



Release Notes for Cradlepoint Rev 6.4.2 Firmware

Products supported/tested

AER3100/AER3150

AER2100

AER1600/AER1650

IBR1100/IBR1150

IBR900/IBR950

IBR600/IBR650

IBR600B/IBR650B

IBR600C/IBR650C

IBR350

IBR850

MBR1200B

Note1: Before upgrading to new firmware, it is always a good idea to save the configuration file from your current version.

New features added in this release

(Not all features are in all products – see their respective Data Sheets)

- (IBR900) Allow WiFi-as-WAN and WiFi Client to attach to a Hidden SSID
- Added support for the Verizon Global Modem USB730L
- Multi-IMSI SIM support. Added option to **Connection Manager > profile/interface > Edit > Modem>Show Advanced Settings>Extend Connect Time**. This option defines the amount of time given to the SIM system to change to another IMSI before suspending the connection attempt.
- LP6, LP5, LPE, LP3, LP2, LP, LE. Added Physical Cell ID (PCI) to modem status
- NCP Full Tunnel Support
 - Pass all unicast traffic from LAN connect clients to NCP network.
 - Add new configuration element to Config DTD on the Router
 - Add CP router support to gatun-common Router Manager
 - Add new user configuration to UI on ECM

Global Leader in 4G LTE Network Solutions

1111 W Jefferson Street, Ste. 400, Boise, ID 83702-5389 | Toll Free: +1 855-813-3385 | Local: +1 208-424-5054 | Cradlepoint.com | Page: 1

- Add support for subordinate CAs in StrongSwan

Additional UI/Usability changes

- None

Defects fixed

- (IBR900) GPIO Expander interrupts were not firing
- (IBR900) Improved ability to roam between APs. More improvements are coming.
- (IBR1100) Clients not able to connect to 5GHz when Channel Width set to 20/40/80 Mhz Auto mode.
- (IBR900) RADIUS: NAS Port-type wrong for Wireless clients
- (IBR900) Default Time Interval attribute of GPS couldn't be set to 0
- Connection Manager. Unable to Add custom WAN Profiles bound to specific modem SIM slots.
- Added prevention of APN delete from the default profile slot.
- Aggressive Reset is now working for all modems while in certain error conditions.
- LP, LE and L modules were not displayed in modem FW upgrade page.
- Added recovery code for cases where modems unplug due to an internal error and fail to re-plug.
- Added recovery code for cases where modems re-plug excessively under corner case conditions.
- LP4 module failed to attach during configuration due to no signal strength.
- L2 (Band 14). Module connection delay is now resolved.
- USB Sprint modem U772 no longer stays in unconfigured state.
- Removed extraneous modem firmware update events in the log
- Fixed two issues with CP Secure Web Filter
 - 2100 not authorized
 - Extended DNS records not recognized by some DNS servers
- Network Web Filter Rules fail with HTTPS sites
- Unable to clear device configuration with Hotspot configured.
- Race between routing and NAT causing VoIP ATA devices not being NAT'd on failover.
- 802.1x LAN authentication does not initiate
- Reset connection tracking for failed tunnels so that they all come up when switching WANs.



- Problem with connection statistics when there are multiple active WANs without load balancing.

Security issues

- Dnsmasq security issues: We updated dnsmasq to fix numerous security vulnerabilities documented at <http://knowledgebase.cradlepoint.com/articles/Support/Dnsmasq-Security-Update>.
- WPA2 security issues known as “KRACK” (Key Reinstallation Attacks). We updated client drivers and WPA supplicants to remove the security vulnerabilities documented at <http://knowledgebase.cradlepoint.com/articles/Support/WPA-and-WPA2-Vulnerabilities-KRACK>.
 - Please note that four products have fixes for the most severe KRACK vulnerabilities, but still have issues with a group key replay.
 - IBR1100, IBR600, IBR600B, MBR1200B
 - All vulnerability tests pass except for a subset related to a vendor group key replay issue, which will be fixed in a follow-up release. This specifically affects multicast and broadcast traffic, which is rare. SSDP (UPnP), IPTV, and Apple Bonjour are examples of multicast and broadcast traffic. Unicast traffic, which generally accounts for the majority of secure traffic in the system, has been fixed.

Known issues

- DNS requests from CP Secure Web Filter can be interpreted as UDP port scans by IDS.
 - Workaround is to disable the UDP Port Scan signature (4026531849)



Release Notes for Cradlepoint Rev 6.4.0 Firmware

Products supported/tested:

AER3100/AER3150

AER2100

AER1600/AER1650

IBR1100/IBR1150

IBR900/IBR950

IBR600/IBR650

IBR600B/IBR650B

IBR600C/IBR650C

IBR350

CBA850

MBR1200B

Note1: Before upgrading to new firmware, it is always a good idea to save the configuration file from your current version. This firmware version will remove a configuration for version 3.2 or lower and will not try to keep your settings.

New features added in this release

(Not all features are in all products – see their respective Data Sheets)

- Auto Tunnel
 - Auto-Tunnel allows customers to build an optimized, resilient network on top of Cradlepoint's best in class multi-WAN solutions. Networks using auto-tunnel can seamlessly switch between WAN sources, providing the best customer experience with virtually zero downtime. This transparent failover can be coupled with all Cradlepoint's Traffic Control functionality to optimize the link in use for the best customer experience. On top of all the end user benefits, auto-tunnel is dramatically simpler to setup than the typical IPSec VPN.
 - Benefits
 - Prevents downtime as networks failover between links
 - Removal of any dead zones in coverage
 - Optimized performance of network
 - Simple to set up

Global Leader in 4G LTE Network Solutions

1111 W Jefferson Street, Ste. 400, Boise, ID 83702-5389 | Toll Free: +1 855-813-3385 | Local: +1 208-424-5054 | Cradlepoint.com | Page: 4

- Secure connectivity

- IPv6 Support
 - Support for dual-stack (IPv4 and IPv6) was added to these router features:
 - GRE
 - Content Filtering
 - VPN Tunnels
 - NTP
 - SSH Hop
 - Remote Access
 - WebAccess
 - WebFilter
 - Zscaler
 - OpenDNS
 - DNS Proxy
 - VRRP
 - Firewall WAN/LAN NAT Chains
 - SNMP WAN
 - USB to Serial
 - VTI

- Japan Wi-Fi Support for IBR900 and AER1600
- (6.3.3) Added Threat Management support to IBR9x0 and IBR6x0C. This is enabled under the Security -> Threat Management menu. This is a licensable feature and is not enabled by default.
- Introduced Connection Sets in Connection Manager. Used to define a group of interfaces that connects or disconnects all interfaces as a set whenever a member of the group connects or disconnects due to the configured priority rules. When enabled, Connection Sets overlay load balance configurations.
- Introduced Connection State in Connection Manager. Used to configure the profile/interface to Always On, Standby and Connect as needed, replacing the Standby checkbox.
- LP6/LP5/LPE/LP3 only. Added support for multiple PDNs as supported on certain SIMs. With appropriately provisioned SIMs allows a single modem to simultaneously support multiple WAN interface/connections (PDNs) each with their own unique IP address. SIMs of this type are used for split billing, public/private network traffic, and other features.
- (AER) WiFi SSID now supports Unicode characters.

Additional UI/Usability changes

- NetCloud rebranding, the router UI reflects the NetCloud OS (which used to be referred to as router firmware) and NetCloud (which used to be referred to as ECM) rebranding.
- Added Status and Config pages for Auto Tunnel feature
- Added additional IPv6 dual stack options to Connection Manager

Global Leader in 4G LTE Network Solutions

- Modified WAN Verify Idle Check Interval from minimum of 10 secs to 2 secs (T-Mobile)
- LP4/LP5 only. Added carrier / PDN authentication (user name / password credential options) to these modems: Connection Manager>profile/interface>Edit>SIM/APN/Auth
- LP6/LP5 only: Added ability to disable Carrier Aggregation (enabled by default). Connection Manager>profile/interface>Edit>Modem>Show Advanced Settings
- LP6/LPE only. Added Sprint M2M SIM account type support.
- LP5 only. Added support for DHCP relay and voice reject options: Connection Manager>profile/interface>Edit>Modem>Show Advanced Settings

Defects fixed

- Fixed an issue with device alerts where the alert queue would stall if the WAN went down while sending an email.
- Improvements made to Threat Management to avoid triggering the watchdog timer.
- Fixed a core config store line in the PUT path that ensures no uuid's in paths for callbacks. This was causing a problem where NCM would send down uuid's in path (that aren't the leaf) that would cause config to suspend with validators that don't expect uuid's.
- Needed to re-write portions of the Zscaler service to resolve race conditions and state machine problems that were causing service disruptions at some customer sites.
- An upgrade to the internal web server for the previous version of firmware caused hotspot to stop working in some corner cases. This was fixed.
- Configuring the inactivity timeout for the IBR350 caused the ipsec vpn tunnel not to initiate as expected during WAN failover.
- Changes to improve the user experience when policy based routing are used in conjunction with VRRP.
- Enhanced the BGPpeers SDK app to work around a bug in firmware version 6.2 where the LAN networks would disappear after switching routers in VRRP.
- Dual SIM management improvements.
 - Modem AT config script entry is now possible modems that have both SIM interfaces enabled.
 - Resolved router reboot if issue with modem hard reset with dual SIMs.
 - Better recovery from unexpected plug in download mode.
 - Optimized the controller with HW SIM presence detection
 - Bypass configuration of 2nd SIM slot if no SIM is present
- LP5 only. Edit of modem profile or interface is now allowed after editing the 1st time.
- LP4 only. Miscellaneous improvements to the driver, such as better stability if in a dock, now re-plugs properly if there is a failure after SIM switching
- Modem TAC number is now attainable in the status tree via CLI command. This value applies only to LTE connections.
- LPE/LP3 only. T-Mobile dynamic IP voices SIMs no longer overwrite the MDN with "411".
- Resolved UI display where SIM PIN/PUK status and counts were not in sync.

- (AER31x0) PoE devices on power up would not use maximum power available. PSE should support four Class III devices on 60W budget.
- (IBR1100) Clients not able to connect to 5GHz when Channel Width set to 20/40/80 MHz Auto.
- WiFi-as-WAN EAP-TLS not working correctly or possible misconfiguration of NPS on Windows Server. We made changes in the UI to allow setting the Username/Identity that Windows Server required. Note that it should be the same Identity as the Certificate.
- Resolved GPS memory leak that resulted in Out of Memory router messages.
- Added modem workaround for SIMs with delayed connection interaction.
- (IBR1100) RADIUS fails to authenticate on reboot until WiFi radio is disabled/enabled.

Security issues

- Updated OpenSSL to 1.0.1u
- (IBR900) Client wifi connectivity issues. Even though wpa2 is enabled the selected network is open on the client. The IBR900 UI allowed a user to configure WPA1 (“WPA/WPA2 Personal” in UI) and enable Protected Management Frames (PMF). These settings are mutually exclusive and caused the security mode to be set to Open instead of WPA1. A change was made to not enable both settings; PMF can only be enabled when using WPA2 security.

Modems tested *(new 6.4.2 modems / modem platforms are in blue text)*

Cradlepoint Cellular Devices (Embedded & USB Modems)

Cradlepoint AER16x0LPE-AT / AT&T (USA)

Cradlepoint AER16x0LPE-GN / T-Mobile, US Cellular (USA); Generic (North America)

Cradlepoint AER16x0LPE-SP / Sprint (USA)

Cradlepoint AER16x0LPE-VZ / Verizon (USA)

Cradlepoint AER16x0LP4 / AT&T, T-Mobile, Verizon (USA)

Cradlepoint IBR350L / Verizon (USA)

Cradlepoint IBR350LPE-AT / AT&T (USA)

Cradlepoint IBR350LPE-GN / T-Mobile (USA); Generic (North America)

Cradlepoint IBR350LPE-SP/ Sprint (USA)

Cradlepoint IBR350LPE-VZ / Verizon (USA)

Cradlepoint IBR350P2 / AT&T (USA); Generic GSM-compatible locations (World)

Cradlepoint IBR6x0B-LP4 / AT&T, T-Mobile, Verizon (USA)

Global Leader in 4G LTE Network Solutions



Cradlepoint IBR6x0C-LPE-AT / AT&T (USA)

Cradlepoint IBR6x0C-LPE-GN / T-Mobile (USA); Generic (North America)

Cradlepoint IBR6x0C-LPE-SP / Sprint (USA)

Cradlepoint IBR6x0C-LPE-VZ / Verizon (USA)

Cradlepoint IBR6x0LPE-AT / AT&T (USA)

Cradlepoint IBR6x0LPE-GN / T-Mobile, US Cellular (USA); Bell Mobility, Rogers, Telus (Canada); Generic (North America)

Cradlepoint IBR6x0LPE-SP / Sprint (USA)

Cradlepoint IBR6x0LPE-VZ / Verizon (USA)

Cradlepoint IBR6x0LP3-EU / Generic (Europe)

Cradlepoint IBR900LPE-VZ / Verizon (USA)

Note: Also certified on AT&T (USA), Sprint (USA), and Generic (North America)

Cradlepoint IBR9x0LP5 / Generic (APAC)

Cradlepoint IBR9x0LP6 / AT&T, Sprint, T-Mobile, Verizon (USA); Generic (North America, Europe)

Cradlepoint IBR11x0LPE-AT / AT&T (USA)

Cradlepoint IBR11x0LPE-GN / C-Spire, T-Mobile, US Cellular (USA); Bell Mobility, Rogers, Telus (Canada); Generic (North America)

Cradlepoint IBR11x0LPE-SP / Sprint (USA)

Cradlepoint IBR11x0LPE-VZ / Verizon (USA)

Cradlepoint IBR11x0LP3-EU / Generic (Europe), Telstra (Australia)

Cradlepoint IBR11x0LP6 / AT&T, Sprint, T-Mobile, Verizon (USA); Generic (North America, Europe)

Cradlepoint MC400L2 / Public Safety Band 14 only (USA)

Cradlepoint MC400LPE-AT / AT&T (USA)

Cradlepoint MC400LPE-GN / T-Mobile, US Cellular (USA); Bell Mobility, Rogers, Telus (Canada); Generic (North America)

Cradlepoint MC400LPE-SP / Sprint (USA)

Cradlepoint MC400LPE-VZ / Verizon (USA)

Cradlepoint MC400LP3-EU / Generic (Europe)

Cradlepoint MC400LP4 / AT&T, T-Mobile, Verizon (USA)

Cradlepoint MC400LP5 / Generic (APAC)

Cradlepoint MC400LP6 / AT&T, Sprint, T-Mobile, Verizon (USA); Vodafone (Worldwide),



Generic (North America, Europe)

3rd Party USB Cellular Modems

Franklin U770 (“Sprint Plug-In-Connect Tri-Mode USB Modem”) / *Sprint (USA)*

Franklin U772 (“Franklin U772 USB Modem”) / *Sprint (USA)*

Huawei E3276 / *Telus (Canada)*

Huawei E368 (“AT&T USBConnect Force 4G”) / *AT&T (USA)*

Netgear AC340U (“AT&T Beam”) / *AT&T (USA)*

Netgear AC341U (“NETGEAR® 341U USB Modem”) / *Sprint (USA)*

**supports Netgear firmware 4.07.01.11 and MR2 firmware 45.04.20.00*

Novatel 551L LTE (“Verizon USB551L”) / *Verizon (USA)*

Novatel U620L (“Verizon MiFi® 4G LTE Global USB Modem U620L”) / *Verizon (USA)*

Novatel U679 (“4G LTE Novatel Wireless U679 Turbo Stick”) / *Bell Mobility (Canada)*

[Novatel USB730L](#) (“Verizon Global Modem USB730L”) / *Verizon (USA)*

Pantech UML295VW (“Verizon 4G LTE USB Modem UML2954G LTE”) / *Verizon (USA)*

**requires Pantech firmware version L0295VWD821F.B4 or later*

Portsmith PSA1U1M (“Portsmith USB Client to Analog Modem Adapter”) / *POTS phone providers*

Sierra Wireless 308 USB (“AT&T USBConnect Shockwave”) / *AT&T (USA)*

Sierra Wireless 313U (“AT&T USBConnect Momentum 4G”) / *AT&T (USA)*

Sierra Wireless 320U (“Telstra USB 4G (Sierra AirCard 320U)”) / *Telstra (Australia)*

Sierra Wireless 330U (“4G LTE Sierra Wireless U330 - Turbo Stick”) / *Bell Mobility (Canada)*

Sierra Wireless 330U (“LTE Rocket Stick – Sierra Wireless AirCard 330U”) / *Rogers (Canada)*

ZTE MF683 (“T-Mobile Rocket 3.0 4G Laptop Stick”) / *T-Mobile (USA)*

Analog Modems

Portsmith PSA1U1M (“Portsmith USB Client to Analog Modem Adapter”) / *POTS phone providers*

Portsmith PS6EX1M (“Portsmith ExCard to Analog Modem Adapter”) / *POTS phone providers (ExpressCard format, compatible with MBR1400s, MBR1200B, & CBA750B only)*

Known issues

VTI

- A known issue exists around connecting two Cradlepoint devices using VTI if using an IPv6 address as the remote gateway and using IPv4 for the virtual tunnel interface IP. As a workaround use IPv6 as the internal VTI IP.

LTE

- Unless you have a specific service from your carrier, LTE modems will not generally provide an externally-available IP address. Services, such as Remote Management, will not work.

Modem

- Franklin U770. The Modem's Ethernet address conflicts with the default address of the Guest LAN. A warning message is placed in the log and the Guest LAN is disabled. If you change the address of the Guest LAN to a non-conflicting address, this restriction will not occur.
- Sierra Wireless 313U and 330U. When these modems connect on 2G or 3G bands, specifically on GSM 850, they will sometimes cause interference on the USB bus, resulting in the modem not plugging properly. If this occurs, attaching the modem to a USB extension cable will generally fix the problem.
- The following USB modems contain an embedded web server through which many modem settings are configured. To access the modem's web pages, you must be logged in as the router administrator. Once logged in, you can then access the modem web pages at these given IP addresses:

Franklin U770 and U772 / *Sprint (USA)* -> 192.168.10.1

Netgear AC341U * / *Sprint (USA)* -> 192.168.1.1 (address is configurable)

Pantech UML295VW * / *Verizon (USA)* -> 192.168.32.2

Novatel USB730L / *Verizon (USA)* -> 192.168.1.1 (address is configurable)

* The modem web pages are available only when the modem is operating in NAT mode.