Release Note NRSW 4.2.0.104

Project Name: NRSW

Abstract:

This document represents the release note for NetModule Router Software 4.2.0.104. It informs on new functionality, corrections and known issues of this software version of NetModule's router series in comparison to release 4.2.0.103.

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Role	Name
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1 Release Information

NetModule Router Software:

Version:	**4.2.0.104**
Date:	**April 05, 2019**

Supported Hardware:

NetModule Router	Hardware Version
NB800	V2.0 - V2.2
NB1600	V1.0 - V3.3
NB1601	V1.0 - V1.3
NB2700	V1.0 - V2.7
NB2710	V1.0 - V2.7
NB2800	V1.0 - V1.4
NB3700	V2.0 - V4.3
NB3701	V1.0 - V1.4
NB3710	V2.0 - V4.3
NB3711	V1.0 - V1.4
NB3720	V2.0 - V4.3
NB3800	V1.0 - V1.4

Unsupported Hardware:

NetModule Router
NB1300 Series
NB1800 Series
NB2200 Series
NB2300 Series
NB2500 Series
NB2600 Series

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2 New Features

Case-#	Description
50123	**More status information on SWI interface for QMI based WWAN modules** The WWAN status information was extended to show information on SWI status.
52006	**IPSec now supports certificate chains** You can now upload certificate chains for IPSec connection establishment.
52289	**Updated link to latest software** The default link for automated software updates was pointing to wrong location. That was fixed.
54132	**U-blox Toby L2 Series** The u-blox Toby-L200 and Toby-L201 are now supported by NRSW.
54623	**Provide system time to NB1601 GNSS module on boot** To acquire faster GNSS fix we initialize the internal clock of the GNSS module with the system time.
55159	**Watchdog supervision of OSPF and BGP daemon** OSPF and BGP daemon are now supervised by watchdog. This will result in a reboot and reinitialization of the router if one of these daemons crashes.
55193	**APN credentials printed to logs** With debug set to maximum the login credentials for the WWAN APN were printed to the logs. In most setups there is no secret data in APN credentials as they are common for all customers of one provider and can be looked up on the Internet, but if you use a private APN they should not show up in the logs.
55659	**Assisted GPS** Assisted GPS is now supported with u-blox Neo M8 GNSS modules.

3 Security Fixes

The following security relevant issues have been fixed.

Case-#	Description
54204	**Security fixes in 3rd party and open source packages**
55903	CVE-2018-1000500 Busybox contains a Missing SSL certificate validation vulnerability in wget applet.
56501	CVE-2019-8912 Linux kernel had possible use-after-free in sockfs_setattr.
	CVE-2018-0732 OpenSSL client DoS due to large DH parameter
	CVE-2018-0737 OpenSSL cache timing vulnerability in RSA Key Generation
	CVE-2018-5407 OpenSSL microarchitecture timing vulnerability in ECC scalar multiplication
	CVE-2018-0734 OpenSSL timing vulnerability in DSA signature generation
	CVE-2019-1559 OpenSSL 0-byte record padding oracle

4 Fixes

The following issues and problems have been fixed.

Case-#	Description
50082	**Advanced file system recovery** Under rare conditions it might happen that the flash file system on NB2800 might fail after hard power reset. Better error handling will help to recover automatically in these situations.
51256	**Make sure WWAN module is attached to network on dial** In the test lab we have seen some WWAN modules failing to auto-attach to network under test conditions. If that happens we now send an explicit attach command. We are not aware of this happening in a real world environment, but if it should happen it should speed up reconnect in detached state for the affected modules.
53616 54199	**Improvements of OSPF daemon** Under very heavy load the OSPF daemon could crash. These situations have been covered and packets which cannot be handled will be dropped instead. The daemon is also under watchdog supervision now.
53707	**Missing routing entry for OpemVPN server** Under certain conditions the setup system failed to add a mandatory route entry for the OpenVPN server. This was fixed.
53857 53905 53959 53994 54480 54491 54815 56011	**GUI improvements** When changing the network IP and mask of a bridge device the DHCP settings were not checked. Now the GUI will propose appropriate new settings for the DHCP server. The deletion of VLAN interfaces could lead to DHCP configuration failures. This has been fixed. The web interface did not show the same signal quality information that was displayed by LED color. This was fixed. Both interfaces use the same data source now. An inconsistency in menu of the web interface was fixed. Only one serial interface on the NB1601 is capable to run a login shell. The GUI allowed to set both interfaces up for this service. That was fixed. Setup of a LAN port as WAN with Static IP gave a misleading warning on invalid DHCP setup. The Link Management configuration web site on NB800 and NB1601 dif not display the "Bridge interface" option if a WLAN Mesh Point was configured. Time-based SDK trigger setup was simplified.
54288	**LAN as WAN configuration** the WAN configuration of a LAN interface was not applied correctly. This has been fixed.
55027	**Several WWAN links on the same WWAN module** A setup with different WWAN links on the same WWAN module with the same SIM card and different APN failed to establish a connection. This was fixed. Several links sharing common recourses like WWAN module or SIM card can be configured as switchover.
55109	**No WWAN connection due to invalid SMS center** On a network in Dubai we saw the WWAN connection failed with an error message due to invalid SMS center message from the provider. This is handled now and will only produce a warning in the logs. To use SMS feature in such an environment the SMS center configuration has to be set up manually.
55252	**Ethernet switch framework not aware of virtual port mapping** In situations where the logical port assignment does not match the physical port assignment and some ports are turned off the ethernet switch framework did put down wrong ports periodically. This was fixed.
55300	**Setting or getting DIO state with SNMP failed** A new DIO interface introduced in 4.2.0 failed on SNMP. That was fixed.

Case-#	Description
55453	**LED indicators** On connection establishment the WLAN LED on WLAN client could show red blinking signal, which is not described in the manual. This was fixed: The LED will always blink green until process of connection establishment was finished and then switches color to indicate the signal quality.
55666	**Toby-L2 preferred service** No WWAN connection was possible anymore if the preferred service was changed. This has been fixed.
55694	**Toby-L2** The WWAN connection did not reconnect after a signal loss has occurred if 4G only was configured. This has been fixed
55823	**WWAN module sometimes failed to reconnect** Under certain conditions we have seen ME909u and ME909s modules to take very long time to reconnect. This was a result of missing state check before module reset and fixed by enhanced bring-up procedure.
55924	**Incoming voice calls without caller ID** Incoming voice calls from mobile no longer need to provide a valid caller ID. If no caller ID is present the caller will be reported as "anonymous" to the SIP client.
56116	**SNMP engineID** The SNMP enigneID was no generated correctly. The engineID is now generated by using the Serial number of the device.
56193	**GNSS epoch rollover** Several GNSS modules from different vendors will face an unsigned integer overrun in November 2019. This will result in a time offset of about 20 years. Our system software will handle this issue. No action is needed (apart from updating to latest NRSW software) as long as your application does not derive time stamps directly from the GNSS NMEA stream.
56271	**USB Tethering** No IP configuration for USB tethering devices were possible. This has been fixed.
56291	**RTC backup capacitor not charged on some devices** On NB3701, NB3711 and NB3800 the RTC backup capacitor was not charged. This was fixed by change of the RTC internal settings on boot.

5 ECC conversion

The flash on NB1600, NB2700, NB2710, NB3700, NB3710 and NB3720 provides an automated error correction using ECC. With release 4.1.0.100 we changed the ECC length from 1-bit ECC to 4-bit ECC which provides better error correction. On first boot after the update was performed the data on the flash is automatically converted to use the new ECC setup. While this conversion is performed the LEDs show a running light for about 30 seconds.
If you switch back to an older software release like 4.0.0 the migration is reverted.
We tested updates and down-grades to and from 4.0.0 and 3.8.0. Updates to or from older versions are not supported. If you run an older release or want to downgrade to an older release or a feature release like 3.8.2 you are advised to migrate via 4.0.0 as an intermediate release.
To revert the migration on downgrade the SPL boot loader release 4.1.0 stays in place. It can be downgraded in a second sofware update process initiated from the target release after the first reboot.
Software updates with recovery images require special attention. You must not use recovery images 4.0.0 and older for systems running 4.1.0 and newer. If you want to use recovery images please contact our support at router@support.netmodule.com.

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7 Change History

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