Cumulative Developer's Release Notes

Summary of JANOS releases:

v2.5.1 (Released - Dec 10 2024)

- Added IP Black Listing ([#5914](#))
- Starting process in background from the command line reports PID ([#5930](#))
- Corrects DNS retry issue ([#5963](#))
- ARP table resets when network disconnects ([#5959](#))
- Correct memory checker error report stack reference ([#5938](#))
- Removed trailing spaces from file listings
- fixed postmortem power outage time report ([#5900](#))
- Sniffer reports ICMP detail ([#5961](#))
- correct elliptic curve negotiation bug ([#5905](#))
- Improve SSH communications flow control
- Corrected JanosClasses.jar runtime Integer.toHexString ([#5947](#))
- Fixed DNS retry ([#5963](#))
- Corrected Web login issues relating to Nonce table configuration ([#5971](#))
- Corrected performance issue with DNS retry for missing or invalid syslog server ([#5932](#))
- Added optional TCP grey listing to reject non-standard (malicious) connection attempts ([#5914](#))
- Added ability to disable PING ([#5914](#))
- Added SSH Fingerprint to jniorboot.log ([#5914](#))
- Corrected faulty DATE format ([#5970](#))
- Resolved issue with CAT and filenames starting with digits ([#5980](#))
- Improved cryptography performance ([#5981](#))([#5830](#))
- Enabled the ability to pipe command output to standard streams and null ([#5994](#))
- Corrected handling of NBSP in HELP output ([#5929](#))
- Enhanced EDIT to support XTERM functions including mouse ([#6080](#))

v2.5 (Released - Jun 3 2024)

- Moved to highly optimized CC_RX V3 compiler for the creation of JANOS ([#5704](#))
- Eliminated redundant login request when accessing the WebUI from a public page on the JNIOR ([#5667](#))
- SSH Server added ([#4145](#))
- Corrected missing WebSockets close frame ([#5775](#))
- Added memory leak detector ([#5821](#))
- Added support for color xterm terminals ([#5806](#))
- Enhanced HELP system formatting supporting xterm and character attributes ([#5822](#))
- Added Math functions to (PHP) scripting including the '**' exponentiation operator ([#5829](#))
- Added -M option to PS and THD commands support real-time continuous monitoring of processes
- Enhanced the built-in text editor EDIT
- Confirmed readiness for 2038 clock rollover ([#5808](#))
- Corrected FTP client race condition ([#5804](#))
- Greatly improved UTF-8 compatibility

v2.4.2 (Released - Dec 11 2023)

- Corrected JANOS runtime resetInputCounter issue ([#5585](#))
- Fixed issue with renaming folders with a longer name ([#5655](#))
- Improved Flash storage wear-leveling ([#5643](#))
- Corrected handling of strings in PHP that contain NUL characters ([#5649](#))
- Added PHP chr() function ([#5649](#))
- Utilize Gateway as fallback DNS server ([#5608](#))
- Fixed JANOS.resetInputCounter() method ([#5585](#))
- Performs HTTP redirect if SSL/Required enabled
- added Ctrl-U foreign language accent substitution ([#5673](#))

v2.4.1 (Released - Sep 1 2023)

- Resolved HELP manual generation paging issue ([#5444](#))

- Enhanced TAB auto-fill to work when editing a line ([#5446](#)) ([#5424](#))
- Allow you to force context for auto-fill using Ctrl-F and Ctrl-R ([#5446](#))
- Fix memory ownership issue with cstring_t ([#5474](#))
- Fixed DATE command problem introduced with v2.4 ([#5473](#))
- Increased ARP database size
- Corrected issue with Thread.interrupt use before the thread starts ([#5492](#))
- Added network performance information to NETSTAT ([#5515](#))
- Added bandwidth information to NETSTAT -A ([#5515](#))
- Added PS -H showing a history of operation.
- Added shutdown messages to the system log file.

v2.4 (Released - May 3 2023)

- Added hysteresis to garbage collection to eliminate GC storming ([#5291-8](#))
- Fixed web server memory leak ([#5291-14](#))
- Enhanced command line RM/DEL command to override confirmation on wildcard use ([#5292](#))
- Allow multiple commands on a single command line using separators like ';' ([#5299](#))
- Implemented command line '|' piping capability ([#5299](#))
- Enhanced CAT command with HEAD and TAIL usage to support piping ([#5299](#))
- Implemented command line conditional execution && and || syntax ([#5299](#))
- Enhanced GC -M and GC -B memory analysis to report Java class information ([#5301](#))
- Applications can optionally log to external SYSLOG server ([#5315](#))
- Hostname in SYSLOG report includes jrS/N Birthname ([#5316](#))
- Corrected direct JMP connection not forwarding console output ([#5337](#))
- Corrected direct JMP connection File Read failure ([#5340](#))
- Fixed issue with Java Sockets SoTimeout exceptions ([#5358](#))
- Adds phone home support ([#5333](#))
- Improved inter-process messaging to avoid queue assertions ([#5371](#))
- Added command line real-time network sniffer with filtering ([#5329](#))
- Added Email queue management ([#5323](#))
- Corrected REGEX matching issue ([#5317](#))
- Eliminated memory leak with JSON decode ([#5398](#))
- Fixed Web Authentication. No longer gets stuck in loop. ([#5400](#))
- Expanded command line history to 200 commands ([#5401](#))
- Eliminated dormant message queue issues ([#5291](#))
- Fixed FTPClient class issue with retrieving data ([#5390](#))
- Corrected buffer overrun by command line parameters ([#5390](#))
- Eliminated null pointer issue in network race condition ([#5390](#))
- Enhanced MANIFEST to use optional database ([#5344](#))
- Prevent illegal IP address settings blocking network use ([#4753](#))
- Corrected buffer overrun caused by security scanners ([#5365](#))
- Eliminated Resource Deadlock after assertion ([#5402](#))

v2.3 (Released - 2 Feb 2023)

Build 1.0

- Corrected memory issue with KILL and message loop use ([#5275](#))
- Corrected garbage collection issue with static classes in the JVM ([#5275](#))
- Corrected memory issue with serial port buffer resizing ([#5275-38](#))
- Delayed Java Thread startup to insure completion of initialization ([#5278](#))
- Added KILL -A feature to terminate all applications ([#5275](#))
- Initialized the Working Directory for command line scripting ([#5169](#))
- Increased network frame buffers to improve throughput ([#5211](#))
- Increased number of available application watchdogs from 8 to 16 ([#5175](#))
- Added WDT_SILENT so watchdogs can be used to schedule programs and not logged as triggered ([#5175](#))
- Updated PS process listings to display pending watchdogs as scheduled execution ([#5175](#))
- Improved PING statistics ([#5049](#))
- Eliminated assertion in loading classes using InvokeDynamic ([#5146](#))
- Eliminated memory leak in JVM class caching ([#5232](#))
- Corrected IO signature performance with IO changes ([#5081](#))
- Corrected TAB auto-complete issue with second parameter ([#5037](#))
- PHP Registry lists now sorted by name
- Eliminated chance of socket deadlock that would require a hard reboot ([#5260](#))
- Added check for network during boot logging to avoid reboot loop ([#4415-50](#))

v2.2 (Released - 7 June 2022)

- Corrected bug in creating multidimensional arrays ([#4879](#))
- Improved DEFLATE compression performance with binary files ([#4891](#))
- Corrected issue with '%' sign when logging to the syslog ([#4912](#))
- fixed dropped serial character when port is closed ([#5014](#))
- Added experimental debugging tools ([#4965](#))

v2.1.1 (Released - Fall 2021)

- Production release to accommodate component changes.

v2.1 (Released - 7 August 2021)

- Eliminated external SYSLOG Server related memory leak ([#4503](#))
- Corrected Regex issue with the OR operation ([#4606](#))
- Corrected PHP ereg() and eregi() functions ([#4606](#))
- Implemented a greatly expanded Help System ([#4614](#))
- Added PDF MIME type to the WebServer and Email systems ([#4641](#))
- Corrected JRMON latched input [R]eset command, no longer affects relays ([#4624](#))
- PHP read file access expanded to include ZIP virtual folders ([#4661](#))
- Corrected PHP issues with JSON arrays ([#4662](#))
- Corrected Order of Precedence issue with PHP mathematical expressions ([#4667](#))
- Corrected the operation of Regex '*' and '+' quantifiers when used following a group ([#4668](#))
- Corrected RENAME behavior when attempting to alter case of a filename ([#4734](#))
- Enabled PHP logical string comparisons ==, !=, <, <=, >, and >= ([#4742](#))
- Enhanced security for JANOS-Session-Id cookies ([#4692](#))
- Corrected JANOS-Session-Id handling when multiple cookies are present ([#4707](#))
- Improved non-volatile aspect of command line history ([#4712](#))
- Corrected issue with network capture completion ([#4718](#))
- Fixed issue introduced in v2.0 with IpConfig/Allow ([#4726](#))
- Corrected issue with using EXIT in the Console tab of the WebUI ([#4713](#))
- Added SHA256 (SHA2) to the MANIFEST database ([#4706](#))
- Fixed issue resulting in blank Registry keys being displayed ([#4687](#))
- Introduced new expanded Help System ([#4614](#))

v2.0 (Released - 4 March 2021)

- Improved serial diagnostics during boot ([#4286](#))
- Added DST rules for New Zealand timezones ([#4255](#))
- Added File Sharing ([#4237](#))
- Logs prior Registry key values along with changes ([#4195](#))
- Enabled NetBIOS name resolution and disabled LLMNR ([#4237](#))
- Allow product "Birthname" such as jr817120068 to be always valid in name resolution ([#4182](#))
- Corrected Websockets login issue ([#4177](#))
- Fixed issue with HTML Email content ([#4160](#))
- Added SHA384 and SHA512 ([#4159](#))
- Added text form of IP address to certificate to appease Microsoft IE ([#4157](#))
- Enhanced Registry key settings to inform as to reboot requirements ([#4150](#))
- Improved Email error reporting ([#4146](#))
- Added Galois/Counter Mode (GCM) to TLS security suites ([#4136](#))
- Removed legacy Registry editor ([#4106](#))
- JANOS renews its own self-signed certificates ([#4058](#))
- Added JSON support to PHP ([#4046](#))
- Added Command Line text editor ([#4041](#))
- Added Elliptic Curve TLS suites ([#3991](#))
- Added BAT file enhancements and scripting support ([#3710](#))
- Added the ability to retrieve files from remote servers to JRUPDATE ([#3708](#))
- IP address filtering overridden by SAFE MODE ([#3905](#))
- Add capture filter information to pcapng capture file ([#4311](#))
- PHP scandir() changed to return absolute file path ([#4318](#))
- Issue with /etc folder content in scandir() corrected ([#4319](#))
- Corrected issue with nested PHP foreach loops ([#4317](#))
- Added PHP date and time formatting function date() ([#4061](#))
- Console command line history search and selection enhancements ([#4321](#))

- Added PING Flood Mode and addressing validation option ([#4328](#))
- Corrected issue with ZIP/JAR decompression failing with some large binary files ([#4341](#))
- Added support for the standard loopback address range ([#4347](#))
- Default WebServer/Path is now /flash/www/config allowing relocation of the default configuration pages ([#4369](#))
- Corrected Registry issue with of Type 10 temperature sensors ([#4365](#))
- Batch parameter %0 now returns the command from the command line ([#4379-5](#))
- Corrected runtime issue with PHP replacing existing array content ([#4384-3](#))
- Addressed differences in Linux based terminal sessions ([#4433](#))
- Extended the ECHO command for use in scripting ([#4433](#))
- Added JMP Protocol port for use in defining capture filters ([#4416](#))
- Added JMP port and BuildTag to Beacon protocol ([#4426](#))
- Corrected PHP strrpos() and syntax shortcomings ([#4461](#))
- Enhanced ARC/ZIP/JAR command ([#4442](#))
- Improved compatibility with Linux terminal emulators ([#4425](#) / [#4439](#) / [#4433](#))

v1.9 (Released - 31 Jan 2020)

- No longer forces reboot in the event of null Pointer write event ([#3903](#))
- Adds a BEACON announcement in the event of an IP conflict ([#3915](#))
- Improved NONCE management eliminating possible issues in the presence of port scanners ([#3923](#))
- Added support for Reverse LLMNR allowing network scanners to label IP addresses with hostnames ([#3924](#))
- Corrected Sockets race condition that caused occasional reception delays and blocking ([#3925](#))
- Fixed the incorrect signed display of large input counter values in JRMON and JMP Protocol ([#3908](#))
- Adjusted the release of socket data to reduce the chances that a message might be split across separate TCP packets ([#3927](#))
- Flash performance statistics reported by JRFLASH -C more accurately provide averages ([#3943](#))
- CGI transfer of /web.log no longer blocks ([#3946](#))
- Eliminated chance of buffer overrun occurring in FTP transfer ([#3955](#))
- Beacon REBOOT now works in all cases ([#3958](#))
- Eliminated potential difficulty in obtaining network capture file ([#3969](#))

v1.8 (Released - 17 June 2019)

- Implements the JANOS Management Protocol JMP ([#3879](#))
- Adds "Block" command to JSON interfaces ([#3881](#))
- Web Server limits the effects of extremely slow connections.

v1.7.1 (Released - 3 December 2018)

- Watchdog no longer causes reboot from foreground execution ([#3796](#))
- REGEX Alternation '|' has been corrected to properly work in Group ([#3806](#))
- Corrected NULL Pointer write issue when a Group which employs alternation appears at the start of a REGEX expression ([#3806](#)).
- Resolved message pump memory issue relating to process termination ([#3807](#))
- Expand the channel range for setOutputRelay() from 0-11 to 0-15 ([#3839](#))
- Corrected network capture filtering when an IP address is to be excluded ([#3840](#))
- Supports networks using Jumbo Frames ([#3847](#))
- Eliminated assertion associated with improper use of '%n' in System.out.printf. ([#3852](#))

v1.7 (Released - 26 July 2018)

- Added ability to load single CA Certificate to be supplied on TLS connection ([#3768](#))
- Support TLS Client Certificate Verification on outgoing connections ([#3768](#))
- Added legacy PKCS1 support for externally generated certificates ([#3769](#))
- Corrected array issue with processing of deferred email transmissions ([#3666](#))
- Corrected memory issue with TAB use on the Command Line ([#3783](#))

v1.6.5 (Released - 22 May 2018)

- Corrected FTP listing issue created by the v1.6.4 release ([#3723](#))
- Corrected getRegistryList method memory leak ([#3739](#))
- Corrected 412DMX light *Flickering* ([#3742](#))
- Corrected 412DMX NAND Flash processing issue ([#3746](#))
- Corrected FTP transfer restart issue ([#3748](#))

v1.6.4 (Released - 29 Mar 2018)

- TTL is now configurable. (#3694)
- Prevent multiple Console sessions per Websocket connection. (#3697)
- Corrected PHP processing of URL parameters whose value is blank. (#3699)
- WebServer supports DEFLATE content encoding. (#3700)
- Corrected race condition with localhost socket connect. (#3707)
- Added JNIOR Protocol logging to /protocol.log. (#3711)
- Improved SDRAM stability by removing wait() instruction. (#3666)
- Fixed WebServer lockout after failure to start. (#3722)
- Corrected COM and AUX Parity configuration (#3724)
- Corrected occasional character drop over serial channels (#3713)

v1.6.3 (Released - 3 Jan 2018)

- Recognizes 412DMX configuration.
- Corrected issue with ZIP/JAR non-compressed blocks (#3657)
- Modified Websocket Reply Message so it properly indicates the message number. (#3659)
- SAFE_MODE skips App Registration in case an issue is caused by a corrupt JAR. (#3664)
- Corrected TLSv1.2 Client Hello packet length. (#3533)
- Added Registry key Email/SMTPS allowing email transfer over port 465 if TRUE. (#3533)
- Fixed File System GetAbsPath routine adding a necessary NULL pointer check. (#3667)
- Corrected memory leak associated with ConsoleProcess (exec) usage from applications. (#3668)
- Fixed memory issue in TLSv1.0 and TLSv.1.1 (#3666-24)
- Corrected GC race condition causing memory errors. (#3671)
- Corrected MANIFEST folder recursion with wildcard file specification. (#3672)
- Corrected date timestamp in the manifest.json database. (#3682)
- Empty JSON array no longer returns with 1 null object. (#3687)

v1.6.2 (Released - 27 Sep 2017)

- Corrected potential memory concern with network loopback (#3590)
- Corrected potential memory concern with syslog and process termination (#3590)
- Allows timezone customization and modification (#3586)
- Corrected Regular Expressions alternation (#3588)
- Regex wildcard '.' no longer matches carriage returns and line feeds (#3597)
- Implemented Regex support for lazy matches (#3595)
- A custom Syslog server port may be specified. (#3591)
- Added 250 Kbaud serial capability. (#3601)
- Added Mark After Break timing to the AUX serial port. (#3601)
- Added application messaging to the built-in Websockets interface. (#3601)
- AUX port on the Model 410 supports DMX512 protocol. (#3601)
- Corrected deadlock issue with downloading jniorsys.log using the DCP. (#3610)
- Corrected Beacon protocol to work with remote hosts (#3611)
- Corrected watchdog issue with buffer overrun on line input. (#3606)
- Fixed issue in starting the WebServer after the process table has been full. (#3608)
- Upgraded default RSA keys to 1024-bit. (#3628)
- WebServer/DCP no longer accepts blank username as guest login. (#3627)
- Corrected DCP loading issue that occurs when the JNIOR Protocol Server is disabled. (#3629)
- Corrected memory management issue with TCP comms and process termination. (#3619)
- IpConfig/Allow syntax error no longer causes lock-up on boot (#3644)

v1.6.1 (Released - 8 May 2017)

- Extended java.util.Json class to support Enumeration (#3466)
- JANOS.setInputCounter() method now updates monitor packet/message content (#3470)
- Created public WebServer area (#3476)
- Corrected TLS for CVE 2016-2107 to eliminate associated crash (#3481)
- Added support for v3 SSL Certificates (#2647)
- Supports adding SSL Alternative Name certificate extensions using SSL/Cert/SAN Registry key (#2647)
- Updated TLS to eliminate the POODLE vulnerability (#3485)
- TLS now supports Secure Renegotiation per RFC 5746 (#3484)
- Addressed the possibility of a BRK assertion occurring at process creation (#3389-73)
- Corrected occasional ERR_INCOMPLETE_CHUNKED_ENCODING encountered with PHP rendering (#3434-62)
- More stringent Registry Key validation (#3524)

- Access control IpConfig/Allow expanded allowing complex filtering ([#3551](#))
- Hidden files are possible now ([#3554](#))
- Added low-level RS485 AUX port driver control ([#3565](#))

v1.6 (Released - 9 Jan 2017)

- Corrected memory leak associated with syslog server reports ([#3171](#))
- Eliminated risk of command line buffer overrun ([#3172](#))
- Added JANOS.setCtrlC() programmatic control of Ctrl-C use ([#3169](#))
- Method added to the Timebase class for setting the clock ([#3075](#))
- Trimmed RTC for better accuracy ([#3177](#))
- NTP update period is now configurable ([#3177](#))
- Corrected issue impacting TLS secure connections to 2MB/4MB units ([#3200](#))
- Corrected small network memory leak ([#3206](#))
- Fixed updating Domain Name through Support Tool ([#3231](#))
- Network retries no longer block thread progress ([#3237](#))
- Iolog class refresh provides for timestamp filtering ([#3243](#))
- Iolog correctly shows inputs after reboot ([#3240](#))
- Existing files opened with "w+" will now be empty ([#3251](#))
- Corrected PHP string comparisons using logical operators ([#3268](#))
- Registry keys added to disable Websocket Files and Console functionality ([#3283](#))
- Registry key added to disable BEACON announcements ([#3286](#))
- Wide listing option added for DIR and LS commands ([#3285](#))
- NETSTAT -U option enumerates open UDP ports ([#3287](#))
- Websocket interface supports file management ([#2651](#))
- NETSTAT -C generates packet capture file ([#3254](#))
- Added packet capture filtering and promiscuous mode ([#3254](#))
- Corrected TCP/IP received packet order issue with connection close ([#3256](#))
- Programs (and batch files) without Execute attributes now cannot be run ([#3293](#))
- Corrected WebServer random loading delays ([#3315](#))
- Added SENDMAIL -S to skip text entry ([#3324](#))
- Corrected memory issue associated with the enumeration of alarmed external devices ([#3360](#))
- Corrected potential buffer overrun with WebServer authorization and large URI ([#3356](#))
- Corrected PHP short-circuit handling of logical expressions ([#3385](#))
- Resolved major TLS issue that impacted system integrity ([#3396](#))
- Eliminated possible buffer overrun on username/password entry ([#3389](#))
- Corrected JNIOR Protocol memory issue with device read error ([#3423](#))

  Updated to Build 1.0 - 25 Jan 2017

- Corrected issue where malformed TLS packet could block WebServer ([#3389-51](#))
- System process no longer blocks on sensor port access ([#3442](#))
- Added SHA-1 hash to the MANIFEST command
- Corrected thread-safe issue with SHA-1 ([#3434-25](#))
- Corrected PING command memory issue ([#3459](#))
- Application eMail interface memory issue corrected ([#3459-31](#))

v1.5 (Released - 7/15/2016)

  Updated to Build 0.1 - 9 Aug 2016

- Corrected Immutable bounds checks to prevent negative address, offset or length ([#3001](#))
- Application watchdog logs additional text information ([#3002](#))
- Lowered priority of the scheduled Security Update ([#3017](#))
- Added PHP unpack() function used in extracting binary data ([#3022](#))
- Added Math.asin, Math.acos, Math.atan, and Math.atan2 ([#3025](#))
- Better handles PHP temporary values improving performance ([#3027](#))
- Issues with Application Watchdogs and update/reboot procedures eliminated ([#3007](#))
- Adds printf formatting for applications ([#3047](#))
- PHP functions sprintf and printf added ([#3023](#))
- Added JANOS.getFreeFlash() ([#3040](#))
- ArrayUtils will now throw ArrayIndexOutOfBoundsExceptions ([#3021](#))
- Corrects PHP exit and die statement issue ([#3051](#))
- Enable PHP ereg_replace ([#3052](#))

- Corrected swapEndian for sign extension issues ([#3065](#3065))
- Corrected JAR file issues with IntelliJ and Eclipse ([#3059](#3059))
- Corrected guest WebServer login ([#3068](#3068))
- Socket assigned port number if not specified ([#3073](#3073))
- JAR integrity check revised ([#3059](#3059))
- Corrected memory bug in file decompression ([#3008](#3008))
- Eliminated memory contention related to millisecond polling routines ([#3093](#3093))
- (Build 0.1) Corrects WebServer issue for 2MB/4MB units ([#3191](#3191))

v1.4 (Released - 1 Mar 2016)

- Web Server supports compressed ZIP folders/libraries ([#2648](#2648))
- Corrected Email Retry Delay to use correct Registry Key Email/RetryDelay ([#2660](#2660))
- Corrected issue with REBOOT through HTML5 Command Console ([#2668](#2668))
- Eliminates SYSLOG packets when the SYSLOG server is not configured ([#2669](#2669))
- Corrected OnBoot notification when DHCP in use ([#2670](#2670))
- Events/Services key now disables OnAlarm and OnUsage events ([#2673](#2673))
- Corrected Registry corruption issue with name conflicts ([#2674](#2674))
- PHP now supports floatval() and doubleval() ([#2675](#2675))
- PHP now properly performs comparisons between doubles ([#2675](#2675))
- WebServer SSL port no longer fixed at 443 ([#2676](#2676))
- Corrected assertion issue with PHP header(), syslog() and var_dump() statements which have void return ([#2682](#2682))
- PHP now supports the foreach statement ([#2685](#2685))
- Added PHP isset() and empty() variable tests ([#2685](#2685))
- PHP strings now support all 256 byte codes and are no longer ASCIIZ ([#2686](#2686))
- PHP array initialization supports '=>' syntax ([#2685](#2685))
- PHP count() function supports recursion ([#2685](#2685))
- Added Octal and Hexadecimal character entry in PHP double-quoted strings ([#2686](#2686))
- Added PHP functions bin2hex() and hex2bin() ([#2686](#2686))
- Added PHP urldecode() function ([#2686](#2686))
- PHP return statement is now functional ([#2698](#2698))
- Implemented Latching Reset and Clearing Counters/Usage through Websockets ([#2702](#2702))
- ConsoleProcess class added to provide access to session streams ([#2024](#2024))
- Application access to console Environment added ([#2024](#2024))
- Jumper (between LAN and RS-232 ports) now functions as a RESET SWTICH ([#2712](#2712))
- Corrected DNS timeout utilization ([#2713](#2713))
- You can optionally specify a username in Registry keys for user IDs ([#2722](#2722))
- Implemented PHP exit() and die() constructs ([#2724](#2724))
- The $_SERVER array is now available in PHP ([#2726](#2726))
- Added Externals/$Devices key for tracking device presence ([#2730](#2730))
- Corrected websocket external device read to consistently return an empty string for absent devices ([#2731](#2731))
- Socket connection timeout can be adjusted ([#2738](#2738))
- Corrected WebServer/Path use ([#2742](#2742))
- Corrected memory leak associated with JAR file use ([#2613](#2613))
- Corrected PHP getRegistryList() with node or wildcard specifications ([#2758](#2758))
- Corrects JNIOR Protocol issue reading Registry keys longer than 255 characters ([#2785](#2785))
- Corrected Beacon Reboot issue ([#2800](#2800))
- Wesockets authentication remains valid after reboot ([#2905](#2905))
- TLS v1.2 is now supported including SHA2 (SHA256) signed certificates.

v1.3 (Released - 17 Aug 2015)

- Improved reliability of FTP upload in Passive Mode ([#2508](#2508))
- Applications can specify minimum OS requirements ([#2514](#2514))
- Corrected time zone abbreviations for DST in Date class ([#2478](#2478))
- Corrected implementation of java.lang.Math.IEEEremainder ([#2257](#2257))
- Support for Syslog Servers ([#2418](#2418))
- Corrected IllegalMonitorStateException that occurs when creating thousands of new threads ([#2535](#2535))
- Added Watchdog class for applications ([#2273](#2273))
- Added limited batch file (.BAT) functionality ([#945](#945))
- Added ECHO command ([#945](#945))
- Implemented TCP/IP Keepalive ([#2573](#2573))
- Fixed issue preventing assertions from setting the Attention flag ([#2574](#2574))
- Corrected issue that ignores the '\u0000' character formatting in JSON strings ([#2580](#2580))
- DATE command -N option no longer corrupts the IpConfig/NTPServer key ([#2581](#2581))
- Added ability to recover from a corrupt Flash File System ([#2585](#2585))

- Console access now possible through Websocket interface ([#2589](#2589))
- An application can check for other instances of itself ([#2588](#2588))
- Corrected missing native for JANOS.killProcess ([#2591](#2591))
- Now supports TLS v1.1 ([#1641](#1641), [#2601](#2601))
- FTP Server supports MLST and MLSD ([#2608](#2608))
- Corrected NTP request to be Version 4 compliant ([#2617](#2617))
- Unit registers with the local network ([#2635](#2635))
- Corrected issue with array usage in PHP ([#2637](#2637))
- Added array() construct to PHP ([#2641](#2641))
- Corrected issue with NULL assignment in PHP ([#2645](#2645))
- Added $LastNtpSuccess Registry functionality ([#2646](#2646))

v1.2.2 (Released - 8 May 2015)

- Corrected entry of large (>1,000,000,000) counter setting in JRMON ([#2454](#2454))
- Adjusted JRMON counter display to handle large count values ([#2453](#2453))
- StringBuilder class implemented as intended ([#2423](#2423))
- Beacon protocol enhanced with Attention_Required flag ([#2272](#2272))
- Corrected MSS issue in the TCP stack ([#2459](#2459))
- Reboot via JNIOR Protocol or Beacon performs coordinated process shutdown ([#2465](#2465))
- Corrected cache locking issue with renaming files in flash ([#2468](#2468))
- Corrected edit access to '$' Registry keys ([#2486](#2486))
- Unrecognized HTTP-Request no longer causes watchdog ([#2474](#2474))
- Corrected handling of corrupt/truncated JAR file ([#2475](#2475))

v1.2.1 (Released - 6 Apr 2015)

- Corrected TCP retransmission algorithm ([#2431](#2431))
- Corrected IP checksum error in delayed carry recursion ([#2431](#2431))
- Reboot through JNIOR Protocol now closes connections and applications ([#2445](#2445))
- Input counters set using raw (not scaled) counts ([#2450](#2450))
- Bug corrected in text to floating-point interpretation ([#2451](#2451))

v1.2 (Released - 2 Apr 2015)

- Revised TCP retransmission algorithm ([#2285](#2285))
- Implement FTP Server OPTS command ([#2365](#2365))
- Eliminate potential network deadlock on connect ([#2371](#2371))
- Revise REBOOT logic to allow TCP connections to close reliably ([#2377](#2377))
- Generate Registry INI file content in alphabetical order (2379)
- Correct serial port read timeout issue ([#2378](#2378))
- Implement Regex Registry search to the REGISTRY command ([#2294](#2294))
- Added assertion text for message pump related dump ([#2380](#2380))
- Correct memory corruption issue with deep polymorphism ([#2381](#2381))
- Implement polymorphism for all method parameters not just the first ([#2381](#2381))
- Implement setIn(), setOut() and setErr() in java.lang.System class ([#2381](#2381))
- Issues RST packets on attempts to communicate with non-existent connections ([#2384](#2384))
- Removes residual /temp folder content on old 2MB/4MB units ([#2383](#2383))
- Correct FTPClient transfer issue ([#2385](#2385))
- Releases residual LISTENER sockets after application termination ([#2394](#2394))
- com.integpg.system.Immutable.exists() no longer throws unwanted IOException ([#2395](#2395))
- Vector and Hashtable classes support generic typing ([#2358](#2358))
- JANOS supports enum enumerations ([#2361](#2361))
- Corrected potential memory corruption in java.lang.Object.clone() ([#2388](#2388))
- Java application source level restrictions have been lifted.
- Correct issue with lastIndexOf(int) with substrings ([#2397](#2397))
- JANOS.getInputCounter() returns counters for Model 414 channels 9-12 ([#2405](#2405))
- JANOS.setInputCounter() handles 414 extended channels ([#2406](#2406))
- Input counter multiplier now works ([#2403](#2403))
- Eliminate potential deadlock on IO interrupt ([#2410](#2410))
- Corrected Telnet options for compatibility ([#2419](#2419))
- Corrected problem with the REGISTRY command when connection drops ([#2422](#2422))
- Adjusted TCP Retransmit Timer algorithm per RFC 6298 ([#2432](#2432))
- Counter updated in Monitor packet when set in JRMON ([#2436](#2436))
- Setting Input Counters in JRMON no longer affects relay states ([#2440](#2440))

- Corrected REBOOT command trying to terminate non-existent processes ([#2444](#))
- Fixed Web Server blocking issue ([#2441](#))
- Corrected reboot procedure used by JNIOR Protocol ([#2445](#))

v1.1 (Released - 29 Jan 2015)

- Correct below freezing Type 28 temperature sensor readings ([#2312](#))
- Add Device/TimeZone Registry key ([#2302](#))
- Fix JNIOR Protocol device enumeration issue that occurs with 4 or more modules ([#2318](#))
- Object serialization in Java no longer supported ([#1956](#))
- Backslash '\' path separator no longer supported ([#2322](#))
- Implemented command line escape character '\' ([#2248](#))
- DCHP is no longer default
- Corrects Protocol Server memory corruption on reconnect ([#2324](#))
- Allows KILL by program name.
- I/O status updates transmitted over websocket for counter changes ([#2334](#))
- Adds -R option to CERTMGR to reset credentials to factory default ([#1514](#))
- No longer requires that applications be built to source level 1.4 ([#2354](#))
- JanosClasses library supports Auto-boxing ([#2359](#))

v1.0.7 (Released 8 Jan 2015)

- corrected FTP SYST command to report the proper system style ([#2266](#))
- implemented FTP SITE command for DIRSTYLE ([#2266](#))
- added the Registry Key FTP/UnixStyle to configure the default system style ([#2266](#))
- reports DIN 9-12 in JNIOR Protocol external/extended monitor packet ([#2268](#))
- corrected FileInputStream.available() to include pending buffer data ([#2271](#))
- Beacon reports actual JNIOR Protocol port when it is changed from default ([#2289](#))
- corrects I/O configuration issues with 412 and 414. Fixes Inversion of din4 for the 412.
- improved assertion macros to provide textual descriptions

v1.0.6 (Released 24 Nov 2014)

- added Type F9 LED Dimmer Module to read/write device block library ([#2220](#))
- corrected Registry restore allowing the full set of valid characters ([#2222](#))
- corrected ROUT9 thru ROUT12 status issues on the 412 ([#2215](#))
- resolved issue with an assertion within a critical section ([#2229](#))
- application assertions are emphasized in the log ([#2230](#))
- eliminated extra Registry message when a key is removed ([#2231](#))
- increased maximum message pump queue count to 200 ([#2225](#))
- sends monitor packet when input counters reset by application ([#2227](#))
- corrects JVM issue with loading large class files ([#2223](#))
- native socketRead() throws IOException if socket closes ([#2243](#))
- implements the model 414 ([#2239](#))
- improves handling of model differences for the 410, 412 and 414 ([#2239](#))
- JSON string escapement implemented ([#2244](#))
- Websocket Monitor message includes alarms ONLY when alarm triggered
- Websocket Monitor message includes a Model string
- implemented Websocket access for external devices ([#2191](#))
- Websocket Meta data carried in Requests and Responses ([#2246](#))
- Correct potential memory issue with the external device array ([#2247](#))
- Added Registry reset operation for use in sanitizing ([#1513](#))
- Added EGREP command with GREP and FIND aliases
- Regular Expression classes have been added to the Java Library and PHP ([#2249](#))
- JanosClasses.jar is now consistent no longer containing reference issues ([#2251](#))
- corrected issue with pulsed external relay mask ([#2254](#))
- iolog transition flags now an option ([#2255](#))
- corrected reporting of external 4ROUT pulsing in the iolog ([#2256](#))
- Security Update delayed until 8 hours after boot ([#2149](#))

v1.0.5 (Released 22 Sep 2014)

- implemented legacy *sendMail()* method which appears now in the **JANOS** class ([#2162](#))
- corrected *send()* and *reset()* method names in **MailComposer** class to conform to standards ([#2163](#))
- added serial port notification handling ([#773](#))

- changed getChar() blocking to wait-notify to eliminate 100% CPU indication ([#2148](#2148))
- corrected version number in dump.log ([#2183](#2183))
- fixed issue with flash file system verification ([#2203](#2203))
- corrected issue with logging assertions for non-system processes
- fixed issue with flash file system block mapping ([#2197](#2197))
- corrected flash segment reclaim algorithm ([#2197](#2197))

v1.0.4 (Released 12 Aug 2014)

- Enabled flush() functionality for Socket streams. ([#2107](#2107))
- Corrected issue with renaming folders. ([#2106](#2106))
- Corrected JNIOR Protocol monitor packet scheduling. ([#2112](#2112))
- Fixed issue with /temp folder memory allocation. ([#2111](#2111))
- Corrected FTP NLST abbreviated directory listing format.
- Opening a ServerSocket on a random port by setting port=0 now works.
- Application onClose() notification is sent when RST packet received. ([#2109](#2109))
- Corrects lock-up when closing a Java socket that hasn't been used for output. ([#2110](#2110))
- FTPClient class now available in the library. (Issue [#712](#712))
- Command line FTP client application available - must be loaded (Issue [#712](#712))
- Added *Network.isActive()* method so applications can check network availability (Issue [#2113](#2113))
- Corrected loss of data when Secure connections are closed too quickly. (Issue [#2114](#2114))
- Fixed issues with *Date.parse()* (Issue [#2116](#2116), [#2121](#2121))
- Fixed glitch with command line TAB. (Issue [#2118](#2118))
- expanded search paths for application commands to include /flash and /etc. (Issue [#2119](#2119))
- Corrected display of identifiers in NV command. (Issue [#2120](#2120))
- Restored default admin:admin account. (Issue [#2122](#2122))
- Corrected issue with setting invalid floating point values. (Issue [#2123](#2123))
- You can now define User Functions in PHP. (Issue [#2125](#2125))
- Corrected PHP issue with '$' jquery statements in double-quoted strings. (Issue [#2126](#2126))
- Enabled ability to change RS-232 port input buffer size. (Issue [#2130](#2130))
- Corrected JVM issues with casting multi-dimensional arrays. (Issue [#2136](#2136))
- Corrected GC issue with object arrays stored as an object. (Issue [#2138](#2138))
- Added *File.setLastModified()* method. (Issue [#2137](#2137))
- *SocketOutputStream.write()* methods are now blocking so data is not lost. (Issue [#2140](#2140))
- PHP can now include files.
- Added PHP File listing functions.
- Added **-S** option to the RMDIR command to recursively remove an entire directory tree.
- System logging suspended when SRAM memory is critically low to avoid reboot loop.

v1.0.3 (Released 3 Jul 2014)

- Secure Telnet sessions are indicated as secure in the log. ([#2104](#2104))
- Web Server now properly detects closing connections in the TIME_WAIT state. ([#2100](#2100))
- Corrected ASN.1 issue resulting from cstring class modifications in v1.0.2 ([#2096](#2096))
- Corrected issue where external devices stopped responding ([#2093](#2093))
- PHP sever-side scripting enhancements. ([#2078](#2078), [#2080](#2080), [#2090](#2090), etc.)
- Can now configure Digitial Input Conditioning through Registry. ([#2089](#2089))
- Removed extra FIN-ACK in FTP -closing after write. ([#2088](#2088))
- Corrected duration of TCP timeouts ([#2087](#2087))
- Improved TCP packet blocking for transmission ([#2087](#2087), [#2086](#2086))
- Added memory testing during boot ([#2098](#2098))

v1.0.2 (Released 4 Jun 2014)

- Corrected issues with IP filtering blocking DHCP ([#2034](#2034))
- Improved operation of the IPCONFIG command ([#2045](#2045))
- Corrected buffer overrun issue with long filenames/folders ([#2051](#2051))
- Implemented the /temp temporary folder ([#2044](#2044))
- Corrected implementation of digital input debounce ([#2037](#2037))
- Input inversion now takes immediate effect ([#2029](#2029))
- HELP for BYE or EXIT no longer crashes unit ([#2015](#2015))
- DATE command option -N now provides clock sync status ([#2004](#2004))
- Corrected NTP exchange to avoid dropping ACK packet ([#2005](#2005))
- Resolved issue with 412 detection - 410s now reliably detect ([#2070](#2070))
- Server-side scripting expanded -PHP useful now for file downloads ([#2071](#2071))

- Corrected message pump operation - eliminates lost messages ([#2073](#2073))
- Corrected issue when setting Registry key to NULL ([#2076](#2076))
- Java (and PHP) strings are now "binary safe" ([#2078](#2078))
- Corrected websocket protocol to ignore PONG messages ([#2079](#2079))
- Corrected SM_PIPECLOSED message data ([#2081](#2081))
- IPCONFIG command line updated (handled options more flexibly)
- IPCONFIG -A no longer forces you to specify the -M mask option
- IPCONFIG -R can be used in conjunction with -A to switch off DHCP and define new addressing at once
- IPCONFIG -D and -R report status (waits for IP lease)
- IPCONFIG -R preserves Mask, Gateway and DNS settings from DHCP to simplify fixed address settings

v1.0.1 (Released 2 May 2014)

- Improved Flash stability
- OS compatible with the Model 412 ([#2014](#2014))
- Improved HELP system
- DATE NTP request reports status ([#2004](#2004))
- Improved operation of the RTC ([#1999](#1999))
- Updated MANIFEST command ([#1997](#1997))
- Input Debounce corrected
- Input Inversion setting change takes immediate effect
- Corrected issue with JSON whitespace
- Added JSON Read/Write from/to a file

v1.0.0 (Released 31 Mar 2014)

- Initial Release

Contents: