



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

Release SXL-25.04.63.000

Hardware Models	Merlin4100; Merlin4400; Merlin4600 Series
Revision	1.00.14
Approval status	Approved
Date	14 April 2025
Brief description	Details the release of system software SXL-25.04.63.000 for Merlin4100, Merlin4400 and Merlin4600 Series

Table of Contents

1	Revision history	4
2	Release statement	4
2.1	Firmware information	4
2.2	Hardware platforms	4
3	Mobile module support	5
3.1	LTE	5
3.2	LTE-450	5
4	Security fixes	5
5	Security vulnerabilities	6
6	New features	7
7	Deprecated features	10
8	Known issues	10
9	Problems resolved	11
10	Appendix 1: New features history	15
10.1	Release 25.04.16.000	15
10.2	Release 25.04.13.000	15
10.3	Release 25.04.08.000	16
10.4	Release 25.03.43.014	20
10.5	Release 25.03.43.009	20
10.6	Release 25.03.43.000	22
10.7	Release 25.03.23.000	22
10.8	Release 25.02.99.000	23
10.9	Release 25.02.80.000	24
10.10	Release 25.02.14.032	26
10.11	Release 25.02.14.027	26
10.12	Release 25.02.14.016	27
10.13	Release 25.02.14.013	27
10.14	Release 25.02.14.002	29
10.15	Release 25.02.14.000	29
11	Appendix 2: Problems resolved history	31
11.1	Release 25.04.16.000	31
11.2	Release 25.04.13.000	31
11.3	Release 25.04.08.000	32
11.4	Release 25.03.43.014	36
11.5	Release 25.03.43.009	36
11.6	Release 25.03.43.000	38
11.7	Release 25.02.23.000	39
11.8	Release 25.02.99.000	40
11.9	Release 25.02.80.000	42

11.10 Release 25.02.14.032..... 44

11.11 Release 25.02.14.027..... 45

11.12 Release 25.02.14.016..... 45

11.13 Release 25.02.14.013..... 45

11.14 Release 25.02.14.002..... 46

1 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

2 Release statement

SXL-25.04.63.000 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-25.04.63.000.k01.image	19,578,880	14/04/2025	98be2815cb4bcb919c006d61678b1221

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 LTE

Firmware	Vendor	Module	Region	Cat	2G	3G	LTE
25.04.63.000	Sierra Wireless	WP7611	US	4	-	2,4,5	2,4,5,12,13,14,25,26,66,71
25.03.43.005	Sierra Wireless	WP7702	-	M	850/900/1800/1900	-	1,2,3,4,5,8,12,13,17,18,19,20,26,28
25.02.14.027	Sierra Wireless	WP7609-G	Australia	4	-	1,8	1,3,5,8,40,41
	SIMCOM	SIM7070E	-	M	850/900/1800/1900	-	1,2,3,4,5,8,12,13,14,18,19,20,25,26,27,28,31,66,72,85,
25.02.14.000	Sierra Wireless	WP7607-G	EMEA	4	900/1800	1,8	1,3,7,8,20,28
		WP7608-G	Asia/Pacific	4	900/1800	2,4,5	2,4,5,12,13,14,17,66
		WP7610-G	North America	4	-	1,5,8	1,3,5,7,8,28

3.2 LTE-450

Firmware	Code	Module	Cat	2G	3G	LTE
25.04.63.000	PFT	Unitac ML620RU	4	-	-	LTE-FDD: 3,7,20,31 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
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 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

25.03.16.000	openVPN	Updated to version 2.5.11 Fixes CVE-2022-0547	Irritant	6238
	pam_tacplu s	Avoid potential freeing of non-address Fixes CVE-2020-27743 and CVE-2016-20014	Medium	8002
	dnsmasq	Updated to version 2.90 Fixes CVE-2023-28450 and CVE-2022-0934	Medium	7796
	dropbear	Updated to version 2024.85	Medium	7560
	frf	Fix CVE-2024-44070. FRRouting (FRR) does not check the actual remaining stream length before taking the TLV value.	Medium	7858
25.04.13.000	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
	PPP	Updated to version 2.5.0	Low	4179
25.04.08.000	dropbear	Updated to 2022.83	Medium	6403 4976
	System	Delete sensitive information from RAM and generate syslog message after use by luci, uhttpd, PAM, openVPN and strongswan (IEC62443-4-2).	-	7164 7166 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
	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

5 Security vulnerabilities

Module	Short Description	Severity	Mantis
--------	-------------------	----------	--------

bgpd	Vulnerabilities affecting current version of bgpd CVE-2016-1245	Low	5808
frr	Vulnerability affecting current version of frr CVE-2024-27913	Low	8204
openssl	Vulnerabilities affecting current version of openssl 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

6 New features

Ethernet						
RSTP support	Added support for Rapid Spanning Tree Protocol				6508	
Event System						
Event System firewall discard	VA Event System now supports firewall discard event					7769
	Class	Id	Name	Severity	Event Template	
	Firewal l	2	DiscardZon e	warning	Rule %{p1} triggered: %{p6} from %{p4}:%{p7}(%{p2}) to %{p5}:%{p8}(%{p3})	
Firewall						
Firewall discard event 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 cli: vam -a				7440	
SIM7070E diagnostic port	Added support for SIMCOM7070E diagnostic port				7979	
Monitor						
EID Inventory	Support for inventory collection of SIM EID information				8030	
Multiwan						

Suppress static 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 Status	Include physical ports with eth-X interfaces in interface status			7900
Multi Path 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 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
	Package	Section	Options	
	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
	Package	Section	Options	
	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
	Package	Section	Options	
	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 _link2_options			8313
	Package	Section	Options	
	iecd	port	dnp3_num_links; dnp3_transport_protocol 'multidrop'; dnp3_link2_transport_protocol '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
	Package	Section	Options	
	iecd	port	modbus_tcp_server_port	
Optional DNP3 G40 status	Support optional reporting of DNP3 G40 analog output during integrity poll			7999
	Package	Section	Options	
	iecd	port	dnp3s_g40_exclude_intpoll	
VRTU data types	Support VRTU data types and periodic auto updating per point			8233
	Package	Section	Options	
	iecd	point	virtu_value_type; virtu_value_init; virtu_periodic_value_change	
SNMP				
EID OID	SIM EID now supported in VA-MODEM-MIB			8029
VA-UCI-MIB 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. Note: this is only supported for IPv4 ESP tunnel mode.			4307
	Package	Section	Options	
	strongswan	general	vrf	
System				
Firmware and configuration 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 Sierra Wireless with 6 Ethernet	Added support for Merlin4600 using single Sierra Wireless mobile with 6 Ethernet (machtype: MTSWI015)			8242
Multi factor 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 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 cli: debug mobile on cli: debug ipsec on cli: debug multiwan on	4677
----------------------	---	------

7 Deprecated features

Firmware	Package	Description	Mantis
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	wireless.wifi-device.type option deprecated	

8 Known issues

Module	Short Description	Mantis
Firewall	Firewall zone with name longer than 12 characters breaks NAT	7791
OSPF	When the remote connection (from a remote OSPF peer) is dropped, OSPF crashes intermittently.	5677
Strongswan	Strongswan memory footprint increases slowly with tunnel restart	5866
Syslog	No web UI support for syslog filter rules	3705
Web	Web intermittently failing to load when WeConnect is active	7808
Web/IPsec	Unable to configure <code>strongswan.connection.disable_mobike</code> , <code>strongswan.connection.mobike_send_additional_self</code> or <code>strongswan.connection.disable_natt</code> via web UI	5437

Web/Management Users	Unable to configure management users via web UI	5503
----------------------	---	------

9 Problems resolved

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>igmp</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/ IEC104 Slave	Fixed issue with sending End of Initialization message in IEC104 slave	8233
IECD/ 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
	ifup/ifdown now correctly validate the UCI interface name before execution	6276
OpenVPN	Fix support for multiple tunnels	8316
	OpenVPN interfaces are no longer deleted on ifdown/network restart event	7871
PPP	Allow PPP interface to be up without IP address	8229
	Fix option record 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 version -a 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 ifname is missing from an interface	8050
	Remove welcome message from landing page	8072
	Removed hostname and Westermo 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. <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

10 Appendix 1: New features history

10.1 Release 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; 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
	Package	Section	Options	
	system	system	password_hash_algo 'hmac'	

10.2 Release 25.04.13.000

Console				
Console disable	Support new option for disabling the console port			7802
	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
	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						

10.3Release 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.													
	<table> <tr> <th>Package</th><th>Section</th><th>Options</th></tr> <tr> <td>crsd</td><td>main</td><td>see user manual</td></tr> <tr> <td></td><td>route</td><td></td></tr> <tr> <td></td><td>translate</td><td></td></tr> </table>	Package	Section	Options	crsd	main	see user manual		route			translate		
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	7158												
	<table> <tr> <th>Package</th><th>Section</th><th>Options</th></tr> <tr> <td>management_user</td><td>user</td><td>groups</td></tr> <tr> <td></td><td>group</td><td>enabled; allowed_pages</td></tr> </table>	Package	Section	Options	management_user	user	groups		group	enabled; allowed_pages				
Package	Section	Options												
management_user	user	groups												
	group	enabled; allowed_pages												
Mobile														
Airplane mode in backoff	Support new option to enter Airplane Mode during the interface back off period	7032												
	<table> <tr> <th>Package</th><th>Section</th><th>Options</th></tr> <tr> <td>network</td><td>interface</td><td>airplane_mode_backoff</td></tr> </table>	Package	Section	Options	network	interface	airplane_mode_backoff							
Package	Section	Options												
network	interface	airplane_mode_backoff												
SMS security	Improvements to SMS queue processing and support new options for better control how SMS messages are handled	3976												
	<table> <tr> <th>Package</th><th>Section</th><th>Options</th></tr> <tr> <td>mobile</td><td>mobile</td><td>sms_read_interval; sms_check_time; sms_past_margin; sms_future_margin</td></tr> </table>	Package	Section	Options	mobile	mobile	sms_read_interval; sms_check_time; sms_past_margin; sms_future_margin							
Package	Section	Options												
mobile	mobile	sms_read_interval; sms_check_time; sms_past_margin; sms_future_margin												

SMS whitelisting	Support whitelisting commands allowed to be executable by SMS			6931
	Package	Section	Options	
	mobile	caller	allowed_commands	
Watchdog timeout behaviour	Support advanced configurable action [log reset reboot] to take when a watchdog timeout occurs for a mobile module. Currently only supported for QMI modules			5719
	Package	Section	Options	
	mobile	main	netdev_wd_action	
OpenVPN				
TPM support	Support OpenVPN keys in TPM. The existing key option should be configured to the TPM label for the OpenVPN key			7126
	Package	Section	Options	
	openvpn	openvpn	keytype; key '<TPM-label>'	
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 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 iecd.port.ai_scaler 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
	<u>Package</u>	<u>Section</u>	<u>Options</u>	
	iecd	port	dnp3s_g40_variation	
DNP3 relay type	Support new configuration option for specifying command point relay type			7512
	<u>Package</u>	<u>Section</u>	<u>Options</u>	
	iecd	cmdpoint	dnp3_relay_type	
IEC101RTR TCP Server Mode	Support TCP Server Mode for IEC101RTR IEC101 connection			6992
	<u>Package</u>	<u>Section</u>	<u>Options</u>	
	iecd	link101	listen_ip, listen_port	
IEC104 command point IOA	New configuration option for IEC104 master command point information object address			7579
	<u>Package</u>	<u>Section</u>	<u>Options</u>	
	iecd	cmdpoint	iecd104m_cmd_ioa	
IEC104 to DNP3 double command conversion	New option values [4 5] added to <code>iecd.port.dnp3_app_output_mode</code> option that determine behaviour when an IEC104 command with S/E bit is received			7423
MQTT Azure DPS	Added support for MS Azure's IOT hub Device Provisioning Service (DPS)			7028
	<u>Package</u>	<u>Section</u>	<u>Options</u>	
	iecd	port	see user manual	
MQTT read specific data point	MQTT can now be configured to read specific data points			
Modbus bitmap	Support bitmap handling in Modbus master			7371
	<u>Package</u>	<u>Section</u>	<u>Options</u>	7473
	iecd	point	mb_bitmask	
Modbus data formats	Extend supported data format values for MODBUS data points			6890
	<u>Package</u>	<u>Section</u>	<u>Options</u>	
	iecd	point	mb_data_fmt; modbus_data_fmt	
Modbus DI inversion	Support DI inversion for Modbus master			7507
Modbus dual data point handling	Support dual data and command point handling for IEC104 slave to Modbus master conversion. Two Modbus registers can now be converted into a single DPI			7475
	<u>Package</u>	<u>Section</u>	<u>Options</u>	
	iecd	port	modbus_dual_io; modbus_index2	
Modbus frame retransmit counter	Added configuration for MODBUS master frame retransmit count			
	<u>Package</u>	<u>Section</u>	<u>Options</u>	
	iecd	port	modbus_max_retries	

New VHMI payload types	Add support for sending publish messages via MQTT using different payload formats			
	Package	Section	Options	
	iecd	port	vhmi_mqtt_payload_fmt; vhmi_mqtt_client_name; 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 OID	Added ifMultiwanState to VA-UCI-MIB			6915
Sim detection 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 <code>token</code> 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 <code>who</code> 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 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 % {p1}	
	2	IEEE8021xAllowingAllonIf	notice	IEEE8021x allowing all on % {p1}	
	3	IEEE8021xAllowingMAC onIf	notice	IEEE8021x allowing % {p1} on % {p2}	
4	IEEE8021xBlockingMAC onIf	notice	IEEE8021x blocking % {p1} on % {p2}		
Web UI					
Disable web UI	Added new option to disable web UI			7068	
	<u>Package</u>	<u>Section</u>	<u>Options</u>		
	uhttpd	main	webui_enabled		
Limit concurrent users	Support new option for limiting concurrent user sessions			7161	
	<u>Package</u>	<u>Section</u>	<u>Options</u>		
	luci	sauth	sessionlimit		
LTE band display	Show supported LTE bands for enable/disable via Web UI. web: services->mobile manager->lte				
Session control	Added utility to list and terminate web sessions (Mantis: 7159) web: system->sessions cli: sessionctl			7159	
Web UI theme	New restructured web UI with navigation links on left side frame.				
WeConnect					
DCU VPN Concentrator Support	Added support for DCU VPN Concentrator to WeConnect				

10.4Release 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.

10.5Release 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">When configured for PEM 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 -> "uhttpd").When configured for TPM key and key cannot be found in the TPM, the router will try to use file "/etc/<tpm label>.key"						
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> <pre>cli: vam -n</pre>						
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	<p>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)</p> <pre>cli: multiwan.interface.retry_connection_max_sec (def: multiwan.interface.ifup_timeout_sec)</pre>						
Power over Ethernet							
PoE port stop/start	<p>Power over an individual Ethernet port can now be stopped and started via the PoE status page on the web UI (Mantis: 6827)</p> <pre>web: status->PoE</pre>						
SCADA							
DNP3 Analog Set point command variation	<p>Added new option for DNP3 Analog Set point command variation</p> <table><thead><tr><th>Package</th><th>Section</th><th>Options</th></tr></thead><tbody><tr><td>iecd</td><td>cmdpoint</td><td>dnp3_cmd_variation (def: 0)</td></tr></tbody></table>	Package	Section	Options	iecd	cmdpoint	dnp3_cmd_variation (def: 0)
Package	Section	Options					
iecd	cmdpoint	dnp3_cmd_variation (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	<p>Added new feature to transmit a spontaneous update to IEC104 master on DNP3 static variation value change</p> <table><thead><tr><th>Package</th><th>Section</th><th>Options</th></tr></thead><tbody><tr><td>iecd</td><td>port</td><td>dnp3_tx_spont_on_static_change (def: 0)</td></tr></tbody></table>	Package	Section	Options	iecd	port	dnp3_tx_spont_on_static_change (def: 0)
Package	Section	Options					
iecd	port	dnp3_tx_spont_on_static_change (def: 0)					
TPM							

List TPM keys	Support new diagnostic command to list TPM keys <code>cli: tpm-cli listkeys</code>
---------------	---

10.6Release 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
	tservd	port	udpMultiPointOn (def: no); remote_ipX; udpRemotePortX

10.7Release 25.03.23.000

Roaming Manager		
-----------------	--	--

Roaming Manager connection retry options	Added new connection retry options for Roaming Manager feature		
	Package	Section	Options
	network	interface	roaming_link_success_time (def: 600 secs); roaming_prefer_best_operator (def: no); roaming_scan_inheritance (def: no)
	multiwan	interface	retry_on_first_fail (def: no)
SCADA			
MODBUS TCP routes	Added support for MODBUS TCP routes (Mantis: 6643)		
	Package	Section	Options
	iecd	mbtcp_route	ifnum; devaddr, ipaddr
IECD104 Slave cyclic transmission	Support for cyclic transmission of data point messages		
	Package	Section	Options
	iecd	port	iec104_cyclic_on (def: 0)
Transparent mode offline queue	Added support for IEC104 slave offline queue when using transparent mode (no iec104s application layer)		
VRF	Support for binding IEC104 Slave socket to a VRF for isolation from general routing (Mantis: 4802)		
	Package	Section	Options
	iecd	port	iec104_ip1_vrf; iec104_ip2_vrf; iec104_ip3_vrf; iec104_ip4_vrf; iec104_ip5_vrf; iec104_ip6_vrf;
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
	system	timeserver	gnss_clock_source_enabled (def: no)

10.8Release 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) cli: iecd show point options cli: iecd show cmdpoint options

10.9Release 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); 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	<p>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.</p> <table><tr><th>Package</th><th>Section</th><th>Options</th></tr><tr><td>multiwan</td><td>interface</td><td><code>ifup_scanning_timeout_sec</code> (def: 480 secs)</td></tr></table>	Package	Section	Options	multiwan	interface	<code>ifup_scanning_timeout_sec</code> (def: 480 secs)
Package	Section	Options					
multiwan	interface	<code>ifup_scanning_timeout_sec</code> (def: 480 secs)					
SCADA							
DNP3 to IEC104 DI inversion and AI Scaling	<p>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 option for analog scaling – the analog inputs received from the RTU are divided by the scaler before conversion to SCADA protocol (mantis: 6419)</p> <table><tr><th>Package</th><th>Section</th><th>Options</th></tr><tr><td>iecd</td><td>port</td><td><code>di_invert</code> (def: 0); <code>ai_scaler</code> (def: 0)</td></tr></table>	Package	Section	Options	iecd	port	<code>di_invert</code> (def: 0); <code>ai_scaler</code> (def: 0)
Package	Section	Options					
iecd	port	<code>di_invert</code> (def: 0); <code>ai_scaler</code> (def: 0)					
Health points in multi master mode	<p>Added support for health points (6) in multi-master mode</p> <table><tr><th>Package</th><th>Section</th><th>Options</th></tr><tr><td>iecd</td><td>port</td><td><code>iec104_rtuX_health_ioa</code>;</td></tr></table>	Package	Section	Options	iecd	port	<code>iec104_rtuX_health_ioa</code> ;
Package	Section	Options					
iecd	port	<code>iec104_rtuX_health_ioa</code> ;					
HMI second interface	<p>Added support for HMI Second Control Interface (MQTT)</p> <table><tr><th>Package</th><th>Section</th><th>Options</th></tr><tr><td>iecd</td><td>port</td><td><code>modbus_slave_devaddr</code>; <code>modbus_slave_protocol</code>; <code>modbus_slave_local_ip</code>; <code>modbus_slave_tcp_port</code> (def: 502); <code>modbus_slave_serial_ifnum</code>; <code>modbus_slave_use_tls</code>; <code>modbus_slave_tls_cacertfile</code>; <code>modbus_slave_tls_crlfile</code>; <code>modbus_slave_tls_certfile</code>; <code>modbus_slave_tls_keyfile</code>; <code>modbus_slave_tls_pass</code>; <code>modbus_slave_tls_common_name</code>; <code>modbus_slave_tls_validate_peer_cert</code>; <code>modbus_slave_tls_verify_depth</code>; <code>modbus_slave_tls_force_tls1_2</code>; <code>modbus_slave_tls_cipherlist</code></td></tr></table>	Package	Section	Options	iecd	port	<code>modbus_slave_devaddr</code> ; <code>modbus_slave_protocol</code> ; <code>modbus_slave_local_ip</code> ; <code>modbus_slave_tcp_port</code> (def: 502); <code>modbus_slave_serial_ifnum</code> ; <code>modbus_slave_use_tls</code> ; <code>modbus_slave_tls_cacertfile</code> ; <code>modbus_slave_tls_crlfile</code> ; <code>modbus_slave_tls_certfile</code> ; <code>modbus_slave_tls_keyfile</code> ; <code>modbus_slave_tls_pass</code> ; <code>modbus_slave_tls_common_name</code> ; <code>modbus_slave_tls_validate_peer_cert</code> ; <code>modbus_slave_tls_verify_depth</code> ; <code>modbus_slave_tls_force_tls1_2</code> ; <code>modbus_slave_tls_cipherlist</code>
Package	Section	Options					
iecd	port	<code>modbus_slave_devaddr</code> ; <code>modbus_slave_protocol</code> ; <code>modbus_slave_local_ip</code> ; <code>modbus_slave_tcp_port</code> (def: 502); <code>modbus_slave_serial_ifnum</code> ; <code>modbus_slave_use_tls</code> ; <code>modbus_slave_tls_cacertfile</code> ; <code>modbus_slave_tls_crlfile</code> ; <code>modbus_slave_tls_certfile</code> ; <code>modbus_slave_tls_keyfile</code> ; <code>modbus_slave_tls_pass</code> ; <code>modbus_slave_tls_common_name</code> ; <code>modbus_slave_tls_validate_peer_cert</code> ; <code>modbus_slave_tls_verify_depth</code> ; <code>modbus_slave_tls_force_tls1_2</code> ; <code>modbus_slave_tls_cipherlist</code>					
IOSRVD direct serial comms	<p>Support IOSRVD interface to serial using direct driver calls instead of UNIX sockets to <code>tserverd</code> (Mantis: 6322)</p> <table><tr><th>Package</th><th>Section</th><th>Options</th></tr><tr><td>iecd</td><td>port</td><td><code>modbus_serialX_mode</code>; <code>modbus_serialX_speed</code>; <code>modbus_serialX_wsize</code>; <code>modbus_serialX_parity</code>; <code>modbus_serialX_stops</code> (where X is 0 or 1)</td></tr></table>	Package	Section	Options	iecd	port	<code>modbus_serialX_mode</code> ; <code>modbus_serialX_speed</code> ; <code>modbus_serialX_wsize</code> ; <code>modbus_serialX_parity</code> ; <code>modbus_serialX_stops</code> (where X is 0 or 1)
Package	Section	Options					
iecd	port	<code>modbus_serialX_mode</code> ; <code>modbus_serialX_speed</code> ; <code>modbus_serialX_wsize</code> ; <code>modbus_serialX_parity</code> ; <code>modbus_serialX_stops</code> (where X is 0 or 1)					
IOSRVD MQTT	<p>Added support for remote IO and MQTT slave (Mantis: 6315)</p>						
MODBUS master side analog filtering	<p>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.</p> <table><tr><th>Package</th><th>Section</th><th>Options</th></tr><tr><td>iecd</td><td>point</td><td><code>modbus_filter_mode</code>; <code>modbus_filter_db_val</code>; <code>modbus_filter_sampling_time_secs</code>; <code>modbus_filter_transmit_time_secs</code></td></tr></table>	Package	Section	Options	iecd	point	<code>modbus_filter_mode</code> ; <code>modbus_filter_db_val</code> ; <code>modbus_filter_sampling_time_secs</code> ; <code>modbus_filter_transmit_time_secs</code>
Package	Section	Options					
iecd	point	<code>modbus_filter_mode</code> ; <code>modbus_filter_db_val</code> ; <code>modbus_filter_sampling_time_secs</code> ; <code>modbus_filter_transmit_time_secs</code>					

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 public 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	virtu_simulation_interval_sec (def: 30)
Windows file format data point import	Support windows .xlsx extension for data point files import (Mantis: 6027)		

10.10 Release 25.02.14.032

No new features

10.11 Release 25.02.14.027

General	
Merlin4600 Sierra Wireless WP7609-G support	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. Note: Do not downgrade the Merlin4600 (PFJ) variant to firmware prior to SXL-25.02.14.027.
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 particular LTE-450 bands 31, 72 and 87 using Unitac and SIMCOM 7070E modules.
-------------------------------	---

10.12 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						

10.13 Release 25.02.14.013

Ethernet															
Ethernet port to interface mapping using port names	<p>Ethernet interface configuration now uses driver port names in option ifname rather than <code>va_switch</code> configuration section for mapping interfaces to Ethernet ports. The <code>va_switch</code> method used in other hardware models is now deprecated for Merlin4600 series. Use space separator when specifying multiple port names in option ifname.</p> <p>When bridging Ethernet ports option type must be set to 'bridge' (Mantis 6028)</p> <table> <tr> <th>Physical port label</th><th>network.interface ifname value</th></tr> <tr> <td>Ethernet A</td><td>portA</td></tr> <tr> <td>Ethernet B</td><td>portB</td></tr> <tr> <td>Ethernet C</td><td>portC</td></tr> <tr> <td>Ethernet D</td><td>portD</td></tr> <tr> <td>SFP I</td><td>portI</td></tr> <tr> <td>SFP J</td><td>portJ</td></tr> </table> <p>Example bridged configuration:</p> <pre>package network config interface 'LAN' option ifname 'portA portB portC portD' option type 'bridge'</pre> <p>Example segmented configuration:</p> <pre>package network config interface 'LAN1' option ifname 'portA portB portC' option type 'bridge' config interface 'LAN2' option ifname 'portD'</pre>	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
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														

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	<code>iec104_multi_master_on</code> (def: 0); <code>iec104_conn1_casdu</code> ; <code>iec104_conn2_casdu</code> ; <code>iec104_conn3_casdu</code> ; <code>iec104_conn4_casdu</code> ; <code>iec104_conn5_casdu</code> ; <code>iec104_conn6_casdu</code> ; <code>iec104_local_ip1</code> ; <code>iec104_local_ip2</code> ; <code>iec104_local_ip3</code> ; <code>iec104_local_ip4</code> ; <code>iec104_local_ip5</code> ; <code>iec104_local_ip6</code> ; <code>iec104_local_tcpport1</code> ; <code>iec104_local_tcpport2</code> ; <code>iec104_local_tcpport3</code> ; <code>iec104_local_tcpport4</code> ; <code>iec104_local_tcpport5</code> ; <code>iec104_local_tcpport6</code>
	point	<code>iec104_conn_mask</code>
	cmdpont	<code>iec104_conn_mask</code>

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	<code>vhmi_enabled</code> (def: 0); <code>vhmi_proto</code> (def: <code>modbus_tcp</code>); <code>vhmi_listen_port</code> (def: 502); <code>vhmi_debug_on</code> (def: 0)
	point	<code>vhmi_on</code> (def: 0); <code>vhmi_regaddr</code> (def: 0); <code>vhmi_dword</code> (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): <ul style="list-style-type: none">• 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)						
<table><tr><th>Package</th><th>Section</th><th>Options</th></tr><tr><td>strongswan</td><td>scep_cert</td><td>debug_level (def: 0)</td></tr></table>		Package	Section	Options	strongswan	scep_cert	debug_level (def: 0)
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).						
<table><tr><th>Package</th><th>Section</th><th>Options</th></tr><tr><td>strongswan</td><td>scep_cert</td><td>user (def: strongswan)</td></tr></table>		Package	Section	Options	strongswan	scep_cert	user (def: strongswan)
Package	Section	Options					
strongswan	scep_cert	user (def: strongswan)					

10.14 Release 25.02.14.002

No new features

10.15 Release 25.02.14.000

Hardware	
Digital IO	Support for <ul style="list-style-type: none"> • Six digital input ports with Wet/Dry control • Two digital outputs 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.
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	iosrzd	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	
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.	

Security

Last Gasp	Power fail event generated in syslog and optionally delivered using the routers event system via an SNMP trap when power is lost.
-----------	---

WeConnect

WeConnect	<p>WeConnect allows secure remote access to both the network behind the devices and the devices themselves. WeConnect solves the complexity of managing VPNs over the Internet. With WeConnect users can easily and securely connect to any IP-device on the network using their normal PC, smartphone or tablet.</p> <p>If you do not yet have an account, contact your local Westermo reseller or visit weconnect.westermo.com for further information.</p>
-----------	---

11 Appendix 2: Problems resolved history

11.1 Release 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
		7797
	Fixes to ensure the manual network operator selection is executed in the right order	7797
Monitor	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

11.2 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 openvpn restart	7735
System	Fix minimum machtype firmware version checking	7717
		7722
		7714
Web	Fix misleading 'cannot find device' messages on network restart or <code>ifup</code>	7798
	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 <code>web: status->Realtime Graphs</code>	7029
WeConnect	Add missing <code>ripd</code> and <code>openvpn</code> packages during provisioning	7687
		7688
	Network status diagnostics now correctly show WeConnect interface IP address	7682

11.3 Release 25.04.08.000

Module	Short Description	Mantis
802.1x	Fix 802.1x authentication	4290
	Fix 802.1x restart after <code>ifup</code> or cable unplug/plug	7464
Activator	Fix issue with multiple downloads from different services (active update, inventory, audit) running simultaneously	7530
Boot	Fix issue with multiple downloads from different services (active update, inventory, audit) running simultaneously	6321
	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
	Added bitmap handling for DI register type in Modbus master	7371
	Extend supported data format values for MODBUS data points	6890
IECD/ Modbus	Fix event generation of unsolicited messages for Modbus master (serial) to DNP3 slave (TCP) when DNP3 Unsolicited Messages option is enabled in configuration	7335 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	
	Increased size of DNP3 analog output block buffer to handle possible size of variation 4 – 64 bit double with single byte status	
IECD/MQTT	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
		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
		7324
		7325
		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 <code>ifName</code> 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/ WeConnect	Added support for DCU VPN Concentrator configuration options	
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/Dynami c 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 web: <code>security->firewall->traffic rules</code> cli: <code>firewall.rule.chain</code>	6898
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. web: <code>services->mobile manager->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 web: security->ssh->Identity cli: dropbear.dropbear.Identity web: security->ssh->Verbose cli: dropbear.dropbear.verbose web: security->ssh->VRF cli: dropbear.dropbear.VRF	6703
Web/VHMI	Fix broken upload of DPS private key file	
WeConnect	Fix auto generated RIP configuration to ensure WeConnect correctly connects in a Ethernet bridge scenario and also reestablishes on disconnect.	7427
	Fix duplicate interface creation on connect	7539
	Fix support for WeConnect	7591
	HTTPS support for DCU VPN Concentrator auto enrolment	7547
		6793
		7218
		6961

11.4Release 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 web: status->Realtime Graphs	7029

11.5Release 25.03.43.009

Module	Short Description	Mantis
Activator	Set model URL parameter to uimodel rather than machtype 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 cli: arp-scan -l	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	
OpenVPN	Fix privileges in OpenVPN to allow automatic restarts and fix open SSL errors in WeConnect	6793
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/ 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 System	Support configuration of Event System Digital Input change event input number and value via web UI web: services->va event system->event filters->Input Number cli: va_eventd.forwarding.input_number web: services->va event system->event filters->Input Value cli: va_eventd.forwarding.value	6839
Web/IECD	Added selector lists in place of fixed values where possible	
Web/OSPF	Support configuration of OSPF VRF via web UI web: network->ospf->global settings->VRF cli: ospfd.routing.vrf	6964

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

11.6 Release 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	6756
	web: services->http server->Certificate Key Format cli: uhttpd.uhttpd.keytype [PEM TPM]	
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	6794
	web: status->System Log	
	web: status->Kernel Log	

11.7 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 <code>tservd</code>)	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
	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

Monitor	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/ 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 web: network->bgp->global settings->Network	6619
	Fix BGP network option for IP address/subnet input rather than interface name web: network->bgp->global settings->Network	6619
Web/HTTP Client	Support configuration of Http Client certificate key format web: services->http client->advanced->Certificate Key Format 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 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 web: network->vrrp->vrrp group configuration-> Multicast Source IP cli: vrrp.vrrp_group.mcast_src_ip	4057

11.8Release 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	
	web: scada->iecd->slave protocols->configure iec61850->IEC61850 IED Name	
	cli: iecd.port.iec61850_ied_name	
	web: scada->iecd->slave protocols->configure iec61850->IEC61850 LD Name	
	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 vam 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 nd antenna is disconnected when using Unitac modules	6446
	Support new option to enable MIMO on Unitac modules (disabled by default).	6499
	web: services->mobile manager->advanced->Enable MIMO for Unitac radio Modules	
	cli: mobile.mobile.unitac_mimo_enabled	
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/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 <code>ifname</code> configuration being added to mobile interfaces when configured via web UI	6501
Web/SNMP	Improvements to web UI SNMP configuration	
WiFi	Fix <code>ifup</code> transmission issue when WiFi is bridged with an Ethernet interface	6514

11.9Release 25.02.80.000

Module	Short Description	Mantis
Ethernet	<code>ifup</code> 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 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 <code>ifdown</code> web: <code>scada->iecd->master protocols->configure iec104->iec104-X</code> cli: <code>iecd.port.iec104m_t0 (def: 5 secs)</code> cli: <code>iecd.port.iec104m_t1 (def: 15 secs)</code> cli: <code>iecd.port.iec104m_t3 (def: 20 secs)</code>	
	Fix parsing parsing of <code>-casdu</code> switch in IEC104 firewall	6298
	Fixed incorrect parsing of MQTT <code>SUB-ACK</code> 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 <code>chat</code> command failing if previous <code>chat</code> 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 <code>va_roaming</code> ignoring <code>Stat=0</code> 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"> Now commence an operator scan as follows; <code>AT+COPS=2</code> (detach from network); <code>AT+COPS=0;+COPS=?</code> (reattach and commence scan, all in one operation) <code>AT+COPS=?</code> timeout increased to 190 seconds automatically retry a failed <code>AT+COPS=?</code> command if it fails within 15 seconds <code>vam roaming</code> now includes scan duration in seconds 	
	Incorrect SINR reported for Quectel modules	5951
	Re-connect to network automatically if <code>AT+CGATT=1</code> fails	
	VA Mobile roaming diagnostic now shows roaming info for all modems by default	
	<code>cli: vam roaming</code>	
Network	Ensure <code>ifdown</code> kills all <code>ifup</code> processes on the same interface and not just the child processes	
	Fix repeated <code>ifup</code> race condition on bridged interfaces	6265
RTUD	Added support for inverting digital inputs after reading from hardware	6208
	<code>web: scada->rtud->advanced->Invert Inputs</code>	
	<code>cli: rtud.main.invert_inputs (def: 0)</code>	
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 <code>IKE_SA</code>	6190
SFP	Merlin4600 now supports both 100M and 1000Mbps using SIGMII mode	
SNMP	Fix creation of SNMPv3 traps	5943
	Fix failing <code>snmpwalk</code> on <code>vaModem</code> MIB when no roaming info available	5922
Strongswan	Allow IPSec tunnels to start when CA certificate download fails and blocking is disabled in <code>scep_cert</code> 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
	<code>cli: list system.main.passwrld_hash_algo</code>	
	Fix auditing of DMVPN configuration using option <code>audit_cfg</code>	

	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 <code>cli: tserverd.port.led_dsr_detect (def: 0)</code>	
	Auto detect serial mode gpio control settings	5970
	Fix SNMP poll of TSERVER-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/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/Interface	Added <code>mtu</code> configuration option for PPPoEoA and PPPoA ADSL interfaces	5702
Web/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/Terminal Server	Added support for TCP Tap Port configuration <code>web: scada->terminal server->port->advanced->TCP Tap Port</code> <code>cli: tserverd.port.tap_port (def: 0)</code>	6291
	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

11.10 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.	6367
	Flush transient objects from TPM RAM upon session open on Merlin4600 series.	

11.11 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	ifup <ifname> now correctly re-establishes when <ifname> 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>	

11.12 Release 25.02.14.016

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

11.13 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 web: services->ipsec->connection->Route Interface cli: strongswan.connection.route_interface web: services->ipsec->connection->FlexVPN Prefixes cli: strongswan.connection.flexvpn_prefixes	6000
	Support configuration of local cert via web UI web: services->ipsec->scep certificate->Local Certificate cli: strongswan.connection.localcert	6000
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 web: scada->rtud->main settings->Auto generate configuration cli: rtud.rtud.point_auto_config_on	6075
Web/SCEP	Support configuration of SCEP fingerprint and CA Name via wb UI web: services->ipsec->scep certificate->CA Fingerprint cli: strongswan.scep_cert->fingerprint web: services->ipsec->scep certificate->CA Name cli: strongswan.scep_cert->ca_name	6001
Web/Terminal Server	Support configuration of serial port name via the web UI web: scada->terminal server cli: tserverd.port.serialPortName	5424

11.14 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 iosrzd 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