



## CPX Software Release Notes GW1032/1042 Series

Release CPX-25.03.43.011

<b>Hardware Models</b>	GW1032; GW1042 Series
<b>Revision</b>	1.00.19
<b>Approval status</b>	Approved
<b>Date:</b>	15 November 2023
<b>Brief description</b>	Details the release of system software CPX-25.03.43.011 for GW1032/1042 Series

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## Revision history

<b>Date</b>	<b>Revision</b>	<b>Description</b>
02 November 2016	1.00.01	Release notes for CPX-19.00.02.000
15 May 2017	1.00.02	Release notes for CPX-19.00.04.000
20 October 2017	1.00.03	Release notes for CPX-19.00.75.000 RC 15 (limited)
24 November 2017	1.00.04	Release notes for CPX-19.00.75.000
19 January 2018	1.00.05	Release notes for CPX-19.00.75.001
09 April 2018	1.00.06	Release notes for CPX-19.00.77.000
09 August 2018	1.00.07	Release notes for CPX-19.00.78.000
20 February 2019	1.00.08	Release notes for CPX-19.00.80.000
07 October 2019	1.00.09	Release notes for CPX-19.00.86.000
18 May 2020	1.00.10	Release notes for CPX-19.00.91.000
05 March 2021	1.00.11	Release notes for CPX-25.01.40.028 (and bridge release CPX-19.01.40.028)
24 February 2022	1.00.12	Release notes for CPX-25.02.14.010
14 April 2022	1.00.13	Release notes for CPX-25.02.14.016
23 June 2022	1.00.14	Release notes for CPX-25.02.14.027
29 July 2022	1.00.15	Release notes for CPX-25.02.14.033
23 February 2023	1.00.16	Release notes for CPX-25.03.03.000
22 May 2023	1.00.17	Release notes for CPX-25.03.43.000
14 August 2023	1.00.18	Release notes for CPX-25.03.43.005
15 November 2023	1.00.19	Release notes for CPX-25.03.43.011

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# 1 CPX-25.03.43.011 release statement

CPX-25.03.43.011 has formally passed internal acceptance and regression testing and is available for general release on hardware platforms as stated below.

## 1.1 Firmware information

Filename	Size (bytes)	Build Date	Checksum (md5)
CPX-25.03.43.011.image	11,231,232	15/11/2023	588124189fa8436f7e589897a67f5f32

## 1.2 Hardware platforms

Hardware model	Details
GW1032	Dual SIM 3G/CDMA450 wireless router with dual Ethernet and WiFi.
GW1042	Dual SIM LTE/3G/CDMA450 wireless router with dual Ethernet and WiFi.

## 1.3 Important upgrade information

Due to a new unified versioning schema across all Virtual Access families this CPX release contains a change in the MAJOR version number (previously **19**, now **25**).

Older firmware contains safety checks to ensure that the MAJOR firmware version matches before allowing firmware upgrade. More recent CPX firmware relaxes this check to allow seamless upgrade from CPX-19 to CPX-25 versions.

In order to accommodate this change, release CPX-25.01.40.028 is accompanied by a corresponding 'gateway' release CPX-19.01.40.028 (functionally identical to CPX-25.01.40.028).

Please follow the steps below for upgrade:

Running firmware	Upgrade procedure
< CPX-19.00.91.000	Upgrade to CPX-19.01.40.028 before to upgrade to CPX-25.01.40.028 or later
>= CPX-19.00.91.000	Upgrade directly to 25.01.40.028 or later

## 2 Security patches/module firmware upgrades

Firmware	Module	Description	CVE identifier	Mantis
<b>25.03.43.005</b>	console	Automatically log out console sessions after 30 mins if inactivity		6884

<b>25.03.23.000</b>	telnetd	Remove telnetd support		
	password	Resetting password via web UI now requires input of current password		5261
	SSH	Added grace period after console login failure to disrupt brute force attacks		5853
<b>25.02.80.000</b>	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
<b>25.02.14.000</b>	arp-scan	Upgraded to version 1.9.7		
	iecd	COTP: fixed possible heap buffer overflow when handling message with invalid (zero) value in length field)	CVE-2020-7054	5320
	iproute2	Upgrade to version 5.13.0		
	uClibc	Upgrade to version 0.9.33.2		
<b>25.01.40.034</b>	chrony	Upgraded to v3.5.1		
	dnsmasq	Upgraded to v2.84 to fix vulnerabilities in DNS response validation	CVE-2020-25684 CVE-2020-25686	5618
<b>25.01.40.028</b>	chrony	Disable internet command sockets		4995
	chrony dropbear iecd iosrpd openvpn rtud strongswan tserverd xl2tpd	Applications now run with dedicated unique user and group id instead of root privileges		4964 4966 4968 4970 4971 4973 4974 5003
	Password	New configurable option to use SHA-512 for password hashing		5001
	Reset	Config1 and config2 are now deleted when the router is reset to factory config using the reset button press		4996
	tserverd	TLS support for TCP server and TCP client mode		
<b>CPX-19.00.91.000</b>	Curl	Upgraded to version 7.67.0		

	GPS	Upgraded gpsd to version 3.20		4702
	Libpcap	Upgraded to version 1.9.1		
	Tcpdump	Updated to version 4.9.3		
	Web	Removed support for scheduled tasks via web UI		4376
<b>CPX-19.00.86.000</b>	Keepalived	Upgraded to 1.2.19		4226
	Web	Removed ability to disable critical system services via web UI		4340
<b>CPX-19.00.80.000</b>	Configuration	Added support for UCI encryption for 3G interface password		3639
	Coovachilli	Upgraded to version 1.4		
	Dropbear	DSS(DSA) key algorithm removed Disable support for MD5, 96 bit MAC and CBC mode ciphers		3809
	HTTP Server	Disable RC4 cipher suite (RC4, Export, NULL and low strength cyphers (<128)) in https application and add option to set the minimum supported TLS version for the https server. Minimum TLS supported now 1.0.		3809
	HTTP Server	Disabled SSL and exclusively use TLS versions 1.0 and higher		3809
	HTTP Server	Only a generic web error message is now sent to browser and a verbose message is logged on server side		3877

	IPSec	Integrate latest strongswan security patches 10_openssl_ecdsa_signature_patch 12_is_asn1_patch 13_id_dn_match_patch 14_ikev1_fragment_patch 15_reject_child_sa_patch 16_asn1_unwrap_patch 17_modp_custom_patch 19_enforce_remote_auth_patch 20_eap_mschapv2_state_patch 21_gmp_mpz_powm_sec_patch 22_asn1_choice_patch 23_gmp_mpz_export_patch 25_stroke_msg_len_patch 26_skeyseed_init_patch 27_gmp_pkcs1_verify_patch 28_gmp_pkcs1_overflow_patch		4079
	Kernel	Upgrade version from 4.9.59 to 4.9.130	CVE-2018-5390 CVE-2018-5391	3869
	OpenNHRP	Upgraded to version 0.14.1		
	OpenVPN	Upgraded to version 2.4.6	CVE-2018-5390	
	Quagga	Upgraded to version 1.1.0	CVE-2013-6051 CVE-2013-2236 CVE-2016-4036 CVE-2006-2224 CVE-2006-2223 CVE-2016-1245 CVE-2008-1160	3656
	Uboot	Fix root access via modifiable boot process priority		3496
	Web	Mitigated remote code execution vulnerabullity in cmd script.		4054
<b>CPX- 19.00.78.000</b>	Busybox	Bunzip2 integer overflow fix	CVE-2017-15873	3534
	BusyBox	Fix BusyBox auto completion vulnerability	CVE-2017-16544	3526
	Busybox	Heap-based buffer overflow in the DHCP client (udhcpc) before 1.25.0	CVE-2016-2148	3747
	Busybox	Integer overflow in the DHCP client (udhcpc) before 1.25.0	CVE-2016-2147	3747



	Firewall	Updated iptable rules to provide UDP flood protection, filter out bad TCP flags and moved flood protection to mangle table for performance benefit.		3570
	Netsnmp	Upgraded net-snmp to 5.7.3 for integer overflow fix and snmp_pdu_parse function	CVE-2008-4309 CVE-2015-5621	3609
<b>CPX- 19.00.77.000</b>	Kernel	Linux kernel upgraded to 4.9.59		
	Routing	Upgraded iproute2 to 4.13		
	Syslog	Mobile connection failure message in syslog now contains encrypted password.		3493
<b>CPX- 19.00.75.001</b>	Serial	ATMEL module firmware upgraded to 1.3.18		3475
<b>CPX- 19.00.75.000</b>	BusyBox	Upgraded to version 1.23.2	CVE-2011-2716	
	Dnsmasq	Upgraded to 2.78	CVE-2017-14491 CVE-2017-14492 CVE-2017-14493 CVE-2017-14494 CVE-2017-14495 CVE-2017-14496 CVE-2017-13704	
	GPS	GPS now disabled by default		
	Dropbear	Upgraded to 2017.75	CVE-2016-7406	2933
	WiFi	hostapd updated to version 2016-06-15 (Krack Wifi vulnerability fix)	CERT case ID: VU#228519 CVE-2017-13077 CVE-2017-13078 CVE-2017-13079 CVE-2017-13080 CVE-2017-13081 CVE-2017-13082 CVE-2017-13086 CVE-2017-13087 CVE-2017-13088	

## 3 New features

### 3.1 25.03.43.011

No new features

## 3.2 25.03.43.010

Power over Ethernet			
PoE port stop/start	Power over an individual Ethernet port can now be stopped and started via the PoE status page on the web UI (Mantis: 6827) web: status->PoE		
Scada			
DNP3 Analog Set point command variation	Added new option for DNP3 Analog Set point command variation		
	Package	Section	Options
	iecd	cmdpoint	dnp3_cmd_variation (def: 0)
Update IEC104 master on DNP3 static variation change	Added new feature to transmit a spontaneous update to IEC104 master on DNP3 static variation value change		
	Package	Section	Options
	iecd	port	dnp3_tx_spont_on_static_change (def: 0)

## 4 Deprecated features

Firmware	Package	Description
25.02.14.010	WiFi	wireless.wifi-device.type option deprecated
25.02.14.000	Analogue Relay	Removed analogue relay daemon (ard)
	dnsmasq	Removed dhcp.dnsmasq.nodaemon
25.01.40.028	Upnp	Removed miniupnp
	Wget	Removed wget busybox applet
CPX-19.00.91.000	BGP	Removed BGP <code>option scan_time</code> as no longer supported
	Mobile	<code>disable_time</code> option removed from mobile package
	Web	Removed support for scheduled tasks via web UI
	Web	Removed web UI support for ipv4 and ipv6 gateway options from alias interface config
CPX-19.00.86.000	Multiwan	Disabled mwan3 package due to conflict with multiwan package
	Web	Removed ability to disable critical system services via web UI at administration -> startup
CPX-19.00.80.000	Dropbear	MD5, 96 bit MAC and CBC mode ciphers no longer supported
	HTTP Server	Disabled SSL and exclusively use TLS versions 1.0 and higher
	HTTP Server	Disable RC4 cipher suite (RC4, Export, NULL and low strength ciphers (<128)) in https application and add option to set the minimum supported TLS version for the https server. Minimum TLS supported now 1.0.

CPX-19.00.75.000	Data Usage	vnstat package removed. Replaced by Procrustes package. See new features section above.
	DHCP	dhcp-forwarder package removed. DHCP forwarding is now handled by the dnsmasq package. No configuration changes required.
	Firewall	Custom firewall rules in /etc/firewall no longer supported. Removed from web.
	Mobile	Mobile interface option service deprecated. Supported by option service_order which can contain a space separated list of preferred mobile service types in order of preference. See new features section above.
	SLA Monitoring	slad package deprecated. Replaced by Monitor package. Please refer to Monitor section in the user manual for information on configuration.
	System	Removed deprecated option system.cli_clients

## 5 Known issues

No.	Module	Short Description	Mantis
1.	DMVPN	Duplicate SA's on DMVPN connection	3249
2.	Event System	Event target <code>cmd_template</code> does not escape properly when using double quotes	5736
3.	GPS	No GPS support for SIMCOM7070	
4.	IPsec	Strongswan DPD check triggers but takes no action during IP address change on VPN	5665
5.	Mobile	No support for LTE band locking in SIMCOM7070E	6278
6.	Network	Network restart from command line using <code>/etc/init.d/network restart</code> intermittently brings back interfaces in an incorrect state	5423
7.	OSPF	Routing table is not updated correctly with OSPF for dual interfaces	5678
8.	OSPF	When the remote connection (from a remote OSPF peer) is dropped, OSPF crashes intermittently.	5677
9.	PPPoE	Manual <code>ifup pppoe-&lt;interface&gt;</code> causes default route to be lost for <code>&lt;interface&gt;</code>	6276
10.	RIP	RIP advertisements being dropped when running through a GRE tunnel	2265
11.	Strongswan	Strongswan memory footprint increases slowly with tunnel restart	5866
12.	Syslog	No web UI support for syslog filter rules	3705
13.	TACACS	Option <code>tac_user_template %s@VAR</code> not supported	4502
14.	VRF	Command <code>ip vrf identify</code> to view PID associated with VRF's not working as expected	4210
15.	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
16.	Web/Failsafe	Unable to configure failsafe via web UI	5843

17.	Web/Management Users	Unable to configure management users via web UI	5503
18.	Web/Multiwan	Unable to configure <code>multiwan.interface.state_transition_hook</code> via the web UI	5433
19.	Web/SNMP	Unable to configure SNMP alias index for a roaming template via the web UI	3166
20.	Web/VA Event System	Unable to configure <code>va_eventd.target.vrf</code> for syslog and email targets via web UI	5983
21.	Web/WiFi	Web UI not allowing configuration of all available WiFi <code>hwmode</code> and <code>htmode</code>	5552
22.	Web/WiFi	Web UI presents WiFi configuration even when no WiFi available on router	5519

## 6 Problems resolved

### 6.1 25.03.43.011

No.	Module	Short Description	Mantis
1.	Mobile	Added a module reboot after executing a factory reset of the Unitac module	
2.	Mobile	Added an extra delay before issuing the AT command to switch the Unitac modules into ECM mode.	
3.	Mobile	Ensure Unitac module comes back in ECM/VLAN mode after factory reset	
4.	Mobile	Use Unitac-specific AT commands <code>AT!UBAND</code> , <code>AT!UTEMP</code> and <code>AT!UREBOOT</code> instead of GCT commands	

### 6.2 25.03.43.010

No.	Module	Short Description	Mantis
1.	Certificates	Improve error reporting for common issues with HTTPS certificates	6987
2.	IECD	Fixed issue with IEC104 clock synchronization on conversion from CP56TIME2A to time format where memory was not being cleared correctly	
3.	IECD	Improvements for Analog Input integer to float conversion for IEC104 to DNP3	
4.	Mobile	Fix detection of Quectel RM520N 5G mobile module running latest firmware (RM520NGLAAR01A07M4G)	
5.	Mobile	Record Unitac AUX antenna values regardless of MIMO state	
6.	TPM	Don't allow loading a new key if a key with the same label is already present	
7.	VDSL	Disabled DSL restart using <code>/etc/init.d/dsl_control restart</code> for GW6650V and Merlin4700 series as not supported	
8.	VLAN	Fix VLANs on WAN Ethernet port on GW6650V and Merlin4700 series	6994

<b>9.</b>	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
<b>10.</b>	Web/IECD	Added selector lists in place of fixed values where possible	
<b>11.</b>	Web/OSPF	Support configuration of OSPF VRF via web UI web: network->ospf->global settings->VRF cli: ospfd.routing.vrf	6964
<b>12.</b>	Web/PoE	Modifications to a PoE port configuration via the web UI no longer result in the other PoE ports being reset	6827
<b>13.</b>	Web/Realtime Graphs	Fix web UI real time graphs for QMI mobile connections web: status->Realtime Graphs	7029

## 7 Appendix 1: New features history

### 7.1 25.03.43.005

Certificates							
Check both TPM and flash for certificate key	<p>If the key cannot be found in the location specified in the configuration file, the router will automatically check an alternate location using the following methodology (Mantis: 6820).</p> <ul style="list-style-type: none"> <li>When configured for <b>PEM</b> key and key cannot be found at the configured location, the router will try to use a TPM key with name corresponding to base file name (/etc/uhttpd.key -&gt; "uhttpd").</li> <li>When configured for <b>TPM</b> key and key cannot be found in the TPM, the router will try to use file "/etc/&lt;tpm label&gt;.key"</li> </ul>						
Mobile							
FOTA support for Unitac modules	Support FOTA upgrade for Unitac modules						
Neighbour cell information	<p>Added display of neighbouring cell information. Currently only supported on Unitac ML620/660 and Quectel EC200x series</p> <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> <table border="1"> <thead> <tr> <th>Package</th> <th>Section</th> <th>Options</th> </tr> </thead> <tbody> <tr> <td>multiwan</td> <td>interface</td> <td>retry_connection_max_sec (def: multiwan.interface.ifup_timeout_sec)</td> </tr> </tbody> </table>	Package	Section	Options	multiwan	interface	retry_connection_max_sec (def: multiwan.interface.ifup_timeout_sec)
Package	Section	Options					
multiwan	interface	retry_connection_max_sec (def: multiwan.interface.ifup_timeout_sec)					
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-&gt;PoE</pre>						
Scada							
MODBUS to Remote IO protocol conversion	Added support for MODBUS to Remote IO ( <code>ioservd</code> ) protocol conversions (Mantis: 6886)						
TPM							
List TPM keys	<p>Support new diagnostic command to list TPM keys</p> <pre>cli: tpm-cli listkeys</pre>						

## 7.2 25.03.43.000

Network			
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)
SCADA			
IECD VRF support	VRF support for IECD TCP based protocols (Mantis: 6784)		
	Package	Section	Options
	iecd	port	dnp3_vrf; dnp3s_vrf; iec61850_vrf; iec61850mX_vrf; modbus_slave_vrf; modbus_vrf; modbus1_vrf; mqtt_vrf; iec104m_vrf; iec104m1_vrf;

## 7.3 25.03.37.000

GPS	
GPS MIB support	Added support for VA-GNSS-MIB 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.

## 7.4 25.03.35.000

No new features

## 7.5 25.03.33.004

SCADA			
Serial to UDP multi-point mode	Added support for multile 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

## 7.6 25.03.23.000

Roaming Manager
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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)
<b>SCADA</b>			
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;
<b>System</b>			
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)

## 7.7 25.03.05.000

<b>SCADA</b>			
TPM key storage support	Added TPM support for TLS based protocols in IECD and Terminal Server (IEC62351-9) (Mantis: 6552)		
	Package	Section	Options
	iecd	port	iec104_tls_keytype; dnp3s_tls_keytype; modbus_slave_tls_keytype; mqtt_tls_keytype; dnp3_tls_keytype; modbus_tls_keytype; modbus1_tls_keytype; vhmi_mqtt_tls_keytype (def: 0 [0=PEM, 1=TPM])
	tservd	port	tcp_tls_keytype (def: 0 [0=PEM, 1=TPM])

## 7.8 25.03.03.000

No new features



## 7.9 25.02.99.000

No new features

## 7.10 25.02.95.000

Mobile	
FOTA upgrade via CURL	FOTA upgrade can now use CURL to download a firmware image from remote location
SCADA	
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 IEC62351-3 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

## 7.11 25.02.85.000

Mobile	
Quectel RM520N-GL 5G mobile support	Added support for Quectel RM520N-GL 5G mobile module
SCADA	
IECD61850 Slave to MODBUS Server	Added support for IEC61850 slave to MODBUS Server

## 7.12 25.02.80.000

BGP			
BGP MIB support	Added BGP-4-MIB support so BGP information can beretrieved 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		

<b>GPS</b>			
GPS diagnostics	Added new <code>gps</code> diagnostics command		
<b>SNMP</b>			
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 <code>modemTable</code> 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)		
<b>Mobile</b>			
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		
<b>Monitor</b>			
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
<b>Multiwan</b>			
Multiwan interface scanning timeout	New multiwan config parameter to extend <code>ifup</code> timeout when a mobile roaming operator scan is active. Used in conjunction with VA Roaming Manager feature, this parameter is added to the normal <code>ifup_timeout_sec</code> used for <code>ifup</code> operations whenever the <code>ifup</code> occurs during a 3G operator background scan, or the <code>ifup</code> itself triggers such a scan, on the modem being used for the current interface.		
	Package	Section	Options
	multiwan	interface	<code>ifup_scanning_timeout_sec</code> (def: 480 secs)
<b>SCADA</b>			
DNP3 to IEC104 DI inversion and AI Scaling	Added support for inversion of single bit binary input points (Gr1, Gr2) for DNP3 RTU's to IEC104 Scada master. In addition, added support for a new an option for analog scaling – the analog inputs received from the RTU are divided by the scaler before conversion to SCADA protocol (mantis: 6419)		
	Package	Section	Options
	iecd	port	<code>di_invert</code> (def: 0); <code>ai_scale</code> (def: 0)
Health points in multi master mode	Added support for health points (6) in multi-master mode		
	Package	Section	Options
	iecd	port	<code>iec104_rtuX_health_ioa</code> ;

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

## 7.13 25.02.14.033

No new features

## 7.14 25.02.14.027

No new features

## 7.15 25.02.14.024

### 7.15.1 Mobile

#### 7.15.1.1 EID retrieval using SIMCOM 7070E

The SIMCOM 7070E mobile module can now report EID information on the SIMs using `vam -a` command (Mantis: 6236)

#### 7.15.1.2 Merlin4600 LTE-450 mobile module support

Merlin4600 series now supports an alternate mobile module via PCIe slot in order to support frequency bands not supported by the on board Sierra Wireless radio, in particular, LTE-450 bands 31, 72 and 87 using Unitac and SIMCOM 7070E modules.

## 7.16 25.02.14.016

### 7.16.1 Digital Input

Merlin4600 series digital input values changed to match GW2020 series for compatible SCADA operation

Input value	State
0	Input not detected / open / low
1	Input detected / closed / high

### 7.16.2 Terminal server

New configuration option `led_dsr_detect` added to control LED behaviour in GW2124P hardware. By default, the RS232 LED activity depends on DSR detection. However, if the RS232 link does not use the DSR/DTR then this option can be disabled to allow the LED to blink as intended.

Package	Section	Options
tservd	port	led_dsr_detect (default: 1)

---

## 7.17 25.02.14.010

No new features

## 7.18 25.02.14.009

### 7.18.1 SCADA

#### 7.18.1.1 Allow commands to work without status points

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

#### 7.18.1.2 IEC104 Double Bit command conversion to two DNP3 single commands

IECD now supports double bit command conversion to two single DNP3 commands when option `dnp3option` is set to 0x0001. (Mantis: 6052)

Package	Section	Options
iecd	point	index2 (def 0); dnp3options (def: 0)
	cmdpoint	Index2 (def: 0) dnp3options (def: 0)

#### 7.18.1.3 IEC104 multi master support

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

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

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

#### 7.18.1.4 Modbus HMI support

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

Package	Section	Options
iecd	port	vhmi_enabled (def: 0); vhmi_proto (def: modbus_tcp); vhmi_listen_port (def: 502); vhmi_debug_on (def: 0)
	Point	vhmi_on (def: 0); vhmi_regaddr (def: 0); vhmi_dword (def: 0)

### 7.18.1.5 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)

### 7.18.1.6 Support Regulating Step and Bitstring commands for IEC101 to IEC104 conversion

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

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

## 7.18.2 Strongswan

### 7.18.2.1 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 `debug_level`. Set to 0 to disable. (Mantis 5881)

Package	Section	Options
strongswan	scep_cert	debug_level (def: 0)

### 7.18.2.2 SCEP certificate user option

Added new config option `user`, which is the high-level concept of the user of the certificate. This user 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. (Mantis: 5908/5913)

Package	Section	Options
strongswan	scep_cert	user (def: strongswan)

## 7.19 25.02.14.002

No new features.

## 7.20 25.02.14.000

### 7.20.1 BGP

#### 7.20.1.1 eBGP multihop and source peer configuration

Support for allowing multihop ebgp neighbourhood for the peer and specifying source address for communicating with the peer. Option `source` can be either ip4 address or UCI interface name (Mantis: 5609)

Package	Section	Options
bgp	peer	ebgp_multihop; source

#### 7.20.1.2 Peer password configuration

Support for BGP peer password configuration

Package	Section	Options
bgp	peer	password

### 7.20.1.3 Inbound and outbound route map

Support for BGP inbound and outbound route map configuration. Previously it was only possible to specify either inbound or outbound route map.

Package	Section	Options
bgp	peer	inbound_route_map; outbound_route_map

### 7.20.2 Cwatch ping health check

Cwatch now supports ping as a monitoring method. Previously only supported receive byte count.

Package	Section	Options
cwatch	watch	method (def: statistics); icmp_hosts; icmp_attempts (def: 10); icmp_timeout (def: 3); icmp_size (def: 56); icmp_ttl (def: 128); icmp_reliability (def: 50)

### 7.20.3 Event System VRF

Support for events for syslog and email targets to be isolated from general routing using VRF

Package	Section	Options
va_eventd	target	vrf

### 7.20.4 GRE keepalive

Support for automatic responding to received GRE keepalive messages. Added multiwan support for GRE keepalive tests which sends a single GRE keepalive message and waits for either reply or timeout. Only relevant for GRE interfaces.

Package	Section	Options
multiwan	interface	gre_ka_enabled (def: false); gre_ka_timeout_sec (5 secs)

### 7.20.5 Interface status logging

New feature for historical interface status logging for each configured interface for defined periods - day/week/month. Log can then be used to determine the reliability of an interface over time. Feature is enabled by setting `system.main.audit_interface`. When enabled, interface up/down events are logged to `root/interfacelog[*]`.

Log can be displayed via the web UI at `status->interface log`, or using the command `iflog (up|down)`.

Package	Section	Options
system	main	audit_interface (def: 0); audit_interface_log_file (def: /root/interfacelog); audit_interface_log_size (def: 64); audit_interface_log_count (def: 4)

---

## 7.20.6 Mobile roaming SIM enhancements

New feature to identify all available roaming operators visible on the SIM card assigned to a 3G interface, and dynamically select the most appropriate one whenever the 3G interface attempts to connect, rather than sticking with a single operator.

Unlike the existing roaming support (configured via `/etc/config/mobile` roaming section) which creates a dynamic UCI interface for each discovered mobile operator, this new support will use a single UCI interface and will dynamically decide which physical operator to connect to at any time. This decision may be based on criteria such as signal strength, ping response time, and other metrics.

Package	Section	Options
network	interface	roaming_enabled (def: 0); roaming_operator_exclude (def: <empty>); roaming_ordering (def: signal); roaming_ordering_function (def: <empty>); roaming_ping_count (def: 3); roaming_ping_hosts (def: <empty>); roaming_ping_interval_ms (def: 1000); roaming_ping_timeout_ms (def: 500); roaming_ping_size (def: 1360); roaming_full_scan_timer (def: 0); roaming_allow_scan_inheritance (def: no); roaming_full_scan_window_start (def: <empty>); roaming_full_scan_window_end (def: <empty>)

## 7.20.7 Routing table display

Enhanced display of routing table via web UI at `Status->Active Routes` to include Protocol and VRF (Mantis: 5823)

## 7.20.8 SCADA

### 7.20.8.1 Data point and command point import

Support for import of data points and command points from file. This information will replace any UCI configuration. The format of each CSV file will consist of a header that specifies the datapoint options (in double quotes) followed by comma separated values for each of the datapoint options (in double quotes).

Example data point file:

```
"name","iec104_type_id","iec104_ioa","group","index"
"testPoint1","1","1234","1","0"
"status_2","3","10030","11","0"
```

Example command point file

```
"name","iec104_cmd_type_id","iec104_cmd_ioa","iec104_status_ioa","group","index"
"cmdPoint1","46","111","10030","12","0"
```

Package	Section	Options
iecd	port	pointmap_file (def: <empty>); cmd_pointmap_file (def: <empty>);



### 7.20.8.2 DNP3 over TLS (IEC62351-3)

Support for DNP3 connection over TLS (IEC62351-3)

Package	Section	Options
iecd	port	dnp3_use_tls (def: 0) dnp3_tls_cacertfile; dnp3_tls_crlfile; dnp3_tls_certfile; dnp3_tls_keyfile; dnp3_tls_pass; dnp3_tls_common_name; dnp3_tls_validate_peer_cert (def: 0); dnp3_tls_verify_depth (def: 1); dnp3_tls_force_tls1_2 (def: 0); dnp3_tls_cipherlist

### 7.20.8.3 Event System events for data point changes

Added new event system events for data point changes

Class	Id	Name	Sev	Event template
iecd	1	IecdPointValueChange	Info	IOA %{p1} point value changed to %{p2}
rtud	1	Rtud104PointValueChange	Info	IOA %{p1} point value changed to %{p2}
rtud	2	RtudDnp3PointValueChange	Info	group %{p1} index %{p2} point value changed to %{p3}
rtud	3	RtudModbusPointValueChange	Info	regtype %{p1} regaddr %{p2} point value changed to %{p3}

### 7.20.8.4 HART master protocol

Support added for HART master protocol conversion. The terminal server (tservd) configuration serial settings are set by IECD automatically when master protocol is HART. Note that the correct serial interface must still be enabled in tservd config.

Package	Section	Options
iecd	port	hartm_serial_ifnum (def: 0); hartm_poll_intvl_secs (def: 3); hartm_reply_timeout_secs (def: 2); hartm_cmd_max_retries (def: 2); hartm_debug_on (def: 0); hartm_dump_data (def: 0)

### 7.20.8.5 IEC101 automatic time update

Support for automatic time update at specified interval. If the NTP stratum received from chrony matches the configured IEC101 CS Stratum then the time frame sync is sent to the RTU on the specified interval.

Package	Section	Options
iecd	port	iec101_force_time_sync_secs (def: 60); iec101_inter_char_timeout_ms (def: 90) iec101_force_time_sync_first_ms (def: 1200);

### 7.20.8.6 IEC104 to DNP3 write time

New functionality to initiate DNP3 Time Synchronization sequence of commands immediately after reception of IEC104 Clock Synchronization command

Package	Section	Options
iecd	port	iec104_cs_instant_sync_rtu (def: 1)

### 7.20.8.7 IEC104 time synchronisation RES1 bit

The router will not manipulate any timestamps which are included in any messages received from the local Master. This is reflected within a dedicated RES1 bit. The RES1-bit is used in the monitor direction to indicate whether the time tag was added to the information object when it was acquired by the RTU (genuine time) or the time tag was substituted by intermediate equipment such as concentrator stations or by the controlling station itself (substituted time):

- RES1 Value <0> - Genuine time
- RES1 value <1> - Substituted time

### 7.20.8.8 IEC104 last gasp virtual point

Added capability to send IEC104 Single Point message with configurable IOA to SCADA master once host device detect power loss.

Package	Section	Options
iecd	port	iecd104_last_gasp_ioa (def: 0) iec104_last_gasp_val (def: 0)

### 7.20.8.9 IECD web UI redesign

Redesign of IECD web UI to dynamically show chosen master and slave protocol options rather than all possible options at `scada->iecd`

### 7.20.8.10 IEC61850 master protocol

Support added for IEC61850 master protocol conversion when connected to IEC61850 RTU. Current implementation supports up to 2 concurrent links.

Package	Section	Options
iecd	port	master_protocol (new option value iec61850); iecd61850mX_enabled; iec61850mX_remote_ip; iecd61850mX_scl_file; iec61850mX_remote_port; iecd61850mX_remote_ap_title; iecd61850mX_remote_ae_qualifier; iecd61850mX_remote_psel; iec61850mX_remote_ssel; iecd61850mX_remote_tsel; iec61850mX_local_ap_title; iecd61850mX_local_ae_qualifier; iec61850mX_local_psel; iecd61850mX_local_ssel; iec61850mX_local_tsel
	point	iecd61850m_linkno; iec61850m_value_type; iecd61850m_ld_name; iec61850m_node_name; iecd61850m_cdc_name; iec61850m_do; iecd61850m_in_dynamic_ds; iec61850m_dynamic_dsid
	iecd61850m_dataset	linkno; poll_on; is_dynamic; dsid; dataset_ref
	iecd61850m_rcb	linkno; intgpd; buftm; rcb_ref

### 7.20.8.11 IEC104 slave data point averaging mode

Support for data point averaging mode for IEC104 slave. When the configured sampling period (time or number of samples collected from RTU) is reached the average is sent to the SCADA Master.

Package	Section	Options
iecd	point	iecd.port.iecd104_param_avg_on (def: 0); iecd.port.iecd104_param_avg_sampling_period_secs (def: 0); iecd.port.iecd104_param_avg_transmit_period_secs (def: 0); iecd.port.iecd104_param_avg_transmit_threshold (def: 0)

## 7.20.9 WeConnect

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.

Contact your local Westermo reseller or visit [weconnect.westermo.com](http://weconnect.westermo.com) for further information.

Package	Section	Options
weconnect	weconnect	weaddress (def: weconnect.westermo.com); weint_name (def: tap0); confver (def: 1.0); wetoken; weotp; rip_int

## 7.21 25.01.40.034

### 7.21.1 NTP

#### 7.21.1.1 Custom chrony configuration

Support for configuration of custom chrony options through web UI at `system->system->time synchronisation->Custom Chrony configuration options`

Package	Section	Options
system	timeserver	list text

Configured via web UI at `System->System->Time Synchronisation->Custom Chrony configuration options`

#### 7.21.1.2 Local clock drift factor recording

Hidden configuration option `system.timeserver.driftfile` now defaults to `/root/chrony/chrony.drift` to record local clock drift factor and reduce synchronisation time on subsequent boots

### 7.21.2 SCADA

#### 7.21.2.1 Close RTU link when IEC104 master down

New option to stop transmitting on the RTU link when the IEC104 master data link goes down. This will allow the RTU to time out normally and use its own transmission queue to store events.

Package	Section	Options
iecd	port	iec104_close_rtu_link_on_master_down

#### 7.21.2.2 Data point background scan

New option to support IEC104 data point background scan. When enabled, periodic messages with COT=Background Scan shall be sent if the `iec104_type_id` is compatible with COT background scan, and if the global configuration option `iec104_bg_scan_secs` is not zero.

Package	Section	Options
iecd	point	iec104_bgscan_on
	port	iec104_bg_scan_secs

#### 7.21.2.3 Delay measurement ACK in DNP3 initialisation

New configuration option to optionally send DNP3 delay measurement ACK in DNP3 initialisation sequence.

Package	Section	Options
iecd	port	dnp3_app_send_delay_measure

#### 7.21.2.4 DNP3 app time selection control

New configuration option to convert received time to UTC offset or pass through unmodified.

Package	Section	Options
iecd	port	dnp3_app_cs_use_local_time

#### 7.21.2.5 DNP3 to IEC104 IEC104 QU field – Pulse command

DNP3 to IEC104 protocol conversion support for IEC104 QU field - Pulse command operations. New options allow for configuration of individual cmdpoint with parameter required for Pulse command operations

Package	Section	Options
iecd	port	dnp3_app_crob_ontime_ms; dnp3_app_crob_offtime_ms; dnp3_app_crob_count

#### 7.21.2.6 IEC101 Forced Application Mode

Support for configuration of GI and CS parameters for clock synchronisation intervals

Package	Section	Options
iecd	port	iec101_gi_time_secs; iec101_cs_time_secs

#### 7.21.2.7 IEC104 parameters of measured values

New options to support the handling of IEC104 parameters of measured values.

Package	Section	Options
iecd	port	iec104_param_on; iec104_param_thres_on; iec104_param_lolim_on; iec104_param_hilim_on; iec104_param_val_thres; iec104_param_val_lolim; iec104_param_val_hilim

#### 7.21.2.8 IEC104 virtual point configuration version

Added new configuration options for configuration version and IOA address for IEC104 Virtual Point

Package	Section	Options
iecd	port	iec104_cfgver_ioa; iec104_cfgver_val

#### 7.21.2.9 Redundancy for up to 6 SCADA Masters

SCADA master redundancy support has been increased from 2 to 6 SCADA Masters

Package	Section	Options
iecd	port	iec104_local_ip3; iec104_local_tcpport3; iec104_remote_ip3; iec104_local_ip4; iec104_local_tcpport4; iec104_remote_ip4; iec104_local_ip5; iec104_local_tcpport5; iec104_remote_ip5; iec104_local_ip6; iec104_local_tcpport6; iec104_remote_ip6;

#### 7.21.2.10 Support for 2408 data points

Maximum supported data points have now increased from 1200 to 2048.

#### 7.21.2.11 VA event generation on data point change

Support VA event generation on data point IOA value change so VA event system can send an alarm to configured target.

Package	Section	Options
iecd	cmdpoint	log_vaevent_on_change

### 7.21.3 Syslog entries since boot

New parameters added to logread to only show log entries since boot.

- `logread -r` – show current log entries since boot
- `logread -ar` – show log entries since boot and include disk archive files

## 7.22 25.01.40.028

### 7.22.1 Ethernet watchdog

New automatic watchdog script to check switch MIB counters and reset if not incrementing on GW1042 hardware.

### 7.22.2 Mobile

#### 7.22.2.1 Mobile backoff configuration

New feature to support configuration of backoff and reconnection timers on mobile interfaces. This allows for configuration for the number of `ifup` failures before backoff and the amount of time to wait before connection retry. The connection retry timer can be configured to incrementally increase.

Package	Section	Options
network	interface	failures_to_backoff; backoffminutes

See user manual for more information.

#### 7.22.2.2 Mobile custom initialisation string

New feature for ability to pass custom AT commands to the mobile module at mobile startup and SIM switch. The custom AT commands allow for independent configuration for each SIM:

- The initialisation string
- The response to wait for
- The timeout to wait for the response

Package	Section	Options
mobile	main	sim1_custom_pre_init_at_string; sim2_custom_pre_init_at_string; sim1_custom_pre_init_at_string_timeout; sim2_custom_pre_init_at_string_timeout; sim1_custom_post_init_at_string; sim2_custom_post_init_at_string; sim1_custom_post_init_at_string_timeout; sim2_custom_post_init_at_string_timeout

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### 7.22.2.3 Reset LOCI file content on SIM on startup

New option `sim[1|2]_loci_file_reset_enabled` when enabled will lead to a fresh operator search at radio module startup instead of the module trying to register with the last used network again.

Package	Section	Options
mobile	Main	sim1_loci_file_reset_enabled; sim2_loci_file_reset_enabled

### 7.22.2.4 Roaming templates multiwan group

New option for configuration of multiwan exclusive group. Previously this was hard configured to 3g.

Package	Section	Options
mobile	roaming_template	multiwan_exclusive_group

### 7.22.3 Password hash

Support for configurable password hashing algorithm using SHA-512 algorithm.

Note: if using SHA-512 password hash then firmware cannot be rolled back to a version that does not support SHA-512 ie prior to this release.

Package	Section	Options
system	main	passwd_hash_algo

### 7.22.4 Reset

Config1 and config2 configuration files are now deleted when router is reset to factory config using the reset button press

### 7.22.5 SCEP CA fingerprint validation

Added a new option `fingerprint` which specifies a fingerprint that can be matched against the fingerprint (MD5 or SHA1) of a CA certificate during authentication

Package	Section	Options
strongswan	scep_cert	fingerprint

### 7.22.6 SNMP

#### 7.22.6.1 CDMA 450 MIB support

Added CDMA 450 MIB support to vaModem.mib for EC/IO, DRC and PN-Code

MIB	Description
vaModem.29	EC/IO
vaModem.30	DRC
vaModem.31	PN-Code

#### 7.22.6.2 LTE band MIB support

Added LTE band to vaModem.mib

MIB	Description
vaModem.32	LTE band

---

## 7.22.7 Strongswan interoperability improvements

New options added to strongswan configuration for better interoperability with 3<sup>rd</sup> party vendor peers.

Package	Section	Options
strongswan	connection	disable_mobike; mobike_send_additional_self; disable_natt

## 7.22.8 Terminal server

### 7.22.8.1 Hardware independent device naming

Added new `serialPortName` option for configuration of user-friendly terminal server serial port naming. This allows the terminal server to be configured with the serial port label name in place of the linux `devName` (which can vary between hardware models).

Hardware Series	devName	serialPortName	Physical port
GW1150	/dev/ttyUSB0	port-b	Serial
GW2024P/GW7314	/dev/ttySC0	serial0	Serial 0
	/dev/ttySC1	serial1	Serial 1
GW2300	/dev/ttyUSB0	serial0	Serial 0
	/dev/ttyUSB2	serial1	Serial 1
GW3300D	/dev/ttyOBD0	serial1	Serial 1
	/dev/ttyUSB0	serial2	Serial 2
		serial-ext	USB

### 7.22.8.2 Terminal server diagnostics

The terminal server debug log for serial data output can now be configured using `option max_dump_data_size`. Default size is 128 bytes. Previously debug was limited to 15 bytes.

Package	Section	Options
tserverd	main	max_dump_data_size

### 7.22.8.3 TLS support for TCP mode

Added support for TLS in TCP server and TCP client mode using `tserverd`.

## 7.22.9 TOS/DSCP value configuration

Added configuration support to change the TOS byte value in the IP header when using VA applications.

Package	Section	Options
asterisk	main	tos_sip; tos_audio
cesopd	port	tos_value
tserverd	port	tos_value

## 7.23 CPX 19.00.91.000

### 7.23.1 Change log

New change log feature enabled via existing system audit configuration option `system.main.audit_cfg`. Changes are logged to a change log file (in addition to being displayed in `syslog`) and can be viewed using `changes -h` command or via the web at `status->change log`.

Package	Section	Options
system	main	audit_cfg_log_file; audit_cfg_log_size; audit_cfg_log_count;

Configured via the web at `system->system->audit` configuration.

## 7.23.2 Cwatch

### 7.23.2.1 Grace time option support

Support for `option grace_time` for defining a grace time during which interface activity will be ignored after a 'Failure Action' is executed.

Connection Watch will assume the interface to be down during the grace period and will not reset the failure action timers even if packets are received during this grace time.

This can be used to overcome the situation where packets can be received after a failure action even though the interface eventually fails to connect.

For example, during a USB restart on a mobile interface, a small amount of packets can be registered as being received while a mobile connection is attempted but fails registration.

Package	Section	Options
cwatch	watch	failure_grace_time_1; failure_grace_time_2; failure_grace_time_3

### 7.23.2.2 Support for mobile roaming template interfaces

Roaming interfaces can now be monitored via Cwatch using a new `roaming_template` option `cwatch_entries`. This can be configured with a list of a space-separated `watch` section names from the `cwatch` configuration. At boot time, after mobile roaming discovery completes, all `cwatch` sections listed in the new option have their `test_ifaces` entry amended to include discovered operators from the roaming scan, and `cwatch` is automatically restarted so the changes can take effect.

Package	Section	Options
mobile	roaming_template	cwatch_entries

## 7.23.3 Event system

### 7.23.3.1 Custom facility and severity for VA event syslog messages

VA event messages with a syslog target can now be configured with a custom facility and severity which will override the default values. New configuration options `option facility` and `option severity`.

Package	Section	Options
va_eventd	target	facility; severity

See the user manual for more information.



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### 7.23.3.2 Parameter based event filtering

Support for parameter-based filtering in the `forwarding` configuration section of `va_eventd` package. Available options depend on the event type. See user manual for full list of available options.

### 7.23.3.3 Event acknowledgement

VA event system sends a new boolean `vaEventAcknowledgementRequired` field with every snmp trap. Field is set according to boolean `option acknowledgement_required` in `forwarding` section

### 7.23.3.4 Firewall recent rule event

New firewall event added to VA event system triggered when a firewall recent rule is violated

Event name	Event class	Event Id	Severity
RecentRule	Firewall	1	Warning

### 7.23.3.5 Digital output change event

New syslog events added for digital output changes.

Event name	Event class	Event Id
DigitalOutputChange	system	6

## 7.23.4 FlexVPN interoperability

Now supports FlexVPN interoperability with third party VPN hubs for advertising IPv4 and IPv6 routes in IKEv2 authentication.

If strongswan IKEv2 connection contains the `route_interface` option configured with one of uci network interfaces, strongswan will request IPv4 and IPv6 subnets and if the peer (responder) returns any subnet routes they will be installed via configured `route_interface` without a gateway. The new `flexvpn_prefixes` option defines any routes to be advertised.

Package	Section	Options
strongswan	connection	route_interface; flexvpn_prefixes

### 7.23.5 Interface status

New command `ifstatus` to display detailed interface status summary for all UCI-configured interfaces including their current state and IP address.

See user manual for more information.

### 7.23.6 Inventory upload

The inventory upload feature automatically uploads interface statistical information periodically to Activator. Inventory collection produces a JSON document which is

uploaded using the http client. The stored data can be communicated between Activator and third-party applications using a restful API.

Package	Section	Options
monitor	inventory	enabled; upload_interval; trigger_upload_delay_sec

See the user manual for more information.

## 7.23.7 Mobile

### 7.23.7.1 Mobile cold restart

A cold restart of va-mobile can now be executed via the command `'vam init'`. To reset the modem hardware, use `'vam resetmodem'`.

### 7.23.7.2 Mobile diagnostics

New command `vam` to provide easy access to most available va-mobile diagnostics. It relies on a number of underlying tools for its operation, notably `vam_cmd.lua`, `mobile_operators`, `mobile_status`, `/etc/init.d/usb_startup`, `logread` and `va_mobile` itself.

See user manual for more information.

### 7.23.7.3 LTE band selection support for Sierra Wireless module

LTE band selection now supported for Sierra Wireless WP76xx modules.

### 7.23.7.4 Mobile module support

Support for Quectel EG25G mobile module.

Vendor	Module	Firmware
Quectel	EG25G	

### 7.23.7.5 Roaming scan timeout

Support for new configuration option for defining the connection attempt timeout for each operator during a roaming scan. Configurable via the web UI at `services->mobile manager->roaming interface template->Connection timeout in seconds during roaming scan`. The default is 64 seconds but can be increased for rare scenarios where operators take longer than this to connect.

Package	Section	Options
mobile	roaming_template	scan_connection_timeout

## 7.23.8 Monitor speed test

New feature for router speedtest using VA Monitor application. The router will:

- listen on TCP port 9 and discard all received data
- listen on TCP port 19 and stream data to the connected client at maximum possible speed.

Package	Section	Options
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monitor	speedtest	chargen_enabled; discard_enabled
---------	-----------	----------------------------------

## 7.23.9 OSPF/BGP routing

### 7.23.9.1 OSPF/BGP support for adding applications to VRF

VRF support added to BGP and OSPF to enable protocols to be added to a VRF. A new option `vrf` can be configured to allow multiple routing sections to have several instances in different VRF's.

Package	Section	Options
bgpd	routing	vrf
ospfd	routing	vrf

See the user manual for more information.

### 7.23.9.2 Support for assigning peers to particular BGP instance

A new routing option is introduced for for section `peer`, `peer_group` and `routemap`. This can be configured to the name of a routing section you want it to be related to.

Package	Section	Options
bgpd	peer	routing
	peer_group	routing
	routemap	routing

See the user manual for more information.

## 7.23.10 OSPF interface cost metric support

New option to set the OSPF interface cost metric

Package	Section	Options
ospfd	interface	cost

## 7.23.11 Multiwan signal\_test option now supports UDS

A UDS script can now be entered as a parameter in option `signal_test` in the format `option signal_test "uds(script_name)"`.

UCI values can now also be checked from within the script using the format `uci.<pkg>.<section>.<option>`.

Package	Section	Options
multiwan	multiwan	signal_test

See the user manual for more information.

## 7.23.12 Overlay diagnostics

New command `checkov` to show modified overlay files (excluding configs and files stored under `/root/`).

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## 7.23.13 SCADA

### 7.23.13.1 IEC104 Gateway support

Added support for IEC104 Gateway.

### 7.23.13.2 IEC104 redundant connection support

Implemented support for multiple IEC104 master support. Router will accept IEC104 connections from alternate SCADA masters as detailed in IEC 60870-5-104 standard.

No new configuration options are required for operation.

### 7.23.13.3 SCADA application level firewall

SCADA application level firewall allows validating and filtering SCADA messages covering the following protocols:

- IEC 608-5-104 (IEC104)
- IEE Std 185-2012 (DNP3)
- Modbus TCP

This feature is part of the general firewall feature implemented as part of the `iptables` package.

### 7.23.13.4 IECD independent library versioning

Each SCADA protocol (IEC101, IEC104, DNP3, Modbus) and their role (MASTER/SLAVE) within IECD package now has a new independent library and versioning approach. This introduces a code separation structure for performing independent conformity assessments for each of the SCADA protocol digital libraries.

## 7.23.14 SNMP

Enabled MIBs for CPU load average and memory usage

MIB	Description
.1.3.6.1.4.1.2021.4	CPU load average
.1.3.6.1.4.1.2021.10	Memory usage

## 7.23.15 System information

New short command `version` to display system firmware and other information as an alias for existing command `vacmd show vars`. The new command includes an additional `'-a'` option to display additional information.

See user manual for more information.

## 7.23.16 VRF application support

Support for binding the following applications to a specific VRF and isolated from general routing

Application	Package	Section	Options
ADAT	adatcd	main	vrf

HTTP Client	httpclient	core	vrf
SNMP	snmpd	system	vrf
SSH	dropbear	dropbear	interface (existing option)
Syslog	system	system	log_vrf
Web Server	uhttpd	uhttpd	vrf

## 7.23.17 VRRP

### 7.23.17.1 VRRP diagnostics

New command `vrrp` to display additional VRRP diagnostic commands.

### 7.23.17.2 VRRP support for roaming template interfaces

Roaming interfaces can now be tracked via VRRP using a new `roaming_template` option `vrrp_groups` which can be configured with a list of space-separated VRRP group names. Any roaming interfaces discovered will be automatically to the VRRP track interface list (`track_iface`) for each VRRP group listed.

Package	Section	Options
mobile	roaming_template	vrrp_groups

## 7.24 CPX 19.00.86.000

### 7.24.1 Multi-APN (Quectel)

Support on Quectel EC25 for multiple APN via single SIM.

### 7.24.2 Delivery of mobile statistics to Activator

Support for forwarding of mobile stats to Activator via `va_hdl` command.

Current stats supported are IMEI and hardware revision for each radio, and ICCID and IMSI for each SIM.

### 7.24.3 Mobile operator search

Mobile operator scan can now be executed via command line using the command `mobile_operators -s`. This command displays a list of available mobile networks on roaming SIMs.

## 7.25 CPX 19.00.80.000

### 7.25.1 Multi-APN (SIMCOM 7600)

Support on SIMCOM7600 for multiple APN via single SIM.

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## 7.25.2 Mobile module support

Support for SIMCOM7600 mobile module. SIMCOM7600 uses a QMI interface by default rather than Ethernet. Alternatively PPP mode is also supported.

Vendor	Module	Firmware
SIMCOM	SIMCOM7600	

## 7.25.3 Support for 802.11ac protocol for WiFi

Support new wireless option values for 802.11ac protocol for 802.11ac capable hardware

Package	Section	Options
wireless	wifi-device	hwmode - new value 11na htmode - new values VHT20, VHT40, VHT80, VHT160

## 7.25.4 NTP combinelimit option support

Support for `option combinelimit` for limiting sources included in the combining algorithm.

When `chronyd` has multiple sources available for synchronization, it has to select one source as the synchronization source. The measured offsets and frequencies of the system clock relative to the other sources, however, can be combined with the selected source to improve the accuracy of the system clock.

The `combinelimit` directive limits which sources are included in the combining algorithm. Their synchronization distance has to be shorter than the distance of the selected source multiplied by the value of the limit. Also, their measured frequencies have to be close to the frequency of the selected source.

Package	Section	Options
system	timeserver	combinelimit

## 7.25.5 Bootloader version reporting to Activator

HTTP client now reports bootloader version to Activator in HTTP download requests

## 7.25.6 Multiwan health check logic

Multiwan health checks now have granularity of 5 second intervals. The health interval will be rounded up to next 5 second value. For example if health interval is set in the range 1 to 5 seconds, health checks will be performed every 5 seconds. If set to 6 to 10 seconds, health checks will be performed every 10 seconds, and so on.

## 7.25.7 HTTPS minimal supported TLS version

New option to set the minimum supported TLS version for the HTTPS server. Minimum supported version now 1.0.

Package	Section	Options
uhttpd	uhttpd	tls_version

---

## 7.25.8 Support for OSPF interface priority

New option to set the OSPF interface priority.

Package	Section	Options
ospfd	interface	priority

## 7.25.9 Failsafe

Failsafe is a new security feature that allows permanent settings to be defined which control how the router behaves while in recovery mode. It's function is to improve security by protecting sensitive configuration information through deletion of configuration files and prohibiting Ethernet access.

Package	Section	Options
system	failsafe	enabled Ethernet delete_factconf delete_configs reset_all message command

## 7.26 CPX 19.00.78.000

### 7.26.1 Support for maximum lifetime for archive syslog files

Syslog files can now be configured with a maximum age to aid in GDPR compliance. Once files become older than configured option they are deleted. This allows files that may contains sensitive customer information to be deleted after a specified time.

Package	Section	Options
system	main	log_age

### 7.26.2 NTP polling timer

Support for NTP polling delay for slower networks

Package	Section	Options
system	timeserver	max_ntp_roundtrip_sec

### 7.26.3 CDMA information added to SLA bins for ISAD monitoring

SLA bins now contain CDMA information for EC/IO, DRC and PN-Code

## 7.27 CPX 19.00.77.000

### 7.27.1 Mobile operator reselect option

New mobile interface option `operator_reselect` to force modem to run operator selection (with `AT+COPS=0` command) on every interface restart. If option is disabled operator selection will not happen on interface start if current operator modem is 'Automatic'

Package	Section	Options
network	interface	operator_reslect

## 7.27.2 Automatic USB modem power cycle

The USB modem is now automatically power cycled if the tty device does not exist for over 40 seconds. This can be switched off with new mobile option `allow_usb_powercycle`.

Package	Section	Options
mobile	main	allow_usb_powercycle

## 7.27.3 VRF

An interface can now be configured to belong to a VRF. Interfaces included in the VRF form an independent routing domain, so routing of incoming and outgoing packets only happens within a VRF. It's also possible to add individual routes to a VRF using static routes.

Package	Section	Options
network	interface	vrf
	route	vrf

See the user manual for more information.

## 7.27.4 IPSEC re-authentication control for responder

New option to control re-authentication on roaming for connection in responding role. Previously when a responder re-authentication on route change would only happen if initiator.

When enabled option `roam_auth` forces the responder to re-authenticate immediately on route change. When disabled the responder will wait for DPD to timeout before attempting re-authentication.

Package	Section	Options
strongswan	connection	roam_reauth

## 7.28 CPX 19.00.75.001

### 7.28.1 MIB for roaming mobile operators

New MIB added for operators discovered during roaming search – `vaModemRoaming.mib`.

When roaming is enabled, a new state file `/var/const_state/roaming` is created which contains a section for each discovered operator/service combination, along with signal strength, if tested. Time taken to scan is also available along with the time of scan and number of services found

MIB	Description
.1.3.6.1.4.1.2078.3.1.2.3.1	status if scan
.1.3.6.1.4.1.2078.3.1.2.3.2	list of operators and services discovered



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See user manual for more information.

## 7.28.2 Mobile module support

Added support for the following mobile modules

Vendor	Module	Firmware
Telit	LE910-EU-V2 LE910-NA-V2	
Quectel	EC25-E EC25-AU EC25-AUT	
Simcom	SIMCOM7100-E	

## 7.29 CPX 19.00.75.000 RC 15

### 7.29.1 Syslog event filtering

Syslog messages can now be filtered for storing locally or sending remotely. See user manual for more information

### 7.29.2 Writing events to a file

VA Event system now supports a new Event Destination target type `file` for saving events to a file. New options for this target type are: `template` for message template; `file_name` for file location (full path); and `max_size_kb` to limit maximum size

Package	Section	Options
va_eventd	target	type file_name max_size_kb template

Configured via web UI at `Services->VA Event System`

### 7.29.3 Coovachilli firewall rules

Instead of creating iptables rules directly Coovachilli now creates temporary firewall rules for greater configuration control. Every Coovachilli instance now creates

- Firewall zone for coovachilli tunnel interface
- Firewall rules to drop all traffic towards the Coovachilli host except for icmp; dns; unicast and broadcast dhcp; http traffic on `<uamuiport>`, `<uamport>` and `<uamport+1>`
- Firewall forwarding from coovachilli zone to wan zone
- CDMA information added to SLA bins for ISAD monitoring
- SLA bins now contain CDMA information for EC/IO, DRC and PN-Code

---

## 7.29.4 SCEP support for EJBCA server

SCEP now supports Linux EJBCA server.

Package	Section	Options
ipsec	scep_cert	

Configurable via the web UI at `Services->IPSec->SCEP Certificate`

## 7.29.5 Data Usage

Support for monitoring of data usage on a mobile interface and automatically disable if it exceeds monthly limit.

Package	Section	Options
procrustes	limit	enable billing_period_start_day interfaces monthly_data_limit monthly_warning_levels

Configured via web UI at `Services->Data Usage`

## 7.29.6 Mobile service order

Support option `service_order` under 3g interface to allow configuration of service type order of preference. Value is a space separated list of [gprs, umts, lte, auto].

Package	Section	Options
network	interface	service_order
mobile	template	service_order

Configurable via the web UI at `interfaces->mobile-itf->service preference`.

## 7.29.7 Configurable IPSEC retry timer

Support for new strongswan option to add specified delay when re-establishing a connection. Previously if `close_action=restart`, then new option `restartdelay` controls how many seconds it waits before attempting to re-establish the tunnel (to allow head-end time to tidy up).

If not set, it defaults to zero, which means that the previous behaviour of choosing a random time interval in the range `0..RekeyMargin` seconds takes effect.

Package	Section	Options
strongswan	general	restartdelay

Configured via web UI at `Services->IPsec->Connection->Restart Delay`

---

## 7.29.8 NTP Server

Router can now be configured as a NTP server to serve time to NTP clients. This is enabled per interface. Interfaces to serve time can be listed via new option (option `listen`) with space delimiter. It can also be configured as a subnet (network prefix)

Package	Section	Options
system	timeserver	listen

Configurable via the web UI at `system->system->ntp server interface`

## 7.29.9 SNMP interface aliases

A new `snmp_alias_ifindex` option is supported in UCI network interface definitions. This can be set to a small index value unique to that interface.

An alias entry is created in the SNMP ifEntry table at index (`snmp_alias_ifindex + 1000`). This entry is a shadow of the real underlying Linux interface corresponding to the UCI definition. You may use any numbering scheme you wish; the alias values do not need to be consecutive. This allows polling of interfaces where the linux interface index dynamically changes.

Package	Section	Options
network	interface	<code>snmp_alias_ifindex</code> <code>snmp_alias_ifdescr</code>

Configured via the web UI at `network->interfaces->advanced settings`

## 7.29.10 Login info

New option added to allow display of information on the web login page. Option allows calling `uds` script that would render required information on the right side of the log in page.

Package	Section	Options
luci	main	<code>login_page_info_template</code>

See user manual for more information.

## 7.30 CPX 19.00.04

### 7.30.1 L2TPv3

Support for L2TPv3 via network package interface option `network.interface.proto` (value `l2tpv3`). Configurable via the web UI at `interfaces->itf-x->protocol`

### 7.30.2 Dual APN support with multiple PDP contexts

Router can be configured to connect to dual APNs simultaneously using PDP contexts (if supported by the network and SIM). Each APN connection can be configured with its own QOS and traffic flow filters.

Additional secondary PDP contexts with QOS and traffic flow template filters can also be configured.

Package	Section	Options
network	interface	pdp_context subcontexts qmin_traffic_class; qreq_traffic_class; qmin_max_ul_kb; qreq_max_ul_kb; qmin_max_dl_kb; qreq_max_dl_kb; qmin_guaranteed_ul_kb; qreq_guaranteed_ul_kb; qmin_guaranteed_dl_kb; qreq_guaranteed_dl_kb qmin_deliver_in_sequence; qreq_deliver_in_sequence; qmin_frame_error_ratio; qreq_frame_error_ratio; qmin_bit_error_ratio; qreq_bit_error_ratio; qmin_error_frame_mgmt; qreq_error_frame_mgmt; qmin_frame_xfer_msec; qreq_frame_xfer_msec
	subcontext	qmin_traffic_class; qreq_traffic_class; qmin_max_ul_kb; qreq_max_ul_kb; qmin_max_dl_kb; qreq_max_dl_kb; qmin_guaranteed_ul_kb; qreq_guaranteed_ul_kb; qmin_guaranteed_dl_kb; qreq_guaranteed_dl_kb qmin_deliver_in_sequence; qreq_deliver_in_sequence; qmin_frame_error_ratio; qreq_frame_error_ratio; qmin_bit_error_ratio; qreq_bit_error_ratio; qmin_error_frame_mgmt; qreq_error_frame_mgmt; qmin_frame_xfer_msec; qreq_frame_xfer_msecfilters
	subctx_filter	precedence src_prefix droto_num dst_port src_port

Note: Currently only supported with Sierra Wireless. Please see user manual for more information

### 7.30.3 Maintain IPSEC SA through IKE rekey

New IPsec configurable behaviour to keep the existing Phase 2 SA's through an IKE rekey. Default behaviour is as maintained where an IKE rekey causes the existing phase 2 SA to be deleted and rekeyed.

Package	Section	Options
strongswan	connection	inherit_child

### 7.30.4 GZIP compression for UDS scripts

UDS scripts can now be compressed using GZIP compression to reduce config size. The gzipped and base-64 encoded script is used in the config. The UDS package contains a new option value (`gzip`) for the encoding option.

Package	Section	Options
uds	script	encoding

---

## 7.30.5 Improved flash operations using web interface

This software contains refreshed web page Flash Operations with improved validation and verification on each step of router firmware upgrade. It helps prevent router failure when any corruption to the firmware file happens during the updating process. More details can be found in router manual.

No change in any of the router configuration file required.

## 7.30.6 Hostname to IP configuration

A new section has been added to allow editing of /etc/hosts configuration file. Configurable via the web UI at `network->hostnames`.

Package	Section	Options
network	host	addr hostname

Configured via the web UI at `network->hostnames`

## 7.31 CPX 19.00.02

### 7.31.1 Interface dependency change

For CPX-19.00.02.000 and earlier, every interface that had a dependency on another parent interface required an option to be specified in its interface configuration defining the parent interface. This method is now obsolete by defining the dependants in the parent interface (rather creating the dependency in the child interface).

To do this there is a new interface option (option `dependants`) - used for defining all the dependant interfaces. Now the dependant interface will go down when parent interface is down and will [re]start when parent interface starts

Package	Section	Options
Network	Interface	dependants

This replaces relevant options in child interfaces.

Interface	Options
gre	local_interface
l2tp	src_ipaddr
iot	wan1 wan2
6in4	ipaddr
6to4	ipaddr

#### Benefits:

The benefits of this change are:

- Performance – Previously for any interface state change all the interfaces had to be scanned for dependency.
- Unification – Previously every interface had its own option for defining a parent. Now there is only one options for all types of interface

- New features – Previous relations were only available with a subset of protocols (eg. GRE, L2TP). Now any interface can be a dependant of another interface

### Backward compatibility

The old child interface specific configuration options above are now obsolete and no longer supported. In order to maintain backward compatibility with older configurations there are mechanisms in both the firmware and Activator:

- Firmware – On installation of CPX-19.00.02.000 firmware and greater the new dependants option will be created and populated with the correct values for all required interfaces
- Activator – On installation if CPX-19.00.02.000 PRL and greater the new dependants option will automatically be created in all device and profile configurations where required.

### 7.31.2 Partial downloads

Partial downloads is a new mechanism for activation process. It was implemented to better manage:

- slow link connection from routers (via slow modems),
- unstable connections (connectivity loss).

With partial downloads the router software is transmitted in small chunks and if possible as a patch to software instead of full image. This save bandwidth and network usage also reduces time for activation process.

Connectivity loss during download causes the current activation process to completely fail and complete download process has to start over again. Instead with partial downloads it will be continued on next router activation attempt from the place where image stopped download provided there were no other factors that force new full download.

Package	Section	Options
httpclient	core	ActivatorChunkyDownloadPath ChunkSize RateLimit

For more information, see HTTP Client section in the user manual

### 7.31.3 Cwatch

New watchdog feature for watching interfaces and taking configurable action when no traffic received for a configurable period.

Package	Section	Options
cwatch	watch	enabled test_ifaces failure_time_1 failure_action_1 failure_time_2 failure_action_2

For more information, see Cwatch section in the user manual

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### 7.31.4 Initial contact support

Support for sending initial contact during IKE negotiation. The first attempt to contact a remote peer by this strongswan instance sets the `initial_contact` flag which should cause compliant peers to automatically bring down any previous sessions. Previously initial contact was not sent.

Package	Section	Options
strongswan	general	initial_contact
	connection	initial_contact

### 7.31.5 Support for SNMP v2c and v3 in Monitor traps

Monitor now supports SNMP v2c and SNMP v3 traps. In addition it can support multiple instances of instances with differing parameters for SLA reporting.

Package	Section	Options
monitor	main	snmp_version snmp_uname snmp_auth_proto snmp_priv_proto snmp_priv_pass snmp_context snmp_sec_eid

For more information see SLA reporting section in the user manual.

### 7.31.6 Chrony (for NTP)

Chrony is a different implementation of the NTP daemon. Chrony has a number of benefits.

- capable of selecting time sources, decrease request frequency over time, makes better handling of linux time and has a detailed client app for control/status.
- supports non-NTP time sources (gpsd)
- supports for secure NTP.

### 7.31.7 Critical processes watchdog

A new watchdog service – `critprocs` – now checks that critical services are running and restarts if found to be stopped.

Critical Process list	Description
adac	Activator on-Demand Access Tunnels
cwatch	Connection watch watchdog
dnsmasq	DNS forwarder and DHCP server
dropbear	SSH server and client
ipsec starter	Process for controlling IPSec
multiwan	Process for controlling WAN failover
snmpd	SNMP process
syslog	Internal syslog messages
uhttpd	Web server
va-eventd	VA proprietary event system
va-mobile	Process for controlling mobile modules

## 8 Appendix 2: Problems resolved history

### 8.1 25.03.43.005

No.	Module	Short Description	Mantis
1.	Activator	Set model URL parameter to uimodel rather than machtype in updates to Activator	6761
2.	CLI	Improve error message for <code>uci show xy</code> when <code>xy</code> does not exist	
3.	Ethernet	Add <code>arp-scan</code> utility to DRS, ORK and SXL families for consistency with EDG family cli: <code>arp-scan -l</code>	5829
4.	Firewall	Fix variable name clash in zone option presence test causing occasional restart issue	
5.	Firewall	Simplify firewall forwarding within a bridge by avoiding calls to iptables	
6.	Firmware	Prevent downgrade of router firmware to a version that is incompatible with the on board Sierra Wireless module	6878
7.	Mobile	Add <code>dmcli</code> tool for use diagnosing Unitac module problems on GW1042 models	6906
8.	Mobile	Ensure ARP is not turned off for the Unitac Ethernet interface causes problems with the firmware upgrade tool.	
9.	Mobile	Ensure NOARP flag is set on mobile Ethernet devices to avoid the ARP table from filling up with entries from the mobile connection	6676
10.	Mobile	Ensure the SMS format is set correctly and interfaces restarted after Verizon provisioning.	
11.	Mobile	Fix handling of 5G status when operating in an 5G SA network	
12.	Mobile	Fix to ensure the Verizon attach APN is set correctly	
13.	Mobile	Only restart interfaces when Network Initialisation was indicated in OMADM	
14.	Mobile	Switch to <code>AT!GSTATUS</code> to retrieve signal information for Unitac modules	
15.	OpenVPN	Fix privileges in OpenVPN to allow automatic restarts and fix open SSL errors in WeConnect	6793
16.	SNMP	Correct <code>vaUciMib</code> implementation so that it matches the previous implementation	6903
17.	SNMP/GPS	Fix GPS heading in MIB from degrees to micro degrees	6901
18.	System	Fix issues when config files have execute permissions set and configuration audit is enabled	
19.	VLAN	Fix VLAN bridging on Merlin and GW6650V models	6768 6844
20.	Web	Fix error message typo when SSL subsystem fails to initialise	
21.	Web	Print openssl errors when init, cert load or key load fail	
22.	Web/ Interfaces	Avoid restarting all interfaces when adding new interface via web UI	6922 6923
23.	Web/Cwatch	Fix display of bridge interface on Cwatch interface list	6824



24.	Web/System	Restore javascript validation preventing underscores in system hostname	4555
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## 8.2 25.03.43.000

No.	Module	Short Description	Mantis
1.	BGP	Fix local VRF IP subnet not being advertised over WAN VRF using a BGP instance in the same VRF	6799
2.	IECD	Fix IEC104 operation when IEC104 local TCP port configured to '0'	6778
3.	IECD	Fix unwanted Health Point updates during normal master switchover for IEC104 RTU's	6463
4.	IECD	Fixed Modbus master initialisation error when loading TCP routes	6803
5.	Mobile	Fix signal strength detection on older Unitac modules	6805
6.	Web	Fix slow web SSL access when using keys from TPM	6734
7.	Web/HTTP Server	Support configuration certificate keys in TPM web: services->http server->Certificate Key Format cli: uhttpd.uhttpd.keytype [PEM TPM]	6756
8.	Web/Mobile	Correct display of mobile interface type on web UI interface overview page	6787
9.	Web/SCADA	Moved COSEM HDLC Bridge configuration from Services to SCADA tab	6781
10.	Web/Status	Add download button for kernel and system log web: status->System Log web: status->Kernel Log	6794

## 8.3 25.03.35.000

No.	Module	Short Description	Mantis
1.	IECD	IEC61850 Server: Add conversion from Modbus DI to DPS objects	
2.	IECD	IEC61850 Server: Added mapping of Modbus DI to integer types (INS, etc)	
3.	IECD	IEC61850 Server: Fix error with double init of data points for Modbus master	
4.	IECD	IEC61850 Server: Update points from Modbus RTU when point have not been changed before in addition to when value changed	
5.	SNMP	Fix SNMP configuration using TCP protocol	5930
6.	Web/Firewall	Fix summary page showing rules with <code>option enabled '1'</code> in configuration file as disabled	6765

## 8.4 25.03.33.004

No.	Module	Short Description	Mantis
1.	Cwatch	Fix cwatch using cached interface values rather than current values which caused cwatch to intermittently miss state changes	6784

2.	IECD	Improve debugging of IEC61850 client when processing control commands	
3.	Mobile	Rename 'phone number' to 'MSISDN' in mobile stats	
4.	VRF	Fix DNAT behaviour for alias interface within VRF	6705
5.	Web/ IPsec	Fix error on saving of configuration general section	6281
6.	Web/ Network	Show colour codes for interface status in network overview	6536
7.	Web/ OpenVPN	Automatically add and remove OpenVPN network interfaces	6296

## 8.5 25.03.23.000

No.	Module	Short Description	Mantis
1.	Activator	Fix Activator active update command returning incorrectly parsed IPv6 addresses	4727
2.	CWATCH	Cwatch now ignores non-existing UCI network interfaces	6644
3.	Ethernet	Fix Ethernet switch health check on GW1042 when a configured VPN policy matches health check	5758
4.	Failsafe	Failsafe mode now uses SSH instead of telnet access	6663
5.	Firewall	Insert the <code>MARK</code> configuration rule before the <code>redirect</code> rules in the firewall table	5405
6.	IECD	Fix issue in IEC104S to IEC101 in transparent mode, where 104 ASDU CA=65535	
7.	IECD	Fix issue processing IEC101 reset process response	
8.	IECD	Fix issue with DNP3 Gr3 (double bit) to IEC104 single point conversion	6671
9.	IECD	Fixed incorrect cleanup while closing during IEC104S TLS session establishment	6636
10.	IECD	Fixed issues with events not sent from IEC104 slave offline queue after connection is restored	6648
11.	IECD	Fixed issues with processing TI 105 Reset Process command	6640
12.	IECD	IEC104 slave: Fixed incorrect application of clock synchronization command	
13.	IECD	IEC104 to IEC101 conversion: fixed issue with converting QU field of commands from Master (104) to RTU (101)	
14.	IECD	IEC104 to IEC104 conversion: Fix Double command Execute part of Select Execute sequence not passing on QU field of command	6656
15.	LED	Fix Ethernet port A green LED not illuminating on GW1042 series	4511
16.	Mobile	Add MTU detection for Unitac modules	
17.	Mobile	Ensure MTU does not exceed 1500 bytes on QMI links	6567
18.	Mobile	Ensure Quectel EC25/EG25 modules use GSM format for SMS messages	
19.	Mobile	Fix crash when <code>switch_sim</code> command is executed with no value	
20.	Mobile	Fix interface name and type for Unitac modules on Merlin series	

21.	Mobile	Fix performance issues on Sierra Wireless modules (introduced in 25.02.80.000)	6708
22.	Mobile	Prevent crash when handling SIMs with invalid ICCID	6635
23.	Mobile	Prevent crash when no SIM slot specified for SIM switch command	
24.	Mobile	va-mobile no longer automatically changes GNSS configuration as this is now done in manufacturing	6659
25.	Monitor	Fix Monitor Keepalive configuration changes taking effect immediately when changed from web UI or Activator	6650
26.	NTP	Improvements to chrony operation for interface state changes	6631
27.	PPP	Fix connection issue when two ppp links have similar UCI name	6654
28.	Roaming Manager	Retry existing connection after routine disconnect when using Roaming Manager feature	
29.	SNMP	Fix mibwalk error on .1.3.6.1.4.1.2078.3.1.2.4.2 when walking VA-MODEM-MIB::roamingOp* series of values	6618
30.	SSH	Fix SSH login via private and public key.	6425
31.	TACACS	Fix ipv6 address support	6620
32.	Web	Sort web UI drop down headings	5909
33.	Web/ Multiwan	Allow multiwan configuration via web UI when no multiwan config options exist in configuration file	
34.	Web/HTTP Client	Support configuration of Http Client certificate key format web: services->http_client->advanced->Certificate Key Format cli: httpclient->httpclient->KeyFormat	5792
35.	Web/IECD	Changed default location of TLS certs to /etc/cert	6643
36.	Web/IECD	Only show IEC104 TLS Common Name and IEC104 TLS Verify Depth options when IEC104 TLS Validate Peer Cert is enabled	6643
37.	Web/IECD	Removed unused iec101_cmd_type_id option from web UI	6627
38.	Web/IECD	Support SCL import file upload for IEC61850 master web: scada->iecd->master_protocols->configure IEC61850->Select IEC61850M SCL File for Upload	
39.	Web/IECD	Support upload capability for TLS cert, key and CRL files via web UI	6643
40.	Web/IPsec	Web UI IPSEC configuration improvements	6281
41.	Web/System	Fix firmware flashing error message	6286
42.	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
43.	Web/WiFi	Removed 40 MHZ channel option from web UI for GW1042 series	6706

## 8.6 25.03.05.000

No.	Module	Short Description	Mantis
1.	Mobile	Fix missing LTE band information on older Unitac firmware	6630

2.	Web/BGP	Fix BGP network option for IP address/subnet input rather than interface name web: network->bgp->global settings->Network	6619
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## 8.7 25.03.03.000

No.	Module	Short Description	Mantis
1.	IECD	Added RTS-CTS flow control of the serial (when not using tserverd)	6615
2.	Mobile	Prevent +CGEV: NW DETACH trigger warnings in the logs	6616
3.	Routing	Enable FRR vty_enabled option in user interface	6613
4.	Web/BGP	Fix BGP network option for IP address/subnet input rather than interface name web: network->bgp->global settings->Network	6619

## 8.8 25.02.99.000

No.	Module	Short Description	Mantis
1.	IECD	Fix issue in IEC61850 master to DNP3 slave conversion of analog float values	6593
2.	IECD	Fix tx buffer overflow and iecd crash when DNP3 Slave serving large number of points and events (500+)	6609
3.	IECD	Handle multiple sessions, cleaning up in case of errors when fetching CRL file using a link from peer certificate	5955
4.	IECD	Improvements in the VRTU to IEC61850 slave conversion	
5.	Mobile	Fix for SMS received by Quectel EG25G via IMS in Verizon network	6594
6.	QoS	Fix QoS initialisation	6560
7.	Web/ Interfaces	Fix default gateway handling for DHCP protocol	6601
8.	Web/SNMP	Improvements to web UI SNMP configuration	

## 8.9 25.02.95.000

No.	Module	Short Description	Mantis
1.	CWATCH	Ensure cwatch can handle comma separated ping destinations	
2.	GRE	Fix GRE keepalives	6554
3.	IECD	Added conversion from 4 Modbus 16-bit registers (int64) to iec104 float	
4.	IECD	Added support for conversion of 2 modbus 16-bit registers storing FLOAT32 to IEC104 type 13 float	
5.	IECD	Fetch CRL file using a link from peer certificate	5955
6.	IECD	Fix CSV import issue when parsing bitmap options	6555
7.	IECD	Fix serial configuration in modbus master	6540
8.	IECD	Improved IEC61850 SCL import and export into UCI file	6581

9.	IECD	Improved show statistics command when multiple RTU protocols are used per point	6580
10.	IECD	MQTT Slave to MODBUS RTU: send MQTT publish only on value change	6376
11.	Mobile	Add data-only configuration for Quectel EP06 module	
12.	Mobile	Add display of additional Unitac signal values to <code>vam</code> command and web UI	
13.	Mobile	Added 5G network registration status	
14.	Network	Fix dependent interface behaviour when parent WAN interface is using QMI mobile interface	6493
15.	SCEP	Fix intermittent issue where only one SCEP request was sent when multiple SCEP clients were configured	6523
16.	SCEP	Fix loading of SCEP CA certificate	6525
17.	Strongswan	Do not split long PSK into separate lines which would cause PSK to be read incorrectly and Phase1 failure	6537
18.	TACACS	Fix tab correction for TACACS+ user login via SSH	6527
19.	TPM	Improve support for TPM access from multiple processes to avoid TPM being locked by another process	6483
20.	User Limits	Fix Procrustes user limit events	6538
21.	Web	Fix web UI intermittently advising router is running in factconf when in config1	6547
22.	Web/IECD	Fix typo in DNP3 slave protocol option	6578
23.	Web/Mobile	Prevent option <code>ifname</code> configuration being added to mobile interfaces when configured via web UI	6501
24.	WiFi	Fix <code>ifup</code> transmission issue when WiFi is bridged with an Ethernet interface	6514

## 8.10 25.02.85.000

No.	Module	Short Description	Mantis
1.	IECD	Improved IEC61850 control command processing in relation to IEC101 and IEC104 single-double select-execute sequence	
2.	IECD	Support configurable IED name and LD name for IEC61850 slave <pre>web: scada-&gt;iecd-&gt;slave protocols-&gt;configure iec61850-&gt;IEC61850 IED Name cli: iecd.port.iec61850_ied_name web: scada-&gt;iecd-&gt;slave protocols-&gt;configure iec61850-&gt;IEC61850 LD Name cli: iecd.port.iec61850_ld_name</pre>	
3.	IECD	Support for Digital Input inversion in the IEC61850 server	
4.	Mobile	Disable the APNs when connection is terminated for Unitac modules	6484
5.	Mobile	Mobile connection no longer dropped when 2 <sup>nd</sup> antenna is disconnected when using Unitac modules	6446

6.	Mobile	Support new option to enable MIMO on Unitac modules (disabled by default).  web: services->mobile manager->advanced->Enable MIMO for Unitac radio Modules  cli: mobile.mobile.unitac_mimo_enabled	6499
7.	Syslog	Fix multiwan errors in log when multiwan not configured	6489
8.	System	Prevent download of incorrect firmware family	
9.	Terminal Server	Fix failure to recover from bind failure while interface down	6464
10.	TPM	Fix RSA key loading on big endian platforms	
11.	Web/IECD	Fix web UI issue in IEC61850 slave	

## 8.11 25.02.80.000

No.	Module	Short Description	Mantis
1.	Ethernet	Ensure Ethernet ports aren't bridged during startup on GW1042 to avoid leaking traffic between LAN segments during reboot	5906
2.	Ethernet	Ensure that bridge interface in GW1024 uses MAC of first Ethernet interface	2664
3.	Ethernet	ifup now preserves VLAN interfaces when configuration has non VLAN and multiple VLANs attached to the same Ethernet interface	6247
4.	Ethernet	Increase frame size limit to accommodate large VLAN packets	6307
5.	Event System	Fix boot success event	5927
6.	IECD	Added missing implementation of T0, T1 and T3 timers to address IEC104M link not closing on ifdown  web: scada->iecd->master protocols->configure iec104->iec104-X cli: iecd.port.iec104m_t0 (def: 5 secs) cli: iecd.port.iec104m_t1 (def: 15 secs) cli: iecd.port.iec104m_t3 (def: 20 secs)	
7.	IECD	Fix parsing parsing of -casdu switch in IEC104 firewall	6298
8.	IECD	Fixed incorrect parsing of MQTT SUB-ACK packet	6295
9.	IECD	Fixed load errors for custom SCADA firewall rules	6025
10.	IECD	Fixed MQTT hostname resolution	6308
11.	Mobile	Add switch to add switch to data-centric mode for Quectel EC25 and SIMCOM modules	
12.	Mobile	Added PCI display for Unitac modules	6251
13.	Mobile	Ensure that Verizon APN is correct for default/initial bearer	6154
14.	Mobile	Enter airplane mode before attempting to change the default LTE bearer to avoid issues with SIM failover	5991
15.	Mobile	fix chat command failing if previous chat aborted	6210
16.	Mobile	Fix crash when LTE band retrieval for SIMCOM fails	
17.	Mobile	Fix ESN display where leading zero's were being omitted	6345
18.	Mobile	Fix incorrect reporting of RSSI when using Unitac mobile module	6437
19.	Mobile	Fix multiwan to run with default group when no group name specified	

<b>20.</b>	Mobile	Fix to prevent the modification of the Verizon attach bearer	6043
<b>21.</b>	Mobile	Fix va_roaming ignoring <code>stat=0</code> operators in roaming scan	6184
<b>22.</b>	Mobile	Ignore network provided DNS addresses if option DNS configured	6372
<b>23.</b>	Mobile	Improvements to operator scan: <ul style="list-style-type: none"> <li>• 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)</li> <li>• <code>AT+COPS=?</code> timeout increased to 190 seconds</li> <li>• automatically retry a failed <code>AT+COPS=?</code> command if it fails within 15 seconds</li> <li>• <code>vam roaming</code> now includes scan duration in seconds</li> </ul>	
<b>24.</b>	Mobile	Incorrect SINR reported for Quectel modules	5951
<b>25.</b>	Mobile	Re-connect to network automatically if <code>AT+CGATT=1</code> fails	
<b>26.</b>	Mobile	VA Mobile roaming diagnostic now shows roaming info for all modems by default <code>cli: vam roaming</code>	
<b>27.</b>	Network	Ensure <code>ifdown</code> kills all <code>ifup</code> processes on the same interface and not just the child processes	
<b>28.</b>	Network	Fix repeated <code>ifup</code> race condition on bridged interfaces	6265
<b>29.</b>	RTUD	Added support for inverting digital inputs after reading from hardware <code>web: scada-&gt;rtud-&gt;advanced-&gt;Invert Inputs</code> <code>cli: rtud.main.invert_inputs (def: 0)</code>	6208
<b>30.</b>	SCEP	Added certificate expiry check during re-rollment	6235
<b>31.</b>	SCEP	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
<b>32.</b>	SCEP	Strongswan is now restarted after SCEP renewal to ensure the peer correctly deletes the existing <code>IKE_SA</code>	6190
<b>33.</b>	SNMP	Fix creation of SNMPv3 traps	5943
<b>34.</b>	SNMP	Fix failing <code>snmpwalk</code> on vaModem MIB when no roaming info available	5922
<b>35.</b>	Strongswan	Allow IPsec tunnels to start when CA certificate download fails and blocking is disabled in <code>scep_cert</code> config	6324
<b>36.</b>	Strongswan	Remove FlexVPN GRE IP addresses on tunnel termination	5924
<b>37.</b>	Strongswan	Fix IKE SA delete being sent with correct message id to ensure IPsec peer does not discard	6246
<b>38.</b>	System	Changed password hash algorithm option value to a ListValue <code>cli: list system.main.passwr_d_hash_algo</code>	5001
<b>39.</b>	System	Fix auditing of DMVPN configuration using option <code>audit_cfg</code>	
<b>40.</b>	Terminal Server	Increase port limit to 16	6267

41.	Terminal Server	Added support for new option in GW2124P to control serial LED detection using DSR control signal when DTR/DSR signals are being used  cli: tservd.port.led_dsr_detect (def: 0)	
42.	Terminal Server	Auto detect serial mode gpio control settings	5970
43.	Terminal Server	Fix SNMP poll of TSERV-MIB	6477
44.	Terminal Server	Fixed issue with auto detection of serial port names on GW2028	6313
45.	Web	Improvements to web UI performance and load times	6178
46.	Web/Interface	Added mtu configuration option for PPPoEoA and PPPoA ADSL interfaces	5702
47.	Web/OpenVPN	Do not add key_direction option when set to its default value (bidirectional) when OpenVPN configured via web UI	6063
48.	Web/GPIO	Change Web UI digital input mode default to dry mode	6060
49.	Web/IECD	Changed free text fields log_vaevent_on_change, vhmi_on and vhmi_dword to selector on-off	6165
50.	Web/Terminal Server	Added support for TCP Tap Port configuration  web: scada->terminal server->port->advanced->TCP Tap Port cli: tservd.port.tap_port (def: 0)	6291
51.	Web/VA Event	Add length check in web UI for snmp_auth_pass and snmp_priv_pass	
52.	Web/WiFi	Add WPA Enterprise configuration to web	5963

## 8.12 25.02.14.033

No.	Module	Short Description	Mantis
1.	Mobile	Fix SIM7070E with B10 firmware intermittently not being detected on boot.	6396

## 8.13 25.02.14.032

No.	Module	Short Description	Mantis
1.	Mobile	Fix second radio intermittently not being detected on GW3300D series	
2.	Mobile	Fix Unitac module detection (broken in release 25.02.14.030)	6387
3.	TPM	Fix HTTPS incoming connection activation with key stored in TPM on Merlin4600 series.	6367
4.	TPM	Flush transient objects from TPM RAM upon session open on Merlin4600 series.	



## 8.14 25.02.14.030

No.	Module	Short Description	Mantis
11.	ADSL	On GW6600 series start all PPPoA interfaces with ifname nasX. Previously only PPPoE and PPPoA interfaces with nas0 are autoamtically started	6061
12.	Download	Fix interrupted download when va_vars incorrectly states image not found. Download now correctly continues rather than starting again.	6354
13.	Mobile	Fix duplicated ICCID when using WP76xx-AU module on Merlin4600 series.	6352
14.	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

## 8.15 25.02.14.027

No.	Module	Short Description	Mantis
1.	WiFi	Fix intermittent incorrect WiFi interface name generated by <code>ifup</code> command on WiFi interfaces	6253

## 8.16 25.02.14.024

No.	Module	Short Description	Mantis
1.	Download	Fix size calculation when image download exceeds 10M	6033
2.	Download	Increase time limit for image download to 5 hours (previously 2 hours)	6266
3.	HTTP Client	Set download minimum rate limit to 1kBps	6266
4.	PPPoE	<code>ifup &lt;ifname&gt;</code> now correctly re-establishes when <code>&lt;ifname&gt;</code> is a PPPoE link and is already up	6241
5.	Serial	Fix serial LED settings when <code>option serialPortName</code> is configured on GW2124P series	6219
6.	Terminal Server	Fix TOS value support using <code>option tos_value</code>	

## 8.17 25.02.14.016

No.	Module	Short Description	Mantis
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1.	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	
2.	RTUD	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
3.	RTUD	Fix defaults for RTUD so web UI no longer shows errors when saving	6075

## 8.18 25.02.14.010

No.	Module	Short Description	Mantis
1.	LED	Fix serial LED on GW2024P with GW2027 machtype	6167
2.	Mobile	Fix IP connectivity when using Huawei 709 with firmware 11.652.65.00.00	6076
3.	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.	
4.	WiFi	Ignore WiFi type when only single WiFi supported by firmware to avoid issues with third party AP's	5905

## 8.19 25.02.14.009

No.	Module	Short Description	Mantis
1.	Ethernet	Fix default MAC address for Merlin4600 Ethernet ports	5740
2.	GPIO	Merlin digital inputs now default to dry	5992
3.	IECD	Fix data point handling where previously only the last data point was forwarded the SCADA master when using HART protocol	6046
4.	IECD	Fix IECD CSV files data point import.	5975
5.	IECD	Fix issue in handling periodic GI and Clock Sync timeouts in IEC101 Master	
	IECD	Support for CP24 timestamp format messages in IEC101 to 104 conversion	5980
6.	IP PAD	Fix high CPU load for new IP connection to IP PAD causing data transfer from terminal to X.25 to fail	6006
7.	Memory	Fix GW1400 series memory corruption	5620
8.	Mobile	Fix crash when LTE band retrieval for SIMCom fails	
9.	SFP	Fix interface failing to restart after network package restart	6079
10.	Strongswan	Decrease OCSP/CRL fetch timeout to 3 seconds from 10 seconds to avoid resource issues for multiple tunnels using CRL	5954
11.	Strongswan	Exclude password field from re-enrollment requests	5993

12.	Strongswan	Handle DER or PEM format for SECP fingerprint	5879
13.	Strongswan	In case multiple root CA's downloaded, verify fingerprint of the root	
14.	Strongswan	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
15.	Terminal Server	Fix loopback test for serial ports	5972
16.	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
17.	Web/IPsec	Support configuration of local cert via web UI web: services->ipsec->scep certificate->Local Certificate cli: strongswan.connection.localcert	6000
18.	Web/RTUD	Fix web UI configuration of RTUD auto generate config option	6075
19.	Web/SCEP	Support configuration of SCEP fingerprint and CA Name via web 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
20.	Web/Terminal Server	Support configuration of serial port name via the web UI web: scada->terminal server cli: tserverd.port.serialPortName	5424

## 8.20 25.02.14.002

No.	Module	Short Description	Mantis
1.	IECD	Fix IEC MIB walk	5920
2.	IOSRVD	Fix for option auto_detect behaviour to not remove undetected devices from iosrvd config file	5522
3.	IP PAD	Fix Flow control from X.25 network to serial in AT mode	5925
4.	Mobile	Fix ICCID collection for second SIM on Sierra Wireless and Quectel EM06 modules. Previously showing same ICCID for both SIMs	5946
5.	Network	Fix static default route configuration using target 'default' and netmask 0.0.0.0	5942

## 8.21 25.02.14.000

No.	Module	Short Description	Mantis
1.	Activator	Added RADIUS support to active updates	3514

2.	CESOP	Fix CESOP Mcp4821SetVoltage dac write failed on model GW6610-ALL	5747
3.	Ethernet	Enhancements to GW1042 Ethernet health check to avoid configuration blocking health check pings. Now allow ping broadcasts through base0 even if default output set to drop in firewall and dynamically add strongswan bypass policy rule	5758
4.	Ethernet	Fix LED port D behaviour on GW3300D	5869
5.	Ethernet	Restored missing <code>arp-scan</code> functionality on GW6600V cli: <code>arp-scan (ip - l)</code>	5829
6.	Event System	Fix connection tester when using UCI interface name for ping source	5828
7.	FXS	Fix handling of the DTMF characters A-D in SLIC driver. These characters were mapped incorrectly leading to a wrong regeneration by Asterisk when out-of-band signalling was used	5355
8.	GPIO	New user friendly wet/dry configuration commands for USB GPIO daughtercard used by GW2024P (to be used instead of option <code>inputs_dry_wet_mask</code> ) cli: <code>input0_is_wet; input1_is_wet; input2_is_wet; input3_is_wet; input4_is_wet; input5_is_wet;</code>	5145
9.	GRE	Integrate keepalive responder to gre interfacesso every GRE interface will automatically start keepalive responder and reply to all GRE keepalive messages	5249
10.	IECD	Changed IEC104 T2 timer from millisecs to secs web: <code>scada-&gt;iecd-&gt;port settings-&gt;iec104 master-&gt;IEC104 T2</code> cli: <code>iecd.port.iec104m_t2</code>	
11.	IECD	Extend the size of config variable <code>ioa_offset</code> from 16 bit to 32 bit	5790
12.	IECD	Fix behaviour of iecd restart cli: <code>/etc/init.d/iecd restart</code>	4981
13.	IECD	Fix behaviour of DNP3 sync time to use time from the RTU/Master rather than local time. cli: <code>iecd.iecd.dnp3_app_sync_time</code>	5429
14.	IECD	Fix incorrect handling of broken iecd ui commands cli: <code>iec set</code>	5461
15.	IECD	Fix missing ACTCON (neg) for received DNP3 response from DNP3 RTU with Status 2	5497
16.	IECD	Fix when <code>iecd_close_rtu_link_on_master_down=1</code> , DNP3 RTU up-down status is not set. Fixes incorrect (UP) value in the RTU health point sent to IEC104 master	5717
17.	IECD	Fixed an issue in MQTT control group mode OR and Implemented new group mode NAND web: <code>scada-&gt;iecd-&gt;port settings-&gt;mqtt-s-&gt;MQTT Control Group Mode</code> cli: <code>iecd.port.mqtt_ctl_group_mode (and or nand)</code>	5723
18.	IECD	Fixed DNP3 master issue when parsing <code>g1v1</code> object not calculating start index correctly	
19.	IECD	IEC104 to Modbus conversion: implemented conversion from fixed point integer to float.	

20.	IECD	Modbus master now supports reading non consecutive registers (siemens device)	
21.	IOSRVD	Fix IOS fault inidicator critical-non critical error handling	5431
22.	IOSVRD	Implement monitoring of Beijer IOS fault register to detect device faults	5404
23.	IP PAD	Improvements to padd show config.	
24.	IP PAD	Set default AT commmand mode break detect default to enabled	
25.	L2TP	Add new debug options for L2TP speed web: network->interfaces->L2TP->advanced settings->TX Speed cli: network.interface.l2tp_bps_tx web: network->interfaces->L2TP->advanced settings->RX Speed cli: network.interface.l2tp_bps_rx	5769 5770
26.	L2TP	Fix vendor name in XL2TPD package	5771
27.	Mobile	Add LTE band information to /var/state/mobile when using Huawei ME909U module (firmware > 12.63x.x)	3278
28.	Mobile	Added Operator Code (5-digit MCC/MNC) and Cell ID to vam -a command	
29.	Mobile	Always disable fastpath on mobile interfaces on GW6600V	4900
30.	Mobile	Ensure HDR credentials are always provided when needed for CDMA connections. Fixes situations where this information could be lost by module or config transferred to another router.	5735
31.	Mobile	Ensure LTE band lock stays enabled on Hucom modules	5447
32.	Mobile	Fix missing IPv6 default route on QMI interfaces	5755
33.	Mobile	Fix packet corruption caused by too small buffer size in Quectel/Simcom driver when using QMAP	
34.	Mobile	Fix RSRP and RSRQ values reported by Simcom 7070 module using vam -a diagnostic command	5383
35.	Mobile	Fix SIM in/out handling for Quectel modules	
36.	Mobile	Fix SIM switch on Quectel RM500Q mobile module	5863
37.	Mobile	Fix SMS msgs not decoding on 3Ireland Jasper SIMs	5888
38.	Mobile	Fix va_mobile failing to start when SMS is enabled and caller config section is missing caller name option	4507
39.	Mobile	Fixes for Cellient CDMA module crashes while dormant	5760
40.	Mobile	Re enable PPP support on GW1150 series	
41.	Mobile	Removed reset of default bearer APN at startup	5775
42.	Mobile	Support custom name for mobile config section	5542
43.	Mobile	Support LTE band limitation for Huawei ME909U module (firmware > 12.63x.x)	3310
44.	Network	Fix va_switch behaviour on network restart on GW3300D	5869
45.	Network	Fixed \$ character in interface password leading to password corruption	5434
46.	NTP	Include new UTC time in syslog message when clock is stepped	5659
47.	OpenVPN	Added support for key direction configuration web: services->openVPN->certificates->Key Direction cli: openvpn.openvpn.key_direction	5762

<b>48.</b>	Power over Ethernet	Add PoE recover mode for GW2300 Rev E routers. This fixes issue with PoE recovery when moving between battery backup and mains power	5685
<b>49.</b>	Power over Ethernet	Fix port disconnect disconnect event	4220
<b>50.</b>	Radius	Support for Radius added to JKG family	
<b>51.</b>	SCEP	Support rsaes-oaep encryption for pkcs7 signedData password	5872
<b>52.</b>	SNMP	Fix MIB related issue running snmpd as dedicated unique user	4965
<b>53.</b>	Strongswan	Enable support for GCM encryption algorithm	5774
<b>54.</b>	Strongswan	Fix crash when verifying ECSDA signature	5633
<b>55.</b>	Strongswan	Fix IPsec tunnel operation when with waniface option present	5698
<b>56.</b>	Strongswan	Support multiple FlexVPN tunnels with different interfaces	5862
<b>57.</b>	Syslog	Fix logging when conloglevel set to unsupported value	4482
<b>58.</b>	Syslog	Suppress excessive kernel logging on Dakota WiFi	5312
<b>59.</b>	System	Added -M option to ping for mtu discovery behaviour cli: ping <ip_address> -M PMTUD_OPT	
<b>60.</b>	System	Debrand web and command line interface	5498
<b>61.</b>	System	Fix crash in in uci list command cli: uci list	5596
<b>62.</b>	System	Remove stale sshd service files causing issues with telnet access on GW6600V	5333
<b>63.</b>	TACACS	Stpport for TACACS added to JKG family	
<b>64.</b>	VDSL	Store VDSL firmware version in /tmp/.vdsl220-fw-version in addition to syslog	5583
<b>65.</b>	Web/BGP	Added BGP status page web: status->BGP	5819

<p><b>66.</b></p>	<p>Web/BGP</p>	<p>Added missing options to web UI</p> <pre> web: network-&gt;bgp-&gt;global settings-&gt;Maximum Dynamic Neighbours cli: bgpd.routing.max_dynamic_neighbors web: network-&gt;bgp-&gt;global settings-&gt;VRF cli: bgpd.routing.vrf web: network-&gt;bgp-&gt;bgp neighbours-&gt;BGP instance cli: bgpd.peer.routing web: network-&gt;bgp-&gt;bgp neighbours-&gt;Inbound Route Map cli: bgpd.peer.inbound_route_map web: network-&gt;bgp-&gt;bgp neighbours-&gt;Outbound Route Map cli: bgpd.peer.outbound_route_map web: network-&gt;bgp-&gt;bgp neighbours-&gt;EBGP Multihop cli: bgpd.peer.ebgp_multihop web: network-&gt;bgp-&gt;bgp neighbours-&gt;Inbound Soft Reconfiguration cli: bgpd.peer.inbound_soft_reconf web: network-&gt;bgp-&gt;bgp neighbours-&gt;Source Interface cli: bgpd.peer.source web: network-&gt;bgp-&gt;bgp neighbours-&gt;&gt;Password cli: bgpd.peer.password web: network-&gt;bgp-&gt;bgp neighbours group-&gt;BGP instance cli: bgpd.peer_group.routing web: network-&gt;bgp-&gt;bgp neighbours group-&gt;network cli: bgpd.peer_group.network web: network-&gt;bgp-&gt;bgp neighbours group-&gt;ASN cli: bgpd.peer_group.asn web: network-&gt;bgp-&gt;bgp neighbours group-Local Peer cli: bgpd.peer_group.next_hop_self web: network-&gt;bgp-&gt;bgp neighbours group-&gt;Holdtime cli: bgpd.peer_group.holdtime_sec web: network-&gt;bgp-&gt;bgp neighbours group-&gt;Keep-Alive Interval cli: bgpd.peer_group.keepalive_sec </pre>	<p>5817 5818</p>
<p><b>67.</b></p>	<p>Web/IECD</p>	<p>Enhancements and extra diagnostics to IECD status page</p>	<p>5432 5727</p>
<p><b>68.</b></p>	<p>Web/IECD</p>	<p>Fix description of IEC104W option in web UI</p>	<p>5441</p>
<p><b>69.</b></p>	<p>Web/IECD</p>	<p>Fix IECD status page not displaying results</p>	<p>5529</p>
<p><b>70.</b></p>	<p>Web/L2TP</p>	<p>Fix interface connect button for L2TP interfaces</p>	<p>5768</p>
<p><b>71.</b></p>	<p>Web/Mobile IP</p>	<p>Fix web UI configuration when no configuration options exist in package dynamics</p>	<p>5787</p>
<p><b>72.</b></p>	<p>Web/Power over Ethernet</p>	<p>Added PoE restart button to web UI</p>	<p>4220</p>
<p><b>73.</b></p>	<p>Web/RADIUS</p>	<p>Add RADIUS and TACACS support to web UI</p> <pre> web: system-&gt;system-&gt;PAM Authentication </pre>	<p>5591</p>
<p><b>74.</b></p>	<p>Web/SNMP</p>	<p>Fix web UI configuration when no configuration options exist in snmpd system and agent configuration sections</p>	<p>5786</p>
<p><b>75.</b></p>	<p>Web/Status</p>	<p>Added VRF to routing table display</p> <pre> web: status-&gt;active routes </pre>	
<p><b>76.</b></p>	<p>Web/WiFi</p>	<p>Allow selecting modulation mode for Qualcomm qcawifi drivers</p>	<p>5219</p>

<b>77.</b>	Web/X25 PAD	Fix web UI configuration when no configuration options exist in package padd	3053 3054
<b>78.</b>	Web/X25 XOT	Fix web UI configuration when no configuration options exist in package vald	3050 3051
<b>79.</b>	WiFi	Fix Dakota WiFi defaults to be more secure	4408

## 8.22 25.01.40.034

No.	Module	Short Description	Mantis
<b>1.</b>	Activator	Information sent to Activator via httpclient now includes all previous values: imei, sim1_iccid, sim2_iccid, hw_rev, sim1_imsi and sim2_imsi	
<b>2.</b>	Busybox	Truncated ping responses now no longer discarded but noted in the ping response message	5658
<b>3.</b>	DHCP	Improved reporting when external DHCP server detected	5520
<b>4.</b>	Dropbear	Remove stale sshd service files causing issues with telnet access	5533
<b>5.</b>	DSL	Improve PPPoE initial connection on DSL lines	5612
<b>6.</b>	Event System	Connection tester type link now correctly checking link state	5535
<b>7.</b>	Event System	Fix connection tester failing when ping source is specified web: services->va event system->connection tester->Ping Source cli: va_eventd.conn_tester.ping_source	5526
<b>8.</b>	Event System	Fix crash when invalid options are specified in config	1977
<b>9.</b>	Event System	Fix intermittent delay in sending syslog events	4902
<b>10.</b>	Event System	Fix to ensure failed SNMP traps are retried on delivery failure.	5527
<b>11.</b>	Event System	Fixes for crash caused by recursion	4734
<b>12.</b>	IECD		5656
<b>13.</b>	IECD	Added command point pass through	
<b>14.</b>	IECD	Change default of iec101_skip_clock_sync to 1 to stop IEC101 Master sending Delay Acquisition	5663
<b>15.</b>	IECD	Changes to support DNP3 Secure (S) for DNP3 non secure (M) application fragment forwarding	
<b>16.</b>	IECD	Do not send IEC104 health point messages while IEC104 master (uplink) is down	
<b>17.</b>	IECD	Fix conversion of DNP3 timestamps to IEC104 if timezone differs from GMT	5653
<b>18.</b>	IECD	Fix DNP3 bulk SP and DP points update	5586
<b>19.</b>	IECD	Fix DNP3 initialization sequence issues	5599 5660
<b>20.</b>	IECD	Fix DNP3 Master object parser incorrectly processing 32 and 16 bit point variations with time	5544



21.	IECD	Fix DNP3 to IEC104 protocol conversion: missing ACTCON(neg) for received DNP3 response with Status 2	5497
22.	IECD	Fix double point sending incorrect DPI: Indeterminate or Intermediate (0)	5524
23.	IECD	Fix EC104S TXQ overflow	5650
24.	IECD	Fix IECD DNP3 Master and Slave Transport Function incorrectly sending segmented frames	5541
25.	IECD	Fix IECD DNP3 master parsing of g121 and g122 objects (security statistics)	5543
26.	IECD	Fix IECD file transfer issue in DNP3 Transparent mode (dnp3s_transp_fwd=1)	5592
27.	IECD	Fix incorrect DNP3 tracing in IECD when receiving multi-segment transport sequence	5540
28.	IECD	Fix intermittent crash while processing IEC104S DL TxQ	
29.	IECD	Fix queueing mechanism dropping frames received before IEC104 Datalink is declared as down/deactivated	5572
30.	IECD	Fix time stamp manipulation in IEC101-IEC104 conversion with iec104_force_app_layer enabled	5632
31.	IECD	IEC101 - IEC104 Transparent Mode conversion now no longer discards the entire message if there are multiple objects present in the message and IOA mapping is not found for one of the objects; any correctly mapped objects will now be sent.	5626
32.	IECD	IEC104 to DNP3 conversion: configurable TRIP-CLOSE depending on 104 cmd value ON - OFF	
33.	IECD	IOSRVD: Added capability to set custom point names	
34.	IECD	IOSRVD: Do not remove undetected device configurations from /etc/config/iosrvd file when device is not detected, and option device_auto_detect is enabled	5522
35.	IECD	MQTT: Fix behaviour of mqtt_ctl_vars_init_state option	5675
36.	IECD	New global config option start_delay_secs sets a wait time before iosrvd proceeds with initialization to avoid starting before tserverd. cli: iosrvd.main.start_delay_secs	5525
37.	IECD	Remove updating of local point after execution of 104 command - instead let RTU update the corresponding feedback point	
38.	IECD	Support for inter-operating with DNP3DCU	
39.	Mobile	Set LTE attach bearer for Huawei ME909 to ensure attaching to configured APN rather than default APN as detected by the mobile module	5634
40.	NTP	Defer chrony server instances until UCI interface is up to avoid misleading chrony errors in syslog	5550
41.	NTP	Fix incorrect stratum served to local clients. Fixes issue where local NTP server was defaulting to stratum 10, overriding the stratum retrieved from the remote NTP server once the clock had synchronised. Stratum can still be forced though configuration of option stratum however this is not recommended.	5550
42.	PPP	Recover from connection stalling indefinitely when CHAP success message is lost in the network	4631

43.	Radius/Tacacs	Support for Radius and TACACS added to JKG family	
44.	Serial	Fixed problem in Atmel firmware leading to a Tx FIFO overflow on hardware models that use the Atmel serial card	5607
45.	Syslog	Fix <code>changelog</code> not recording first change to each module after initialisation	5616
46.	System	Add hotplug script debug logging option <code>cli: system.main.hotpluglog</code>	5646
47.	Web/Event System	Support for custom facility and target configuration options for syslog target <code>web: services-&gt;va event system-&gt;event destination-&gt;Facility</code> <code>cli: va_eventd.target.facility</code> <code>web: services-&gt;va event system-&gt;event destination-&gt;Severity</code> <code>cli: va_eventd.target.severity</code>	4739
48.	Web/xDSL	Removed unsupported xDSL configuration options from web UI for GW2300 models	5518
49.	Web/xDSL	Support for configuration of ATM bridge via web UI on GW2300 models	5516

## 8.23 25.01.40.028

No.	Module	Short Description	Mantis
1.	Activator	Fix to correctly detect 'Software Up To Date' status from Activator	5481
2.	DNS	Properly handle duplicate DNS entries on multiple interfaces	4993
3.	Dropbear	Don't allow root to login if option <code>RootLogin</code> is disabled	5003
4.	Ethernet	New automatic watchdog script to check switch MIB counters and reset if not incrementing on GW1042 hardware	3589 4423
5.	Event System	Fix allocated memory boundaries violation with syslog target	5298
6.	Event System	Fix corrupted email target messages	5463
7.	Event System	Fix crash when SNMP target template length was multiple of 4 bytes	5460
8.	Event System	Fix intermittent memory management error	
9.	Event System	Increase event system target name length from 16 to 127 characters	5420
10.	Event System	Report system error when send fails due to session open failure	
11.	Event System	Use UDP port 162 by default for SNMP trap destination port	5435
12.	Failsafe	Fix <code>reboot</code> command in failsafe mode	4885
13.	GPS	Only try to get GPS coordinates for inventory collection when GPS enabled to avoid unnecessary log messages	4905 4919

<b>14.</b>	HTTP Server	Added support for redirecting HTTP to HTTPS web: services->http server->Redirect HTTP requests to HTTPS cli: uhttpd.main.redirect_https	4585
<b>15.</b>	IEC104 Gateway	Implemented checking chrony NTP sync status and stratum before clock sync rewrite	5079
<b>16.</b>	ISAD	Add info on cell technology used for each bin	5159
<b>17.</b>	LED	Power/Config led off now flashes slowly while the router is in recovery mode.	4510
<b>18.</b>	Mobile	Add additional echo detection as an indication of radio module reset	5410
<b>19.</b>	Mobile	Ensure mobile interfaces get a /32 netmask.	5173
<b>20.</b>	Mobile	Ensure that roaming template generated multiwan interfaces are updated when va_mobile is restarted	5010
<b>21.</b>	Mobile	Fix auto connect if mobile interface dropped during DST transition hour when moving from BST to GMT	5334
<b>22.</b>	Mobile	Fix connectivity issues in PPP mode with some APNs due to dialled address in dial string	5314
<b>23.</b>	Mobile	Fix fix signal strength reporting for Asiatel modules	5146
<b>24.</b>	Mobile	Fix intermittent issue where route is not populated to routing table when mobile interface comes up on QMI interfaces	4847
<b>25.</b>	Mobile	Fix parsing of special characters in mobile username and password	5070
<b>26.</b>	Mobile	Fix Quectel EM06 GPS location	4940
<b>27.</b>	Mobile	Fix SINR=-1 readings clearing out other mobile status values	4907
<b>28.</b>	Mobile	Fixed bug in the reinitialisation of the QMI control code which led to a failure to detect the loss of connectivity and failures when trying to re-establish connectivity	5242
<b>29.</b>	Mobile	Fixes so that we support IPv4, IPv4v6 and IPv6-only modes for PPP and QMI	4839
<b>30.</b>	Mobile	Improve interface status detection for roaming templates interfaces	4988
<b>31.</b>	Mobile	Improvements to detection and recovery of mobile module restart	5310
<b>32.</b>	Mobile	Only poll temperature on SIMCom7100 modules that support it to avoid signal quality monitoring not being enabled due to disabling of temperature monitoring	4914 4916
<b>33.</b>	Mobile	Report correct SIM slot after roaming scan	4987
<b>34.</b>	Mobile	Support for new option ip6ifaceid for ability to set IPv6 suffix and add to received prefix to form full IPv6 address. cli: network.interface.ip6ifaceid	4840
<b>35.</b>	Mobile	Use PDP context 3 for Quectel, Simcom and Sierra Wireless modules as the first data context. This fixes issues on Verizon networks where only context 3 can be used.	4921
<b>36.</b>	Multiwan	Poison routes of managed interface after interface start so that routing is confirmed before redirecting traffic over it	5287
<b>37.</b>	Network	Always configure lo interface with 127.0.0.1/8 address	4760
<b>38.</b>	Network	Fix carrier check to only run for Ethernet interfaces	5409

39.	Network	Prevent duplicate default route when using PPP mode for a mobile connection	5130
40.	SCEP	Support for Cisco CA	4841
41.	SNMP	Ensure that both specific field (SNMPv1) and snmpTrapOID (SNMPv2+) are set correctly.	5449
42.	Strongswan	Don't reject certificates with invalid certificate policies. The certificate policy itself is still considered invalid and is not returned in the auth config resulting from trust chain operations.	5110
43.	Strongswan	Ensure all certs and keys are only writable by root and readable by strongswan	5161
44.	Strongswan	Fix crash in <code>ipsec statusall</code> output parser when lua pattern magic characters are used. Fixes issue with IPsec status web UI page not displaying when using the minus symbol '-' in policy names.	4901
45.	Strongswan	Fix crash when responding to connection initiation when NATT disabled	5293
46.	Syslog	Frequent <code>upnp</code> messages in syslog no longer generated	5160
47.	System	Avoid overwriting <code>/dev/null</code> with newly created config file when configuration audit is enabled	5080
48.	System	Ensure <code>/etc/systime</code> is updated upon reboot command issued from Activator	5297
49.	Terminal Server	Extended the size of serial data logged when option <code>debug_rx_tx_enable</code> is enabled	4989
50.	Terminal Server	Fix <code>tservd</code> crash when receiving split packets in an X25 call	5300
51.	USB	Fix USB intermittently changing serial port mapping after reboot by introduction of new option for mapping a user-friendly serial port name to the underlying linux device name. See new features section above.  cli: <code>tservd.port.serialPortName</code>	5107
52.	VA Events	Correct wrong parameter order in BadPasswordSSH event default template	4849
53.	VA Events	Fix <code>cwatches</code> <code>vaevent</code> generation	4904
54.	Web/Firewall	Fix issue in port-forward rule creation via web UI	4872
55.	Web/Flash Operations	Improve hash checking of firmware upgrade via web UI	4984
56.	Web/System	Added configuration of luci login template information to web UI  web: <code>system-&gt;system-general settings-&gt;Login info template</code> cli: <code>luci.main.login_page_info_template</code>	3791
57.	Web/System	uImage with appended uboot now updates correctly via the web	5006
58.	Web/WiFi	Allow configuration of modulation mode	5219
59.	WiFi	Support for option to hide SSID  web: <code>network-&gt;wifi-&gt;interface configuration-&gt;Hide ESSID</code> cli: <code>wireless.wifi-iface.hidden</code>	5375

## 8.24 CPX-19.00.91.000

No.	Module	Short Description	Mantis
1.	Activator	Fix problem whereby Activator will sometimes reject binary files with a HTTP Status code 302	4512
2.	CWATCH	CWATCH status now correctly shows when an action is executed	4667
3.	Download	Remove temporary image file if created as part of partial download process.	3848
4.	Download	Fix problem whereby bytes downloaded so far were not being shown in response to va_hdl5 or on Activator Active Updates	
5.	Ethenret	Fix Ethernet port LED A behaviour	4511
6.	Ethernet	Fix bridging with VLAN interface	4548
7.	Ethernet	Fix Ethernet interface showing up when cable unplugged	4294 4594
8.	Event system	Fixed event trigger for mobile events on systems with multiple radio cards	4506
9.	GPS	Improvements to GPS for SIMCOM modules	3710
10.	GRE	Fix interfaces not being removed correctly	4789
11.	GRE	Fix GRE interfaces crash when running <code>tcpdump</code>	4789
12.	GRE	Fix GRE interaction with firewall	4789
13.	IPsec	Fix corrupt MD5 packets when both MD5 and SHA1 are hardware accelerated	3815
14.	Mobile	Configure APN before operator selection for LTE connection establishment	4389 4399
15.	Mobile	Fix mobile interface not starting without mobile config section	4419
16.	Mobile	Reset mobile module when fails to respond	4114
17.	Mobile	Fix crash in qmi disconnect code	4524
18.	Mobile	Automatic FOTA checks on Huawei ME909 now disabled. Fixes confusing FOTA warning message in syslog.	4417 4421
19.	Mobile	Fixed service_order not working in some cases on Huawei ME909 when in PPP mode	4103
20.	Mobile	No longer allow connection to LTE network when option_service configured to UMTS only.	3673
21.	Mobile	Default EPS bearer (pdp context 1) no longer used for any communication. Fixes issue where module would connect to UMTS even though LTE available.	4553
22.	Mobile	Fix module firmware not being displayed correctly for Huawei module	4588
23.	Mobile	Fix broken LTE band selection on Simcom7x00	4595
24.	Mobile	The mobile interface now waits and retries if started before the modem hardware is initialised to avoid instances where a multiwan mobile interface to retry after initial ifup attempt	4627
25.	Mobile	Concatenated SMS messages with more than 140 characters are now decoded correctly	4253
26.	Mobile	Added LTE band selection for Quectel modules	4671

27.	Mobile	Handle multiple MNCs with same operator name in roaming discovery	4704
28.	Mobile	Reset operator link if disconnected by CLR or otherwise	4668
29.	Mobile	Fix unexpected <code>wwan0</code> root file creation in Ethernet mode on Simcom	4716
30.	Mobile	Fix GPS rollover issues with SIMCOM7100 leading to an incorrect date and altitude being displayed	4702
31.	Mobile	Fix default routes not appearing on VRF	4713
32.	Mobile	Suppress <code>gpsOneExtra</code> messages	4721
33.	Mobile	Only start first configured <code>auto=1</code> interface for each PDP context	4725
34.	Mobile	Fix for error messages caused by incorrect <code>AT+CGDAUTH</code> command	4723
35.	Mobile	Do not auto connect PPP roaming interfaces after explicit <code>ifdown</code> using custom <code>ifname</code>	4730
36.	Mobile	Fix crash selecting LTE bands for Telit module	4732
37.	Mobile	Fix default route suppression when gateway set to 0.0.0.0 and using DHCP client	4738
38.	Mobile	Make CLR (Cancel Location Request) event handling more robust and non-intrusive	4688
39.	Mobile	fix NDIS Ethernet calls and startup APN check to speed up connection time	4709
40.	Mobile	Improve flushing operator state on SIM change	4724
41.	Mobile	Fix broken PPP mode for Huawei modules	4770
42.	Mobile	Reset module when changing SIMs for SIMCOM 7070	4771
43.	Mobile	Fixes so that we support IPv4, IPv4v6 and IPv6-only modes	4839
44.	Mobile	Fix LTE default attach bearer configuration	4248
45.	Multiwan	Now supports separate thread for each interface group to improve performance and avoid starvation between multiwan groups	4772
46.	Network	Fixed arithmetic error on execution of <code>ifup eth1.vlan</code> command	4532
47.	Network	Fixed console warning on execution of <code>ifup eth&lt;x&gt;.vlan</code> command	4532
48.	OpenNHRP	sSop installing legacy unused files	4531
49.	PPP	Fix LCP response under heavy load	4179
50.	SNMP	Enable MIBs for CPU load average (.1.3.6.1.4.1.2021.4) and memory (.1.3.6.1.4.1.2021.10)	3531
51.	Strongswan	Process <code>option reauth</code> as a boolean so now accepts [0   1] as values as well [yes   no]	4756
52.	System	<code>ps</code> command displays long command lines correctly again. Fixes issue where long command lines were being discarded rather than displayed as truncated, unless <code>ps -ww</code> was used.	4683
53.	System	Fix login banner being displayed twice	4537
54.	UDS	Stop creating unneeded <code>/etc/crontabs/*</code> files at boot	4717
55.	VRF	Now able to assign a GRE interface to a VRF instance	4039

<b>56.</b>	VRF	VRF support for BGP and OSPF to run protocols in particular VRF cli: bgpd.routing.vrf cli: ospf.routing.vrf	4194
<b>57.</b>	VRF	Ensure sure two VRF networks don't share the same routing table number	4578
<b>58.</b>	Web/Firewall	Fix default zone selection for SNAT/Firewall rule wizard. This fixes an issue where adding SNAT rule in web UI could create a hidden DNAT entry instead	4564
<b>59.</b>	Web/IPsec	Do full restart when committing web changes. Previously web changes to strongswan were causing a 'reload' rather than 'restart' in response to Save & Apply. This refreshed connection changes, but not general config changes.	4682
<b>60.</b>	Web/Login	Changed login text from Authorization to Authentication	4508
<b>61.</b>	Web/System	Hostname validation now accepts non-alphanumerics	4555
<b>62.</b>	Web/System	Web support for luci audit_req and audit_level web: system->system->audit configuration->Web Audit cli: luci.main.audit_req web: system->system->Web Audit Level cli: luci.main.audit_level	4563
<b>63.</b>	Web/System	Web UI now supports % for special parameters for host name configuration	4657
<b>64.</b>	Web/UDS	Changed the web UI uds script code input interface to a multi-line text edit box for easier script entry	3953
<b>65.</b>	Web/VRRP	Fix VRRP interface selection description	4059
<b>66.</b>	WiFi	Added WiFi client roaming options to improve WiFi roaming	4679

## 8.25 CPX-19.00.86.000

No.	Module	Short Description	Mantis
<b>1.</b>	CWATCH	Added connection watch execution event	4298
<b>2.</b>	CWATCH	Enhancement to status display of cwatch actions	4337
<b>3.</b>	CWATCH	Fix to prevent time collision of multiple actions	4173
<b>4.</b>	DHCP	Fix DHCP forwarding using VLANs	4525
<b>5.</b>	DNP3 Outstation	Change default loglevel from critical to info	4348
<b>6.</b>	Download	Bytes downloaded now showing correctly so Activator can monitor progress	
<b>7.</b>	Dropbear	Fix dropbear/SSH sessions hanging on exit after changing settings on system->administration web UI page	4454
<b>8.</b>	Dropbear	Fix <code>segfault</code> for authorised key logins	4440
<b>9.</b>	Ethernet	Fix bridging with VLAN interface	4548
<b>10.</b>	Firewall	Removed invalid icmp-types from default firewall config	4180

<b>11.</b>	GPIO	Added UCI command to configure GPIO debounce interval in milliseconds. web: n/a cli: gpio.gpio.debounce_interval	4237
<b>12.</b>	GPIO	Fix digital input change of value syslog message	4350
<b>13.</b>	GPIO	Log digital IO output changes	
<b>14.</b>	IECD	Change C_SE_TC_1 TYPE_ID from 63 to 62	4153
<b>15.</b>	IECD	Fix IECD not generating M_PS_NA_1 Message	4165
<b>16.</b>	IECD	Support for configurable IEC104 type ID when transmitting IEC104 DI/DO data points to SCADA Master web: services->iecd104->IEC104 DI Type ID cli: rtud.main.iecd104_type_id	
<b>17.</b>	IPSec	Fix strongswan restart when roam_reauth option is present in strongswan connection config	3425
<b>18.</b>	IPSec	Strongswan now retries to initiate the connection after 10 seconds when failing to resolve FQDN remote address.	3921
<b>19.</b>	IPv6	Fix issue where IPv6 default route is lost immediately after boot	4365
<b>20.</b>	ISAD	Support for upload of ISAD bins via HTTP/HTTPS	4139
<b>21.</b>	Mobile	Added LTE RSRQ OID (.27.x) to vaModem.mib	4452
<b>22.</b>	Mobile	Added new operator search command to scan and display a list of available mobile networks on roaming SIMs cli: mobile_operators -s	4456
<b>23.</b>	Mobile	Added reporting of RSRP and SINR for Asiatel modules	4405
<b>24.</b>	Mobile	Configure APN before operator selection for LTE connection establishment	4389 4399
<b>25.</b>	Mobile	Configure default APN when configuration is empty	
<b>26.</b>	Mobile	Fix harward revision info in mobile module stats	4588
<b>27.</b>	Mobile	Fix incorrect value for RSRP OID (.25.x)	4452
<b>28.</b>	Mobile	Fix issue with second SIM connecting when ICCID collection enabled	4322
<b>29.</b>	Mobile	Fix mobile interface not starting without mobile config section	4419
<b>30.</b>	Mobile	Fix MTU support for Telit LE910	4093
<b>31.</b>	Mobile	Fix parsing issue for -m input phy option to sendsms command	3971
<b>32.</b>	Mobile	For PDP connections do not use default bearer for data bearer on SIMCOM and Quectel modules. Addresses intermittent connection issues such as situation where module can detach from the network but the router still has connection	3950
<b>33.</b>	Mobile	Improve Quectel EC25 LTE connection procedure when SIM swapped for a different operator SIM	4453
<b>34.</b>	Mobile	Stop using default EPS bearer (PDP context 1) for any communication	4553
<b>35.</b>	Mobile	Terminate data connection properly for Quectel and SIMCOM modules	4141
<b>36.</b>	Mobile	Updates to handle an empty command input error scenario	3503



<b>37.</b>	Mobile	vamobile now forces DHCP release on remote QMI disconnect. Fixes issue on SIMCOM 7600 where a remote QMI disconnect did not correctly re-establish link when disconnected.	4362
<b>38.</b>	Network	Don't accept connection from VRF if daemon is bound to a non VRF IP address	4201
<b>39.</b>	PPP	Fix LCP response under heavy load	4179
<b>40.</b>	PPP	Use eth0 mac address for ipv6 eui-64 generation	4391
<b>41.</b>	PPPoE	Fix PPPoE connection error	4317
<b>42.</b>	SCEP	Fix automatic SECP cert renewal	4028
<b>43.</b>	Syslog	Increase syslogd buffer size to 400 bytes to allow long log messages to be safely captured without having to omit the hostname prefix.	4481
<b>44.</b>	Terminal Server	Set line termination GPIO when SP339 is configured using GPIOs	4380
<b>45.</b>	USB	Fix resource conflict between tervd and mobile modules	4401
<b>46.</b>	VA Events	Fix va mobile VA Event generation	3768
<b>47.</b>	VRF	Ensure sure two VRF networks don't share the same routing table number	4578
<b>48.</b>	VRF	Fix binding daemon sockets (eg. dropbear) to VRF interface	4185
<b>49.</b>	VRF	Fix NTP update on non default VRF	4202
<b>50.</b>	VRF	Fix VRF support for DHCP	4123
<b>51.</b>	VRF	Now able to assign a GRE interface to a VRF instance	4039
<b>52.</b>	VRRP	VRRP MAC is now compliant with RFC standard 00-00-5E-00-01-{VRID}	4226
<b>53.</b>	Web/Firewall	Fix DNAT port forwarding configuration via web UI when custom source and destination zones are used	4372
<b>54.</b>	Web/Network	Can now configure an IPv6 address to an alias interface	4357
<b>55.</b>	Web/OSPF	OSPF route priority now configurable via the web interface web: network->ospf->interfaces configuration->Routing Priority cli: ospfd.@interface[0].priority	3872 4145
<b>56.</b>	Web/Syslog	Allow IPv6 addresses for external syslog servers	4102
<b>57.</b>	Web/System	Login banner now configurable via web interface web: system->administration->Console login banner cli: system.main.banner	3901
<b>58.</b>	Web/System	Maximum login attempts now configurable via web interface web: system->administration->ssh access->Maximum login attempts cli: dropbear.dropbear.MaxLoginAttempts	4301
<b>59.</b>	Web/UDS	Added support for exec_type 'once' to web UI configuration web: services->user-defined scripts->Execution Type cli: uds.script.exec_type	4457
<b>60.</b>	WiFi	Discard zero-length packets and packets smaller than an ACK	4304
<b>61.</b>	WiFi	Start/Stop WiFi interface based on carrier status. Fixes issue where WiFi interface stays active even though WiFi Access Point disappears.	4403

62.	VRRP	Fixed issue with <code>use_vmac</code> MAC address flushing	4226
63.	Mobile	Fix issue with overlapping remote/broadcast addresses on QMI interfaces	4691
64.			

## 8.26 CPX-19.00.80.000

No.	Module	Short Description	Mantis
1.	Activation	Show filename router is trying to download for failed http download syslog message	3856
2.	Activator	Fix available memory reporting to Activator	3847
3.	Boot	Retry USB mobile module power up to 5 times with 1 minute interval until a non-hub device appears on the USB bus	
4.	Data Usage	Data units changed from MiB to MB	3338
5.	Dropbear	Disable ECDSA key support	3910
6.	Dropbear	Disable MD5, 96 bit MAC and CBC mode ciphers	3809
7.	Dropbear	Dropbear now supports multiple instances	3708
8.	Dropbear	Removed <code>Action not supported</code> log messages from dropbear hotplug module	3912
9.	Ethernet	Fixed a race condition when reconfiguring interfaces in a bridge that sometimes deferred changes until the next reboot	3892
10.	Failsafe	Fix missing ip address in failsafe mode	4119
11.	Firewall	Fix support for DNETMAP and SNETMAP targets	3732
12.	GPS	GPS now correctly reactivated after a radio module restart	3876
13.	HTTP Server	Disabled RC4 cipher suite (RC4, Export, NULL and low strength cyphers (<128)) in https application and added option to set the minimum supported TLS version for the https server. Minimum TLS supported now 1.0.  web: services->http server->main settings->tls protocol version cli: uhttpd.main.tls_version	3809
14.	HTTP Server	Disabled SSL and exclusively use TLS versions 1.0 and higher	3809
15.	HTTP Server	Only a generic web error message is now sent to browser and a verbose message is logged on server side	3877
16.	IPSec	Fix accumulating IKEv2 CHILD_SA's	3943
17.	IPSec	Fix strongswan crash while processing UpDown script	4078
18.	IPsec	<code>inherit_child</code> is now only applied to sessions that are fully established to avoid situations where multiple SAs could be created	3955
19.	IPsec	New command to compare the priority of tunnel policies and their corresponding DROP policies  cli: ip x p	3933
20.	IPsec	No longer inherit child_sa's if they were destined to be discarded as duplicates the next time they rekey	3975

<b>21.</b>	IPSec	Stongswan now pays attention to whether or not there is already an IKE connection in progress when rekeying, before restarting the one that is just being deleted; this avoids issues when both sides decide to rekey at similar times and prevents duplicate SAs being formed.	3975
<b>22.</b>	Mobile	Add display of SINR for Quectel modules	4038
<b>23.</b>	Mobile	Add query of current SINR value to Huawei module startup	4080
<b>24.</b>	Mobile	Added <code>restartmobile</code> command to <code>usb_start_up</code> service. This cleanly restarts any instances of <code>vamobile</code> on the system <code>cli: /etc/init.d/usb_startup restartmobile</code>	4051
<b>25.</b>	Mobile	Added signal strength to link up syslog event	3846
<b>26.</b>	Mobile	Fix calculation of RSCP value when using Telit LE910	3795
<b>27.</b>	Mobile	Fix clearing of network state for mobile interfaces in PPP mode. This fixes issue with <code>option retry_interval_sec</code> not reconnecting the mobile connection after termination from the network	3839
<b>28.</b>	Mobile	Fix connection status reverting to unregistered over time on SIMCOM modules	3584
<b>29.</b>	Mobile	Fix for eth-0 interface occasionally being assigned to radio module	4112
<b>30.</b>	Mobile	Fix severity level for Wetelcom module connection up/down syslog message	3855
<b>31.</b>	Mobile	Fix unhandled +GCAP message from Hucom module	3854
<b>32.</b>	Mobile	Fix various issues with SMS remote command execution	4051
<b>33.</b>	Mobile	Improve mask calculation for Telit MBIM to avoid route issues	3924
<b>34.</b>	Mobile	Improved signal quality reports for Telit module	
<b>35.</b>	Mobile	Use standard COPS AT=command in place of proprietary AT-commands (SYSCFGEX and CNMP resp.) for module initialisation to avoid issues connecting to GPRS network.	3701
<b>36.</b>	Multiwan	Added recovery syslog message for when health check is successful after a health check failure but before the expiry of <code>health_check_retries</code>	3780
<b>37.</b>	Multiwan	Fix issue of multiwan shutting down an unmanaged backup interface when restarting primary interface in pre-empt mode	3707
<b>38.</b>	Multiwan	Fix multiwan health check interval logic. See new features section above.	3449
<b>39.</b>	Network	Changing interface protocol from DHCP client to static now correctly stops DHCP client operation	3915
<b>40.</b>	Network	Enable special port forwarding for certain layer 7 protocols (ftp, irc, etc). Particularly for FTP this enables automated translation for data connection in passive mode	3885
<b>41.</b>	Network	Interface name now displayed with pppd syslog events	3853
<b>42.</b>	Network	Now use <code>ifplugd</code> for monitoring the state of PPP link. This means router doesn't have to rely on the <code>pppd disconnect</code> script.	3928
<b>43.</b>	Network	Prevent incorrect configuration of dependant interfaces preventing successful connection establishments	4107

<b>44.</b>	NTP	Support for chronyd combinelimit option to limit sources included in the combining algorithm  web: system->system->time synchronization->ntp source combine limit  cli: system.timeserver.combinelimit	
<b>45.</b>	OpenNHRP	Fix OpenNHRP running out of buffer space resulting in error message Filter code buffer too small	3816 3807
<b>46.</b>	OSPF	Support for new OSPF interface priority configuration  cli: ospfd.@interface[0].priority	3872
<b>47.</b>	PPP	Fix sequencing issue with timers when system clock adjust to avoid delay on establishment of PPPoE connections if the initial connection attempt failed after a restart, and the system clock was adjusted during the timeout period.	4106
<b>48.</b>	Recovery	Fix termination of jobs in recovery mode via telnet session	4118
<b>49.</b>	Recovery	Fixed reset button operation when in recovery mode	3844
<b>50.</b>	Recovery	Power/Config LED now flashes slow in recovery mode to align with other model behaviour	3826
<b>51.</b>	RIP	An IP link delete event now always frees the multicat group membership. Fixes issues resulting in syslog message can't setsockopt IP_ADD_MEMBERSHIP No buffer space available	3721
<b>52.</b>	SCEP	Fix SCEP certificate renewal	4028
<b>53.</b>	SNMP	Fix high CPU utilisation for cellmodem_count_snmp.lua	2704
<b>54.</b>	SNMP	Fix issue sending SNMP trap resulting in buffer too small to read octet string error message.	3766
<b>55.</b>	SNMP	Fix SNMP crash when mobile module is restarted	3775
<b>56.</b>	SNMP	Fix vaevent.mib	4004
<b>57.</b>	SNMP	Fixed SNMP syslog error messages on start up	3857
<b>58.</b>	SNMP	Make trap variables match those reported by Openwrt	4082
<b>59.</b>	SNMP	Truncate long UCI snmp_alias_as_ifdescr strings to 15 chars to avoid crash walking host resources MIB table	2704
<b>60.</b>	Syslog	Coovachilli syslog messages no longer generated when disabled	3800
<b>61.</b>	Syslog	Fix logread -f stopping when log files rotate	3986
<b>62.</b>	Syslog	Fix misleading kernel error message usb0: kevent 12 may have been dropped when mobile module interface is created but not connected	3837
<b>63.</b>	Syslog	Report AT command that failed when an error occurs processing a modem command	
<b>64.</b>	Syslog	syslogd restart now ignores empty logread buffers. This fixes an issue on restart of syslogd where logread was not showing correct messages	3984
<b>65.</b>	Syslog	va_eventd no longer generates syslog messages when package contains no options	3510
<b>66.</b>	Syslog	Wait 3 seconds before checking changes when configuration audit enabled to make tracking changes more reliable	4088
<b>67.</b>	System	Automatically save crash logs from monitored processes to syslog and /tmp/critprocs.log	

<b>68.</b>	VA Events	Fix va_eventd mismatch in va_eventd regex for SMS	4010
<b>69.</b>	VRF	Fix crash on mobile virtual Ethernet interfaces when VRF added to configuration	
<b>70.</b>	VRRP	Correctly handle offline VRRP UCI interfaces. Fixes issue where VRRP would ignore interfaces rather than treating them as offline resulting in a master state rather than fault state.	4002
<b>71.</b>	VRRP	Fix VRRP IPsec tunnel tracking support for multiple tunnels cli: vrrp.vrrp_group.ipsec_connection	3991
<b>72.</b>	VRRP	Fix VRRP reload command /etc/init.d/vrrp reload	3886
<b>73.</b>	Web/Firewall	Re-ordering rules on firewall webpage using Up/Down arrow now longer leads to out of memory	3988
<b>74.</b>	Web/Firewall	Fix active web property tabs don't show hand cursor even though they are clickable	4062
<b>75.</b>	Web/Network	Web UI now allows an LCP echo interval of 0	3728
<b>76.</b>	Web/System	Added missing audit configuration options to web UI web: system->system->audit configuration cli: system.main.audit_cfg cli: system.main.audit_hul_interval_hours cli: system.main.audit_cfg_max_size_kb cli: system.main.audit_shell	3432
<b>77.</b>	Web/System	Display RAM buffer size option when choosing RAM log storage via web UI	3698
<b>78.</b>	Web/System	Fix web support for custom log hostname special values %ser, %mon and %hostname	3699
<b>79.</b>	Web/VA Event System	Filter event list presented based on event class selected	3753
<b>80.</b>	Web/VA Event System	Fix web UI generating wrong value in config when target type is set to SNMP trap	3767
<b>81.</b>	Web/VRRP	Added field to manually set VRRP Group configuration section names via web UI web: network->vrrp->vrrp group configuration cli: vrrp.vrrp_group	3882

## 8.27 CPX-19.00.78.000

No.	Module	Short Description	Mantis
<b>1.</b>	ISAD	SLA bins now contain new CDMA stats for EC/IO, Total DRC and PN-Code	3472
<b>2.</b>	Mobile	Added ability to set the slot cycle on hardware using Cellient MPN200 web: services->mobile manager->Slot Cycle Index cli: mobile.mobile.cdma_slot_cycle_index	3486

<b>3.</b>	Mobile	Added report of RSRP and RSRQ for Quectel modules. Also reports RSCP and ECIO for UMTS mode	3571
<b>4.</b>	Mobile	Added report of RSRP for Telit LE910V2	3490
<b>5.</b>	Mobile	Ensure incorrect PIN is not attempted twice to avoid locking SIM	3585
<b>6.</b>	Mobile	Filter out empty SMS messages	3559
<b>7.</b>	Mobile	Fix connectivity issue with roaming SIM using Huaiwei ME909. Previously needed to specify op code.	3515
<b>8.</b>	Mobile	Fix crash on roaming discovery when unable to establish signal strength for multiple operators	3580
<b>9.</b>	Mobile	Fix crash on SIMCOM 7100E	3550
<b>10.</b>	Mobile	Fix early restart of module in case of errors	3630
<b>11.</b>	Mobile	Fix Ethernet clash with Huawei 709 on 600Mhz hardware	3737
<b>12.</b>	Mobile	Fix for PDU format in SMS transmission	3683
<b>13.</b>	Mobile	Fix for SIMCOM 7100E vamobile crash when no username and password specified	3685
<b>14.</b>	Mobile	Fix issue with Telit modules when APN contains '-' character	3693
<b>15.</b>	Mobile	Fix SMS reception for SIMCOM modules when SIM storage is full.	3687
<b>16.</b>	Mobile	Fix support for Sierra Wireless in kernel 3.2	
<b>17.</b>	Mobile	Fix to improve interface coming up after SIM switch	3595
<b>18.</b>	Mobile	Improve mechanism for connecting to LTE network when available rather than UMTS when using SIMCOM modules	3667
<b>19.</b>	Mobile	SIMCOM 7100 now no longer reboots between connection attempts when not necessary to do so.	3738
<b>20.</b>	Mobile	Telit LE910v2 now uses a /30 network mask in Ethernet mode mask rather than /8.	3692
<b>21.</b>	Multiwan	Ensure PID file removal after manual disable or graceful stop of service	3680
<b>22.</b>	Multiwan	Fix default routes not being correctly restored when mobile interface managed by multwan is restored using preempt	3598
<b>23.</b>	Multiwan	Preserve updated metric for PPP links during disconnect/reconnect	3575
<b>24.</b>	Multiwan	Use metric -2 instead of -1 for routes that have failed health check	3575
<b>25.</b>	NTP	Added configurable option for NTP polling delay for slower networks web: system->system->time synchronization->Max Round-Trip Time (sec) cli: system.timeserver.max_ntp_roundtrip_sec	3467
<b>26.</b>	Recovery	Fixed Ethernet access in recovery mode	3601
<b>27.</b>	Syslog	Change log level from error to warning for packet domain events	3637
<b>28.</b>	Syslog	New option for specifying maximum age of log files web: system->system->logging->Max Age of rotated log files cli: system.main.log_age	3671
<b>29.</b>	System	cwatch and vamobile now treated as a critical service so automatically restart when crashes	3561

<b>30.</b>	System	Reset reboot counter on cold start to avoid accidental reversion to altconfig or factconf if mains power supply is unreliable	
<b>31.</b>	Web/Cwatch	Fix web only showing first interface after configuration when multiple interfaces are configured via web	3622
<b>32.</b>	Web/IPsec	Fix IPsec status web error	3524
<b>33.</b>	Web/IPsec	Support configuration of IKE version web: services->ipsec->IKE version cli: strongswan.connection.ikeversion	3513
<b>34.</b>	Web/Mobile	Fix processing of legacy service option	3474
<b>35.</b>	Web/Openvpn	Added support for authentication configuration web: services->openvpn->Auth cli: openvpn.openvpn.auth	3576
<b>36.</b>	Web/Serial	Added web support for controlling RS232/RS485 mode via GPIO rather than DIP switch settings web: services->terminal server->GPIO control cli: tserverd.port.serial_mode_gpio_control	3519
<b>37.</b>	Web/Syslog	Fix system log UI view when system log is being written to a default log_file.	3694
<b>38.</b>	Web/VA Event System	Allow configuration of syslog/snmp destination address without a port number	3506

## 8.28 CPX-19.00.77.000

No.	Module	Short Description	Mantis
<b>1.</b>	Connection Watch	Fix intermittent crash when the ifname of the interface is not available	3415
<b>2.</b>	Data Usage	Fix procrustes application crash	3353
<b>3.</b>	IPsec	Added new option to control re-authentication on roaming for connection in responding role. web: services->ipsec->connections->Reauth Responder on Roaming cli: strongswan.connection.roam_reauth	3412
<b>4.</b>	IPsec	Fix specific preshared key character sequences being misinterpreted as already encrypted	3396
<b>5.</b>	Mobile	Band selection for Wetelecom/Hucom now survives reboot	3032
<b>6.</b>	Mobile	Don't attempt to send SMS using radio modules that don't support	3363
<b>7.</b>	Mobile	Fix excessive duration to populate multiwan roaming interfaces when no multiwan interfaces are defined prior to roaming discovery. Timeout reduced from 1000 seconds to 3 seconds.	3464
<b>8.</b>	Mobile	Fix intermittent signal strength report for SIMCOM module	3241
<b>9.</b>	Mobile	Fix issue with multiwan not failing over to roaming interfaces when using Quectel EC25-E module	3431
<b>10.</b>	Mobile	Fix roaming interfaces not being populated into multiwan with Telit LE910-EU v2. hw_rev=20.00.402	3462
<b>11.</b>	Mobile	Fix vmobile crash for AsiaTelco LP42	3395

12.	Multiwan	Fix multiwan crash	3390
13.	Multiwan	Improve default route suppress/restore mechanism by updating metric in uci state. For interfaces that have come back the metric will continue to be -1 until multiwan confirms recovery.	3399
14.	NTP	Fix issue limitation with NTP interface names having to begin with characters A-F	3445
15.	REC	Added REC reset during shutdown	3443
16.	Syslog	Syslog options <code>log_ip</code> and <code>log_file_count</code> can now take effect without a reboot by using new <code>syslod</code> init-script. <code>cli: /etc/init.d/syslogd</code>	3352
17.	Syslog	System log default file location is now <code>/root/syslog</code>	3381
18.	System	Fix upload of config audit	3302
19.	USB	Improve USB power up procedure	3435
20.	Web/DHCP	Support for configuration of DHCPv6 and IPv6 RA pools	3296
21.	Web/DHCP-Forwarder	Fix web UI not restarting dnsmasq after save & apply of DHCP-Forwarder configuration page	3304
22.	Web/Interface	Fix 'save & apply' causing continuous interface restart when WiFi and Ethernet are bridged	3404
23.	Web/Network	Support for configuration of IPv6 Mode on a PPPoE interface	3296
24.	Web/SNMP	Support or configuration of USM User <code>web: services-&gt;snmp-&gt;usm user</code>	3328
25.	Web/Syslog	System logging to a file can now be configured through the web UI. <code>web: system-&gt;system-&gt;logging</code>	3349
26.	Web/System	System page no longer crashes when router has an incomplete luci configuration file	3305
27.	Web/System Log	All archive syslog files now shown via system log. Previously only current log was displayed <code>web: status-&gt;system log</code>	3350
28.	Web/VA Event System	Support for configuration <code>va_eventd.target.type</code> file and associated options via web UI	3261
29.	Web/BGP	Support for BGP event logging	3382

## 8.29 CPX-19.00.75.001

No.	Module	Short Description	Mantis
1.	BGP	Added BGP scan timer option <code>web: network-&gt;bgp-&gt;global settings-&gt;Scan Time</code> <code>cli: bgpd.bgpd.scan_time</code>	3237
2.	Mobile	Fix so that APN parameter changes don't require a reset of the SIMCOM radio module	3365



3.	Mobile	Fix va_mobile crash when no username is specified for Telit module	
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### 8.30 CPX-19.00.75.000

No.	Module	Short Description	Mantis
1.	Download	Download status messages now correctly show number of bytes transferred	3254
2.	Download	Fix for bad checksum during partial download when image size to be downloaded is exact multiplier of the chunk size.	3258
3.	GPS	GPS now starting correctly	3292
4.	L2TP	L2TPv3 interfaces are now started as automatically when a dependant of a parent interface.	3262
5.	Mobile	Bumped ATMEL module firmware version to 1.3.17	
6.	Mobile	Fix 3G connection failure message when <code>ipv6_mode</code> not configured or set to 'none'	3265
7.	Mobile	Fix for SIMCOM module not detecting NO SERVICE correctly in when in LTE only mode	3264
8.	Mobile	Fix for Wetelecom/Hucom reconnecting correctly after aerial removal	3251
9.	Mobile	Fix va_mobile crash for Sierra Wireless MC7304	3282
10.	Mobile	Fix va_mobile crash when option <code>service_order</code> contains unsupported value	3309
11.	Syslog	Removed spurious getty messages in syslog	3253
12.	Syslog	Syslog messages can be now be filtered for storing locally or sending remotely. See new features section	
13.	Web/Connection Watch	Fixed Connection Watch web error following reboot after configuring valid cwatch instance	3148
14.	Web/Firewall	Port forwarding fields 'Source Port', 'External Port' and 'Internal Port' now accept space separated list of ports via web GUI	3224
15.	Web/Scada RTU	Can now configure SCADA RTU via web when no configuration options exist in package	3250
16.	Web/UDS	UDS now supported via web UI <code>web: services-&gt;user-defined scripts</code>	
17.	Web/WiFi	Web no longer continually tries to resend the form after 'Save and Apply' of WiFi interface configuration	3243
18.	WiFi	No longer attempt to start WiFi when it is disabled.	3280

### 8.31 CPX-19.00.75.000 RC 15

No.	Module	Short Description	Mantis
1.	Activation	Autoload no longer reboots router into altimage/altconfig when http client not enabled.	2870

2.	Activator	Fix for management IP update when failing over to alternate SIM via multiwan when logical interface name is the same for both SIMs	3163
3.	ADAT	ADAT tunnel initiation no longer brings down existing established tunnels	3001
4.	ADAT	DNS records no longer case sensitive	3005
5.	Busybox	Busybox upgrade to version 1.23.2 to address security vulnerability CVE-2011-2716	3232
6.	Connection Watch	Cwatch now configurable via web GUI	2982
7.	Coovachilli	Fix to stop coovachilli from blocking bootup	2954
8.	CPU/VA events	Vaeventd no longer causes utilisation loop that results in CPU reaching 100% when multiwan continuously switching interfaces	2929
9.	DHCP Client	Now supports metric override in network state diagnostics <code>/var/state/network</code>	
10.	DHCP/DNS	Updated dnsmasq version to 2.78 to address security vulnerabilities - CVE-2017-14491; CVE-2017-14492; CVE-2017-14493; CVE-2017-14494; CVE-2017-14495; CVE-2017-14496; CVE-2017-13704	3227
11.	Download	Additional events added for partial download	2858
12.	Events	Support for passing router serial number as a variable to the template in messages. Example: <code>option subject_template '%{serial} %{severityName} %{eventName}!'</code>	3043
13.	Firewall	Bridged interfaces, when using QOS to limit download speed, no longer mark the packets as invalid. IPTables therefore now no longer drop the packet.	3059
14.	Firewall	Firewall redirect rule options <code>src_port</code> and <code>src_dport/dest_port</code> now accept space-separated lists of ports.	
15.	Firewall	Fixed error when logging enabled in a firewall zone <code>cli: firewall.@zone[0].log</code>	3060
16.	GPS	GPS now disabled by default	
17.	IPsec	Fix crash for shunt connection on LAN interface	2968
18.	IPsec	Support for new strongswan option to add specified delay when re-establishing a connection. See new features section for more information. <code>web: services-&gt;ipsec-&gt;Restart Delay</code> <code>cli: strongwan.connection.restartdelay</code>	
19.	IPv6	Fix for IPv6 default route deletion	3168
20.	IPv6	Fix for no IPv6 global address being generated after toggling an interface	3022
21.	IPv6	Interface now generates a global address and default route when the interface toggles state. Previously waited for an unsolicited RA before generating.	3140
22.	IPv6	No longer assign dummy IPv6 link address for interface with existing IPv6 link address. Removes extra global and link address in PPP IPv6 interfaces	3023
23.	IPv6	Support dhcp6 options for all PPP interfaces when option ipv6 is set	

24.	ISAD	Extra debugging added via using <code>-d</code> parameter <code>cli: isad -d</code>	2716
25.	L2TP	Support for option MTU. <code>cli: network.&lt;l2tp_interface&gt;.mtu</code>	2846
26.	Mobile	Fix crash caused by ICCID collection for SIMCOM7100E module	3099
27.	Mobile	Fix for Hucom mobile module intermittently failing to connect after aerial is removed	3251
28.	Mobile	Fix for loading of factory config from SIM card using Quectel EC25	2932
29.	Mobile	Fix for long SMS commands not being parsed correctly	3130
30.	Mobile	Fix for LTE registration when using Hucom module when APN requires username and password	3202
31.	Mobile	Fix for sending SMS for mobile module Huawei MW909U. Now by default the number can be local or international with <code>'00&lt;country-code&gt;'</code> prefix. Existing explicit types are supported: international, local, net_spec (for network specific) and short (for short numbers)	3222
32.	Mobile	Fix for vamobile crash if <code>option service</code> omitted from config	3182
33.	Mobile	Fix for vamobile crash when using Hucom mobile module when username is not present	3242
34.	Mobile	Fix SIM with invalid PIN which prevents start of interface using alternative SIM.	2988
35.	Mobile	Fixed crash during LTE band detection on Simcom module	3049
36.	Mobile	Fixed incorrect default LTE bands value for SIMCom7100 module	3154
37.	Mobile	Fixed operator selection for Huawei modules	3013
38.	Mobile	Internal AT connection attempts now retried until <code>network.@interface[0].retry_interval_sec</code>	3016
39.	Mobile	Reduced Hucom start up time which could lead to problems in multiwan scenarios	2989
40.	Mobile	SMS decoding of <code>' '</code> character now fixed	764
41.	Mobile	Support for extended gsm encoding. This fixes SMS processing of some special characters that were being incorrectly interpreted ( [ ,   )	1874 3086
42.	Mobile	Support for IPv6 only connection in PPP mode. Previously connection continually disconnected due to not having an IPv4 address	3149
43.	Mobile	Tech code now displayed correctly for SIMCOM module	2849
44.	Mobile	When using 2 PIN protected SIMs if one PIN is incorrect in configuration then neither will connect.	2960
45.	Multiwan	Multiwan now no longer marks PPPoA ADSL as initially up after boot with no ADSL cable connected.	3071
46.	NTP	Added NTP server support. See new features section. <code>web: system-&gt;system-&gt;ntp server interface</code> <code>cli: system.timeserver.listen</code>	2956
47.	RIP	Fixed order dependency for ripd config sections in configuration file	3179
48.	Scada RTU	Support for IPv6	2556
49.	Scada RTU	Support for Modbus TCP RTU protocol	

50.	SNMP	cellmodem SNMP enterprise OID no longer breaks snmpwalk during roaming discovery	
51.	SNMP	Fixed buffer over-run when accessing CPU stats	
52.	SNMP	SNMP now treated as a critical service so automatically restarts if daemon crashes	
53.	SNMP	SNMP OID for new mobile interface SNMP Alias Index no longer shows interface as operationally down when it is up	2935
54.	SNMP	vaUCI mib now includes additional columns: 1.3.6.1.4.1.2078.3.2.66.1.1.<uci-index>.5 - Primary IP address of interface, or 0.0.0.0 1.3.6.1.4.1.2078.3.2.66.1.1.<uci-index>.6 - snmp_alias_ifdescr field if defined, else UCI interface name	
55.	SNMP	Web now displays SNMP system and agent settings when agent and configuration sections have custom names	2115
56.	SSH	Dropbear version updated to fix vulnerability CVE-2016-7406	2933
57.	Tcpdump	Specifying excess -B buffer size no longer crashes system	
58.	Terminal Server	Fixed issue with high latency when using Atmel serial card.	2736
59.	Terminal Server	Support for IPv6 and FQDN	2556
60.	Terminal Server	Terminal server now supports configurable baud rates up to 1152000	2780
61.	VA Events	Fix for va_eventd crash when no ip address is specified for pinger	3133
62.	VA Events	New file target type which support three options; <code>template</code> for message template; <code>file_name</code> for file location (full path); and <code>max_size_kb</code> to limit maximum size. See new features section above.	3198
63.	Web/BGP	BGP connect timer option added to BGP neighbour section web: network->bgp->bgp neighbours->Connect Time cli: bgpd.@peer[0].connect_sec	3190
64.	Web/Connection Watch	Connection watch now supports configurable 3 <sup>rd</sup> action via web	3146
65.	Web/Firewall	Custom rules removed from web	3136
66.	Web/Firewall	MAC filtering prefix now configurable via web UI. web: network->firewall->traffic rules->source mac address cli: firewall.<rule label>.src_mac	2597
67.	Web/Firewall	Support for new boolean option <code>reflection</code> to disable all NAT reflections for this zone. Option is enabled by default. web: network->firewall->zones->advanced settings->Allow NAT Reflections cli: firewall.@zone[0].reflection	3104
68.	Web/GPS	Fix issue when gpsd package contains no options the web UI does not allow configuration	3007
69.	Web/IPsec	Fix for IPsec status page not loading when connection name is longer than 12 characters.	2851

<b>70.</b>	Web/IPsec	Option <code>inherit_child</code> to allow IPsec Phase 2 SA to be kept through IKE rekey now supported via web web: <code>services-&gt;ipsec-&gt;Inherit CHILD SA</code> cli: <code>stringswan.connection.inherit_child</code>	2964
<b>71.</b>	Web/Ipsec	Option <code>initial_contact</code> to allow control of initial contact flag now supported via web GUI web: <code>services-&gt;ipsec-&gt;Send INITIAL CONTACT</code> by default cli: <code>stringswan.general.initial_contact</code> web: <code>services-&gt;ipsec-&gt;Send INITIAL CONTACT</code> cli: <code>stringswan.connection.initial_contact</code>	2995
<b>72.</b>	Web/L2TPv3	L2TPv3 now supported via web web: <code>interfaces-&gt;Protocol</code> cli: <code>network.@interface[0].proto</code>	2969
<b>73.</b>	Web/Mobile	Mobile manager web configuration page now restarts <code>va_mobile</code> so changes can take immediate effect when 'Save & Apply' button is used.	2161
<b>74.</b>	Web/Mobile	Support for configuration of mobile module temperature poll interval web: <code>services-&gt;mobile manager-&gt;basic-&gt;Temperature Polling Interval (Seconds)</code> cli: <code>mobile.mobile.temp_poll_interval_sec</code>	2965
<b>75.</b>	Web/Mobile	Support for independent modes for IPv4 and IPv6 now supported via web GUI for mobile interfaces web: <code>interfaces-&gt;advanced settings-&gt;IPv4 Mode</code> cli: <code>network.@interface[0].ipv4mode</code> web: <code>interfaces-&gt;advanced settings-&gt;IPv6 Mode</code> cli: <code>network.@interface[0].ipv6mode</code>	2966
<b>76.</b>	Web/Mobile	Support for option <code>force_mode</code> to force mobile modem to TTY mode rather than Ethernet mode. When the option is not present operation is Ethernet modem. web: <code>Services-&gt;mobile manager-&gt;basic</code> cli: <code>mobile.main.force_mode</code>	2132
<b>77.</b>	Web/Monitor	Fix for monitor web page not displaying correctly when keepalive section is not named 'main'	2998
<b>78.</b>	Web/Monitor	Monitor SNMP v3 settings fully configurable via web UI	3009
<b>79.</b>	Web/Monitor	Support for ISAD configuration via web UI Web: <code>Services-&gt;monitor-&gt;interface stats</code>	2304
<b>80.</b>	Web/Network	Options <code>hosts.addr</code> and <code>hosts.hostname</code> now configurable via web GUI web: <code>network-&gt;hostnames</code>	2967
<b>81.</b>	Web/Network	Support for SNMP interface alias configuration via web UI web: <code>network-&gt;interfaces-&gt;advanced settings-&gt;snmp_alias_ifindex</code> cli: <code>network.interface.snmp_alias_ifindex</code>	2973

82.	Web/Network	Web now shows correct interface names beside all logical interfaces at interface physical setting configuration page. web: Network->Interfaces->Common Configuration->Physical Settings	2261
83.	Web/RealTime Graphs	Tabs now show both linux and uci interface names	2442
84.	Web/RIP	RIP offset now supported via web	3175
85.	Web/RIP	Support for redistribution of kernel routes via web UI web: Network->rip->redistribute kernel routes cli: ripd.ripd.redistribute_kernel_routes	3103
86.	Web/SCEP	SCEP now configurable via the web Web: Services-IPSec->SCEP Certificate	3062
87.	Web/SNMP	Can now configure custom COM2SEC Security Name and Source, and custom Group Settings Security Name	2764
88.	Web/Terminal Server	Added missing "Add" button for adding "Main" and "Port" configuration for terminal server in web UI. Web: Services->Terminal server	2662
89.	Web/Terminal Server	Fixed missing UDP secondary IP address field Web: Services->Terminal server->Port settings->Network	2402
90.	Web/VA Events	VA Event System (va_eventd) now configurable via web GUI web: services->va event system	3008
91.	Web/VRRP	Tracking IPsec tunnel status now configurable via web UI web: network->vrrp->vrrp group configuration->Track IPsec Tunnel cli: vrrp.vrrp_group.track_ipsec	3096
92.	WiFi	Fix for WiFi LED being off when WiFi interface is up in client mode	2432
93.	WiFi	Fix WiFi not starting when MAC filter list defined	2705

### 8.32 CPX-19.00.04.000

No.	Module	Short Description	Mantis
1.	Activation	Fix FQDN support so management ip update requirement is checked when some interface starts up even if activator server is configured as FQDN in httpclient	
2.	Download	Delta downloads now operating as expected	2701
3.	Firmware	Fix problem whereby images posted to web server via https are corrupt but flashable. This results in a kernel that boots but then has a bad file system.	2791
4.	GRE	Fix GRE interface not starting when parent interface goes up and down with sub-minute interval	
5.	GRE	Support gre and eogre in ipv6 network with new protocols gre6 and gretap6	
6.	HTTP client	Fixed \$.ip packet not sent when httpclient uses name instead of IP	2987
7.	IECD	Fixed crash on receipt of long message from RTU in IEC101 (unbalanced) mode.	2804

<b>8.</b>	IPsec	Added new command to allow IPsec Phase 2 SA to be kept through IKE rekey. Previously Phase 2 SA were deleted and rekeyed on IKE rekey.  cli: strongswan.connection.inherit_child (def: no)	2672
<b>9.</b>	IPsec	An IPsec tunnel with option auto set to always now correctly auto reconnects after AUTH_FAILURE from peer when using IKEv2 is protocol	2678
<b>10.</b>	IPsec	IKE limiting now supported for VPN concentrator devices	
<b>11.</b>	IPv6	Fixed issue with Dnsmasq crashing on boot up after prefix delegation received.	2807
<b>12.</b>	ISAD	Fix for ISAD bins not being created after a long period	2881
<b>13.</b>	Mobile	Added new option to control the mobile chip temperature polling time to avoid USB resets.  cli: mobile.mobile.temp_poll_interval_sec (def: 61)	2671
<b>14.</b>	Mobile	Added SIM specific LTE band selection using option lte_bands  Web: services->mobile->basic cli: mobile.mobile.sim1_lte_bands cli: mobile.mobile.sim2_lte_bands	2873
<b>15.</b>	Mobile	Fix cell network time updates being applied regardless of NTP configuration when config mobile is not defined for phy	
<b>16.</b>	Mobile	Fix for Huawei modules to not attempt to bring up the interface while the operator is being selected by multiwan	2925
<b>17.</b>	Mobile	Fix for intermittent corruption of SMS messages	2857
<b>18.</b>	Mobile	Fix for va_mobile crash on receipt of ordered registration request when option cdms_ordered_registration_reboot is enabled	2768
<b>19.</b>	Mobile	Fix for va-mobile crash after IMSI change	2766
<b>20.</b>	Mobile	Fix for WeTelcom module failing to establish a connection after a SIM switch	
<b>21.</b>	Mobile	Fix issue where on a crash or reset of the mobile module sometimes the mobile connection does not restart automatically	2618
<b>22.</b>	Mobile	Fix va_mobile crash when attempting multiwan failover to roaming SIM	2621
<b>23.</b>	Mobile	Fix va_mobile crash when WeTelcom module set for umts_only	2553
<b>24.</b>	Mobile	Fixed handling of SMS originators in non-international format	2469
<b>25.</b>	Mobile	Fixed intermittent connection issues for Ericsson F5321 R3C111 module	2690
<b>26.</b>	Mobile	New configuration for setting PDP context to support dual APN configuration including support for configuration of secondary PDP contexts with QOS and traffic flow template filters. Currently only supported for Sierra Wireless modems. See new features for more information.  cli: network.interface.pdp_context	
<b>27.</b>	Mobile	Second mobile module now detects SIM removal in dual radio hardware	2717
<b>28.</b>	Mobile	sendsms command now has additional options to specify the type and numbering plan of the destination address	2761

<b>29.</b>	Mobile	SIM LED behaviour now correct on GW1042 hardware model	2856
<b>30.</b>	Mobile	Support independent modes for Ipv4 and Ipv6 configuration for eth-mode  cli: network.interfaces.ipv4_mode cli: network.interfaces.ipv6_mode	
<b>31.</b>	Mobile	Support temperature collection for SimCom modules	
<b>32.</b>	Modem	Fixed issue with '\d' in mgetty configuration getting replaced with 'd'	
<b>33.</b>	Multiwan	Fixed issue where multiwan pings out wrong interface in scenario where two simultaneous multiwan interfaces are up and using pings	2839
<b>34.</b>	Network	Support for 6in4 and 6to4 tunnel configuration	
<b>35.</b>	Network	Support for editing /etc/hosts file via new host section. See new features for more information.  cli: network.hosts.addr cli: network.hosts.hostname	
<b>36.</b>	Network	Support for L2TPv3 protocol via static configuration.  cli: network.interface.proto (l2tpv3)	
<b>37.</b>	NTP	Added NTP server support. See new features section.  cli: system.timeserver.listen	
<b>38.</b>	NTP	Fixed date/time on router not updating with NTP when a NTP server domain name cannot be resolved	2157
<b>39.</b>	RADIUS	IPv6 and hostname support for server specification	
<b>40.</b>	Serial	Support for enabling RTS/CTS flow control in terminal  web: services->terminal server->flow control cli: terminal.terminal.fc_mode	
<b>41.</b>	Shutdown	Set 15 second cap for reboot with <code>reboot</code> command or via the web	
<b>42.</b>	SMS	Fixed decoding of ' ' character	
<b>43.</b>	SNMP	Added support for ADSL-LINE-MIB	
<b>44.</b>	SNMP	Fixed configuration of SNMP additional view settings to limit access to certain OID values	2654
<b>45.</b>	SNMP	SNMP modemType now returns correct string for all supported mobile modules	2445
<b>46.</b>	SNMP	Support for fixed offset aliases for interfaces under ifTable. See new features  cli: network.interface.snmp_alias.ifindex	
<b>47.</b>	SNMP	Web now displays SNMP system and agent settings when agent and configuration sections have custom names	2115
<b>48.</b>	Syslog	Event now generated when firmware upgraded	2770
<b>49.</b>	Syslog	New event generated when configuration changes are made	2760
<b>50.</b>	Syslog	SNMPD errors no longer appear when the router is shutting down after issuing <code>reboot</code> command	2677
<b>51.</b>	System	Fixed duplication of login banner so now doesn't appear before authentication by default	2745



52.	Terminal Server	Fixed issue with high latency when using Atmel serial card.	2736
53.	Terminal Server	Terminal server now supports configurable baud rates up to 1152000	2780
54.	UDS	Support new value <code>gzip</code> for option <code>encoding</code> . The uds configuration text needs to be gzipped and base64-encoded for this encoding. See new features for more information.  <code>cli: uds.script.encoding</code>	
55.	Watchdog	New service to check critical services are running - syslog, va-eventd, dnsmasq, dropbear, adatc, multiwan, ipsec starter and uhttpd	2769
56.	Web	Fixed problem where zombie processes occur when using flash operations page	2876
57.	Web/Flash Operations	Redesign of image upgrade and flash operations	
58.	Web/Hotspot	Prevent mac address and ip addresses wrapping in hotspot status display.	2792
59.	Web/Multiwan	Multiwan Health Monitor Interval now supports custom value	2375
60.	Web/Terminal Server	Added missing "Add" button for adding "Main" and "Port" configuration for terminal server in web UI.  <code>Web: Services -&gt;Terminal server</code>	2662

### 8.33 CPX-19.00.02.000

No.	Module	Short Description	Mantis
1.	Activation	Support Activator certificate validation with CA certificate (option <code>CAFile</code> contains path to CA). Skip status check (i.e. OSCP) if boolean option <code>IgnoreServerCertificateStatus</code> is set.	
2.	Activation	Fix for autoload where in rare instances does not reboot into the altimage when the router firmware (altimage) is already up to date	2635
3.	Activator IP Update	write pid file so next IP update can kill running one. Fixes memory leak in <code>va_hdl.lua</code> when updating own IP to Activator	2463
4.	ADAT	Add support for auxiliary id list. Now particular router can be referred by serial number or by auxiliary id.  <code>Package: adatcd</code> <code>Section: main</code> <code>Option: aux_id</code>	
5.	ADAT	Support virtual pool to allow both client and server to operate behind NAT. To use add option <code>remotesourceip 'virtual subnet'</code> to ADAT IPsec headend config and option <code>leftsourceip '%config'</code> to ADAT server IPsec section	
6.	Events	Added support for TCP in syslog target via boolean option.  <code>package: va_eventd</code> <code>section: target</code> <code>option: tcp_syslog</code>	

<b>7.</b>	Events	Facility and severity of events are now stored when saving to a file. Previously they were only present in messages to an external syslog server.	2553
<b>8.</b>	Events/SNMP	Support ipv6 and domain names in syslog target config <code>option target_addr</code>	
<b>9.</b>	Firewall/GRE/DMVPN	Avoids race condition on firewall update from hotplug. Fixes race condition nature of GRE tunnel with using DMVPN and GRE. Resolves issue where in GRE could fail to come up after a network outage.	2656
<b>10.</b>	Firewall	Support for MAC prefix filtering in firewall. Option <code>firewall.rule.src_mac</code> now supports matching only the first bits of the MAC address. Append <code>\/prefix'</code> to option value to use. Example: <code>option src_mac '00:E0:C8:00:00:00/prefix'</code>	2575
<b>11.</b>	HTTP Download	Fixed <code>va_hdl.lua</code> crash and wrong status message after HTTP download failed	2573
<b>12.</b>	IPsec	New watchdog to restart ike daemon (charon) if job queue stuck. Restarts if next job waiting to be served doesn't change in 30 seconds.	
<b>13.</b>	IPsec	Fix for ping not working over ipsec tunnel established inside the tunnel (e.g. pppoe, gre, etc.)	2466
<b>14.</b>	IPsec	Fix for tunnels not starting when <code>waniface</code> starts by adding a <code>hotplug/iface</code> script	2473
<b>15.</b>	IPsec	Avoids race condition on IPsec config update that stopped traffic traversing the tunnel	2488
<b>16.</b>	IPsec	Fix an issue when strongswan cannot transfer data after crash due to stale routes in routing table 220	2513
<b>17.</b>	IPsec	Fix strongswan secret when containing quotation characters. Previously would not work.	2625
<b>18.</b>	IPsec	Support for sending initial contact during negotiation. The first attempt to contact a remote peer by this strongswan instance sets the <code>initial_contact</code> flag which should cause compliant peers to automatically bring down any previous sessions. Previously initial contact not sent.  <code>Opt: strongswan.connection.initial_contact</code>	
<b>19.</b>	IPsec	Support for new strongswan option to add specified delay when re-establishing a connection. Previously if <code>close_action=restart</code> , then new option <code>retrydelay</code> controls how many seconds it waits before attempting to re-establish the tunnel (to allow head-end some time to tidy up). If not set, it defaults to zero, which means that the previous behaviour of choosing a random time interval in the range <code>0..RekeyMargin</code> seconds takes effect.  <code>Opt: strongswan.connection.retrydelay</code>	
<b>20.</b>	ISAD	Implemented mactrack support. When monitored interface has coova chilli attached to it, ISAD will collect a list of mac addresses with associated client rx and tx bytes for isad bin interval	
<b>21.</b>	ISAD	Store bin changes even if it contains zero changes	
<b>22.</b>	LED	Fix for LED update after connection start-up. Fixes issue with signal LEDs not working correctly using Huawei MU609 module	2416

<b>23.</b>	Mobile	Fix interface start behaviour so when carrier is lost interface is actually stopped. Fixes issue when using automatic operator when primary interface has no connectivity but multiwan does not switch to backup.	2105
<b>24.</b>	Mobile	Factory config SIM extraction now works correct on Huawei modules	2112
<b>25.</b>	Mobile	Huawei MU909 module now connects to mobile network when set to 'LTE only' mode.	2160
<b>26.</b>	Mobile	Fix crash on GW7645 on second mobile module when attempting to run va_mobile	2426
<b>27.</b>	Mobile	Fixed regression that prevented Telit module starting	2514
<b>28.</b>	Mobile	Fixed Web UI error when adding in main section on mobile page	2558
<b>29.</b>	Mobile	Fix for automatic operator setting on Huawei mu609 when neither operator nor service is specified in config. Previously may intermittently connect under these conditions.	2561
<b>30.</b>	Mobile	Corrected handling of network disconnect detection for SIMCOM7100 modules. Software now tries to reconnect significantly faster to the UMTS/LTE network	2588
<b>31.</b>	Mobile	Fix for echo sometimes getting re-enabled after boot on mobile filling up syslog with spurious events	2612
<b>32.</b>	Mobile	Web UI 3G status applet now correctly shows PN code	2616
<b>33.</b>	Mobile	Fix issue where on a crash or reset of the mobile module sometimes the mobile connection does not restart automatically	2618
<b>34.</b>	Mobile	Fix va_mobile crash when attempting multiwan failover to roaming SIM	2621
<b>35.</b>	Mobile	Fix issue where Wetelcom WPD-600N doesn't detect link loss when aerial is removed	2652
<b>36.</b>	Network	<p>New option for defining dependant network interfaces using <code>option dependants</code> in parent interface. Dependant interface will go down when parent interface is down and will [re]start when parent interface starts</p> <pre>Package: network Section: interface Option: dependants</pre> <p>This replaces relevant options in child interfaces.</p> <pre>gre: option local_interface lt2p: option src_ipaddr iot: option wan1 wan2 6in4: option ipaddr 6to4: option ipaddr</pre>	
<b>37.</b>	RIP	Fix for rip issue when after DMVPN update rip starts sending additional surplus announcements for every request	2523
<b>38.</b>	RIP	Fix a redundant <code>passive-interface</code> clause generation on manual <code>ripd restart</code> via <code>/etc/init.d/ripd restart</code>	2533
<b>39.</b>	SNMP	Customer specific SNMP changes	
<b>40.</b>	SNMP	Fix for SNMPD replying with different types for some OIDs than are specified by the va mibs	2515

41.	SNMP	SNMP trap for successful boot now correctly sent	2520
42.	Syslog	Support for syslog over TCP	
43.	TACACS	Fixed user name template support so template is added properly. This allows TACACS+ request to be sent in a specific format.	2549
44.	UCI	fix non-forced reboot ( <code>reboot</code> command) hanging	2519
45.	VA Events	Generate new <code>ImageUpdateSaved</code> event when new software is flushed to altimage via hdl or web	
46.	Versioning	Support for new firmware version scheme <FAMILY>-XX.YY.ZZ.AAA to better handle branch and hot fix releases.	2554
47.	VRRP	Fix for out of memory crash caused by respawning keepalived processes	2584
48.	Web	Change default certificate options: use <code>ecdsa384</code> for key, and <code>sha512</code> digest for certificate	
49.	Web	Restart web server if it fails after long run	2505
50.	Web/ Coovachilli	Add a coovachilli monitor page for Monitor widget	
51.	Web/Firewal l	Fix MAC filtering prefix not configurable via web UI.	2597
52.	Web/Mobile	CDMA status/Monitor web page: Fill Advanced tab (and Monitor page) with carrier data	2498
53.	Web/Mobile	Web GUI does now correctly adds roaming template and SMS caller to mobile package after 'main' section	2517
54.	Web/Networ k	don't restart interface when user hits 'save' button	2228
55.	Web/NTP	Fix time synchronization/NTP settings are not available via the web UI	2546
56.	Web/SNMP	Now able to configured user defined strings for the community name via web UI	2489

**Note:** Bugs fixed prior to CPX-19.00.02rc25 have been archived