Release Note NRSW 4.2.0.100

Project Name: NRSW

Abstract:

This document represents the release note for NetModule Router Software 4.2.0.100. It informs on new functionality, corrections and known issues of this software version of NetModule's router series in comparison to the current stable release 4.1.0.102.

Keywords:

NetModule, Software Development, NRSW, Release Note

Document Control:

Document:	Version	1.0
	File	NRSW-RN-4.2.0.100
	Status	Valid

Creation:	Role	Name
	Author	Moritz Rosenthal
	Review	Benjamin Amsler

Approval	Role	Name
	Director Product Development	Michael Enz

1 Release Information

NetModule Router Software:

Version:	**4.2.0.100**
Date:	**November 19, 2018**

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

NetModule Insights
Subscribe to our mailing and get the latest
news about software releases and much more

2 New Features

Case-#	Description
43437	**Voice signaling** Voice signaling is now possible without any Voice license on voice capable hardware
44287	**SW update package validated before upload** An invalid SW update package is identified in the web interface before the actual transfer to the target was performed skipping the process of slow up-load of potential invalid packages via mobile network. The new architecture also allows us to provide better and more detailed feedback on the current status of the update.
45399	**New version of igmpproxy** Igmpproxy was updated to version 0.2.1. This also fixes a bug on interfaces with an alias IP setup.
45994	**Several changes to the WLAN settings to comply with RED (2014/53/EU).**
46178 46292	**WLAN advanced user license** to set up regulatory domain and antenna gain parameter is is required to have a WLAN advanced user license. The new default parameters are "EU" for the regulatory domain and "3 dBi" for the antenna gain. Please contact our customer support if you need this a WLAN advanced user license.
46965	**HTTPS access with client certificates** Functions which communicate with HTTPS-Servers (like SW update from URL or SDK) can now authenticate with client-certificate and key.
47729	**MQTT publishing from SDK** Functions for publishing MQTT messages were added to the SDK scripting language.
48441 53541 53543	**Password hashes replace encrypted passwords in configuration** We changed our password handling to use cryptographic hashes instead of symmetric encrypted passwords where ever possible. Therefor you have to provide the administrator password on downgrade to older SW releases as these still rely on the passwords to be stored on the device. For SNMP access the passwords still need to be available. Therefor users which shall be able to log in via SNMP need the new setting "Store password in device" to be enabled.
48502	**GNSS default antenna type set to "active"** As passive GNSS antennas are very uncommon these days we changed the default setting to active. This is only valid on factory default configuration. A configuration update will keep the existing settings.
48568	**Support for new NB1601** The new NB1601 router is supported first time by 4.2.0.100.
48684	**Wait for configuration change task to be finished** Changing a configuration setting via CLI or SDK does not block. A new function was implemented to request if all pending tasks have been finished and it is safe to send new configuration change requests.
49043	**WLAN MESH** The support of WLAN Mesh (802.11s) is now available. It is possible to configure a pure mesh point or a mesh access point (mesh point and access point). Currently the encrypted Mesh with TI based Router (NB800, NB1601) is only compatible among themselves.
49268	**Support for new GNSS modules** Added support for new Ublox NEO-M8 modules.

Case-#	Description
49269	**uBlox TOBY-L2 support** The uBlox Toby-L2 LTE modem is now supported.
49328	**WLAN Inter Access Point Protocol (IAPP)** It is now possible to enable IAPP within the WLAN configuration. This feature will inform the old access point that a WLAN client has associated with a new access point.
49641	**Number of VLANs increased** It is now possible to configure up to 10 VLANs instead of 5.
49901	**Update of time zone data** North Korea switched back to +09 on 2018-05-05. Our best wishes to all Korean people.
50631	**CLI shows WLAN channel** The cli status command will show the current WLAN channel if access point or dual mode is configured.
50670	**LED configuration** All LEDs except for "STAT" can be configured to different function like LAN, WAN, WLAN, WWAN, etc.
50924	**Bridges without STP** It is possible now to switch off STP completely on bridg-devices.
51662 51893 53533	**GUI improvements** Allow Upload of keys and certificates in nested p12 files. IP pass-trough setup failed on web interface with recent SW releases. Obsolete GUI interfaces have been removed,
51762	**React faster on GNSS flaps** The maximum GNSS flaps were evaluated only once every 5 minutes. This has been changed. Now the GNSS supervision will take action as soon as the maximum flaps have been detected.
52451 53792	**NB2800 with Push-To-Talk module** Added support for new Push-To-Talk module on NB2800.
52468	**Configuration of NTP server stratum** The stratum of NTP server in case of GNSS sync or time from internal clock can be configured now. As these sources are not very accurate this feature should be used with care. Please contact our customer support for detailed information.
52526	**Refactory of config converter** Our config conversion tool cfconvert which is responsible for converting older and newer configuration files to the configuration release needed by the current version was refactored speeding up this step of SW update or configuration apply by factor or 3-5 and reducing the required flash space by several hundred kB which was required for implementation of other features on older hardware like NB1600 or NB2700 with very limited flash space. As a side effect the conversion to configuration versions other than the one used by the current SW release is not supported any more. In normal operation this is not needed anyway. If you have such a requirement please contact our technical support.
52959 53201 53315	**Recover from power fail on Sierra Wireless MC7430 and MC7455 firmware update** We have seen LTE modules MC7430 and MC7455 to enter error state if a power fail occurred while FW update was in progress. Counter measurements have been taken to retry a failed update and finally trying roll back to latest working version in case of reoccurring update failures.
52979	**Power down Sierra Wireless LTE modules on ignition sense power cycle** If we power down NB2800 due to ignition sense routers with MC7430 and MC7455 will hold module power up for an additional time out. This will increase the power down time, but is suggested as good practice by the module manufacturer.

Case-#	Description
53203	**Navigation mode of ublox GNSS modules** The operational mode of ublox GNSS modules is now automatically set up portable or stationary depending on the router setting admin.area (mobile or stationary).

3 Security Fixes

The following security relevant issues have been fixed.

Case-#	Description
52029	**Update of Lighttpd** On release 4.2.0.100 Lighttpd was updated to version 1.4.50. On older releases Security relevant issues were back ported. CVE-2015-3200: Injection of log entries fixed on lighttpd
53324	**Log display in web interface vulnerable to Cross-Site-Scripting (XSS) attack** The web interface which displays the system log was vulnerable to JavaScript XSS attacks. An attacker capable of placing malitious content in the system log could execute JavaScript code in the web browser of the user.
53513	**Security bug fixes on 3rd party SW packages** CVE-2015-3200: Use-after-free fixed in Linux kernel
53834	**Security bug fixes in 3rd party SW packages** CVE-2018-14526 Unauthenticated EAPOL-Key decryption in wpa_supplicant

4 Fixes

The following issues and problems have been fixed.

Case-#	Description
41149	**Roaming failed with Huawei ME909u-521** Devices equipped with Huawei ME909u-521 LTE modules sometimes failed to connect in roaming environment.
48966	**Command-Line-Interface improvements** The command 'cli status dio' reported non existent DIO IN1/IN2 and OUT1/OUT2 for NB800. This was fixed and the output shows only DIO which are actually present.
49063 49743 51090	**SDK improvements** The SDK function nb_can_setattr failed if the optional parameter restart was different from 0. Fixed typo in modification time of files in nb_transfer_list.
49327	**Mismatch between VLAN network settings and DHCP settings triggers reboot** In situations where the VLAN network settings (network address/netmask) did not fit with the DHCP range configured for that network the router would go into reboot. This was fixed. Now the DHCP server on the mis-configured interface will not be started and a warning is given to the user.
49353	**Authorities certificates were not used for all HTTPS downloads** Some functions where data is downloaded from a server the "Authorities" certificates were not used. E.g. it was not possible to update WWAN module firmware from HTTPS.
51073 51087 51101 51378 51567 51568 51575 51802 52008 52608 53009 53323 53592	**GUI improvements** Changing the priority of WAN interfaces on the GUI did change bridged WLAN client interface setup. WAN links are displayed as bridgeable devices. This has been fixed. WLAN channels did not appear if WLAN band was changed. This has been fixed. Changing between 4G-Only and automatic increased the amount of transfered data. This was a failure of data display and did not affect the actual data traffic. The IAPP feature was not displayed if WLAN dual mode was configured. This has been fixed. The 4 address frame option was displayed on a NB800 if dualmode was configured. That has been fixed. The interface numbering was wrong during modem firmware update. This has been fixed. On devices without native serial interface (like NB800) the serial setup section was missing in web interface after connecting an external USB serial adapter. Display of the configuration web site of the WLAN Administration was fixed. WAN interfaces could be reconfigured to LAN if port assignment was changed in GUI. Changes on port setup could switch configured WAN interfaces to act as LAN interfaces. Userdata from the web administration interface was not escaped correctly in some cases. Clicking on 'Cancel' in the certificate settings accidentally applied the changes.
51203 51643 51923	**CAN on NB2800 failed on high traffic** On NB2800 we saw CAN bus getting stuck on high traffic due to a protocol mismatch between CAN module firmware and kernel driver.
51391	**Certification installation over CLI** It was not possible to install WLAN certifications for client mode over the CLI command. That has been fixed.
51406	**SNMP walk timeout** In certain cases a SNMP timeout could occur during a SNMP walk. That has been fixed.
51430	**Removed option "Force PMF" on NB800** It was possible to configure protected management frames (PMF) for WLAN. The chipset of the NB800 does not support PMF. That has been fixed.

Case-#	Description
51475	**uBlox TOBY-L2 improvements** Clients connected to the LAN side of the router could not communicate to the WAN network, because IP forwarding was disabled. That has been fixed.
51836	**SNMP: unknown type in vendor MIB** The MGTrapHistoryEntry in the vendor SNMP MIB was not standard conform. That has been fixed
51856	**Fixed SDK example script** The SDK example script 'dio-server.are' comtained a logical error that could trigger an error on run-time.
51939	**WLAN module order** WLAN modules were not swapped according to board descriptor. This has been fixed.
52100	**Soft bridges sometimes not in UP state after configuration** Depending on which devices were bridged on one of the soft bridges (BR1, BR2) the soft bridge was not set to state UP if no local IP address was configured. Therefor packet farwarding between these devices failed.
52293	**SW update URL was identified as invalid by mistake** Due to internal escape sequence URLs containing special characters like '&' were identified as invalid.
52309	**User names starting with 'admin' or 'root' not able to login** Additional users starting with 'admin' or 'root' like 'admin-user' were not able to login after change of administrator password.
52339	**Unrecovered loss of connection with Huawei ME909u-521 and Link-Supervision** Sometimes routers which had Link-Supervision enabled, failed to recover from LTE disconnect.
52357	**Ping supervision failed on IP pass-through** In IP pass-through the ping supervision failed to contact the server and therefor restarted the router even if the WWAN connection was fine.
52411	**No DNS on routed network adapter to LXC container** A virtual network adapter which is configured as routed interface for LXC container did not provide DNS to the LXC. DNS for such interfaces can now be configured the same way as it is done for other interfaces.
52412	**Set up bridged network interfaces for LXC guests without network and gateway** The network settings of a bridged virtual network interface should be defined by the bridge and not by the interface as it is common sense for all bridged interfaces.
52601	**NB800: DFS channels** It was possible to connect to DFS channels in client mode which are not supported, yet. That has been fixed
52927	**No connection after switching to roaming network** If a router with Huawei ME909 LTE module changes from 3G home network to 4G roaming network it sometimes lost connection and did not recover until back in home network.
53012	**NB800 WLAN firmware crash** In certain circumstances the WLAN firmware of a NB800 crashes. This was leading to stacktraces in the system logs and required an automated module restart cycle. This has been fixed and the WLAN firmware has been updated.
53078	**NB800 kernel crash at heavy traffic on IPsec** Under heavy IPsec traffic the tunnel sometimes broke down due to a failure in DMA access.
53213	**Module not connecting to private APN network** NB800 were sometimes not able to connecting to private APN networks. The module bring-up procedure was changed to fix this issue.
53587	**Certificate key handling** Changing the certificate key of the system could fail and leave the system without usable certificate keys. This was fixed.

Case-#	Description
53608	**Empty user password affected other users** If the setting 'user.0.password' contained an empty string all other users were not able to log in any more. This is not a valid configuration anyway, but it was not intended behavior either and therefor was fixed.
53619	**WLAN: disconnected clients displayed.** In certain circumstances the WLAN status and GUI was still showing some disconnected clients as connected. That has been fixed

5 Known Issues

Items listed here represent minor problems known at release time. These issues will be resolved in a later version.

Case-#	Description
49532	**NB800 shows error messages from USB subsystem on boot** There are messages like 'musb-hdrc musb-hdrc.0.auto: Failed to request rx1.' or 'musb-hdrc musb-hdrc.0.auto: musb_init_controller failed with status -517' showing up in boot log. These messages are shown due to module load order. These messages should be no errors, but info or debug messages. Never the less as a change here would mean to have an additional patch against the main line kernel and would give no functional benefit. Therefor we do not fix this.

6 ECC conversion

The flash on NB1600, NB2700, NB2710, NB3700, NB3710 and NB3720 provides an automated error correction using ECC. 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.

7 OSS Notice

We inform you that NetModule products may contain in part open source software. We are distributing such open source software to you under the terms of GNU General Public License (GPL)[1], GNU Lesser General Public License (LGPL)[2] or other open source licenses[3].

These licenses allow you to run, copy, distribute, study, change and improve any software covered by GPL, Lesser GPL, or other open source licenses without any restrictions from us or our end user license agreement on what you may do with that software. Unless required by applicable law or agreed to in writing, software distributed under open source licenses is distributed on an "AS IS" basis, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

To obtain the corresponding open source codes covered by these licenses, please contact our technical support at router@support.netmodule.com.

---

[1]GPLv2 license is available at http://www.gnu.org/licenses/gpl-2.0.txt

[2]LGPL license is available at http://www.gnu.org/licenses/lgpl.txt

[3]OSI licenses (ISC License, MIT License, PHP License v3.0, zlib License) are available at http://opensource.org/licenses

8 Change History

Version	Date	Name	Reason
1.0	2018-11-19	rosenthal	Final

NetModule AG is located at:

Maulbeerstrasse 10
CH-3011 Bern
Switzerland

info@netmodule.com
Tel +41 31 985 25 10
Fax +41 31 985 25 11

For more information about NetModule AG visit the NetModule website at *www.netmodule.com.*