Support automatic rollback of firmware or configuration if router fails to reconnect to Activator after firmware or configuration update using Activation or Active Update. Feature enabled by default. |           | 3012 |                    |
|                                                  | Package                                                                                                                                                                                                 | Section   |      | Options            |
|                                                  | rollback                                                                                                                                                                                                | core      |      | enabled; timer     |
| Merlin4600<br>Sierra Wireless<br>with 6 Ethernet | Added support for Merlin4600 using single Sierra Wireless mobile with 6 Ethernet (machtype: MTSWI015)                                                                                                   |           | 8242 |                    |
| Multi factor<br>Authentication                   | New authentication method added to PAM Authentication for MFA configuration to persist through reboot.                                                                                                  |           | 7152 |                    |
|                                                  | Package                                                                                                                                                                                                 | Section   |      | Options            |
|                                                  | system                                                                                                                                                                                                  | pam_auth  |      | type 'google'      |
| Unified debug<br>script                          | Support debug tool which gives a consistent and user-friendly method of enabling debug on various applications. Currently supported for Mobile, IPSec and Multiwan                                      |           | 4677 |                    |
|                                                  | cli: debug mobile on                                                                                                                                                                                    |           |      |                    |
|                                                  | cli: debug ipsec on                                                                                                                                                                                     |           |      |                    |
|                                                  | cli: debug multiwan on                                                                                                                                                                                  |           |      |                    |

## 10.4Release 25.04.16.000

|                       |                                                          |         |                                     |      |
|-----------------------|----------------------------------------------------------|---------|-------------------------------------|------|
| Mobile                |                                                          |         |                                     |      |
| LTE power saving mode | Support LTE PSM mode for SIMCom7070E mobile module       |         |                                     | 7841 |
|                       | Package                                                  | Section | Options                             |      |
|                       | mobile                                                   | mobile  | sim1_enable_psm;<br>sim2_enable_psm |      |
| System                |                                                          |         |                                     |      |
| Merlin4405 support    | Support for Merlin4405 variant without serial interfaces |         |                                     |      |

| TPM hashed password | Support new HMAC hashing algorithm for hardware with a TPM. This allows the user to use the HMAC functionality in the TPM as a means of hashing passwords. This is opposed to existing md5 or sha512 hashes and prevents a malicious actor from decrypting as the hashes now require the TPM hardware to be calculated | 7155                      |         |         |        |        |                           |  |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------|---------|--------|--------|---------------------------|--|
|                     | <table> <tr> <th>Package</th><th>Section</th><th>Options</th></tr> <tr> <td>system</td><td>system</td><td>password_hash_algo 'hmac'</td></tr> </table>                                                                                                                                                                 | Package                   | Section | Options | system | system | password_hash_algo 'hmac' |  |
| Package             | Section                                                                                                                                                                                                                                                                                                                | Options                   |         |         |        |        |                           |  |
| system              | system                                                                                                                                                                                                                                                                                                                 | password_hash_algo 'hmac' |         |         |        |        |                           |  |

## 10.5Release 25.04.13.000

| Console                          |                                                                                                                                                                                                                         |                    |         |         |         |           |                    |  |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------|---------|---------|-----------|--------------------|--|
| Console disable                  | Support new option for disabling the console port                                                                                                                                                                       | 7802               |         |         |         |           |                    |  |
|                                  | <table> <tr> <th>Package</th><th>Section</th><th>Options</th></tr> <tr> <td>system</td><td>failsafe</td><td>console</td></tr> </table>                                                                                  | Package            | Section | Options | system  | failsafe  | console            |  |
| Package                          | Section                                                                                                                                                                                                                 | Options            |         |         |         |           |                    |  |
| system                           | failsafe                                                                                                                                                                                                                | console            |         |         |         |           |                    |  |
| Mobile                           |                                                                                                                                                                                                                         |                    |         |         |         |           |                    |  |
| SKU display                      | Add display of Sierra Wireless module SKU to mobile diagnostics                                                                                                                                                         | 7155               |         |         |         |           |                    |  |
| PPP                              |                                                                                                                                                                                                                         |                    |         |         |         |           |                    |  |
| Adaptive LCP Echo                | When enabled LCP echo will only be sent if no traffic is received on the interface. This avoids the situation where PPP is terminated on a congested PPP link because LCP echos are not received in time (Mantis: 4179) | 4179               |         |         |         |           |                    |  |
|                                  | <table> <tr> <th>Package</th><th>Section</th><th>Options</th></tr> <tr> <td>network</td><td>interface</td><td>adaptive_keepalive</td></tr> </table>                                                                     | Package            | Section | Options | network | interface | adaptive_keepalive |  |
| Package                          | Section                                                                                                                                                                                                                 | Options            |         |         |         |           |                    |  |
| network                          | interface                                                                                                                                                                                                               | adaptive_keepalive |         |         |         |           |                    |  |
| System                           |                                                                                                                                                                                                                         |                    |         |         |         |           |                    |  |
| Change Log                       | Change log now records active image number and version on reboot                                                                                                                                                        | 7728               |         |         |         |           |                    |  |
| Merlin4400 series without serial | Added support for Merlin4400 series with no serial interface                                                                                                                                                            | 7722               |         |         |         |           |                    |  |
| Merlin4600 dual mobile           | Added support for Merlin4600 series with dual mobile                                                                                                                                                                    | 7714               |         |         |         |           |                    |  |
| Merlin4700 with SFP              | Added support for Merlin4700 with additional SFP/Ethernet port                                                                                                                                                          | 7717               |         |         |         |           |                    |  |
| Port mirroring                   | Support software port mirroring. All ingress and egress traffic on an interface can be mirrored to an alternate interface                                                                                               | 7969               |         |         |         |           |                    |  |
|                                  | <table> <tr> <th>Package</th><th>Section</th><th>Options</th></tr> <tr> <td>network</td><td>interface</td><td>mirrorto</td></tr> </table>                                                                               | Package            | Section | Options | network | interface | mirrorto           |  |
| Package                          | Section                                                                                                                                                                                                                 | Options            |         |         |         |           |                    |  |
| network                          | interface                                                                                                                                                                                                               | mirrorto           |         |         |         |           |                    |  |
| Change Log                       | Change log now records active image number and version on reboot                                                                                                                                                        | 7728               |         |         |         |           |                    |  |
| Merlin4400 series without serial | Added support for Merlin4400 series with no serial interface                                                                                                                                                            | 7722               |         |         |         |           |                    |  |

## 10.6Release 25.04.08.000

| AT Command Service                  |                                                                                                                                                                                                                                                             |           |                                                                                                                              |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------------------------------------------------------------------------------------------------------|
| AT Command Service                  | New router application that acts as a PSTN modem emulator/AT command interpreter. It converts PSTN data calls from asynchronous serial to TCP/IP.                                                                                                           |           |                                                                                                                              |
|                                     | Package                                                                                                                                                                                                                                                     | Section   | Options                                                                                                                      |
|                                     | crsd                                                                                                                                                                                                                                                        | main      | see user manual                                                                                                              |
|                                     |                                                                                                                                                                                                                                                             | route     |                                                                                                                              |
|                                     |                                                                                                                                                                                                                                                             | translate |                                                                                                                              |
| Dual user serial/digital input port |                                                                                                                                                                                                                                                             |           |                                                                                                                              |
| Merlin4400 support                  | Merlin4400 series now supports a dual use serial/digital input port                                                                                                                                                                                         |           | 7214                                                                                                                         |
| Management Users                    |                                                                                                                                                                                                                                                             |           |                                                                                                                              |
| User groups                         | Support new group configuration which contains a list of <code>allowed_pages</code> . A user can be assigned to multiple groups. This allows a user to be able to visit pages from their own <code>allowed_pages</code> as well as from any assigned groups |           |                                                                                                                              |
|                                     | Package                                                                                                                                                                                                                                                     | Section   | Options                                                                                                                      |
|                                     | management                                                                                                                                                                                                                                                  | user      | groups                                                                                                                       |
|                                     | _user                                                                                                                                                                                                                                                       | group     | enabled; <code>allowed_pages</code>                                                                                          |
| Mobile                              |                                                                                                                                                                                                                                                             |           |                                                                                                                              |
| Airplane mode in backoff            | Support new option to enter Airplane Mode during the interface back off period                                                                                                                                                                              |           |                                                                                                                              |
|                                     | Package                                                                                                                                                                                                                                                     | Section   | Options                                                                                                                      |
|                                     | network                                                                                                                                                                                                                                                     | interface | <code>airplane_mode_backoff</code>                                                                                           |
| SMS security                        | Improvements to SMS queue processing and support new options for better control how SMS messages are handled                                                                                                                                                |           |                                                                                                                              |
|                                     | Package                                                                                                                                                                                                                                                     | Section   | Options                                                                                                                      |
|                                     | mobile                                                                                                                                                                                                                                                      | mobile    | <code>sms_read_interval</code> ; <code>sms_check_time</code> ; <code>sms_past_margin</code> ; <code>sms_future_margin</code> |
| SMS whitelisting                    | Support whitelisting commands allowed to be executable by SMS                                                                                                                                                                                               |           |                                                                                                                              |
|                                     | Package                                                                                                                                                                                                                                                     | Section   | Options                                                                                                                      |
|                                     | mobile                                                                                                                                                                                                                                                      | caller    | <code>allowed_commands</code>                                                                                                |
| Watchdog timeout behaviour          | Support advanced configurable action [ <code>log</code>   <code>reset</code>   <code>reboot</code> ] to take when a watchdog timeout occurs for a mobile module. Currently only supported for QMI modules                                                   |           |                                                                                                                              |
|                                     | Package                                                                                                                                                                                                                                                     | Section   | Options                                                                                                                      |
|                                     | mobile                                                                                                                                                                                                                                                      | main      | <code>netdev_wd_action</code>                                                                                                |
| OpenVPN                             |                                                                                                                                                                                                                                                             |           |                                                                                                                              |
| TPM support                         | Support OpenVPN keys in TPM. The existing key option should be configured to the TPM label for the OpenVPN key                                                                                                                                              |           |                                                                                                                              |
|                                     | Package                                                                                                                                                                                                                                                     | Section   | Options                                                                                                                      |
|                                     | openvpn                                                                                                                                                                                                                                                     | openvpn   | <code>keytype: key '&lt;TPM-label&gt;'</code>                                                                                |

| Password Management                   |                                                                                                                                                                                                                                                          |          |                        |      |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------------|------|
| Multi Factor Authentication           | SSH and web UI now support Multi Factor Authentication using Google authenticator                                                                                                                                                                        |          |                        | 5339 |
|                                       | Package                                                                                                                                                                                                                                                  | Section  | Options                | 7152 |
|                                       | dropbear                                                                                                                                                                                                                                                 | dropbear | multi_factor_auth      | 7154 |
|                                       | luci                                                                                                                                                                                                                                                     | main     | multi_factor_auth      |      |
| Password lifetime                     | Support password lifetime configuration for management users. Does not apply to root password                                                                                                                                                            |          |                        | 7156 |
|                                       | Package                                                                                                                                                                                                                                                  | Section  | Options                |      |
|                                       | managemen<br>t_user                                                                                                                                                                                                                                      | user     | max_passwd_age         |      |
| Password regex                        | Support configuring password regex rules. Applies to root password and management users password                                                                                                                                                         |          |                        | 7194 |
|                                       | Package                                                                                                                                                                                                                                                  | Section  | Options                |      |
|                                       | system                                                                                                                                                                                                                                                   | main     | password_regex         |      |
| Password reuse                        | Support limiting password re-use of the last 10 management user passwords. Does not apply to root password                                                                                                                                               |          |                        |      |
| RADIUS                                |                                                                                                                                                                                                                                                          |          |                        |      |
| NAS-Identifier option                 | Support new configuration option for NAS-Identifier with support for %serial and %hostname option values                                                                                                                                                 |          |                        | 7347 |
|                                       | Package                                                                                                                                                                                                                                                  | Section  | Options                |      |
|                                       | system                                                                                                                                                                                                                                                   | pam_auth | radius_nasid           |      |
| Scada                                 |                                                                                                                                                                                                                                                          |          |                        |      |
| AI Scaler                             | Extended AI scaler support <code>iecd.port.ai_scaler</code> for DNP3 slave to Modbus master conversion. The analog inputs received from the RTU are divided by the scaler before conversion to SCADA protocol. Previously only DNP3 to IEC104 supported. |          |                        | 7278 |
|                                       | AI scaler now supports both divisor and multiplier                                                                                                                                                                                                       |          |                        | 7506 |
|                                       | Package                                                                                                                                                                                                                                                  | Section  | Options                |      |
|                                       | iecd                                                                                                                                                                                                                                                     | port     | ai_scaler_op           |      |
| Critical process support for IEC      | IECD now added to list of critical processes that are automatically restarted                                                                                                                                                                            |          |                        | 7294 |
| DNP3 group 40 analog output variation | Added support for DNP3 slave group 40 analog output variation                                                                                                                                                                                            |          |                        | 7548 |
|                                       | Package                                                                                                                                                                                                                                                  | Section  | Options                |      |
|                                       | iecd                                                                                                                                                                                                                                                     | port     | dnp3s_g40_variation    |      |
| DNP3 relay type                       | Support new configuration option for specifying command point relay type                                                                                                                                                                                 |          |                        | 7512 |
|                                       | Package                                                                                                                                                                                                                                                  | Section  | Options                |      |
|                                       | iecd                                                                                                                                                                                                                                                     | cmdpoint | dnp3_relay_type        |      |
| IEC101RTR TCP Server Mode             | Support TCP Server Mode for IEC101RTR IEC101 connection                                                                                                                                                                                                  |          |                        | 6992 |
|                                       | Package                                                                                                                                                                                                                                                  | Section  | Options                |      |
|                                       | iecd101rtr                                                                                                                                                                                                                                               | link101  | listen_ip, listen_port |      |

|                                                   |                                                                                                                                                                    |           |                                                                         |              |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------|--------------|
| IEC104<br>command point<br>IOA                    | New configuration option for IEC104 master command point<br>information object address                                                                             |           |                                                                         | 7579         |
|                                                   | Package                                                                                                                                                            | Section   | Options                                                                 |              |
|                                                   | iecd                                                                                                                                                               | cmdpoint  | iec104m_cmd_ioa                                                         |              |
| IEC104 to<br>DNP3 double<br>command<br>conversion | New option values [4 5] added to <code>iecd.port.dnp3_app_output_mode</code><br>option that determine behaviour when an IEC104 command with S/E<br>bit is received |           |                                                                         | 7423         |
| MQTT Azure<br>DPS                                 | Added support for MS Azure's IOT hub Device Provisioning Service<br>(DPS)                                                                                          |           |                                                                         | 7028         |
|                                                   | Package                                                                                                                                                            | Section   | Options                                                                 |              |
|                                                   | iecd                                                                                                                                                               | port      | see user manual                                                         |              |
| MQTT read<br>specific data<br>point               | MQTT can now be configured to read specific data points                                                                                                            |           |                                                                         |              |
| Modbus bitmap                                     | Support bitmap handling in Modbus master                                                                                                                           |           |                                                                         | 7371<br>7473 |
|                                                   | Package                                                                                                                                                            | Section   | Options                                                                 |              |
|                                                   | iecd                                                                                                                                                               | point     | mb_bitmask                                                              |              |
| Modbus data<br>formats                            | Extend supported data format values for MODBUS data points                                                                                                         |           |                                                                         | 6890         |
|                                                   | Package                                                                                                                                                            | Section   | Options                                                                 |              |
|                                                   | iecd                                                                                                                                                               | point     | mb_data_fmt; modbus_data_fmt                                            |              |
| Modbus DI<br>inversion                            | Support DI inversion for Modbus master                                                                                                                             |           |                                                                         | 7507         |
| Modbus dual<br>data point<br>handling             | Support dual data and command point handling for IEC104 slave to<br>Modbus master conversion. Two Modbus registers can now be<br>converted into a single DPI       |           |                                                                         | 7475         |
|                                                   | Package                                                                                                                                                            | Section   | Options                                                                 |              |
|                                                   | iecd                                                                                                                                                               | port      | modbus_dual_io; modbus_index2                                           |              |
| Modbus frame<br>retransmit<br>counter             | Added configuration for MODBUS master frame retransmit count                                                                                                       |           |                                                                         |              |
|                                                   | Package                                                                                                                                                            | Section   | Options                                                                 |              |
|                                                   | iecd                                                                                                                                                               | port      | modbus_max_retries                                                      |              |
| New VHMI<br>payload types                         | Add support for sending publish messages via MQTT using different<br>payload formats                                                                               |           |                                                                         |              |
|                                                   | Package                                                                                                                                                            | Section   | Options                                                                 |              |
|                                                   | iecd                                                                                                                                                               | port      | vhmi_mqtt_payload_fmt;<br>vhmi_mqtt_client_name;<br>vhmi_mqtt_site_name |              |
| SCEP                                              |                                                                                                                                                                    |           |                                                                         |              |
| TPM support                                       | SCEP now supports key pair management in TPM                                                                                                                       |           |                                                                         | 7125         |
|                                                   | Package                                                                                                                                                            | Section   | Options                                                                 |              |
|                                                   | strongswan                                                                                                                                                         | scep_cert | use_tpm; key_label                                                      |              |
| SNMP                                              |                                                                                                                                                                    |           |                                                                         |              |
| Multiwan state<br>OID                             | Added ifMultiwanState to VA-UCI-MIB                                                                                                                                |           |                                                                         | 6915         |
| Sim detection<br>OID                              | Added SimIn to VA-MODEM-MIB                                                                                                                                        |           |                                                                         | 6915         |
| SSH                                               |                                                                                                                                                                    |           |                                                                         |              |

|                                |                                                                                                                                                               |                           |                                                |                                           |      |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------------------------|-------------------------------------------|------|
| Limit concurrent users         | Support new option for limiting concurrent authenticated user sessions (Mantis: 7160)                                                                         |                           |                                                | 7160                                      |      |
|                                | Package                                                                                                                                                       | Section                   | Options                                        |                                           |      |
|                                | dropbear                                                                                                                                                      | dropbear                  | MaxConnections                                 |                                           |      |
| Strongswan                     |                                                                                                                                                               |                           |                                                |                                           |      |
| IKEv2 Multiple subnet support  | Support multiple subnets for ikev2                                                                                                                            |                           |                                                | 6026                                      |      |
|                                | Package                                                                                                                                                       | Section                   | Options                                        |                                           |      |
|                                | strongswan                                                                                                                                                    | connection                | locallanextra; remotelanextra                  |                                           |      |
| TPM support                    | Support strongswan keys in TPM. TPM keys are supported via the token secret type. In this case the value of the secret specifies the label of the key to use. |                           |                                                | 4460                                      |      |
|                                | Package                                                                                                                                                       | Section                   | Options                                        |                                           |      |
|                                | strongswan                                                                                                                                                    | secret                    | secrettype 'token'; secret '<TPM-label>'       |                                           |      |
| XAuth EAP support              | Added support for xauth-eap and eap-radius authentication methods                                                                                             |                           |                                                | 6294                                      |      |
|                                | Package                                                                                                                                                       | Section                   | Options                                        |                                           |      |
|                                | strongswan                                                                                                                                                    | connection                | localauth; localauth2; remoteauth; remoteauth2 |                                           |      |
|                                |                                                                                                                                                               | radius_server             | enabled; address; secret; auth_port; acct_port |                                           |      |
| System                         |                                                                                                                                                               |                           |                                                |                                           |      |
| Busybox                        | Enable support for who command                                                                                                                                |                           |                                                | 6788                                      |      |
| Firmware                       | Prohibit downgrading router firmware on models using Sierra Wireless Toshiba NAND flash to an unsupported version (< 25.03.43.014)                            |                           |                                                | 7488                                      |      |
| Syslog                         | New warning message generated to local and remote syslog when any entries stored locally are discarded due to log rotation (Mantis: 7162)                     |                           |                                                | 7162                                      |      |
| Terminal Server                |                                                                                                                                                               |                           |                                                |                                           |      |
| Show configuration CLI command | Added support for display of running terminal server configuration CLI command<br>cli: show config                                                            |                           |                                                | 6893                                      |      |
| VA Events                      |                                                                                                                                                               |                           |                                                |                                           |      |
| 802.1x events                  | VA Event System now supports ieee8021x event class and events                                                                                                 |                           |                                                |                                           | 6528 |
|                                | <u>Id</u>                                                                                                                                                     | <u>Name</u>               | <u>Severity</u>                                | <u>Event Template</u>                     |      |
|                                | 1                                                                                                                                                             | IEEE8021xRestrictingIf    | notice                                         | IEEE8021x restricting on %<br>{p1}        |      |
|                                | 2                                                                                                                                                             | IEEE8021xAllowingAllonIf  | notice                                         | IEEE8021x allowing all on %<br>{p1}       |      |
|                                | 3                                                                                                                                                             | IEEE8021xAllowingMAC onIf | notice                                         | IEEE8021x allowing %<br>{p1} on %<br>{p2} |      |
|                                | 4                                                                                                                                                             | IEEE8021xBlockingMAC onIf | notice                                         | IEEE8021x blocking %<br>{p1} on %<br>{p2} |      |
| Web UI                         |                                                                                                                                                               |                           |                                                |                                           |      |
| Disable web UI                 | Added new option to disable web UI                                                                                                                            |                           |                                                | 7068                                      |      |
|                                | Package                                                                                                                                                       | Section                   | Options                                        |                                           |      |
|                                | uhttpd                                                                                                                                                        | main                      | webui enabled                                  |                                           |      |

|                        |                                                                                                             |         |              |      |
|------------------------|-------------------------------------------------------------------------------------------------------------|---------|--------------|------|
| Limit concurrent users | Support new option for limiting concurrent user sessions                                                    |         |              | 7161 |
|                        | Package                                                                                                     | Section | Options      |      |
|                        | luci                                                                                                        | sauth   | sessionlimit |      |
| LTE band display       | Show supported LTE bands for enable/disable via Web UI.<br>web: services->mobile manager->lte               |         |              |      |
| Session control        | Added utility to list and terminate web sessions (Mantis: 7159)<br>web: system->sessions<br>cli: sessionctl |         |              | 7159 |
| Web UI theme           | New restructured web UI with navigation links on left side frame.                                           |         |              |      |

## 10.7Release 25.03.43.014

| General         |                                                                                                                                                                                                                       |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sierra Wireless | Added support for new Sierra Wireless NAND flash (Toshiba TC58NYG2S0H). Note: Routers running this Sierra Wireless flash version require v2.6 bootloader and cannot be rolled back to firmware prior to 25.03.14.014. |

## 10.8Release 25.03.43.009

| Certificates                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Check both TPM and flash for certificate key | <p>If the key cannot be found in the location specified in the configuration file, the router will automatically check an alternate location using the following methodology (Mantis: 6820).</p> <ul style="list-style-type: none"> <li>When configured for <b>PEM</b> key and key cannot be found at the configured location, the router will try to use a TPM key with name corresponding to base file name (/etc/uhttpd.key -&gt; "uhttpd").</li> <li>When configured for <b>TPM</b> key and key cannot be found in the TPM, the router will try to use file "/etc/&lt;tpm label&gt;.key"</li> </ul> |
| Mobile                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| FOTA support for Unitac modules              | Support FOTA upgrade for Unitac modules                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Neighbour cell information                   | <p>Added display of neighbouring cell information. Currently only supported on Unitac ML620/660 and Quectel EC200x series</p> <p>cli: vam -n</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Sierra Wireless WP7702 LTE-M support         | Added support for Sierra Wireless WP7702 LTE-M1/NB1 mobile module on Merlin series                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Multiwan                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Multiwan upper retry limit for roaming interfaces    | For 3G roaming connections, and connections with <code>retry_on_first_fail</code> enabled, to avoid getting stuck on one SIM, a new Multiwan configuration parameter defines the maximum number of seconds to stay with an interface after its first failure before proceeding. (Mantis: 6975)<br><br>cli: <code>multiwan.interface.retry_connection_max_sec</code> (def: <code>multiwan.interface.ifup_timeout_sec</code> ) |                                                      |         |         |                   |                       |                                                      |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|---------|---------|-------------------|-----------------------|------------------------------------------------------|
| Power over Ethernet                                  |                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                      |         |         |                   |                       |                                                      |
| PoE port stop/start                                  | Power over an individual Ethernet port can now be stopped and started via the PoE status page on the web UI (Mantis: 6827)<br><br>web: <code>status-&gt;PoE</code>                                                                                                                                                                                                                                                           |                                                      |         |         |                   |                       |                                                      |
| SCADA                                                |                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                      |         |         |                   |                       |                                                      |
| DNP3 Analog Set point command variation              | Added new option for DNP3 Analog Set point command variation<br><table><tr><th>Package</th><th>Section</th><th>Options</th></tr><tr><td><code>iecd</code></td><td><code>cmdpoint</code></td><td><code>dnp3_cmd_variation</code> (def: 0)</td></tr></table>                                                                                                                                                                   | Package                                              | Section | Options | <code>iecd</code> | <code>cmdpoint</code> | <code>dnp3_cmd_variation</code> (def: 0)             |
| Package                                              | Section                                                                                                                                                                                                                                                                                                                                                                                                                      | Options                                              |         |         |                   |                       |                                                      |
| <code>iecd</code>                                    | <code>cmdpoint</code>                                                                                                                                                                                                                                                                                                                                                                                                        | <code>dnp3_cmd_variation</code> (def: 0)             |         |         |                   |                       |                                                      |
| MODBUS to Remote IO protocol conversion              | Added support for MODBUS to Remote IO (ioservd) protocol conversions (Mantis: 6886)                                                                                                                                                                                                                                                                                                                                          |                                                      |         |         |                   |                       |                                                      |
| Update IEC104 master on DNP3 static variation change | Added new feature to transmit a spontaneous update to IEC104 master on DNP3 static variation value change<br><table><tr><th>Package</th><th>Section</th><th>Options</th></tr><tr><td><code>iecd</code></td><td><code>port</code></td><td><code>dnp3_tx_spont_on_static_change</code> (def: 0)</td></tr></table>                                                                                                              | Package                                              | Section | Options | <code>iecd</code> | <code>port</code>     | <code>dnp3_tx_spont_on_static_change</code> (def: 0) |
| Package                                              | Section                                                                                                                                                                                                                                                                                                                                                                                                                      | Options                                              |         |         |                   |                       |                                                      |
| <code>iecd</code>                                    | <code>port</code>                                                                                                                                                                                                                                                                                                                                                                                                            | <code>dnp3_tx_spont_on_static_change</code> (def: 0) |         |         |                   |                       |                                                      |
| TPM                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                      |         |         |                   |                       |                                                      |
| List TPM keys                                        | Support new diagnostic command to list TPM keys<br><br>cli: <code>tpm-cli listkeys</code>                                                                                                                                                                                                                                                                                                                                    |                                                      |         |         |                   |                       |                                                      |

## 10.9Release 25.03.43.000

|                             |                                                                                                                                                                                                                                                                               |           |                                |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------|
| General                     |                                                                                                                                                                                                                                                                               |           |                                |
| Merlin4100 support          | Added support for Merlin4100 series                                                                                                                                                                                                                                           |           |                                |
| GPS                         |                                                                                                                                                                                                                                                                               |           |                                |
| GPS MIB support             | Added support for <code>VA-GNSS-MIB</code> for retrieval of GPS values                                                                                                                                                                                                        |           |                                |
| Network                     |                                                                                                                                                                                                                                                                               |           |                                |
| Dummy interface support     | Added support for dummy interfaces. Dummy interfaces are real kernel interfaces (unlike alias interfaces) and support all the configuration options of a static interface. Dummy interfaces are useful in combination with VRFs as they can be isolated from general routing. |           |                                |
| Ignore carrier state option | Support new option for static protocol interfaces to ignore carrier state changes. This allows interfaces to stay permanently up even when physical connection is not present (Mantis: 6739)                                                                                  |           |                                |
|                             | Package                                                                                                                                                                                                                                                                       | Section   | Options                        |
|                             | network                                                                                                                                                                                                                                                                       | interface | ignore_carrier_state (def: no) |

| System                                  |                                                                                                                                                                                                                            |                   |                                                                                               |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------|
| IP PAD support                          | Added <code>padd</code> and <code>vald</code> packages for IP PAD support for converting legacy X.25 serial communication over TCP/IP.                                                                                     |                   |                                                                                               |
| SCADA                                   |                                                                                                                                                                                                                            |                   |                                                                                               |
| MODBUS to Remote IO protocol conversion | Added support for MODBUS to Remote IO ( <code>ioservd</code> ) protocol conversions (Mantis: 6886)                                                                                                                         |                   |                                                                                               |
| Serial to UDP multi-point mode          | Added support for multiple UDP peers on serial port. Data received on a serial port is transmitted to all peers; data received from any peer is transmitted on the serial port. Up to 8 UDP peers supported (Mantis: 6723) |                   |                                                                                               |
|                                         | Package                                                                                                                                                                                                                    | Section           | Options                                                                                       |
|                                         | <code>tservd</code>                                                                                                                                                                                                        | <code>port</code> | <code>udpMultiPointOn</code> (def: no); <code>remote_ipX</code> ; <code>udpRemotePortX</code> |

## 10.10 Release 25.03.23.000

| Roaming Manager                          |                                                                                                                      |                          |                                                                                                                                                                                   |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Roaming Manager connection retry options | Added new connection retry options for Roaming Manager feature                                                       |                          |                                                                                                                                                                                   |
|                                          | Package                                                                                                              | Section                  | Options                                                                                                                                                                           |
|                                          | <code>network</code>                                                                                                 | <code>interface</code>   | <code>roaming_link_success_time</code> (def: 600 secs); <code>roaming_prefer_best_operator</code> (def: no); <code>roaming_scan_inheritance</code> (def: no)                      |
|                                          | <code>multiwan</code>                                                                                                | <code>interface</code>   | <code>retry_on_first_fail</code> (def: no)                                                                                                                                        |
| SCADA                                    |                                                                                                                      |                          |                                                                                                                                                                                   |
| MODBUS TCP routes                        | Added support for MODBUS TCP routes (Mantis: 6643)                                                                   |                          |                                                                                                                                                                                   |
|                                          | Package                                                                                                              | Section                  | Options                                                                                                                                                                           |
|                                          | <code>iecd</code>                                                                                                    | <code>mbtcp_route</code> | <code>ifnum</code> ; <code>devaddr</code> , <code>ipaddr</code>                                                                                                                   |
| IECD104 Slave cyclic transmission        | Support for cyclic transmission of data point messages                                                               |                          |                                                                                                                                                                                   |
|                                          | Package                                                                                                              | Section                  | Options                                                                                                                                                                           |
|                                          | <code>iecd</code>                                                                                                    | <code>port</code>        | <code>iec104_cyclic_on</code> (def: 0)                                                                                                                                            |
| Transparent mode offline queue           | Added support for IEC104 slave offline queue when using transparent mode (no <code>iec104s</code> application layer) |                          |                                                                                                                                                                                   |
| VRF                                      | Support for binding IEC104 Slave socket to a VRF for isolation from general routing (Mantis: 4802)                   |                          |                                                                                                                                                                                   |
|                                          | Package                                                                                                              | Section                  | Options                                                                                                                                                                           |
|                                          | <code>iecd</code>                                                                                                    | <code>port</code>        | <code>iec104_ip1_vrf</code> ; <code>iec104_ip2_vrf</code> ; <code>iec104_ip3_vrf</code> ; <code>iec104_ip4_vrf</code> ; <code>iec104_ip5_vrf</code> ; <code>iec104_ip6_vrf</code> |
| System                                   |                                                                                                                      |                          |                                                                                                                                                                                   |
| GNSS time synchronisation                | Added support for time update via GNSS.                                                                              |                          |                                                                                                                                                                                   |
|                                          | Note: Router requires GNSS capabilities and GNSS is enabled (Mantis: 6229)                                           |                          |                                                                                                                                                                                   |
|                                          | Package                                                                                                              | Section                  | Options                                                                                                                                                                           |
|                                          | <code>system</code>                                                                                                  | <code>timeserver</code>  | <code>gnss_clock_source_enabled</code> (def: no)                                                                                                                                  |

## 10.11 Release 25.02.99.000

| Mobile                                       |                                                                                                                                                                          |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FOTA upgrade via CURL                        | FOTA upgrade can now use CURL to download a firmware image from remote location                                                                                          |
| SCADA                                        |                                                                                                                                                                          |
| IECD61850 Slave to MODBUS Server             | Added support for IEC61850 slave to MODBUS Server                                                                                                                        |
| IEC62351-3 TLS - CRL/OCSP Automated Fetching | Added support for CRL/OCSP automatically fetching from a link provided within the certificate. Previously implementation only used a local file (Mantis: 5955)           |
| New IECD diagnostics                         | Added new command line diagnostics to show all possible point and cmdpoint options (Mantis: 6556)<br><br>cli: iecd show point options<br>cli: iecd show cmdpoint options |

## 10.12 Release 25.02.80.000

| BGP                                |                                                                                                                                                   |           |                                                             |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------------------------------------------------|
| BGP MIB support                    | Added BGP-4-MIB support so BGP information can be retrieved via SNMP (Mantis: 6347)                                                               |           |                                                             |
| FXS                                |                                                                                                                                                   |           |                                                             |
| Analogue gain                      | Added options to store FXS card gain                                                                                                              |           |                                                             |
|                                    | Package                                                                                                                                           | Section   | Options                                                     |
|                                    | fxs                                                                                                                                               | interface | rx_analogue_gain (def: 0.0);<br>tx_analogue_gain (def: 0.0) |
| General                            |                                                                                                                                                   |           |                                                             |
| Merlin4400 support                 | Added support for Merlin4400 series                                                                                                               |           |                                                             |
| Sierra Wireless                    | Added support for newer Sierra Wireless NAND flash. Note: Routers running newer Sierra Wireless flash cannot be rolled back prior to 25.02.80.000 |           |                                                             |
| GPS                                |                                                                                                                                                   |           |                                                             |
| GPS diagnostics                    | Added new <code>gps</code> diagnostics command                                                                                                    |           |                                                             |
| SNMP                               |                                                                                                                                                   |           |                                                             |
| LAPB MIB support                   | Added support for Virtual Access VA-LAPB-STATS-MIB which provides level 2 statistics for the serial interface (Mantis: 4695).                     |           |                                                             |
| Modem firmware version MIB support | Virtual Access VA-MODEM-MIB modemTable now supports <code>modemFirmwareVersion</code> and <code>modemGsmLtePci</code> (Mantis: 5912)              |           |                                                             |

|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                                                  |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------------------------------------------|
| VA roaming manager MIB support             | Added MIB support for VA Roaming Manager ( <code>vaRoamingManagerModule</code> ) feature to VA-MODEM-MIB (Mantis: 5842)                                                                                                                                                                                                                                                                                                                                              |           |                                                                  |
| Mobile                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                                                  |
| EID retrieval                              | Support EID retrieval for Quectel, Simcom, Sierra Wireless, Huawei and Telit mobile modules. EID information on the SIMs can be displayed using <code>vam -a</code> command (Mantis: 6236)                                                                                                                                                                                                                                                                           |           |                                                                  |
| FOTA upgrade                               | Support Quectel FOTA upgrade via locally stored file                                                                                                                                                                                                                                                                                                                                                                                                                 |           |                                                                  |
| Monitor                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                                                  |
| LTE band and cell diagnostics              | Added support for LTE band and cell information in ISAD bins (Mantis 6007)                                                                                                                                                                                                                                                                                                                                                                                           |           |                                                                  |
| VRF support for monitor keepalive          | Added support for configuration of VRF domain for Monitor keepalive traps (Mantis: 5983)                                                                                                                                                                                                                                                                                                                                                                             |           |                                                                  |
|                                            | Package                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Section   | Options                                                          |
|                                            | monitor                                                                                                                                                                                                                                                                                                                                                                                                                                                              | keepalive | vrf                                                              |
| Multiwan                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                                                  |
| Multiwan interface scanning timeout        | New multiwan config parameter to extend <code>ifup</code> timeout when a mobile roaming operator scan is active. Used in conjunction with VA Roaming Manager feature, this parameter is added to the normal <code>ifup_timeout_sec</code> used for <code>ifup</code> operations whenever the <code>ifup</code> occurs during a 3G operator background scan, or the <code>ifup</code> itself triggers such a scan, on the modem being used for the current interface. |           |                                                                  |
|                                            | Package                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Section   | Options                                                          |
|                                            | multiwan                                                                                                                                                                                                                                                                                                                                                                                                                                                             | interface | <code>ifup_scanning_timeout_sec</code> (def: 480 secs)           |
| SCADA                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |                                                                  |
| DNP3 to IEC104 DI inversion and AI Scaling | Added support for inversion of single bit binary input points (Gr1, Gr2) for DNP3 RTU's to IEC104 Scada master. In addition, added support for a new an option for analog scaling – the analog inputs received from the RTU are divided by the scaler before conversion to SCADA protocol (mantis: 6419)                                                                                                                                                             |           |                                                                  |
|                                            | Package                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Section   | Options                                                          |
|                                            | iecd                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | port      | <code>di_invert</code> (def: 0); <code>ai_scaler</code> (def: 0) |
| Health points in multi master mode         | Added support for health points (6) in multi-master mode                                                                                                                                                                                                                                                                                                                                                                                                             |           |                                                                  |
|                                            | Package                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Section   | Options                                                          |
|                                            | iecd                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | port      | <code>iec104_rtuX_health_ioa</code> ;                            |

|                                                   |                                                                                                                                                                                                                                                                                                                                                                                                        |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HMI second interface                              | Added support for HMI Second Control Interface (MQTT)                                                                                                                                                                                                                                                                                                                                                  |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                   | Package                                                                                                                                                                                                                                                                                                                                                                                                | Section | Options                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                   | iecd                                                                                                                                                                                                                                                                                                                                                                                                   | port    | modbus_slave_devaddr; modbus_slave_protocol; modbus_slave_local_ip; modbus_slave_tcp_port (def: 502); modbus_slave_serial_ifnum; modbus_slave_use_tls; modbus_slave_tls_cacertfile; modbus_slave_tls_crfile; modbus_slave_tls_certfile; modbus_slave_tls_keyfile; modbus_slave_tls_pass; modbus_slave_tls_common_name; modbus_slave_tls_validate_peer_cert; modbus_slave_tls_verify_depth; modbus_slave_tls_force_tls1_2; modbus_slave_tls_cipherlist |
| IOSRVD direct serial comms                        | Support IOSRVD interface to serial using direct driver calls instead of UNIX sockets to tservd (Mantis: 6322)                                                                                                                                                                                                                                                                                          |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                   | Package                                                                                                                                                                                                                                                                                                                                                                                                | Section | Options                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                   | iecd                                                                                                                                                                                                                                                                                                                                                                                                   | port    | modbus_serialX_mode; modbus_serialX_speed; modbus_serialX_wsize; modbus_serialX_parity; modbus_serialX_stops (where X is 0 or 1)                                                                                                                                                                                                                                                                                                                      |
| IOSRVD MQTT                                       | Added support for remote IO and MQTT slave (Mantis: 6315)                                                                                                                                                                                                                                                                                                                                              |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| MODBUS master side analog filtering               | When IECD is configured to communicate with a modbus slave, it can receive updates of register values that are modelling analog inputs (Holding Registers and/or Input Registers). Since analog values can be 'noisy' in nature, these updates can be quite frequent. If it is desired to limit the frequency of these updates, it is now possible to apply per data point filtering of analog values. |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                   | Package                                                                                                                                                                                                                                                                                                                                                                                                | Section | Options                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                   | iecd                                                                                                                                                                                                                                                                                                                                                                                                   | point   | modbus_filter_mode; modbus_filter_db_val; modbus_filter_sampling_time_secs; modbus_filter_transmit_time_secs                                                                                                                                                                                                                                                                                                                                          |
| MODBUS slave to Modbus master TCP data conversion | Support Modbus slave to Modbus master TCP conversion (Mantis: 6047)                                                                                                                                                                                                                                                                                                                                    |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                   | Package                                                                                                                                                                                                                                                                                                                                                                                                | Section | Options                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                   | iecd                                                                                                                                                                                                                                                                                                                                                                                                   | port    | modbus_slave_devaddr; modbus_slave_protocol; modbus_slave_local_ip; modbus_slave_tcp_port (def: 502); modbus_slave_serial_ifnum; modbus_slave_use_tls; modbus_slave_tls_cacertfile; modbus_slave_tls_crfile; modbus_slave_tls_certfile; modbus_slave_tls_keyfile; modbus_slave_tls_pass; modbus_slave_tls_common_name; modbus_slave_tls_validate_peer_cert; modbus_slave_tls_verify_depth; modbus_slave_tls_force_tls1_2; modbus_slave_tls_cipherlist |
| MQTT offline queue                                | Added support for MQTT offline message queue for storing publish messages in memory while MQTT broker is offline.                                                                                                                                                                                                                                                                                      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                   | Package                                                                                                                                                                                                                                                                                                                                                                                                | Section | Options                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                   | iecd                                                                                                                                                                                                                                                                                                                                                                                                   | port    | mqtt_offline_q_on (def: 0)                                                                                                                                                                                                                                                                                                                                                                                                                            |
| MQTT payload logging                              | Added payload logging for MQTT publish (Mantis: 6317)                                                                                                                                                                                                                                                                                                                                                  |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                   | Package                                                                                                                                                                                                                                                                                                                                                                                                | Section | Options                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                   | iecd                                                                                                                                                                                                                                                                                                                                                                                                   | port    | mqtt_debug_on (def: 0)                                                                                                                                                                                                                                                                                                                                                                                                                                |

|                                       |                                                                                                                        |         |                                        |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------|
| MQTT Slave to Modbus conversion       | Added support for MQTT slave to Modbus protocol conversion (Mantis: 6319)                                              |         |                                        |
| RTU test emulator                     | Added support for VRTU (RTU Test Emulator) for pre-production SCADA connectivity and operations testing (Mantis: 6225) |         |                                        |
|                                       | Package                                                                                                                | Section | Options                                |
|                                       | iecd                                                                                                                   | port    | vrtu_simulation_interval_sec (def: 30) |
| Windows file format data point import | Support windows .xlsx extension for data point files import (Mantis: 6027)                                             |         |                                        |

## 10.13 Release 25.02.14.032

No new features

## 10.14 Release 25.02.14.027

| General                                     |                                                                                                                                                                                                                                                                                          |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Merlin4600 Sierra Wireless WP7609-G support | <p>Due to differing versions of Sierra Wireless WP7609G Australia module this release marks official support for WP7609G in Merlin4600 series (Mobile code: PFJ) for all versions.</p> <p>Note: Do not downgrade the Merlin4600 (PFJ) variant to firmware prior to SXL-25.02.14.027.</p> |
| Mobile                                      |                                                                                                                                                                                                                                                                                          |
| EID retrieval using SIMCOM 7070E            | The SIMCOM 7070E mobile module can now report EID information on the SIMs using vam -a command (Mantis: 6236)                                                                                                                                                                            |
| LTE-450 mobile module support               | Merlin4600 series now supports an alternate mobile module via PCIe slot in order to support frequency bands not support by the on board Sierra Wireless radio, in particuar LTE-450 bands 31, 72 and 87 using Unitac and SIMCOM 7070E modules.                                           |

## 10.15 Release 25.02.14.016

| DI/DO         |                                                                                                                                                                                        |             |       |   |                                 |   |                                |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------|---|---------------------------------|---|--------------------------------|
| Digital Input | Merlin4600 series digital input values changed to match GW2020 series for compatible SCADA operation                                                                                   |             |       |   |                                 |   |                                |
|               | <table> <tr> <th>Input value</th><th>State</th></tr> <tr> <td>0</td><td>Input not detected / open / low</td></tr> <tr> <td>1</td><td>Input detected / closed / high</td></tr> </table> | Input value | State | 0 | Input not detected / open / low | 1 | Input detected / closed / high |
| Input value   | State                                                                                                                                                                                  |             |       |   |                                 |   |                                |
| 0             | Input not detected / open / low                                                                                                                                                        |             |       |   |                                 |   |                                |
| 1             | Input detected / closed / high                                                                                                                                                         |             |       |   |                                 |   |                                |

## 10.16 Release 25.02.14.013

| Ethernet |
|----------|
|----------|

Ethernet port to interface mapping using port names

Ethernet interface configuration now uses driver port names in option ifname rather than `va_switch` configuration section for mapping interfaces to Ethernet ports. The `va_switch` method used in other hardware models is now deprecated for Merlin4600 series. Use space separator when specifying multiple port names in option ifname.

When bridging Ethernet ports option type must be set to 'bridge' (Mantis 6028)

| Physical port label | network.interface ifname value |
|---------------------|--------------------------------|
| Ethernet A          | portA                          |
| Ethernet B          | portB                          |
| Ethernet C          | portC                          |
| Ethernet D          | portD                          |
| SFP I               | portI                          |
| SFP J               | portJ                          |

Example bridged configuration:

```
package network
config interface 'LAN'
    option ifname 'portA portB portC portD'
    option type 'bridge'
```

Example segmented configuration:

```
package network
config interface 'LAN1'
    option ifname 'portA portB portC'
    option type 'bridge'
config interface 'LAN2'
    option ifname 'portD'
```

## SCADA

Allow commands to work without status points

Setting option `iec104_status_ioa` in a `cmdpont` section to 0 makes the IEC104 ignore the feedback point, but the commands still work. (Mantis: 5981)

IEC104 Double Bit command conversion to two DNP3 single commands

Setting option `iec104_status_ioa` in a `cmdpont` section to 0 makes the IEC104 ignore the feedback point, but the commands still work. (Mantis: 5981)

IEC104 multi master support

The IEC104 slave now supports up to 6 SCADA masters that can control the same RTU. In a normal scenario there is a single IEC104 SCADA master connecting to the router. It may sometimes use several TCP concurrent connections, however only one connection is active and transferring data at a time. All configured data points are sending data to the same connected IEC104 master.

In some scenarios it may be necessary that several IEC104 SCADA masters are polling and controlling the same RTU concurrently. Moreover, it may be desirable that one master polls or receives data from a specific set of data points (identified by IOAs (information object addresses)) while another master polls a different set of data points within the same RTU. (Mantis: 6012)

| Package | Section  | Options                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| iecd    | port     | iec104_multi_master_on (def: 0);<br>iec104_conn1_casdu; iec104_conn2_casdu;<br>iec104_conn3_casdu; iec104_conn4_casdu;<br>iec104_conn5_casdu; iec104_conn6_casdu;<br>iec104_local_ip1; iec104_local_ip2;<br>iec104_local_ip3; iec104_local_ip4;<br>iec104_local_ip5; iec104_local_ip6;<br>iec104_local_tcpport1;<br>iec104_local_tcpport2;<br>iec104_local_tcpport3;<br>iec104_local_tcpport4;<br>iec104_local_tcpport5;<br>iec104_local_tcpport6 |
|         | point    | iec104_conn_mask                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|         | cmdpoint | iec104_conn_mask                                                                                                                                                                                                                                                                                                                                                                                                                                  |

Modbus HMI support

VHMI (Virtual HMI) is a human machine interface exposed to an externally connected software. Current version supports only Modbus TCP protocol for the connection to the HMI software. The router acts as a Modbus TCP slave/server. External HMI software is a Modbus TCP master/client. When VHMI is enabled, the Modbus TCP client can poll the values of all data point objects in parallel to normal protocol conversion process. (Mantis: 6040)

| Package | Section | Options                                                                                                        |
|---------|---------|----------------------------------------------------------------------------------------------------------------|
| iecd    | port    | vhmi_enabled (def: 0); vhmi_proto (def: modbus_tcp);<br>vhmi_listen_port (def: 502);<br>vhmi_debug_on (def: 0) |
|         | point   | vhmi_on (def: 0); vhmi_regaddr (def: 0);<br>vhmi_dword (def: 0)                                                |

Support CP24 timestamp format messages in IEC101 to 104 conversion

IEC101 Type ID 2, 4, 6, 8, 10,12,14,16 now supports CP24Time2a (Mantis: 5980)

Support Regulating Step and Bitstring commands for IEC101 to IEC104 conversion

Added IEC101 to IEC104 conversion support for commands (Mantis: 6030):

- C\_RC\_NA\_1 Regulating step
- C\_BO\_NA\_1 Bitstring of 32 bit

Strongswan

|                              |                                                                                                                                                                                                                                                                                           |           |                        |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------|
| SCEP certificate debug level | The SCEP client natively supports debug options with 4 levels levels - 0,1,2,3 and 4. These can now be configured using new config option <code>debug_level</code> . Set to 0 to disable. (Mantis 5881)                                                                                   |           |                        |
|                              | Package                                                                                                                                                                                                                                                                                   | Section   | Options                |
|                              | strongswan                                                                                                                                                                                                                                                                                | scep_cert | debug_level (def: 0)   |
| SCEP cert user option        | New SCEP config option user which is the high-level concept of the user of the cert. It gets read access via its group. The owner is root, the group is the user. The user is expected to be a member of its group. User certs are stored in <code>/etc/certs</code> tree (Mantis: 5913). |           |                        |
|                              | Package                                                                                                                                                                                                                                                                                   | Section   | Options                |
|                              | strongswan                                                                                                                                                                                                                                                                                | scep_cert | user (def: strongswan) |

## 10.17 Release 25.02.14.002

No new features

## 10.18 Release 25.02.14.000

| Hardware                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Digital IO                    | <p>Support for</p> <ul style="list-style-type: none"> <li>Six digital input ports with Wet/Dry control</li> <li>Two digital outputs</li> </ul> <p>An event is raised in the router's syslog when the status of the digital input changes. The routers event system can be used to forward the events to a Syslog Server, SNMP, email or SMS.</p>                                                                                                                                                                                                                    |
| SFP                           | Support for two 1Gbps SFP ports using physical ports I and J. Ports can operate with Ethernet or Fibre adapters and are internally configured as standard Ethernet interfaces                                                                                                                                                                                                                                                                                                                                                                                       |
| Trusted Platform Module (TPM) | <p>A Trusted Platform Module (TPM) is a microcontroller-based chip, which provides hardware-based security for the user's data, cryptographic keys, and safeguards confidential information.</p> <p>The Merlin hardware comes with a set of keys that are burned to the TPM's memory fuse and cannot be changed. These keys are used to produce a set of keys that act as local Root of Trust. These can then be used by a variety of system processes and for data exchanges. This digital signing process ensures the highest level of identity verification.</p> |
| SNMP                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Last Gasp                     | Power fail event generated in syslog and optionally delivered using the routers event system via an SNMP trap when power is lost.                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| SCADA                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

|                    |                                                                                                                                   |           |                                                                                                                                                                                     |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SCADA applications | Support for SCADA protocol conversion suite.                                                                                      |           |                                                                                                                                                                                     |
|                    | Web                                                                                                                               | Package   | Description                                                                                                                                                                         |
|                    | DNPOSD                                                                                                                            | dnposd    | DNPOSD is a SCADA application which emulates a DNP3 controlled station and presents status of monitored interfaces and device information as DNP3 objects                           |
|                    | IEC101MON                                                                                                                         | iec101mon | IEC101MON is a router application that monitors IEC 60870-5-101 link and forwards the decoded messages over MQTT                                                                    |
|                    | IEC101RTR                                                                                                                         | iec101rtr | IEC101RTR is a SCADA protocol conversion application which acts as IEC101 Slave and converts SCADA traffic to IEC104 Master                                                         |
|                    | IECD                                                                                                                              | iecd      | IECD is a SCADA protocol conversion application supporting many SCADA protocols: IEC 60870-5-104, IEC 60870-5-101, IEC61850, DNP3, Modbus, MQTT                                     |
|                    | IOSRVD                                                                                                                            | iosrvd    | IOSRVD is a router application working with IECD to communicate to Remote IO devices                                                                                                |
|                    | Modbus Gateway                                                                                                                    | modbus_gw | Modbus Gateway SCADA protocol conversion application which acts as Modbus Slave and converts SCADA traffic to IEC104 Master                                                         |
| Security           | RTUD                                                                                                                              | rtud      | RTUD allows the remote SCADA master to monitor and control the digital IOs of the Virtual Access router that acts as the RTU slave. RTUD supports IEC 60870-5-104, DNP3 and Modbus. |
|                    |                                                                                                                                   |           |                                                                                                                                                                                     |
| Last Gasp          | Power fail event generated in syslog and optionally delivered using the routers event system via an SNMP trap when power is lost. |           |                                                                                                                                                                                     |

## 11 Appendix 2: Problems resolved history

### 11.1 Release 25.05.68.000

#### 11.1.1 General

| Module             | Short Description                                                                                                                                                                             | Mantis |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Activator          | Fix Activator delivering the same password for a user when not present in <code>/etc/passwd</code> which could result in <code>management_users</code> password being set to <code>'x'</code> | 9398   |
|                    | Fix issue caused by space separated cipher list causing Activator active updates to fail when TLS Ciphers are specified in the HTTP Client configuration                                      | 9203   |
| AT Command Service | Fix <code>ATH0</code> handling                                                                                                                                                                | 8955   |
|                    | Fix error on modem start with <code>+++</code> in command phase followed by <code>AT</code>                                                                                                   | 8956   |
|                    | Fix AT Command Interpreter process restart using <code>/etc/init.d/crsd restart</code>                                                                                                        | 9189   |

|                  |                                                                                                                                                                                                         |      |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
|                  | Fix ATH command parsing in idle state                                                                                                                                                                   | 9608 |
|                  | Keep DTR always high on main serial to stop DSR dropping momentarily when TCP session closes                                                                                                            | 9617 |
| Certificates     | Fix private key loading in PKI command                                                                                                                                                                  | 9072 |
| Connection Watch | Fix Connection Watch operation on a VTI interface                                                                                                                                                       | 8877 |
| DHCP Client      | Update DHCPv6 address and timers when processing a response                                                                                                                                             | 9093 |
| Dynamic DNS      | Fix Dynamic DNS correctly detecting the IP address when using Unitac mobile modules                                                                                                                     | 9148 |
|                  | Fix incorrect permissions preventing Dynamic DNS process ( <code>ddns</code> ) from starting                                                                                                            | 8803 |
| Ethernet         | Fix issue when using a bridge configuration the router intermittently fails to detect link on one of the physical bridge ports, even though the cable is physically connected.                          | 9358 |
| Event System     | Fix NTP event generation                                                                                                                                                                                | 7098 |
|                  | Fix SMS event system events generation in syslog                                                                                                                                                        | 7088 |
| Firewall         | Use the correct IP family for reflections that could cause firewall rule not to be applied                                                                                                              | 9524 |
| IPSec            | Drop traffic matching policy when IPSec tunnel is down                                                                                                                                                  | 8479 |
|                  | Fix blackhole handling for destination <code>%any</code> and web UI default                                                                                                                             | 9485 |
|                  | Fix conntrack flush on IPSec tunnel up                                                                                                                                                                  | 9304 |
|                  | When an IPSec secret change is detected on execution of <code>/etc/init.d/strongswan reload</code> , a full strongswan restart is forced                                                                | 9077 |
| LLDP             | Set <code>Chassis ID</code> to serial number                                                                                                                                                            | 9199 |
|                  | Run on all interfaces when option <code>interfaces</code> is empty.                                                                                                                                     | 9198 |
| Mobile           | Ensure recipe module restart is ignored on models with single radio Sierra Wireless modules and add syslog message to indicate that <code>/etc/init.d/usb_startup</code> has no effect.                 | 9103 |
|                  | Ensure Unitac module is in automatic operator search mode after switching SIM to allow connection to new operator network                                                                               | 9211 |
|                  | Fix APN passwords being shown in syslog when special characters are used in the username or password for Unitac modules                                                                                 | 9282 |
|                  | Fix authentication issues for Unitac modules when using more than one APN                                                                                                                               | 9508 |
|                  | Fix crash with Unitac modules when default APN is enabled but no APN specified                                                                                                                          | 9343 |
|                  | Fix delay in Unitac module carrier search on SIM switch                                                                                                                                                 | 9496 |
|                  | Fix Merlin4400 intermittently reporting connection for NB-IOT when connected via LTE                                                                                                                    | 8986 |
|                  | Fix reporting of signal values for Quectel EG950 (RFY) mobile module                                                                                                                                    | 9534 |
|                  | Fix status pattern and add 60 second post download delay for flash write execution when performing Verizon LWM2M FOTA upgrade                                                                           | 8927 |
|                  | Improvements to Unitac module upgrade from <code>ML620EUV13_RELEASE_2024020</code> to <code>ML620EUV14_RELEASE_20250627</code> firmware to fix issue with no data connection after upgrade until reboot | 8814 |
|                  | Start interfaces in ascending context order                                                                                                                                                             | 9128 |

|         |                                                                                                                                                   |      |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Monitor | Removed <code>mcc/mnc</code> code to Monitor in place of obsoleted <code>operator</code> field                                                    | 9337 |
| Network | Improve static route handling when interface configuration changes                                                                                | 8062 |
| OSPF    | Increase the maximum number of <code>igmp_max_memberships</code> from 20 to 128 to fix issues with OSPF configurations with greater than 20 peers | 9228 |
| SCEP    | Fix SCEP certificate status not updated upon deletion of TPM keys                                                                                 | 9050 |
| Syslog  | Change log level for <code>jffs2</code> summary warning from notice to debug                                                                      | 9132 |
|         | Fix DNS request log entries filling system log                                                                                                    | 6625 |
|         | Fix syslog remote filter issue including hostname in matches                                                                                      | 9215 |
|         | Remove sensitive data overwritten syslog messages                                                                                                 | 9315 |
| System  | Allow password history depth of zero                                                                                                              | 9388 |
|         | Fix ERROR messages in logs when switching Ethernet ports on Merlin3400 series                                                                     | 9186 |
|         | Fix management users <code>max_passwd_age</code> option forcing a password change on every log in                                                 | 9299 |
|         | Fix password hint showing correctly for SSH login                                                                                                 | 9321 |
|         | Fix switching between configurations with and without management users which could result in the user passwords being corrupted.                  | 9398 |

### 11.1.2 Scada

| Module | Short Description                                                                                        | Mantis |
|--------|----------------------------------------------------------------------------------------------------------|--------|
| IECD   | Fix <code>iec show point</code> output showing syntax error                                              | 7212   |
| DNP3   | Allow configuration of DNP3S static and event variations per point and show correct variations per group | 9254   |
|        | Ensure DNP3 to MQTTS points are sent only on value or quality change                                     | 9267   |
|        | Fix analog output event processing for DNP3S Group 40/41/42                                              | 9255   |
|        | Fix DNP3 client startup with support for unsolicited mode                                                | 9192   |
|        | Fix IEC101 to DNP3 unsolicited messages                                                                  | 9272   |
|        | Fix incorrect and missing cases of DNP3S Double 64 bit, analog input and analog output support           | 9252   |
|        | Fix incorrect conversion of DNP3-M G3/G4 to Modbus-S DI/CO                                               | 9262   |
|        | Fix incorrect conversion of floating point objects from DNP3M to MQTTS                                   | 8181   |
| IEC101 | Fix issues processing MQTTS to DNP3M binary and analog output commands                                   | 9265   |
|        | Added missing support for TI 21 in IEC104 to IEC101 protocol conversion                                  | 9379   |
|        | Fix issues with points online offline reporting for IEC101M to Modbus-S scenario                         | 9384   |
| IEC103 | Fix IV bit handling during IEC101M GI                                                                    | 9381   |
|        | Fixed format spec of <code>iec103m_gi_time_secs</code> in config table                                   | 9102   |
| IEC104 | Fix incorrect reporting of integrated totals in response to counter interrogation command                | 9383   |
|        | Fix message loss bug when using background scan procedure                                                | 9380   |

|        |                                                                                                                |      |
|--------|----------------------------------------------------------------------------------------------------------------|------|
|        | Support regulating step commands (Type ID47 and ID64) for IEC104 to IEC104 protocol conversion                 | 8193 |
| Modbus | Fix incorrect conversion of IEC104 double point to Modbus HR                                                   | 8159 |
|        | Fixed incorrect online-offline reporting of Multi RTU Modbus points                                            | 9057 |
|        | Modbus TCP - invalidate only points belonging to specific slave address rather than all points                 | 9073 |
| MQTT   | Add support for Client ID check to user accounts                                                               | 9283 |
|        | Added configuration and checking for client source IP address against configured IP address in the user record | 9281 |
|        | Added missing handling of QoS=1 publish messages                                                               | 9347 |
|        | Fix incorrect handling of MQTT to Modbus 32-64 bit float writes                                                | 9388 |
|        | Fix issues with MQTT initialisation script <code>/etc/init.d/mqttd start</code>                                | 9280 |
|        | Fix crash caused by processing SNMP command result                                                             | 5724 |
| RTUD   | Added missing handling of online-offline status bit when reporting GPIO to DNP3                                | 9038 |
|        |                                                                                                                | 9546 |
|        | Improvements to auto config feature                                                                            | 9564 |

### 11.1.3 Web UI

| Module             | Short Description                                                                                                                                                                                                    | Mantis |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| UI                 | Change HTTP method from GET to POST for delete actions of SCEP client; IPsec and system clock setting; NTP timeserver enable action; state-changing CBI parse actions in Interfaces and WiFi; Service restart action | 8290   |
|                    | Do not display serial options if serial interface not present on hardware                                                                                                                                            | 8414   |
|                    | Ensure the web UI does not create different config sections with the same name                                                                                                                                       | 9081   |
|                    | Fix user log in when password contains =                                                                                                                                                                             | 9309   |
|                    | Fix Web UI CSS caching to improve web UI performance                                                                                                                                                                 | 9064   |
|                    | Improvements to performance of web UI when waiting for a response from a web client that has closed the connection                                                                                                   | 9037   |
|                    | Only show applications requiring serial interfaces when serial interfaces are present                                                                                                                                | 8419   |
|                    | Remove VA references from autoload, monitor and COSEMD pages                                                                                                                                                         | 9503   |
| Administration     | Fix log in banner description                                                                                                                                                                                        | 9187   |
|                    | Log in banner configuration change now takes effect after Save&Apply instead of reboot.                                                                                                                              | 9191   |
| AT Command Service | Fix broken link on Custom AT commands button<br><code>web: services-&gt;AT command service-&gt;advanced</code>                                                                                                       | 9068   |
|                    | Fix Serial Failover description in Main Settings                                                                                                                                                                     | 9287   |
|                    | Support missing options <code>pre_dial_timeout_ms</code> and <code>pre_dial_age_timeout_ms</code>                                                                                                                    | 9205   |
|                    | Use POST for adding CRSD route and command sections                                                                                                                                                                  | 8290   |

|                 |                                                                                                                   |      |
|-----------------|-------------------------------------------------------------------------------------------------------------------|------|
| BGP             | Ensure that the routing section for BGP is named <code>bgpd</code>                                                | 8078 |
| Certificates    | Replace VA references with 'System' for certificates page                                                         | 9434 |
| Data Usage      | Fix web UI crashes when missing configuration options                                                             | 8915 |
| Diagnostics     | Use POST for diagnostic commands such as <code>ping</code> , <code>traceroute</code> , and <code>nslookup</code>  | 8290 |
| Ethernet        | Fix Ethernet port counters on web UI                                                                              | 9074 |
| Event System    | Remove VA reference from option labels and descriptions                                                           | 9437 |
| Firewall        | Convert firewall restart and reset counter actions to POST                                                        | 8290 |
|                 | Fix 404 Not Found error when adding protocol <code>Other</code> on the Port Forwards page                         | 9196 |
|                 | Only display firewall rule Source/Destination Port fields when TCP/UDP protocol                                   | 9004 |
| Interfaces      | Support missing <code>gretap</code> , <code>gre6</code> and <code>gretap6</code> interface protocol configuration | 9101 |
|                 | Convert network shutdown, start, delete and add actions to POST                                                   | 8290 |
| IPSec           | Only show aggressive mode option when IKEv1 selected                                                              | 9130 |
|                 | Remove 30 character limit from strongswan PSK secret and selector fields when configuring via web UI              | 9107 |
| Logs            | Use POST for clearing interface logs                                                                              | 8290 |
| Mobile          | Do not display SMS options when SMS not supported by the radio module                                             | 9446 |
|                 | Do not show SMS options if module does not support SMS                                                            | 9342 |
|                 | Fix SIM2 configuration on web UI for SIM7070E mobile module                                                       | 9605 |
|                 | Remove 5G references for radio protocol and replace with 'Cellular'                                               | 8080 |
| Roaming Manager | Support missing <code>roaming_service</code> option values <code>[cdma 5g any]</code>                             | 9049 |
| RTUD            | Only display configuration options for RTU protocol selected                                                      | 9544 |
| Scada           | Added Packed Single Point message type web UI configuration for IEC104 and IEC101 protocol conversions            | 9380 |
|                 | Fix Command Point TypeID dropdown menu missing TI 47 (Server 104) for IEC101S                                     | 9377 |
|                 | Fix description on RTUD main page                                                                                 | 9274 |
|                 | Fix issue with web UI points not showing in IEC104 Status for Modbus-S to DNP3-M scenario                         | 9261 |
|                 | Fix issues with MQTT TLS certificate file uploads                                                                 | 9278 |
|                 | Fix MQTT master points not showing in the IEC104 status                                                           | 9349 |
|                 | IECD description now updated to include new protocol conversions                                                  | 9359 |
|                 | IECD status page now correctly displays GROUPS 110 and 111                                                        | 9345 |
|                 | Improved reporting of points online-offline status (DNP3-M to MQTTs)                                              | 9266 |
|                 | Improvements to IEC104 showing points on status page                                                              | 9213 |
|                 | Move IEC104 options from general configuration tab to IEC104 tab                                                  | 9580 |
|                 | Only show RTUD configuration when digital IO's are present                                                        | 9519 |
|                 | Support missing TI-5 data point configuration for IEC101 to IEC104 protocol conversion                            | 9376 |
|                 | Support RTUD configuration on platforms with Digital IO's                                                         | 9248 |

|                 |                                                                                 |      |
|-----------------|---------------------------------------------------------------------------------|------|
| SCEP            | Only display valid users for SCEP client Certificate User option                | 9422 |
|                 | Fix typo in description for Renewal and Retry options                           | 9414 |
| Smart EMS       | Use POST for Smart EMS check                                                    | 8290 |
| SNMP            | Fix SNMP web UI configuration when options not already present in configuration | 9390 |
|                 | Remove unsupported 'any' value from SNMP Group Version option list              | 9601 |
| Status          | Only show Data Usage status when data usage enabled                             | 8915 |
|                 | Only show VRRP status when enabled                                              | 6966 |
| Terminal Server | Fix terminal server not showing for firmware families that do not support SCADA | 9289 |
| VRRP            | Add IP address validation and update description for Virtual IP option          | 3852 |

## 11.2Release 25.05.24.000

| Module       | Short Description                                                                                                                                       | Mantis |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Cwatch       | Ensure a minimum of ICMP attempts when jitter and latency checks are enabled – 3 for jitter, 2 for latency                                              | 8095   |
|              | Fix segfault when an additional cwatch config section is empty                                                                                          | 8554   |
|              | Log an error message when trying to restart a Sierra Wireless WP7xxx modules using cwatch radio module restart recipe as this module does not support   | 8398   |
|              | Show cwatch status info even when cwatch process is not running                                                                                         | 8554   |
|              | Use parallel ping when multiple <code>icmp_hosts</code> defined                                                                                         | 7312   |
| DHCP Client  | Fix DHCP client intermittently not installing the default route on a when ports are bridged                                                             | 8823   |
| Dropbear     | Fix dropbear intermittently failing to start on an interface                                                                                            | 8502   |
|              | Pass default key file to Dropbear and skip loading all other keys to avoid auth warning messages in syslog                                              | 8174   |
| Ethernet     | Fix broken Ethernet operation in Merlin series when upgrading Merlins using legacy <code>va_switch</code> config_section for mapping the Ethernet ports | 8960   |
|              | Fix manual <code>ifup</code> on non auto Ethernet and SFP interfaces                                                                                    | 8507   |
|              | Support <code>network.va_switch</code> config section on DSA platforms                                                                                  | 8451   |
| Event System | Fix <code>ConfigChanged</code> event not being generated when using configuration audit                                                                 | 7132   |
| Failsafe     | Fix auth error messages in syslog when console disabled using failsafe feature                                                                          | 8401   |
| Firewall     | Optimise local IP checking using cache                                                                                                                  | 8307   |
| IECD         | Improve IECD launch speed when using a large number of data points                                                                                      | 8608   |
|              | Set Point configuration defaults after importing points from CSV file                                                                                   | 8301   |
|              | Sort command points and data points from lowest to highest in <code>iec show stats</code>                                                               | 8701   |
| IECD/DNP3    | Fix display of DNP3S uplink time in <code>iec show stats</code>                                                                                         | 8417   |
|              | Fix DNP3S event queue handling so the event queue persists across the uplink up and down events                                                         | 8931   |
|              | Fix incorrect reporting of DNP3S link status                                                                                                            | 8620   |

|                   |                                                                                                                                                                                                                                         |      |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
|                   | Fix support for DNP3 Group 3 data point (double bit binary input)                                                                                                                                                                       | 8597 |
|                   | Fixed incorrect conversion of DNP3 G42 variation 6 events to IEC104 TI 36                                                                                                                                                               | 8527 |
| IECD/IEC104       | Added Command Type ID validation to configured cmdpoint type id for IEC104S                                                                                                                                                             | 8579 |
|                   | Fix issues with IEC104 command point pass through dependencies                                                                                                                                                                          | 8617 |
|                   | Improvements for IEC104 Server transmission queue for optimal upload performance.                                                                                                                                                       | 8625 |
| IECD/<br>IEC61850 | Added default config values for IEC61850 master settings                                                                                                                                                                                | 8351 |
|                   | Fix an issue in SCL parser - converting DPS point types                                                                                                                                                                                 | 8535 |
|                   | Fix errors in mapping of IEC61850 DPS to IEC104 double point                                                                                                                                                                            | 8483 |
|                   | Fix IEC61850M Read Instant Value option operation. <code>iec61850m readinst</code> option moved from <code>61850m</code> config section to global config section so it is applied to all points during SCL import                       | 8574 |
|                   | Fix IEC61850M SCL parser issue related to RCBs and datasets                                                                                                                                                                             | 8716 |
|                   | Fix incorrect handling of IEC61850 DPC data type by the IEC61850 client                                                                                                                                                                 | 8493 |
|                   | Fix incorrect reading of APC value                                                                                                                                                                                                      | 8497 |
|                   | Fix issue in handling Point Invalid bit when multiple IEC61850M sessions are connecting                                                                                                                                                 | 8353 |
|                   | Fix issues in IEC61850M SCL file parser when dealing with multiple Logical Nodes                                                                                                                                                        | 8482 |
|                   | Fixed incorrect processing of INS variable during dataset poll                                                                                                                                                                          | 8794 |
|                   | Fixed reading IEC61850 analog inputs (instantaneous vs averaged values)                                                                                                                                                                 | 8293 |
|                   | Incomplete Parsing of Data and Command Points for 30 61850M Links                                                                                                                                                                       | 8570 |
|                   | Set <code>iec104_sbo</code> parameter based on the parsed value of <code>ctrlmodel</code> of IEC61850M SCL file                                                                                                                         | 8467 |
|                   | Fix IEC61850M reports trigger options handling                                                                                                                                                                                          | 8872 |
| IECD/Modbus       | Added display of point value for MQTTS to Modbus point display in <code>iecd show points</code> command                                                                                                                                 | 8691 |
|                   | Allow value of 0 for Modbus register address                                                                                                                                                                                            | 8615 |
|                   | Fix incorrect reporting of point online (quality status)                                                                                                                                                                                | 8619 |
|                   | Fix reporting of offline status on Modbus read errors - now Modbus read errors result in associated point coming offline                                                                                                                | 8529 |
|                   | Fixed handling of online status bits in DNP3S to Modbus mode                                                                                                                                                                            | 8408 |
| IECD/MQTT         | Added default setting of MQTT port for VHMI                                                                                                                                                                                             | 8531 |
|                   | Fixed incorrect reporting of point value by VHMI over MQTT                                                                                                                                                                              | 8946 |
|                   | Send point updates to dedicated topics if configured<br><code>web: system-&gt;iecd-&gt;server protocol-&gt;configure mqtt-&gt;topic-&gt;Append Name to Monitor Topic</code><br><code>cli: iecd.port.mqtt_add_ptname_to_mon_topic</code> | 8971 |
| LLDP              | Fix LLDP description delivery to peer                                                                                                                                                                                                   | 8627 |
|                   | Fix LLDP neighbour establishment                                                                                                                                                                                                        | 8595 |

|                  |                                                                                                                                                                                                     |      |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Management Users | Fix management user <code>allowed_pages</code> handling                                                                                                                                             | 8225 |
| Mobile           | Disable VoLTE on SIMCOM7600 mobile module to avoid establishing an IMS bearer in selected networks                                                                                                  | 8405 |
|                  | Ensure correct LTE bands are selected when switching SIMs                                                                                                                                           | 8893 |
|                  | Ensure Quectel initialisation doesn't require unnecessary module reboots                                                                                                                            | 8859 |
|                  | Fix crash for Quectel modules when SIM2 in during boot and SIM1 inserted after boot                                                                                                                 | 8529 |
|                  | Fix ICCID collection when SIM1 empty and SIM2 inserted to allow mobile interface to start correctly                                                                                                 | 8934 |
|                  | Fix intermittent Unitac module connection after FOTA upgrade from module firmware from V13 to V14                                                                                                   | 8814 |
|                  | Fix manual <code>ifup</code> first attempt on Sierra Wireless WP76XX modules                                                                                                                        | 7827 |
|                  | Fix RM520 mobile module connectivity using RM520NGLAAR01A08M4G_01.200.01.200 firmware                                                                                                               | 8698 |
|                  | Increase sleep between turning off and on of radio module from 1 to 2 seconds to support SIMCOM7070E on Merlin4400 series.                                                                          | 8661 |
|                  |                                                                                                                                                                                                     |      |
| Multiwan         | Check if route exists before modifying to avoid modifying a route for an incorrect interface. Fix issue where multiwan is modifying/removing routes for interfaces that are                         | 8282 |
|                  | Clear conntrack table when routes are changed to avoid stale connections                                                                                                                            | 8256 |
|                  | Fix issue restoring default gateway metric when interface recovers                                                                                                                                  | 8282 |
|                  | Fix mobile interface losing IP address after USB restart via command line or via Connect Watch <code>Interface restart</code> failure action                                                        | 8754 |
|                  | Fix multiwan crash due to module separation                                                                                                                                                         | 8435 |
|                  | Fix multiwan pre-empt functionality (broken in 25.04.35.000)                                                                                                                                        | 8575 |
|                  | Ping failure not recorded when pings dropped due to iptables rules                                                                                                                                  | 8545 |
| Network          | Remove IP address display if interface is down using <code>network_status</code> command                                                                                                            | 6763 |
| OpenVPN          | Fix multiple OpenVPN tunnel establishment without the need for process restart                                                                                                                      | 8478 |
|                  | Fix Openvpn tunnel interface failing to get IP address with TPM stored keys                                                                                                                         | 8822 |
| SCEP             | Fix issue due to empty <code>cacert</code> option value that could cause SCEP to fail to pull certificate on <code>strongswan</code> reboot                                                         | 8885 |
|                  | Fix SCEP certificate enrolment failure using TPM-backed key                                                                                                                                         | 8441 |
|                  | Fix system clock changing to certificate expiry time on certificate retrieval                                                                                                                       | 8871 |
|                  | Strongswan will now skip connections that require certs that are retrieved via SCEP should those certs not be available yet                                                                         | 8377 |
| SFP              | Fix bridging two SFP ports on Merlin4600 series                                                                                                                                                     | 8651 |
| SNMP             | Firewall Zone drop event now available in <code>VA-TRAPS-G02</code> MIB file                                                                                                                        | 8829 |
| Strongswan       | Fix <code>ipsec statusall</code> crash when multiple peers connect to a single connection with <code>remoteaddress</code> configured as <code>%any</code> and an unspecified <code>remotelan</code> | 8785 |

|                        |                                                                                                                              |      |
|------------------------|------------------------------------------------------------------------------------------------------------------------------|------|
|                        | Fix strongswan file permissions for IPsec XAUTH with PAM                                                                     | 8802 |
| Syslog                 | Fix <code>misc nmea</code> kernel error messages in syslog                                                                   | 8533 |
|                        | Fix <code>tty</code> error messages when used on VM                                                                          | 8461 |
| System                 | Ensure <code>/etc/passwd</code> is updated when option <code>linuxuser</code> is set to no                                   | 8171 |
|                        | Ensure <code>/etc/rollback</code> directory is automatically created and fix rollback from active update to altconfig target | 8621 |
|                        | Factory reset from web UI when force password present in factory config forces user to reset password on next log on.        | 8974 |
|                        | Fix configuration error message due to obsoleted <code>openvpn_recipes</code> package                                        | 8811 |
|                        | Fix incorrect config file errors when running configuration sanity check <code>sanity_check.sh</code>                        | 8732 |
|                        | Improve firmware validation to cover both kernel and main image before flashing to altimage                                  | 2882 |
| Web                    | Define link colour for dark mode                                                                                             | 8099 |
|                        | Do not show DLMSD or COSEM configuration if no serial interface present                                                      | 8061 |
|                        | Fix menu items when they don't fit the menu width                                                                            | 8546 |
|                        | Fix web UI becoming unresponsive when HTTPS status page left open in browser                                                 | 8695 |
| Web/Administration     | Fix TPM key upload via web UI                                                                                                | 7874 |
|                        | Remove Upload private keys to TPM button since now handled via Certificate Management page                                   | 8235 |
| Web/AT Command Service | Enhancements to AT Command Service web configuration and refresh of AT service status to refresh every 5 seconds             | 8238 |
| Web/Certificates       | Fix typo on HTTPS Certificate label                                                                                          | 8891 |
| Web/Connection Watch   | Fix incorrect Connection Watch status display on web UI when there are underlying configuration issues                       | 8569 |
| Web/Cwatch             | Ensure ICMP jitter options are only present on web UI when method <code>icmp</code> is selected                              | 6973 |
|                        | Fix cwatch status showing as disabled when enabled                                                                           | 8837 |
| Web/HTTP Server        | Remove configuration options that are not required from web UI, fix default values and split configuration into tabs         | 8397 |
| Web/Interfaces         | Fix issue when creating an interface with a device already assigned to another interface                                     | 4072 |
|                        | Fix <code>RECONNECT</code> button press stalling the web UI until the interface has finished connecting                      | 8982 |
| Web/IPSec              | Fix crash when accessing Authentication tab on web UI                                                                        | 8582 |
|                        | Fix IPSec status display for multiple child tunnels                                                                          | 8444 |
|                        | Fix IPSec status page display after disabling IPSec                                                                          | 8844 |
|                        | Fix misleading preshared key ID selector label                                                                               | 8349 |
|                        | Fix to ensure connection tab labels contain correct tunnel names                                                             | 8729 |

|                      |                                                                                                                                                               |      |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
|                      | Fix Web UI incorrectly saving default values for IPSec Connection Additional Local and Remote Auth options                                                    | 8801 |
|                      | IPSec status now refreshes every 5 seconds                                                                                                                    | 8464 |
|                      | Removed cert file upload from strongswan web UI – now handled on certificate management page.                                                                 | 8464 |
|                      | Reordering of configuration into separate tabs and removal of certificate file upload. Certificates are now handled in dedicated Certificate Management page. | 8464 |
|                      | Strongswan connection setting no longer removed when disabled via the web UI                                                                                  | 8828 |
| Web/Mobile           | Fix 3G roaming manager custom sort script option when Roaming Sort Order is <code>none</code>                                                                 | 8991 |
|                      | Fix missing band selection in web UI for Hucom mobile module                                                                                                  | 8372 |
| Web/<br>Multiwan     | Fix multiwan configuration using web UI when <code>main</code> configuration section is missing in config                                                     | 8569 |
|                      | Multiwan now stops correctly when disabled via the web UI                                                                                                     | 8085 |
| Web/Power<br>Monitor | Fix web UI default value for power monitor enabled field                                                                                                      | 8633 |
| Web/Rollback         | Fix rollback configuration through web UI when no options exist in configuration                                                                              | 8621 |
| Web/Scada            | Add missing IEC61850 datasets and control block configuration                                                                                                 | 8696 |
|                      | Add MQTT server option dependencies for MQTT Number of Control Vars and MQTT Payload Format configuration                                                     | 8682 |
|                      | Add note to Data point descriptive name field to inform of 39 character limit                                                                                 | 8616 |
|                      | Add reminder on web UI to save config when changes made on IECD pages                                                                                         | 8052 |
|                      | Added IEC61850 to RTU protocols list for IEC104 command point                                                                                                 | 8213 |
|                      | Added missing DNP3 group3 point type to data point in the web UI                                                                                              | 8330 |
|                      | Added missing Echo enable configuration option for CRSD                                                                                                       | 8954 |
|                      | Added missing IECD options to web UI                                                                                                                          | 8764 |
|                      | Added quality column and data point quality reporting to IECD status in web UI                                                                                | 8406 |
|                      | Change <code>modbus_regtype</code> command type import from string to numerical                                                                               | 8684 |
|                      | Changed MQTT TLS Verify Depth to a dropdown list instead of integer                                                                                           | 8707 |
|                      | Description changed to reflect the fact that IEC61850 SCL file import only works with SCADA side protocol set to IEC104                                       | 8353 |
|                      | Fix configuration of IEC104 Auth Exp Key Wrap Algo option                                                                                                     | 8718 |
|                      | Fix data polling delays for IEC61850M to IEC104S protocol conversion when using multiple RTUs with large number of data points                                | 8672 |
|                      | Fix display of Integrated Totals IEC104 type ID                                                                                                               | 8656 |
|                      | Fix IEC104 Master Link 2 tab option visible when only Link 1 is enabled                                                                                       | 8765 |
|                      | Fix IEC104 W option description in IEC104_LINK. Was previously incorrectly labelled IEC104 K                                                                  | 8436 |
|                      | Fix issue in converting 104 setpoint float to Modbus 64 bit commands                                                                                          | 8655 |

|                     |                                                                                                                                    |      |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------|------|
|                     | Fixed data points in IECD status page for MQTT                                                                                     | 8688 |
|                     | Fixed incorrect processing of Modbus bitmap point type for DNP3S case                                                              | 8675 |
|                     | Fixed Modbus point quality not updating in web status                                                                              | 8662 |
|                     | Fixed point event queue overflow for IEC61850M to IEC104S protocol conversion for data points greater than 127                     | 8560 |
|                     | IECD Slave changed to IECD Server                                                                                                  | 8894 |
|                     | Implemented missing command conversion from IEC104 Setpoint Float to Modbus                                                        | 8614 |
|                     | Moved IEC104 health point configuration from Multi-master mode tab to new Health tab                                               | 8686 |
|                     | Remove popup warning prompts users to save configuration on subpage                                                                | 8587 |
|                     | Update description for IEC61850M Read Instant Value                                                                                | 8821 |
|                     | Update descriptions for MQTT server options                                                                                        | 8680 |
|                     | Updated IEC104M point field descriptions                                                                                           | 8480 |
| Web/SCEP            | Fix error on UI after certificate deletion                                                                                         | 8997 |
|                     | Fix SCEP client status showing correctly                                                                                           | 8835 |
|                     | Fix SCEP status display in the web UI                                                                                              | 8835 |
|                     | SCEP request now initiated after <code>Save &amp; Apply</code> via the web UI                                                      | 8377 |
| Web/SSH             | Fix host key algorithm description to note that only RSA algorithms are advertised by the SSH server when no algorithm is selected | 7312 |
| Web/Status          | Added mobile overview and routing table to web UI status overview page                                                             | 6965 |
|                     | Ensure AT Command Service status is not present when disabled                                                                      | 8862 |
|                     | Ensure Connection Watch status is not present when disabled                                                                        | 6966 |
|                     | Ensure Data Usage status is not present when disabled                                                                              | 6966 |
|                     | Ensure GNSS status is not present when disabled                                                                                    | 8858 |
|                     | Suppress link local IPv6 addresses in routing table overview                                                                       | 6965 |
| Web/Terminal Server | Fix missing Terminal Server configuration in web UI using SXL firmware                                                             | 8393 |
| Web/UDS             | Added missing 'none' value for script type to allow loading a pure text file                                                       | 8989 |
|                     | Do not remove blank lines from scripts                                                                                             | 8990 |
|                     | Support UDS gzip encoding configuration via web UI                                                                                 | 8368 |
| Web/VRRP            | Fix 'Track Interface' configuration as <code>list</code> type for proper operation                                                 | 8637 |

## 11.3Release 25.04.63.000

| Module       | Short Description                                                                                                | Mantis |
|--------------|------------------------------------------------------------------------------------------------------------------|--------|
| BCP          | Fix BCP crash upon receipt of IPv6 frame                                                                         | 8116   |
| Data Usage   | Fix data usage bringing down interface when monthly usage limit reached                                          | 7759   |
| Event System | Fix missing interface names in VA event messages generated by the firewall using the <code>recent</code> option. | 8037   |

|                       |                                                                                                                                                                                                                                                                                    |      |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
|                       | Fix syslog message sending to multiple IP address                                                                                                                                                                                                                                  | 8046 |
| Firewall              | Fix broken protocol values ( <code>igp</code> , <code>eigrp</code> , <code>ax.25</code> , <code>etherip</code> , <code>ipcomp</code> , <code>vrrp</code> , <code>l2tp</code> , <code>isi</code> , <code>sctp</code> , <code>fc</code> ) used by firewall option <code>proto</code> | 7906 |
|                       | Support <code>vrrp</code> as valid protocol option                                                                                                                                                                                                                                 | 7906 |
|                       | Truncate zone names > 12 chars to avoid breaking firewall                                                                                                                                                                                                                          | 7791 |
| GPS                   | Fix <code>gpspeek</code> location information                                                                                                                                                                                                                                      | 7980 |
|                       | GPS error messaging improved by using error messages instead of error numbers                                                                                                                                                                                                      | 6660 |
| GRE                   | Prevent starting GRE interface if parent interface is missing                                                                                                                                                                                                                      | 8103 |
| HTTP Client           | Fix chunk size addition when reporting download status to Activator when using Chunky Downloads that could result in download failure                                                                                                                                              | 8023 |
| IECD                  | Fix parsing of AI scaler when importing data points from CSV file                                                                                                                                                                                                                  | 8199 |
|                       | Improved data points CSV import feature                                                                                                                                                                                                                                            | 8191 |
| IECD/<br>IEC104 Slave | Fixed issue with sending End of Initialization message in IEC104 slave                                                                                                                                                                                                             | 8233 |
| IECD/<br>IEC61850     | Fix description in the IEC61850 Slave side data point for DO field                                                                                                                                                                                                                 | 8019 |
|                       | Fixed TCP connection drop on IEC104 clock sync processing                                                                                                                                                                                                                          | 8211 |
| IECD/DNP3             | Fix error in displaying DNP3 app status                                                                                                                                                                                                                                            | 8348 |
|                       | Fixed incorrect link assignment when sending dual point cmd IEC104S to DNP3M                                                                                                                                                                                                       | 8390 |
|                       | Fixed issue with DNP3 analog input scaler for IEC104 TIs 9,11                                                                                                                                                                                                                      | 8347 |
|                       | Fixed issues in applying scaler to negative MODBUS value for DNP3 to MODBUS protocol conversion                                                                                                                                                                                    | 8207 |
|                       | Fixed sending ACT CON and ACT TERM to Scada Master for IEC104 slave to DNP3 master protocol conversion                                                                                                                                                                             | 8348 |
| IECD/Modbus           | Fix DNP3S to Modbus conversion issues for <code>select operate</code>                                                                                                                                                                                                              | 7999 |
|                       | Fixed bug in converting MODBUS HR register reads to DNP3S points (G30 and G40) mapped to same HR index                                                                                                                                                                             | 7999 |
|                       | Fix incorrect conversion from Modbus DI or CO to IEC104 Slave DPI (Type ID 3)                                                                                                                                                                                                      | 8380 |
|                       | Support Modbus Slave to IEC104 Master command conversion for Set Point Float                                                                                                                                                                                                       | 8182 |
| IECD/MQTT             | Added support for Type ID 20 for IEC101 to MQTT protocol conversion                                                                                                                                                                                                                | 8135 |
|                       | Fixed incorrect conversion of IEC101 double points to MQTT                                                                                                                                                                                                                         | 8126 |
|                       | Fixed issues with converting MQTT to IEC104 Master TypeIDs 9, 13, 48 and 50                                                                                                                                                                                                        | 8176 |
| L2TP                  | Fix L2TP initialisation                                                                                                                                                                                                                                                            | 8035 |
|                       | Fix privileges which left PPP in a bad state                                                                                                                                                                                                                                       | 8071 |
| Mobile                | Added error messages for failed connection attempts for Quectel modules in Ethernet mode                                                                                                                                                                                           | 7899 |
|                       | Corrected 5G technology codes so that they match with 3GPP 27.007 Release 16                                                                                                                                                                                                       | 7992 |
|                       | Correctly identify Unitac ML620DE and ML620EU modules in diagnostics. Previously both identified as ML620EU.                                                                                                                                                                       | 8166 |

|          |                                                                                                                                                                                                                                                                                 |      |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
|          | Disable <code>va-mobile</code> and execute <code>AT+CFUN=0</code> before powering down SIMCOM7070 modem to avoid module not reinitialising on USB bus                                                                                                                           | 7996 |
|          | Ensures signal strength and registration status information is refreshed as part of the check whether or not the radio module is registered with a PLMN and the signal strength is sufficient. Fixes connectivity issue when last reported signal strength was -113dBm or less. | 7919 |
|          | Fix 5G SA mode on Quectel RM520N-GL mobile module                                                                                                                                                                                                                               | 7975 |
|          | Fix connection for bands > 64 for Sierra Wireless WP7611 (PFP) module                                                                                                                                                                                                           | 8370 |
|          | Fix crash when band detection on Sierra Wireless WP76xx failed                                                                                                                                                                                                                  | 8334 |
|          | Fix incorrect detection of registration status while in GPRS mode                                                                                                                                                                                                               | 7945 |
|          | Fix Sierra Wireless WP7702 (QFT) mobile module becoming unresponsive when configured for ICCID collection                                                                                                                                                                       | 8360 |
|          | Fix SIM slot 2 3V/5V issue on Merlin series with Sierra Wireless WP7611 processor                                                                                                                                                                                               | 8142 |
|          | Fixes to ensure Unitac modules are initialised correctly                                                                                                                                                                                                                        | 8093 |
|          | Generate error message and handling if no supported LTE bands have been detected on a mobile module                                                                                                                                                                             | 8370 |
|          | Improve the handling of +CREG responses so that it also handles CREG mode 2                                                                                                                                                                                                     | 7880 |
|          | Only toggle the RF disable line when module is not present on the USB bus to avoid issues with correct phy detection. This fixes issues with SIM7070E starting on boot.                                                                                                         | 8114 |
|          | Power cycle the SIMCOM7070E modem if it starts in EDL mode                                                                                                                                                                                                                      | 8014 |
|          | Reset SIMCOM module authentication details to avoid using stored credentials when username/password not explicitly set in configuration                                                                                                                                         | 8013 |
|          | Set minimum firmware software version for Quectel EM060 module to prevent rollback to unsupported firmware                                                                                                                                                                      | 8088 |
|          | Stop flushing conntrack table every time a mobile connection fails to reconnect                                                                                                                                                                                                 | 8277 |
| Monitor  | Fix Monitor SSH access for SLA uploads                                                                                                                                                                                                                                          | 8175 |
| Multiwan | Fix issue where default gateway is lost on route change                                                                                                                                                                                                                         | 8282 |
|          | Split multiwan route management, health check and state management into separate modules                                                                                                                                                                                        | 8327 |
|          | Log multiwan shell commands at debug level                                                                                                                                                                                                                                      | 8332 |
| Network  | Fix Ethernet interfaces on Merlin series intermittently failing to restart after a network restart command                                                                                                                                                                      | 8120 |
|          | Fix link loss when changing from bridge to single port                                                                                                                                                                                                                          | 7937 |
|          | <code>ifup/ifdown</code> now correctly validate the UCI interface name before execution                                                                                                                                                                                         | 6276 |
| OpenVPN  | Fix support for multiple tunnels                                                                                                                                                                                                                                                | 8316 |
|          | OpenVPN interfaces are no longer deleted on <code>ifdown/network restart</code> event                                                                                                                                                                                           | 7871 |
| PPP      | Allow PPP interface to be up without IP address                                                                                                                                                                                                                                 | 8229 |
|          | Fix option <code>record</code> support                                                                                                                                                                                                                                          | 8022 |

|                    |                                                                                                                                                          |      |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| PPPoE              | Fix PPPoE interface on an Ethernet port not automatically starting on boot                                                                               | 7924 |
|                    | When PPPoE link is on a VLAN, it is no longer necessary to configure a dummy UCI interface for the underlying device in order for the VLAN to be created | 7924 |
| Roaming Manager    | Ignore test operators in roaming scan                                                                                                                    | 8001 |
| SFP                | Fix SFP interface correctly detecting state when using certain 1000base-X copper adapters that were not identifying when the Ethernet link was down      | 8152 |
| SNMP               | Fix SNMP support for BGP. Fixes bug introduced in 25.04.16.000                                                                                           | 7938 |
| Strongswan         | Fix conntrack flushing for strongswan on tunnel change                                                                                                   | 8249 |
| Syslog             | Fix bad values intermittently generated using firewall recent option                                                                                     | 8055 |
| System             | Suppress UCI error on <code>version -a</code> command if mobile module is not initialised                                                                | 7984 |
| TPM                | Fix HTTPS when keys are stored in the TPM                                                                                                                | 7922 |
|                    | Improve messaging to users during key existence checks                                                                                                   | 7567 |
| VRRP               | Fix VRRP transition when tracking mobile interface on Merlin series                                                                                      | 8020 |
| Web                | Added Security-Policy-Header (CSP) to prevent clickjacking                                                                                               | 8087 |
|                    | Align reboot loading page with web UI theme                                                                                                              | 8036 |
|                    | Change 'Modem configuration' to 'Mobile Manager Configuration'                                                                                           | 7310 |
|                    | Do not show PoE on hardware that does not support                                                                                                        | 6967 |
|                    | Ensure lines are visible underneath the login fields                                                                                                     | 8072 |
|                    | Fix formatting error messages in web UI                                                                                                                  | 8255 |
|                    | Fix interface colours after firewall zone update                                                                                                         | 8056 |
|                    | Fix pixelated background images                                                                                                                          | 8072 |
|                    | Fix web UI crash when option <code>ifname</code> is missing from an interface                                                                            | 8050 |
|                    | Remove welcome message from landing page                                                                                                                 | 8072 |
|                    | Removed hostname and logo and link from web UI log in page                                                                                               | 8072 |
| Web/Administration | Fix broken link on TPM cert upload page                                                                                                                  | 8082 |
|                    | Fix TPM key upload                                                                                                                                       | 7874 |
|                    | Improvements to reboot scheduling                                                                                                                        | 8125 |
|                    | Upload TPM key button is now removed for non-TPM boards                                                                                                  | 8086 |
| Web/Firewall       | Add option to WebUi to raise va events on zone dropped/rejected traffic.<br><code>cli: firewall.zone.discard_event</code>                                | 7769 |
|                    | Ensure firewall zone names are no longer than 12 characters                                                                                              | 7791 |
| Web/GPS            | Add option to select mobile device required to use GPS                                                                                                   | 7943 |
|                    | Replace GPS with GNSS                                                                                                                                    |      |
|                    | Restore link to google maps                                                                                                                              | 7403 |
| Web/HTTP Server    | Fix typo on web UI HTTP Server TPM Key Name                                                                                                              | 8079 |
| Web/Interfaces     | Align up/down indicator centrally                                                                                                                        | 7988 |

|                     |                                                                                                                    |      |
|---------------------|--------------------------------------------------------------------------------------------------------------------|------|
|                     | Fix unable to select SIM1 or SIM2 from mobile interface SIM configuration option                                   | 8007 |
|                     | Fix network interface colours to reflect up/down status                                                            | 6536 |
|                     | Fix removal of dependent interfaces from configuration                                                             | 8074 |
|                     | Support default route and metric configuration on L2TP interfaces                                                  | 8073 |
|                     | Update interface pages to show firewall zones as colours                                                           | 7988 |
|                     | Allow configuration of an MTU higher than 1500 bytes                                                               | 7534 |
| Web/IEC104 Slave    | Fix incorrect display of value for IEC104S to Modbus TI 9, 3 and HR, DI                                            | 8385 |
| Web/IECD            | Add debug options for IEC61850 to web UI                                                                           | 8215 |
|                     | Fixed IECD application restarting correctly when Save & Apply button used and IEC61850 connection is active.       | 8214 |
| Web/IPsec Status    | IPsec status now displays multiple subnets for IKEv2                                                               | 8352 |
| Web/Mobile          | Removed choice for selection of the assigned radio module. Radio selection is now done via the SIM slot selection. | 7893 |
|                     | Mobile status information on the web now automatically refreshes every 5 seconds                                   | 8272 |
|                     | Fix error on Mobile Manager page when using RFD mobile module - Hucom (WeTelecom) WPD-600N                         | 8358 |
| Web/Real Time Graph | Only show UCI network interfaces on the Realtime Traffic screen                                                    | 7946 |
| Web/Status          | Do not display 802.1x, CESOP, LLDP, Mobile IP ,ADSL on status tab unless configured                                | 6966 |
| Web/Strongswan      | Elliptic curve Diffie-Hellman algorithms can now be configured via the web UI when using IKEv2                     | 7730 |
| Web/System          | Do not show HMAC password algorithm as a configurable option on hardware that does not support a TPM               | 7895 |

## 11.4Release 25.04.16.000

| Module     | Short Description                                                                    | Mantis |
|------------|--------------------------------------------------------------------------------------|--------|
| Data Usage | Fix mobile phy detection on data usage start using faster processors                 | 7865   |
| Ethernet   | Fix Ethernet ports intermittently reflecting incorrect state when bridging           | 7795   |
| Mobile     | Fix band selection for SIMCom7070E module                                            | 7833   |
|            | Fix SIMCom7070E module establishing data connection                                  | 7821   |
|            | Fixes to ensure APN information is set properly for Sierra Wireless radio modules    | 7777   |
|            | Fixes to ensure the manual network operator selection is executed in the right order | 7797   |
|            | Log a warning that GNSS is not supported for SIMCom7070E mobile module               | 7822   |
| Monitor    | Fix mobile phy detection on monitor start using faster processors                    | 7863   |
|            |                                                                                      | 7864   |

|          |                                                                                        |      |
|----------|----------------------------------------------------------------------------------------|------|
| Multiwan | Fix crash caused by incorrect mobile phy detection on start up using faster processors | 7835 |
|          | Produce warning for interfaces that do not exist                                       | 7857 |
| System   | Replace invalid spaces in hostnames with '-' at run time                               | 7829 |
| TPM      | Fix error message when <code>tpm-cli flush</code> command is executed twice in a row   | 6010 |
| Web      | Prevent capitalisation of configuration section names                                  | 7856 |

## 11.5 Release 25.04.13.000

| Module              | Short Description                                                                                     | Mantis |
|---------------------|-------------------------------------------------------------------------------------------------------|--------|
| Mobile              | Fix Sierra Wireless module FOTA upgrade CRC32 checksum calculation                                    | 7724   |
| OpenVPN             | Don't create new <code>linux</code> and <code>uci</code> interface on <code>openvpn</code> restart    | 7735   |
| System              | Fix minimum machtype firmware version checking                                                        | 7717   |
|                     |                                                                                                       | 7722   |
|                     |                                                                                                       | 7714   |
|                     | Fix misleading 'cannot find device' messages on network restart or <code>ifup</code>                  | 7798   |
| Web                 | Fix issue socket closing before HTTP data is complete which can result in UI not displaying correctly | 6738   |
|                     |                                                                                                       | 7752   |
| Web/Realtime Graphs | Fix display of Realtime Graphs for mobile interfaces<br><code>web: status-&gt;Realtime Graphs</code>  | 7029   |

## 11.6 Release 25.04.08.000

| Module       | Short Description                                                                                                  | Mantis |
|--------------|--------------------------------------------------------------------------------------------------------------------|--------|
| 802.1x       | Fix 802.1x authentication                                                                                          | 4290   |
|              |                                                                                                                    | 7464   |
|              | Fix 802.1x restart after <code>ifup</code> or cable unplug/plug                                                    | 7530   |
| Activator    | Fix issue with multiple downloads from different services (active update, inventory, audit) running simultaneously | 6321   |
| Boot         | Improve power-on sequencing for USB hub on GW2124P and Merlin series                                               |        |
| Cwatch       | Change Cwatch 'Interface does exist' message to <code>NOTICE</code> severity                                       | 7078   |
| DHCP         | Fix corrupted IA address when sending <code>OPTION_IA_N</code>                                                     | 7424   |
| Event System | Correctly handle double quotes in event target <code>cmd_template</code> value                                     | 5736   |
|              | Fix <code>va_event</code> syslog messages showing with no space between date and serial number                     | 7513   |
| GRE          | Validate configured keys are unique                                                                                | 6769   |
| HTTP Client  | Include all CPUs in interrupt count value in <code>hdl</code> request field <code>irq_cnt</code>                   | 6228   |
| IECD         | Added timestamp to <code>iecd show stats</code> diagnostics command                                                | 7339   |
|              | Enhancement to <code>iecd show config</code> command to show full config and not just main section                 | 6894   |
|              | Fix clock sync time in IEC101 <code>force_clock_sync</code> to use local time instead of UTC                       | 7208   |

|                 |                                                                                                                                                               |              |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
|                 | Fix error in converting clock value from IEC104 to UTS seconds                                                                                                | 7022         |
|                 | Fix excessive logging of DNP3 point updates                                                                                                                   | 7521         |
|                 | Fix serial interface name selectors for DNP3, Modbus and IEC101 to match physical port names                                                                  | 7180         |
|                 | IEC104 to IEC101 health point now correctly sent to IEC104 master when IEC101 data link gets established                                                      |              |
|                 | Improvements to IEC104 Setpoint to DNP3 Analog Output conversion                                                                                              | 7015         |
| IECD/<br>Modbus | Added bitmap handling for DI register type in Modbus master                                                                                                   | 7371         |
|                 | Extend supported data format values for MODBUS data points                                                                                                    | 6890         |
|                 | Fix event generation of unsolicited messages for Modbus master (serial) to DNP3 slave (TCP) when DNP3 Unsolicited Messages option is enabled in configuration | 7335<br>7526 |
|                 | Fix issue with detection of serial interface names on Merlin4400 causing inconsistency with <code>iecd.port.modbus_serial_ifnum</code> option                 | 7051         |
|                 | Fix issue with IEC104 to Modbus AI scaling                                                                                                                    | 7375         |
|                 | Fix missing display of point value in Web UI for Modbus to MQTT                                                                                               | 7189         |
|                 | Fix support for conversion of Modbus slave to DNP3 master                                                                                                     | 7186         |
|                 | Fixed MODBUS master command not timing out when RTU does not reply                                                                                            |              |
|                 | Improvements to Modbus trace feature                                                                                                                          | 7470         |
|                 | Minimum Modbus master polling time reduced from 500ms to 50ms                                                                                                 | 7228         |
| IECD/DNP3       | Added support for DNP3 analog output command g41 v1, v2, v3 and v4                                                                                            |              |
|                 | Allow non-contiguous point indexes for DNP3 slave                                                                                                             | 7275         |
|                 | Changed DNP3 master integrity poll request for class 0 static data poll                                                                                       | 7392         |
|                 | Fix converting DNP3 double precision float types to IEC104 floats                                                                                             | 7533         |
|                 | Fix DNP3 slave to IEC104 master protocol conversion                                                                                                           | 7579         |
|                 | Fix incorrect float translation for group 40 var 3 and 4                                                                                                      | 7536         |
|                 | Fix issue with converting DNP3 counter to IEC104 Integrated Total                                                                                             | 7531         |
|                 | Fix issue with DNP3 master in processing multi-fragment responses                                                                                             | 7409         |
|                 | Fix to provide output control feedback for DNP3 slave to MODBUS master                                                                                        |              |
|                 | Fix transmission of spontaneous update to IEC104 master on DNP3 static variation value change                                                                 | 7410         |
|                 | Fixed issues in DNP3 slave processing Binary Output and Analog Output commands                                                                                | 7548         |
|                 | Implemented common DNP3 trace functions for slave and master side                                                                                             | 7557         |
|                 | Implemented several new features for IEC104 to DNP3 double command conversion                                                                                 | 7423         |
|                 | Improve DNP3 slave processing of Binary and Analog Commands; now allow all combinations of OpCode and TCC fields: LATCH_ON, LATCH_OFF, CLOSE, TRIP            |              |
| IECD/MQTT       | Increased size of DNP3 analog output block buffer to handle possible size of variation 4 – 64 bit double with single byte status                              |              |
|                 | Fix data point map value update with Modbus master to MQTT conversion that generates events to MQTT subscribers                                               | 7465         |

|           |                                                                                                                    |                              |
|-----------|--------------------------------------------------------------------------------------------------------------------|------------------------------|
|           | Increased supported character length for MQTT topic name, client id and client name                                | 7173                         |
| IECD/VHMI | Fix issue related to DPS not starting for VHMI MQTT mode                                                           | 7081                         |
|           | Fix to report data point by VHMI only when value changes                                                           |                              |
| Mobile    | Allow backslash '\' in username and password                                                                       | 7360                         |
|           | Custom interface DNS now supported by Unitac modules                                                               | 7192                         |
|           | Ensure PDP context is deactivated before attempting to establish connection to avoid issue with connection attempt | 7168                         |
|           | Ensure SMS format is set correctly on the Quectel modules                                                          |                              |
|           | Ensure that we don't try to restore IMS APN settings when using Sierra Wireless WP7702 module                      | 7382                         |
|           | Fix EID detection when APDU contains the tag and length                                                            | 7522                         |
|           | Fix initialisation of 3V/5V SIMs in SIM slot 2 on Merlin 4100/4400 series                                          | 7554<br>7625                 |
|           | Fix LTE band selection for bands larger than 63 for Sierra Wireless modules                                        | 7680                         |
|           | Fix mobile module detection on Merlin4100 series                                                                   | 7683                         |
|           | Fix Quectel registration status poller                                                                             | 7484                         |
|           | Fix Quectel RM520N restart after switching to QMI mode                                                             | 7243                         |
|           | Fix selection of bands above band 63 for SIMCom7600G-H                                                             | 7356                         |
|           | Fix SIM In status for Merlin series with non-Sierra Wireless modems                                                | 7220                         |
|           | Fix SIM7070E connection to LTE on Merlin4400 series                                                                | 7542                         |
|           | Fix <code>va_mobile</code> failing to start if LTE band list is empty                                              | 7495                         |
|           | Fixed network status constantly changing textual description (LTE/LTE-M) for used radio technology                 | 7340                         |
|           | Ignore SIM in/out events from eSIM that could lead to crash on Sierra Wireless modems                              |                              |
|           | Improve behaviour on network down for QMI connections to ensure reconnection after network outage                  | 6325                         |
|           | LTE band locking configuration option <code>simX_lte_bands</code> now supports space separated bands               |                              |
|           | <code>sendsms</code> command now handles '+' at the beginning of international numbers                             |                              |
|           | Support firmware auto select on Sierra Wireless WP7702                                                             | 7349                         |
|           | Unitac modules now use <code>wwan0</code> interface rather than <code>eth0</code>                                  | 6899                         |
| Network   | Add interface name and state for aliases to <code>network_status</code>                                            | 6716                         |
|           | Fix dependant interfaces starting correctly on a network restart                                                   | 7598                         |
|           | Remove the minimum IPv6 fragment size check                                                                        | 7320<br>7324<br>7325<br>7326 |
| OpenVPN   | Allow <code>tun</code> or <code>tap</code> setting to create interfaces correctly.                                 | 7114                         |
| PoE       | Fix missing event on powered device disconnect                                                                     | 7195                         |
| SCEP      | Fix certificate expiration date calculation                                                                        | 7572                         |
|           | SCEP ATQ time now synchronised with NTP                                                                            | 7083                         |

|                         |                                                                                                                                              |      |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------|
| Serial Broadcast Server | Fixed incorrect handling of TCP connection to Terminal Server                                                                                | 7231 |
| SNMP                    | Fix UCI MIB ifName truncation                                                                                                                | 6981 |
|                         | SNMP <code>engineID</code> now has fixed value that persists through reboot                                                                  | 7355 |
|                         |                                                                                                                                              | 7358 |
| Strongswan              | General improvements to memory usage                                                                                                         |      |
| Syslog                  | Fix syslog to use local time instead of UTC                                                                                                  | 7240 |
| System                  | Adds the ability to define a COMMENT environment variable when invoking any process for display by <code>ps</code> command                   | 7020 |
|                         | Fix firmware upgrade on Merlin series running Sierra Wireless WP7602 module                                                                  | 7012 |
|                         | Panic log now contains timestamp on crash events                                                                                             | 5608 |
| TACACS                  | Fix IPv6 support                                                                                                                             | 6620 |
| Terminal Server         | Start serial device in RS232 mode to ensure terminal server initialises correctly                                                            | 7009 |
| VA Event System         | Fix buffer overflow crash and add new internal warning event upon event buffer overflow                                                      | 7176 |
|                         |                                                                                                                                              | 7163 |
| VRRP                    | Allow multiple groups in <code>vrrp status</code> command                                                                                    | 7246 |
| Web                     | Fix reboot via web UI                                                                                                                        | 7574 |
| Web/Interfaces          | Ensure interface names are not automatically capitalized on the web UI                                                                       | 7678 |
|                         | Remove PPTP protocol from available interface protocols                                                                                      | 7354 |
| Web/Modbus              | Fix display of IECD status page to show data points                                                                                          | 7170 |
| Web/Multiwan            | Support <code>multiwan.interface.state_transition_hook</code> configuration via the web UI                                                   | 5433 |
| Web/OpenVPN             | Implement dependency between <code>local</code> and <code>nobind</code> option to avoid OpenVPN failing to start when both enabled in config | 6819 |
| Web/802.1x              | 802.1x web UI enhancements; add file upload for certs and keys; Only display bridge interfaces as available 802.1x supplicant interfaces     | 6528 |
| Web/Dynamic DNS         | Restart DDNS when settings are changed from web UI                                                                                           | 6491 |
| Web/Firewall            | Fix add and edit of firewall zones and rules via web UI                                                                                      | 7573 |
|                         | Support firewall rule <code>chain</code> option                                                                                              | 6898 |
|                         | web: <code>security-&gt;firewall-&gt;traffic rules</code><br>cli: <code>firewall.rule.chain</code>                                           |      |
| Web/IECD                | Change MODBUS serial interface presentation to a selection of detected serial interface names                                                |      |
|                         | Changed IEC104 TI option to list value instead of range                                                                                      |      |
|                         | Fix delete button on web UI for IECD                                                                                                         | 7181 |
|                         | Fix incorrect display of values in DNP3 slave to DNP3 master mode                                                                            | 7571 |
|                         | Fixed web UI error in setting value range for IEC104 link number                                                                             | 6911 |
|                         | IEC61850 client web UI enhancements                                                                                                          | 6600 |
|                         | Improvements for IECD command points                                                                                                         | 7015 |
|                         |                                                                                                                                              | 7019 |

|                    |                                                                                                                                                                                                                                                                                                                                                                                            |      |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
|                    | Improvements to MODBUS master configuration                                                                                                                                                                                                                                                                                                                                                |      |
|                    | Improvements to VHMI web configuration                                                                                                                                                                                                                                                                                                                                                     | 7062 |
| Web/IOSERV         | Add support for upload of CID file                                                                                                                                                                                                                                                                                                                                                         | 6897 |
| Web/Mobile         | Added display of LTE bands supported by SIMCom7070E                                                                                                                                                                                                                                                                                                                                        | 7565 |
|                    | Fix <code>va_mobile</code> restart on save & apply via web UI                                                                                                                                                                                                                                                                                                                              | 7494 |
|                    | Simplify mobile configuration using tabs via web UI                                                                                                                                                                                                                                                                                                                                        | 7707 |
| Web/Mobile Manager | Show supported LTE bands for enable/disable via Web.<br><code>web: services-&gt;mobile manager-&gt;lte</code>                                                                                                                                                                                                                                                                              |      |
| Web/Status         | Only show hardware capable features                                                                                                                                                                                                                                                                                                                                                        | 6966 |
|                    | Only show multiwan status when enabled                                                                                                                                                                                                                                                                                                                                                     | 6966 |
| Web/System         | Fix duplicate firewall package in configuration export                                                                                                                                                                                                                                                                                                                                     | 6904 |
| Web/System         | Support missing configuration options for SSH connection identity, verbose and VRF via web UI<br><code>web: security-&gt;ssh-&gt;Identity</code><br><code>cli: dropbear.dropbear.Identity</code><br><code>web: security-&gt;ssh-&gt;Verbose</code><br><code>cli: dropbear.dropbear.verbose</code><br><code>web: security-&gt;ssh-&gt;VRF</code><br><code>cli: dropbear.dropbear.VRF</code> | 6703 |
| Web/VHMI           | Fix broken upload of DPS private key file                                                                                                                                                                                                                                                                                                                                                  |      |

## 11.7Release 25.03.43.014

| Module              | Short Description                                                                                                                 | Mantis |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------|--------|
| Mobile              | Use Unitac-specific AT commands <code>AT!UBAND</code> , <code>AT!UTEMP</code> and <code>AT!UREBOOT</code> instead of GCT commands |        |
|                     | Added a module reboot after executing a factory reset of the Unitac module                                                        |        |
|                     | Ensure Unitac module comes back in ECM/VLAN mode after factory reset                                                              |        |
|                     | Added an extra delay before issuing the AT command to switch the Unitac modules into ECM mode.                                    |        |
| Web/Realtime Graphs | Fix web UI real time graphs for QMI mobile connections<br><code>web: status-&gt;Realtime Graphs</code>                            | 7029   |

## 11.8Release 25.03.43.009

| Module       | Short Description                                                                                                               | Mantis |
|--------------|---------------------------------------------------------------------------------------------------------------------------------|--------|
| Activator    | Set model URL parameter to <code>uimodel</code> rather than <code>machtype</code> in updates to Activator                       | 6761   |
| Certificates | Improve error reporting for common issues with HTTPS certificates                                                               | 6987   |
| CLI          | Improve error message for <code>uci show xy</code> when <code>xy</code> does not exist                                          |        |
| Ethernet     | Add <code>arp-scan</code> utility to DRS, ORK and SXL families for consistency with EDG family<br><code>cli: arp-scan -l</code> | 5829   |

|                     |                                                                                                                                                                                                        |      |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Firewall            | Fix variable name clash in zone option presence test causing occasional restart issue                                                                                                                  |      |
|                     | Simplify firewall forwarding within a bridge by avoiding calls to iptables                                                                                                                             |      |
| Firmware            | Prevent downgrade of router firmware to a version that is incompatible with the on board Sierra Wireless module                                                                                        | 6878 |
| IECD                | Fixed issue with IEC104 clock synchronization on conversion from CP56TIME2A to time format where memory was not being cleared correctly                                                                |      |
|                     | Improvements for Analog Input integer to float conversion for IEC104 to DNP3                                                                                                                           |      |
| Mobile              | Ensure ARP is not turned off for the Unitac Ethernet interface causes problems with the firmware upgrade tool.                                                                                         |      |
|                     | Ensure NOARP flag is set on mobile Ethernet devices to avoid the ARP table from filling up with entries from the mobile connection                                                                     | 6676 |
|                     | Ensure the SMS format is set correctly and interfaces restarted after Verizon provisioning.                                                                                                            |      |
|                     | Fix to ensure the Verizon attach APN is set correctly                                                                                                                                                  |      |
|                     | Only restart interfaces when Network Initialisation was indicated in OMADM                                                                                                                             |      |
|                     | Record Unitac AUX antenna values regardless of MIMO state                                                                                                                                              |      |
|                     | Switch to AT!GSTATUS to retrieve signal information for Unitac modules                                                                                                                                 |      |
| SNMP                | Correct vaUciMib implementation so that it matches the previous implementation                                                                                                                         | 6903 |
| SNMP/GPS            | Fix GPS heading in MIB from degrees to micro degrees                                                                                                                                                   | 6901 |
| System              | Fix issues when config files have execute permissions set and configuration audit is enabled                                                                                                           |      |
| TPM                 | Don't allow loading a new key if a key with the same label is already present                                                                                                                          |      |
| VLAN                | Fix VLAN bridging on Merlin and GW6650V models                                                                                                                                                         | 6768 |
|                     |                                                                                                                                                                                                        | 6844 |
| Web                 | Fix error message typo when SSL subsystem fails to initialise                                                                                                                                          |      |
|                     | Print openssl errors when init, cert load or key load fail                                                                                                                                             |      |
| Web/<br>Interfaces  | Avoid restarting all interfaces when adding new interface via web UI                                                                                                                                   | 6922 |
|                     |                                                                                                                                                                                                        | 6923 |
| Web/Cwatch          | Fix display of bridge interface on Cwatch interface list                                                                                                                                               | 6824 |
| Web/Event<br>System | Support configuration of Event System Digital Input change event input number and value via web UI                                                                                                     | 6839 |
|                     | web: services->va event system->event filters->Input Number<br>cli: va_eventd.forwarding.input_number<br>web: services->va event system->event filters->Input Value<br>cli: va_eventd.forwarding.value |      |
| Web/IECD            | Added selector lists in place of fixed values where possible                                                                                                                                           |      |
| Web/OSPF            | Support configuration of OSPF VRF via web UI                                                                                                                                                           | 6964 |
|                     | web: network->ospf->global settings->VRF<br>cli: ospfd.routing.vrf                                                                                                                                     |      |

|            |                                                                                                              |      |
|------------|--------------------------------------------------------------------------------------------------------------|------|
| Web/PoE    | Modifications to a PoE port configuration via the web UI no longer result in the other PoE ports being reset | 6827 |
| Web/System | Restore javascript validation preventing underscores in system hostname                                      | 4555 |

## 11.9Release 25.03.43.000

| Module          | Short Description                                                                                                                           | Mantis |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------|--------|
| BGP             | Fix local VRF IP subnet not being advertised over WAN VRF using a BGP instance in the same VRF                                              | 6799   |
| Cwatch          | Fix cwatch using cached interface values rather than current values which caused cwatch to intermittently miss state changes                | 6784   |
| IECD            | Fix IEC104 operation when IEC104 local TCP port configured to '0'                                                                           | 6778   |
|                 | Fix unwanted Health Point updates during normal master switchover for IEC104 RTU's                                                          | 6463   |
|                 | Fixed Modbus master initialisation error when loading TCP routes                                                                            | 6803   |
|                 | IEC61850 Server: Add conversion from Modbus DI to DPS objects                                                                               |        |
|                 | IEC61850 Server: Added mapping of Modbus DI to integer types (INS, etc)                                                                     |        |
|                 | IEC61850 Server: Fix error with double init of data points for Modbus master                                                                |        |
|                 | IEC61850 Server: Update points from Modbus RTU when point have not been changed before in addition to when value changed                    |        |
| Mobile          | Improve debugging of IEC61850 client when processing control commands                                                                       |        |
|                 |                                                                                                                                             |        |
| Mobile          | Fix signal strength detection on older Unitac modules                                                                                       | 6805   |
|                 | Rename 'phone number' to 'MSISDN' in mobile stats                                                                                           |        |
| SNMP            | Fix SNMP configuration using TCP protocol                                                                                                   | 5930   |
| VRF             | Fix DNAT behaviour for alias interface within VRF                                                                                           | 6705   |
| Web             | Fix slow web SSL access when using keys from TPM                                                                                            | 6734   |
| Web/ IPsec      | Fix error on saving of configuration general section                                                                                        | 6281   |
| Web/ Network    | Show colour codes for interface status in network overview                                                                                  | 6536   |
| Web/ OpenVPN    | Automatically add and remove OpenVPN network interfaces                                                                                     | 6296   |
| Web/Firewall    | Fix summary page showing rules with <code>option enabled '1'</code> in configuration file as disabled                                       | 6765   |
| Web/HTTP Server | Support configuration certificate keys in TPM<br>web: services->http server->Certificate Key Format<br>cli: uhttpd.uhttpd.keytype [PEM TPM] | 6756   |
| Web/Mobile      | Correct display of mobile interface type on web UI interface overview page                                                                  | 6787   |
| Web/SCADA       | Moved COSEM HDLC Bridge configuration from Services to SCADA tab                                                                            | 6781   |
| Web/Status      | Add download button for kernel and system log<br>web: status->System Log<br>web: status->Kernel Log                                         | 6794   |

## 11.10 Release 25.02.23.000

| Module          | Short Description                                                                                                          | Mantis |
|-----------------|----------------------------------------------------------------------------------------------------------------------------|--------|
| Activator       | Fix Activator active update command returning incorrectly parsed IPv6 addresses                                            | 4727   |
| CWATCH          | Cwatch now ignores non-existing UCI network interfaces                                                                     | 6644   |
| Failsafe        | Failsafe mode now uses SSH instead of telnet access                                                                        | 6663   |
| Firewall        | Insert the <code>MARK</code> configuration rule before the <code>redirect</code> rules in the firewall table               | 5405   |
| IECD            | Added RTS-CTS flow control of the serial (when not using tservd)                                                           | 6615   |
|                 | Fix issue in IEC104S to IEC101 in transparent mode, where 104 ASDU CA=65535                                                |        |
|                 | Fix issue processing IEC101 reset process response                                                                         |        |
|                 | Fix issue with DNP3 Gr3 (double bit) to IEC104 single point conversion                                                     | 6671   |
|                 | Fixed incorrect cleanup while closing during IEC104S TLS session establishment                                             | 6636   |
|                 | Fixed issues with events not sent from IEC104 slave offline queue after connection is restored                             | 6648   |
|                 | Fixed issues with processing TI 105 Reset Process command                                                                  | 6640   |
|                 | IEC104 slave: Fixed incorrect application of clock synchronization command                                                 |        |
|                 | IEC104 to IEC101 conversion: fixed issue with converting QU field of commands from Master (104) to RTU (101)               |        |
|                 | IEC104 to IEC104 conversion: Fix Double command Execute part of Select Execute sequence not passing on QU field of command | 6656   |
| Mobile          | Add MTU detection for Unitac modules                                                                                       |        |
|                 | Ensure MTU does not exceed 1500 bytes on QMI links                                                                         | 6567   |
|                 | Ensure Quectel EC25/EG25 modules use GSM format for SMS messages                                                           |        |
|                 | Fix crash when <code>switch_sim</code> command is executed with no value                                                   |        |
|                 | Fix interface name and type for Unitac modules on Merlin series                                                            |        |
|                 | Fix interface name and type for Unitac modules on Merlin series                                                            |        |
|                 | Fix missing LTE band information on older Unitac firmware                                                                  | 6630   |
|                 | Fix performance issues on Sierra Wireless modules (introduced in 25.02.80.000)                                             | 6708   |
|                 | Prevent <code>+CGEV: NW DETACH</code> trigger warnings in the logs                                                         | 6616   |
|                 | Prevent crash when handling SIMs with invalid ICCID                                                                        | 6635   |
| Monitor         | Prevent crash when no SIM slot specified for SIM switch command                                                            |        |
|                 | va-mobile no longer automatically changes GNSS configuration as this is now done in manufacturing                          | 6659   |
|                 | Fix Monitor Keepalive configuration changes taking effect immediately when changed from web UI or Activator                | 6650   |
| NTP             | Improvements to chrony operation for interface state changes                                                               | 6631   |
| PPP             | Fix connection issue when two ppp links have similar UCI name                                                              | 6654   |
| Roaming Manager | Retry existing connection after routine disconnect when using Roaming Manager feature                                      |        |

|                    |                                                                                                                                                                            |      |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Routing            | Enable FRR <code>vtty_enabled</code> option in user interface                                                                                                              | 6613 |
| SFP                | Support <code>ethtool -m</code> option for displaying SFP info                                                                                                             |      |
| SNMP               | Fix mibwalk error on <code>.1.3.6.1.4.1.2078.3.1.2.4.2</code> when walking VA-MODEM-MIB::roamingOp* series of values                                                       | 6618 |
| SSH                | Fix SSH login via private and public key.                                                                                                                                  | 6425 |
| TACACS             | Fix ipv6 address support                                                                                                                                                   | 6620 |
| Web                | Sort web UI drop down headings                                                                                                                                             | 5909 |
| Web/<br>Multiwan   | Allow multiwan configuration via web UI when no multiwan config options exist in configuration file                                                                        |      |
| Web/BGP            | Fix BGP network option for IP address/subnet input rather than interface name<br>web: network->bgp->global settings->Network                                               | 6619 |
|                    | Fix BGP network option for IP address/subnet input rather than interface name<br>web: network->bgp->global settings->Network                                               | 6619 |
| Web/HTTP<br>Client | Support configuration of Http Client certificate key format<br>web: services->http client->advanced->Certificate Key Format<br>cli: httpclient->httpclient->KeyFormat      | 5792 |
| Web/IECD           | Changed default location of TLS certs to <code>/etc/cert</code>                                                                                                            | 6643 |
|                    | Only show IEC104 TLS Common Name and IEC104 TLS Verify Depth options when IEC104 TLS Validate Peer Cert is enabled                                                         | 6643 |
|                    | Removed unused <code>iec101_cmd_type_id</code> option from web UI                                                                                                          | 6627 |
|                    | Support SCL import file upload for IEC61850 master<br>web: scada->iecd->master protocols->configure IEC61850->Select IEC61850M SCL File for Upload                         |      |
|                    | Support upload capability for TLS cert, key and CRL files via web UI                                                                                                       | 6643 |
| Web/IPsec          | Web UI IPSEC configuration improvements                                                                                                                                    | 6281 |
| Web/System         | Fix firmware flashing error message                                                                                                                                        | 6286 |
| Web/VRRP           | Add support for configuration of VRRP Group Multicast Source IP<br>web: network->vrrp->vrrp group configuration-> Multicast Source IP<br>cli: vrrp.vrrp_group.mcast_src_ip | 4057 |

## 11.11 Release 25.02.99.000

| Module | Short Description                                                                                 | Mantis |
|--------|---------------------------------------------------------------------------------------------------|--------|
| CWATCH | Ensure cwatch can handle comma separated ping destinations                                        |        |
| GRE    | Fix GRE keepalives                                                                                | 6554   |
| IECD   | Added conversion from 4 Modbus 16-bit registers (int64) to iec104 float                           |        |
|        | Added support for conversion of 2 modbus 16-bit registers storing FLOAT32 to IEC104 type 13 float |        |
|        | Fetch CRL file using a link from peer certificate                                                 | 5955   |
|        | Fix CSV import issue when parsing bitmap options                                                  | 6555   |
|        | Fix issue in IEC61850 master to DNP3 slave conversion of analog float values                      | 6593   |
|        | Fix serial configuration in modbus master                                                         | 6540   |

|                 |                                                                                                                                                                                                                                                                                            |      |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
|                 | Fix tx buffer overflow and iecd crash when DNP3 Slave serving large number of points and events (500+)                                                                                                                                                                                     | 6609 |
|                 | Handle multiple sessions, cleaning up in case of errors when fetching CRL file using a link from peer certificate                                                                                                                                                                          | 5955 |
|                 | Improved IEC61850 control command processing in relation to IEC101 and IEC104 single-double select-execute sequence                                                                                                                                                                        |      |
|                 | Improved IEC61850 SCL import and export into UCI file                                                                                                                                                                                                                                      | 6581 |
|                 | Improved show statistics command when multiple RTU protocols are used per point                                                                                                                                                                                                            | 6580 |
|                 | Improvements in the VRTU to IEC61850 slave conversion                                                                                                                                                                                                                                      |      |
|                 | MQTT Slave to MODBUS RTU: send MQTT publish only on value change                                                                                                                                                                                                                           | 6376 |
|                 | Support configurable IED name and LD name for IEC61850 slave<br>web: scada->iecd->slave protocols->configure iec61850->IEC61850 IED Name<br>cli: iecd.port.iec61850_ied_name<br>web: scada->iecd->slave protocols->configure iec61850->IEC61850 LD Name<br>cli: iecd.port.iec61850_ld_name |      |
|                 | Support for Digital Input inversion in the IEC61850 server                                                                                                                                                                                                                                 |      |
| Mobile          | Add data-only configuration for Quectel EP06 module                                                                                                                                                                                                                                        |      |
|                 | Add display of additional Unitac signal values to <code>vam</code> command and web UI                                                                                                                                                                                                      |      |
|                 | Disable the APNs when connection is terminated for Unitac modules                                                                                                                                                                                                                          | 6484 |
|                 | Fix for SMS received by Quectel EG25G via IMS in Verizon network                                                                                                                                                                                                                           | 6594 |
|                 | Mobile connection no longer dropped when 2 <sup>nd</sup> antenna is disconnected when using Unitac modules                                                                                                                                                                                 | 6446 |
|                 | Support new option to enable MIMO on Unitac modules (disabled by default).<br>web: services->mobile manager->advanced->Enable MIMO for Unitac radio Modules<br>cli: mobile.mobile.unitac_mimo_enabled                                                                                      | 6499 |
| Network         | Fix dependent interface behaviour when parent WAN interface is using QMI mobile interface                                                                                                                                                                                                  | 6493 |
| QoS             | Fix QoS initialisation                                                                                                                                                                                                                                                                     | 6560 |
| SCEP            | Fix intermittent issue where only one SCEP request was sent when multiple SCEP clients were configured                                                                                                                                                                                     | 6523 |
|                 | Fix loading of SCEP CA certificate                                                                                                                                                                                                                                                         | 6525 |
| Strongswan      | Do not split long PSK into separate lines which would cause PSK to be read incorrectly and Phase1 failure                                                                                                                                                                                  | 6537 |
| Syslog          | Fix multiwan errors in log when multiwan not configured                                                                                                                                                                                                                                    | 6489 |
| System          | Prevent download of incorrect firmware family                                                                                                                                                                                                                                              |      |
| TACACS          | Fix tab correction for TACACS+ user login via SSH                                                                                                                                                                                                                                          | 6527 |
| Terminal Server | Fix failure to recover from bind failure while interface down                                                                                                                                                                                                                              | 6464 |
| TPM             | Fix RSA key loading on big endian platforms                                                                                                                                                                                                                                                |      |
|                 | Improve support for TPM access from multiple processes to avoid TPM being locked by another process                                                                                                                                                                                        | 6483 |
| User Limits     | Fix Procrustes user limit events                                                                                                                                                                                                                                                           | 6538 |

|                    |                                                                                                 |      |
|--------------------|-------------------------------------------------------------------------------------------------|------|
| Web                | Fix web UI intermittently advising router is running in factconf when in config1                | 6547 |
| Web/<br>Interfaces | Fix default gateway handling for DHCP protocol                                                  | 6601 |
| Web/IECD           | Fix typo in DNP3 slave protocol option                                                          | 6578 |
|                    | Fix web UI issue in IEC61850 slave                                                              |      |
| Web/Mobile         | Prevent option ifname configuration being added to mobile interfaces when configured via web UI | 6501 |
| Web/SNMP           | Improvements to web UI SNMP configuration                                                       |      |
| WiFi               | Fix ifup transmission issue when WiFi is bridged with an Ethernet interface                     | 6514 |

## 11.12 Release 25.02.80.000

| Module          | Short Description                                                                                                             | Mantis |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------|--------|
| Ethernet        | ifup now preserves VLAN interfaces when configuration has non VLAN and multiple VLANs attached to the same Ethernet interface | 6247   |
|                 | Increase frame size limit to accommodate large VLAN packets                                                                   | 6307   |
| Event<br>System | Fix boot success event                                                                                                        | 5927   |
| GPIO            | Merlin4600 digital inputs now default to dry                                                                                  | 5992   |
| IECD            | Added missing implementation of T0, T1 and T3 timers to address IEC104M link not closing on ifdown                            |        |
|                 | web: scada->iecd->master protocols->configure iec104->iec104-X                                                                |        |
|                 | cli: iecd.port.iec104m_t0 (def: 5 secs)                                                                                       |        |
|                 | cli: iecd.port.iec104m_t1 (def: 15 secs)                                                                                      |        |
|                 | cli: iecd.port.iec104m_t3 (def: 20 secs)                                                                                      |        |
|                 | Fix parsing parsing of -casdu switch in IEC104 firewall                                                                       | 6298   |
|                 | Fixed incorrect parsing of MQTT SUB-ACK packet                                                                                | 6295   |
|                 | Fixed load errors for custom SCADA firewall rules                                                                             | 6025   |
|                 | Fixed MQTT hostname resolution                                                                                                | 6308   |
| Mobile          | Add switch to add switch to data-centric mode for Quectel EC25 and SIMCOM modules                                             |        |
|                 | Added PCI display for Unitac modules                                                                                          | 6251   |
|                 | Ensure that Verizon APN is correct for default/initial bearer                                                                 | 6154   |
|                 | Enter airplane mode before attempting to change the default LTE bearer to avoid issues with SIM failover                      | 5991   |
|                 | fix chat command failing if previous chat aborted                                                                             | 6210   |
|                 | Fix crash when LTE band retrieval for SIMCOM fails                                                                            |        |
|                 | Fix ESN display where leading zeros were being omitted                                                                        | 6345   |
|                 | Fix incorrect reporting of RSSI when using Unitac mobile module                                                               | 6437   |
|                 | Fix multiwan to run with default group when no group name specified                                                           |        |
|                 | Fix to prevent the modification of the Verizon attach bearer                                                                  | 6043   |
|                 | Fix va_roaming ignoring Stat=0 operators in roaming scan                                                                      | 6184   |
|                 | Ignore network provided DNS addresses if option DNS configured                                                                | 6372   |

|                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                        |      |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| Improvements to operator scan:                                                |                                                                                                                                                                                                                                                                                                                                                                                                        |      |
|                                                                               | <ul style="list-style-type: none"> <li>Now commence an operator scan as follows; AT+COPS=2 (detach from network); AT+COPS=0;+COPS=? (reattach and commence scan, all in one operation)</li> <li>AT+COPS=? timeout increased to 190 seconds</li> <li>automatically retry a failed AT+COPS=? command if it fails within 15 seconds</li> <li>vam roaming now includes scan duration in seconds</li> </ul> |      |
|                                                                               | Incorrect SINR reported for Quectel modules                                                                                                                                                                                                                                                                                                                                                            | 5951 |
| Re-connect to network automatically if AT+CGATT=1 fails                       |                                                                                                                                                                                                                                                                                                                                                                                                        |      |
| VA Mobile roaming diagnostic now shows roaming info for all modems by default |                                                                                                                                                                                                                                                                                                                                                                                                        |      |
| cli: vam roaming                                                              |                                                                                                                                                                                                                                                                                                                                                                                                        |      |
| Network                                                                       | Ensure ifdown kills all ifup processes on the same interface and not just the child processes                                                                                                                                                                                                                                                                                                          |      |
|                                                                               | Fix repeated ifup race condition on bridged interfaces                                                                                                                                                                                                                                                                                                                                                 | 6265 |
| RTUD                                                                          | Added support for inverting digital inputs after reading from hardware                                                                                                                                                                                                                                                                                                                                 | 6208 |
|                                                                               | web: scada->rtud->advanced->Invert Inputs                                                                                                                                                                                                                                                                                                                                                              |      |
|                                                                               | cli: rtud.main.invert_inputs (def: 0)                                                                                                                                                                                                                                                                                                                                                                  |      |
| SCEP                                                                          | Added certificate expiry check during re-enrolment                                                                                                                                                                                                                                                                                                                                                     | 6235 |
|                                                                               | Change new cert and key permissions when they are installed at the end of the SCEP process. Also adjust the CRLs directory to allow strongswan write access for runtime CRL downloads.                                                                                                                                                                                                                 | 5908 |
|                                                                               | Strongswan is now restarted after SCEP renewal to ensure the peer correctly deletes the existing IKE_SA                                                                                                                                                                                                                                                                                                | 6190 |
| SFP                                                                           | Merlin4600 now supports both 100M and 1000Mbps using SIGMII mode                                                                                                                                                                                                                                                                                                                                       |      |
| SNMP                                                                          | Fix creation of SNMPv3 traps                                                                                                                                                                                                                                                                                                                                                                           | 5943 |
|                                                                               | Fix failing snmpwalk on vaModem MIB when no roaming info available                                                                                                                                                                                                                                                                                                                                     | 5922 |
| Strongswan                                                                    | Allow IPSec tunnels to start when CA certificate download fails and blocking is disabled in scep_cert config                                                                                                                                                                                                                                                                                           | 6324 |
|                                                                               | Remove FlexVPN GRE IP addresses on tunnel termination                                                                                                                                                                                                                                                                                                                                                  | 5924 |
|                                                                               | Fix IKE SA delete being sent with correct message id to ensure IPSec peer does not discard                                                                                                                                                                                                                                                                                                             | 6246 |
| System                                                                        | Changed password hash algorithm option value to a ListValue                                                                                                                                                                                                                                                                                                                                            | 5001 |
|                                                                               | cli: list system.main.passwrld_hash_algo                                                                                                                                                                                                                                                                                                                                                               |      |
|                                                                               | Fix auditing of DMVPN configuration using option audit_cfg                                                                                                                                                                                                                                                                                                                                             |      |
|                                                                               | Fix boot-success script to set altimage to current image to avoid Merlin4400/4600 series incorrectly reverting to altimage                                                                                                                                                                                                                                                                             | 6392 |
| Terminal Server                                                               | Increase port limit to 16                                                                                                                                                                                                                                                                                                                                                                              | 6267 |
|                                                                               | Added support for new option in GW2124P to control serial LED detection using DSR control signal when DTR/DSR signals are being used                                                                                                                                                                                                                                                                   |      |
|                                                                               | cli: tservd.port.led_dsr_detect (def: 0)                                                                                                                                                                                                                                                                                                                                                               |      |
|                                                                               | Auto detect serial mode gpio control settings                                                                                                                                                                                                                                                                                                                                                          | 5970 |
|                                                                               | Fix SNMP poll of TSERV-MIB                                                                                                                                                                                                                                                                                                                                                                             | 6477 |

|                         |                                                                                                                                                                                             |      |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
|                         | Fixed issue with auto detection of serial port names on GW2028                                                                                                                              | 6313 |
| Web                     | Improvements to web UI performance and load times                                                                                                                                           | 6178 |
| Web/<br>Ethernet        | Fix Ethernet adapter interfaces presented in web UI for Merlin4600 series                                                                                                                   | 5986 |
|                         | Remove Ethernet Port map section in web UI for Merlin4400/4600 series. Mapping configured in Etherent interface view.                                                                       | 5986 |
| Web/<br>Interface       | Added <code>mtu</code> configuration option for PPPoEoA and PPPoA ADSL interfaces                                                                                                           | 5702 |
| Web/<br>OpenVPN         | Do not add <code>key_direction</code> option when set to its default value (bidirectional) when OpenVPN configured via web UI                                                               | 6063 |
| Web/GPIO                | Change Web UI digital input mode default to dry mode                                                                                                                                        | 6060 |
| Web/IECD                | Changed free text fields <code>log_vaevent_on_change</code> , <code>vhmi_on</code> and <code>vhmi_dword</code> to selector on-off                                                           | 6165 |
| Web/Termin<br>al Server | Added support for TCP Tap Port configuration<br><br>web: <code>scada-&gt;terminal_server-&gt;port-&gt;advanced-&gt;TCP Tap Port</code><br>cli: <code>tserverd.port.tap_port (def: 0)</code> | 6291 |
| Web/VA<br>Event         | Add length check in web UI for <code>snmp_auth_pass</code> and <code>snmp_priv_pass</code>                                                                                                  |      |
| Web/WiFi                | Add WPA Enterprise configuration to web                                                                                                                                                     | 5963 |

## 11.13 Release 25.02.14.032

| Module   | Short Description                                                                                                                                                                                                         | Mantis |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Download | Fix interrupted download when <code>va_vars</code> incorrectly states image not found. Download now correctly continues rather than starting again.                                                                       | 6354   |
| Mobile   | Fix duplicated ICCID when using WP76xx-AU module on Merlin4600 series.                                                                                                                                                    | 6352   |
| TACACS   | Fix TACACS behaviour when router is configured to only authorise authentication for SSH access (or other configured PAM services). Previously all authentication requests were sent to TACACS server instead of SSH only. | 6050   |
| TPM      | Fix HTTPS incoming connection activation with key stored in TPM on Merlin4600 series.<br><br>Flush transient objects from TPM RAM upon session open on Merlin4600 series.                                                 | 6367   |

## 11.14 Release 25.02.14.027

| Module      | Short Description                                                                                                                | Mantis |
|-------------|----------------------------------------------------------------------------------------------------------------------------------|--------|
| BFD         | BFD rate changes now working as expected when multihop enabled                                                                   | 6255   |
|             | Fix BFD multiplier configuration                                                                                                 | 6242   |
| Download    | Fix size calculation when image download exceeds 10M                                                                             | 6033   |
|             | Increase time limit for image download to 5 hours (previously 2 hours)                                                           | 6266   |
| HTTP Client | Set download minimum rate limit to 1kBps                                                                                         | 6266   |
| PPPoE       | <code>ifup &lt;ifname&gt;</code> now correctly re-establishes when <code>&lt;ifname&gt;</code> is a PPPoE link and is already up | 6241   |

|                 |                                                                 |
|-----------------|-----------------------------------------------------------------|
| Terminal Server | Fix incorrect translation of <code>option serialPortName</code> |
|                 | Fix TOS value support using <code>option tos_value</code>       |

## 11.15 Release 25.02.14.016

| Module | Short Description                                                                                                                                                            | Mantis |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| GPIO   | Merlin4600 series digital input values changed to match GW2020 series for SCADA operation compatibility<br>0 = input not detected/open/low<br>1 = input detected/closed/high | 6197   |

## 11.16 Release 25.02.14.013

| Module          | Short Description                                                                                                                                                                                                                                    | Mantis |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Ethernet        | Fix default MAC address for Merlin4600 Ethernet ports                                                                                                                                                                                                | 5740   |
| GPIO            | Merlin series digital inputs now default to dry                                                                                                                                                                                                      | 5992   |
| IECD            | Fix data point handling where previously only the last data point was forwarded the SCADA master when using HART protocol                                                                                                                            | 6046   |
|                 | Fix IECD CSV files data point import.                                                                                                                                                                                                                | 5975   |
|                 | Fix issue in handling periodic GI and Clock Sync timeouts in IEC101 Master                                                                                                                                                                           |        |
|                 | Support for CP24 timestamp format messages in IEC101 to 104 conversion                                                                                                                                                                               | 5980   |
| Mobile          | Fix crash when LTE band retrieval for SIMCom fails                                                                                                                                                                                                   |        |
| SFP             | Fix interface failing to restart after network package restart                                                                                                                                                                                       | 6079   |
| Strongswan      | Decrease OCSP/CRL fetch timeout to 3 seconds from 10 seconds to avoid resource issues for multiple tunnels using CRL                                                                                                                                 | 5954   |
|                 | Exclude password field from re-enrollment requests                                                                                                                                                                                                   | 5993   |
|                 | Handle DER or PEM format for SECP fingerprint                                                                                                                                                                                                        | 5879   |
|                 | In case multiple root CA's downloaded, verify fingerprint of the root                                                                                                                                                                                |        |
|                 | Send DELETE message from IKEv2 delete task for initiator. Previously when initiator, the router terminated the IKE_SA without sending a delete which led to problems when connected against another VA router in responder role.                     | 6052   |
| System          | Backup, check and fix uboot environment in case of corruption on models using Sierra Wireless WP7600 series processor (GW1150, Merlin4600). Fixes rare situation where machtype could revert to incorrect model.                                     | 6031   |
| Terminal Server | Fix loopback test for serial ports                                                                                                                                                                                                                   | 5972   |
| Web/IPsec       | Support configuration for FlexVPN via web UI<br>web: services->ipsec->connection->Route Interface<br>cli: strongswan.connection.route_interface<br>web: services->ipsec->connection->FlexVPN Prefixes<br>cli: strongswan.connection.flexvpn_prefixes | 6000   |

|                     |                                                                                                                                                                                           |      |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
|                     | Support configuration of local cert via web UI                                                                                                                                            | 6000 |
|                     | web: services->ipsec->scep certificate->Local Certificate<br>cli: strongswan.connection.localcert                                                                                         |      |
| Web/RTUD            | Fix defaults for Web UI fields to allow web config to save the page                                                                                                                       | 6075 |
|                     | RTUD auto generate config option now defaults to off in both web UI and router                                                                                                            | 6075 |
|                     | web: scada->rtud->main settings->Auto generate configuration<br>cli: rtud.rtud.point_auto_config_on                                                                                       |      |
| Web/SCEP            | Support configuration of SCEP fingerprint and CA Name via wb UI                                                                                                                           | 6001 |
|                     | web: services->ipsec->scep certificate->CA Fingerprint<br>cli: strongswan.scep_cert->fingerprint<br>web: services->ipsec->scep certificate->CA Name<br>cli: strongswan.scep_cert->ca_name |      |
| Web/Terminal Server | Support configuration of serial port name via the web UI                                                                                                                                  | 5424 |
|                     | web: scada->terminal server<br>cli: tserverd.port.serialPortName                                                                                                                          |      |

## 11.17 Release 25.02.14.002

| Module  | Short Description                                                                                                            | Mantis |
|---------|------------------------------------------------------------------------------------------------------------------------------|--------|
| IECD    | Fix IEC MIB walk                                                                                                             | 5920   |
| IOSRVD  | Fix for option auto_detect behaviour to not remove undetected devices from iosrvd config file                                | 5522   |
| Mobile  | Fix ICCID collection for second SIM on Sierra Wireless and Quectel EM06 modules. Previously showing same ICCID for both SIMs | 5946   |
| Network | Fix static default route configuration using target 'default' and netmask 0.0.0.0                                            | 5942   |