

Software Release Notes

mPower® Edge Intelligence Software Includes mPower 6.0.4

Models Impacted:

MultiTech Conduit® Gateway
MultiTech Conduit® IP67 Base Station
MultiTech Conduit® IP67 200 Series Base Station
MultiTech Conduit® AP Access Point



Overview

This document includes the release notes and cumulative changelog for mPower Edge Intelligence software. Detailed information is listed in reverse chronological order, starting with the latest mPower release.

The latest version includes new features and enhancements to the DeviceHQ interface, cellular hardware support, Modbus protocols, user interface, and networking and security features.

Updated mPower 6.x.x release notes are available [< here >](#)

Downloadable Versions:

- mPower 6.0.4 Availability: January 2023
- mPower 6.0.2 Availability: October 2022
- mPower 6.0.1 Availability: September 2022
- Visit <http://www.multitech.net/developer/downloads/>

mPower™ Edge Intelligence is MultiTech's embedded software offering delivering network flexibility, enhanced security, and manageability for scalable Industrial Internet of Things (IIoT) solutions. mPower Edge Intelligence simplifies integration with a variety of popular upstream IoT platforms to streamline edge-to-cloud data management and analytics, while also providing the programmability and processing capability to execute critical tasks at the edge of the network to reduce latency, control network and cloud services costs, and ensure core functionality – even in instances when network connectivity may not be available.

Contents

mPower 6.0.4	(January 2023)
mPower 6.0.2	(October 2022)
mPower 6.0.1	(September 2022)
mPower 6.0.0	(May 2022)
Revision History	

mPower 6.0.4 Changelog and Overview

Released: January 2023

Status: Downloadable January 2023

Updates in mPower 6.0.4, from [mPower 6.0.2](#)

New Features & Enhancements	Operating System	Networking & Security	Bug Fixes	Known Behaviors	Deprecations	Schedule	Models Impacted	Upgrade Process
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New Features & Enhancements (mPower 6.0.4)

Hardware Support		
MTCDDT-247A, MTCDDTIP-267A Devices Only <ul style="list-style-type: none"> In mPower 6.0.4, WiFi/BT firmware is updated to version 2.5.1.11 Release Notes: https://github.com/SiliconLabs/RS911X-nLink-OSD/commit/591aae04861c6c7ab374e03135be5d58ffb8c62f 		Enhancement GP-1840
LoRaWAN Enhancement - Reset GPS after PPS Reconnection <ul style="list-style-type: none"> mPower 6.0.4 detects when PPS is lost and when PPS returns, the gateway GPS is reset In previous versions of mPower, loss of PPS results in invalid GPS timestamps attached to received packets Resetting the gateway GPS upon PPS reconnect restores the correct behavior 		Enhancement GP-1825 GP-1826 GP-1827
MQTT Bridge Password <ul style="list-style-type: none"> In mPower 6.0.4, MQTT bridge password allows spaces In previous versions of mPower, MQTT bridge password did not allow spaces Some brokers (including Microsoft Azure IoT Hub) support passwords with spaces 		Enhancement GP-1854

Networking & Security (mPower 6.0.4)

IP Defense - DoS Prevention <ul style="list-style-type: none"> In mPower 6.0.4, DoS prevention is disabled by default In previous versions of mPower, DoS prevention was enabled by default 		Enhancement GP-1844
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Bug Fixes (mPower 6.0.4)

LoRaWAN Packet Table <ul style="list-style-type: none"> In previous versions of mPower, LoRaWAN, Packets, Packet Details were not being displayed properly This issue has been fixed in mPower 6.0.4 		User Interface TS-5111718
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Schedule (mPower 6.0.4)

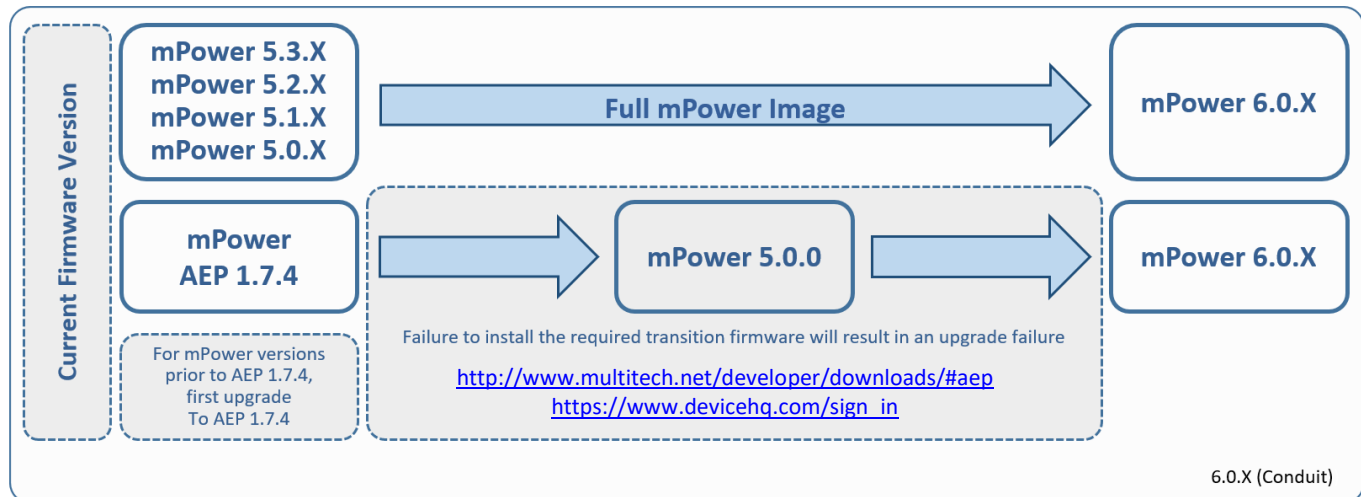
- Downloadable Versions
 - mPower 6.0.4 Availability: January 2023
 - Visit <http://www.multitech.net/developer/downloads/>
 - DeviceHQ: January 2023
- Manufacturing Updates:
 - Download only
 - Devices that ship from MultiTech will not be impacted
- Differential Images:
 - Differential mPower updates are not available for mPower 6.0.4

Models Impacted (mPower 6.0.4)

- MultiTech Conduit® Gateway
 - MTCDDT-240A, MTCDDT-246A, MTCDDT-247A
 - MTCDDT-L4E1, MTCDDT-L4G1, MTCDDT-L4N1, MTCDDT-LAT3, MTCDDT-LAP3, MTCDDT-LDC3, MTCDDT-LSB3
 - Hardware versions: MTCDDT-0.1, MTCDDT-0.2
- MultiTech Conduit® IP67 Base Station
 - MTCDDTIP-266A, MTCDDTIP-267A
 - MTCDDTIP-L4E1, MTCDDTIP-L4G1, MTCDDTIP-L4N1, MTCDDTIP-LAP3, MTCDDTIP-LDC3, MTCDDTIP-LSB3
 - Hardware versions: MTCDDTIP-0.0, MTCDDTIP-0.1
- MultiTech mCard™ Gateway Accessory Cards
 - MTAC-LORA-H-868, MTAC-LORA-H-915, MTAC-LORA-H-923-JP
 - MTAC-003E00, MTAC-003U00
 - MTAC-GPIO, MTAC-MFSE-DTE, MTAC-MFSE-DCE, MTAC-ETH, MTAC-XDOT
 - Note: MultiTech mCard available individually and in select Conduit gateways (MTCDDT-series) and IP67 base stations (MTCDDTIP- series)
- MultiTech Conduit® IP67 200 Series Base Station
 - MTCDDTIP2-EN
 - MTCDDTIP2-L4E1, MTCDDTIP2-LNA3

Upgrade Process (mPower 6.0.4)

To install mPower 6.0.4, the Conduit gateway must be upgraded to mPower 5.0.0 or higher. Customers that are running earlier versions of mPower should use the following upgrade process.



Differential file updates are also available. Visit <https://support.multitech.com/> to create a support case and request access to differential file updates.

Using an old configuration file on new Conduit devices may result in the new devices becoming non-functional. To successfully update new Conduit devices, create separate configuration templates for each type of Conduit device:

- Hardware model (MTC DT, MTC DTIP)
- Hardware version (MTC DT-0.1, MTC DT-0.2, MTC DTIP-0.0, MTC DTIP-0.1)
- Cellular radio (-L4G1, -L4N1, -L4E1)
- mPower version (mPower 5.3.7, mPower 5.3.8s-s1, mPower 6.0.4)

When upgrading a device fleet:

1. Upgrade the mPower version on one device
2. Modify the user-specific configuration settings
3. Perform in-house testing and adjust settings if necessary
4. Use the newly developed configuration file as part of field updates when the new version of mPower is widely deployed

mPower 6.0.2 Changelog and Overview

Released: October 2022

Status: Shipping October 2022

Updates in mPower 6.0.2, from [mPower 6.0.1](#)

New Features & Enhancements	Operating System	Networking & Security	Bug Fixes	Known Behaviors	Deprecations	Schedule	Models Impacted	Upgrade Process
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Bug Fix (mPower 6.0.2)

MTCDTIP2 Devices Only <ul style="list-style-type: none"> In mPower 6.0.1, it was discovered that after upgrading the MTCDTIP2 devices from mPower 5.3.8 to mPower 6.0.1, LoRa Packet Forwarder and Basic Station modes are not available in the LoRaWAN Network Settings In mPower 6.0.2, this issue is resolved 	TS-5113039
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Schedule (mPower 6.0.2)

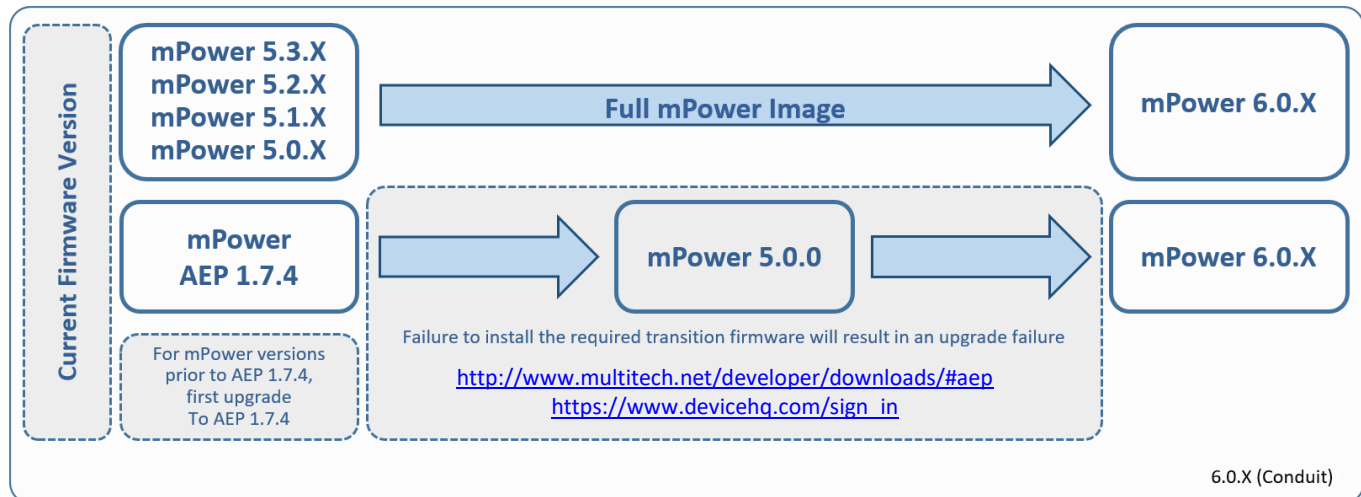
- Downloadable Versions
 - mPower 6.0.2 Availability: October 2022
 - Visit <http://www.multitech.net/developer/downloads/>
 - DeviceHQ: October 2022
- Manufacturing Updates:
 - Devices that ship from MultiTech starting in October 2022 will include mPower 6.0.2
 - See part numbers impacted for details
- Differential Images:
 - Differential mPower updates are not available for mPower 6.0.2

Models Impacted (mPower 6.0.2)

- MultiTech Conduit® IP67 200 Series Base Station
 - MTCDTIP2-EN
 - MTCDTIP2-L4E1, MTCDTIP2-LNA3

Upgrade Process (mPower 6.0.2)

To install mPower 6.0.2, the Conduit gateway must be upgraded to mPower 5.0.0 or higher. Customers that are running earlier versions of mPower should use the following upgrade process.



Differential file updates are also available. Visit <https://support.multitech.com/> to create a support case and request access to differential file updates.

Using an old configuration file on new Conduit devices may result in the new devices becoming non-functional. To successfully update new Conduit devices, create separate configuration templates for each type of Conduit device:

- Hardware model (MTCAP, MTCDT, MTCDTIP)
- Hardware version (MTCAP-0.0, MTCDT-0.1, MTCDT-0.2, MTCDTIP-0.0, MTCDTIP-0.1)
- Cellular radio (-L4G1, -L4N1, -L4E1)
- mPower version (mPower 5.3.7, mPower 5.3.8s-s1, mPower 6.0.2)

When upgrading a device fleet:

5. Upgrade the mPower version on one device
6. Modify the user-specific configuration settings
7. Perform in-house testing and adjust settings if necessary
8. Use the newly developed configuration file as part of field updates when the new version of mPower is widely deployed

mPower 6.0.1 Changelog and Overview

Released: September 2022

Status: Shipping September 2022

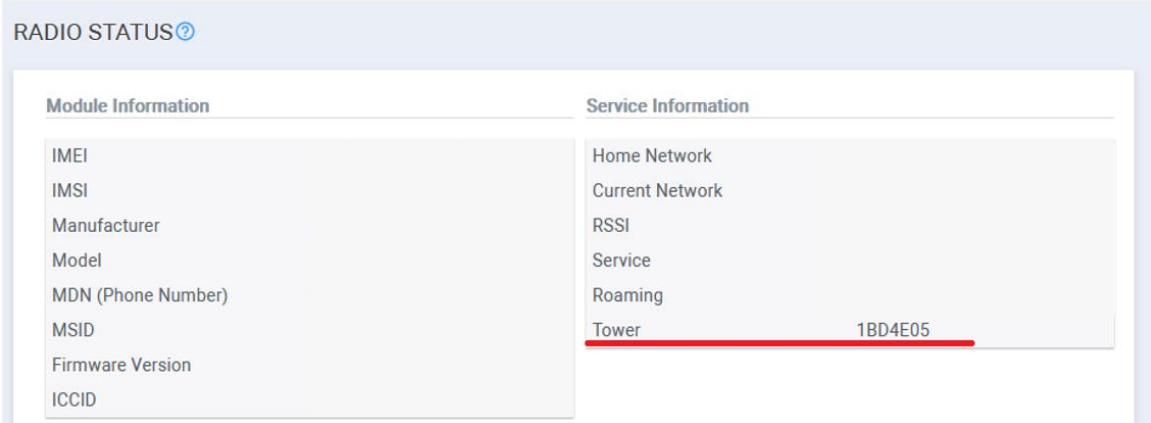
Updates in mPower 6.0.1, from [mPower 6.0.0](#)

New Features & Enhancements	Operating System	Networking & Security	Bug Fixes	Known Behaviors	Deprecations	Schedule	Models Impacted	Upgrade Process
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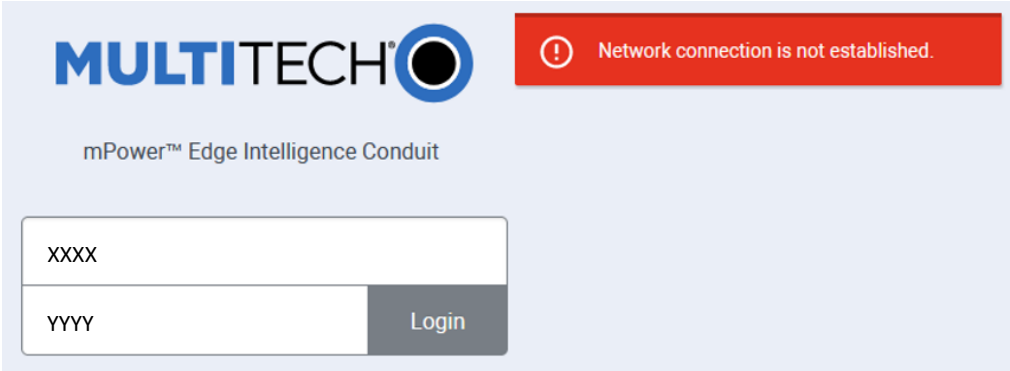
Critical Bug (mPower 6.0.1)

MTCDTIP2 Devices Only <ul style="list-style-type: none"> After being upgraded from mPower 5.3.8 to mPower 6.0.1, LoRa Packet Forwarder and Basic Station modes are not available in the LoRaWAN Network Settings In mPower 6.0.2, this issue is resolved 	TS-5113039
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New Features and Enhancements (mPower 6.0.1)

Software and Services	
LoRa Network Server – Database Backup <ul style="list-style-type: none"> When network time is not set or is lost, LoRa database backup will load the wrong files and a reboot is required. In mPower 6.0.1, timestamps are not required for database backup and loading. The database backup also writes two copies of each back up interval to provide redundancy 	Enhancement TS-5111635
Hardware Support	
RADIO STATUS Page Tower ID is now presented in the Service Information section 	Enhancement GP-1657 MTX-4547
Verizon Wireless – Updated APN Behavior Devices impacted: MTCAP-LNA3, MTCDT-L4N1, MTCDTIP-L4N1 models When the MNO is defined as Verizon, the SMS command #apn returns the message: <i>APN is obtained automatically from the Verizon network</i>	Enhancement GP-1596 MTX-4489


Cellular Configuration – Dial-on Demand <ul style="list-style-type: none"> The wording of the tooltip for the dial-on-demand label has been updated Tooltip in mPower 6.0.1 <i>Enable or disable Dial-on-Demand. If Enabled, the device will bring up and maintain a cellular connection while activity is detected on the Cellular interface</i> Tooltip in earlier versions of mPower <i>Enable or disable Dial-on-Demand. If Enabled, the device will bring up and maintain a cellular connection while activity is detected on the LAN interface</i> 	Enhancement MP-1606 MTX-4500																																						
User Interface																																							
Web User Interface, status definition updates <table border="1" data-bbox="155 611 1265 1312"> <thead> <tr> <th>Updated Status Definition in mPower 6.0.1</th><th>Previous Status Definition</th></tr> </thead> <tbody> <tr> <td colspan="2">DEVICE INFORMATION Page - Cellular WAN State</td></tr> <tr> <td>Link is up</td><td>PPP Link is up</td></tr> <tr> <td>Link is down</td><td>PPP Link is down</td></tr> <tr> <td>In process of establishing link</td><td>In process of establishing PPP link</td></tr> <tr> <td>Cellular is not running</td><td>PPP is not running</td></tr> <tr> <td colspan="2">SERVICE STATISTICS Page - TCM/ICMP Keep Alive</td></tr> <tr> <td>IDLE, since link is not up</td><td>IDLE, since PPP link is not up</td></tr> <tr> <td colspan="2">CELLULAR STATISTICS Page - Cellular Link</td></tr> <tr> <td>Link is up</td><td>PPP Link is up</td></tr> <tr> <td>Link is down</td><td>PPP Link is down</td></tr> <tr> <td>In process of establishing link</td><td>In process of establishing PPP link</td></tr> <tr> <td>Cellular is not running</td><td>PPP is not running</td></tr> <tr> <td colspan="2">NETWORK INTERFACE CONFIGURATION Page - Network Type</td></tr> <tr> <td>Cellular PPP</td><td>PPP</td></tr> <tr> <td>Cellular WWAN</td><td>PPP</td></tr> <tr> <td colspan="2">NETWORK INTERFACE CONFIGURATION – IPv4 Settings - Mode</td></tr> <tr> <td>Auto</td><td>PPP</td></tr> <tr> <td>Auto – Addressed Only</td><td>PPP – Addresses Only</td></tr> </tbody> </table> <ul style="list-style-type: none"> Associated HELP files have also been updated to reflect these updates All other Cellular WAN status are unchanged 	Updated Status Definition in mPower 6.0.1	Previous Status Definition	DEVICE INFORMATION Page - Cellular WAN State		Link is up	PPP Link is up	Link is down	PPP Link is down	In process of establishing link	In process of establishing PPP link	Cellular is not running	PPP is not running	SERVICE STATISTICS Page - TCM/ICMP Keep Alive		IDLE, since link is not up	IDLE, since PPP link is not up	CELLULAR STATISTICS Page - Cellular Link		Link is up	PPP Link is up	Link is down	PPP Link is down	In process of establishing link	In process of establishing PPP link	Cellular is not running	PPP is not running	NETWORK INTERFACE CONFIGURATION Page - Network Type		Cellular PPP	PPP	Cellular WWAN	PPP	NETWORK INTERFACE CONFIGURATION – IPv4 Settings - Mode		Auto	PPP	Auto – Addressed Only	PPP – Addresses Only	Enhancement GP-913 MTX-4189 GP-1595
Updated Status Definition in mPower 6.0.1	Previous Status Definition																																						
DEVICE INFORMATION Page - Cellular WAN State																																							
Link is up	PPP Link is up																																						
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CELLULAR STATISTICS Page - Cellular Link																																							
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In process of establishing link	In process of establishing PPP link																																						
Cellular is not running	PPP is not running																																						
NETWORK INTERFACE CONFIGURATION Page - Network Type																																							
Cellular PPP	PPP																																						
Cellular WWAN	PPP																																						
NETWORK INTERFACE CONFIGURATION – IPv4 Settings - Mode																																							
Auto	PPP																																						
Auto – Addressed Only	PPP – Addresses Only																																						
Web Interface, CELLULAR STATISTICS Page, terminology change <table border="1" data-bbox="155 1457 1265 1570"> <thead> <tr> <th>Updated Definition in mPower 6.0.1</th><th>Previous Definition</th></tr> </thead> <tbody> <tr> <td colspan="2">CELLULAR STATISTICS Page - Cellular</td></tr> <tr> <td>Cellular Trace</td><td>PPP Trace</td></tr> </tbody> </table> <ul style="list-style-type: none"> If cellular mode is PPP, Cellular Trace is only available Associated HELP files have also been updated to reflect these updates If cellular mode is WWAN, Cellular Trace is hidden 	Updated Definition in mPower 6.0.1	Previous Definition	CELLULAR STATISTICS Page - Cellular		Cellular Trace	PPP Trace	Enhancement GP-1568 MTX-4460 GP-1595																																
Updated Definition in mPower 6.0.1	Previous Definition																																						
CELLULAR STATISTICS Page - Cellular																																							
Cellular Trace	PPP Trace																																						
Web Interface, CELLULAR STATISTICS Page <ul style="list-style-type: none"> Cellular logs pane is added and always displayed, regardless of cellular mode (PPP or WWAN) The cellular logs pane includes all logs related to cellular functionality 	Enhancement GP-1568 MTX-4460																																						

Web Interface, Login Page <ul style="list-style-type: none"> During the login process, if connection to the device is lost, a new message is displayed <i>Network connection is not established.</i> 	Enhancement GP-1581 MTX-4473
Username and Password – Autocomplete is Disabled <ul style="list-style-type: none"> Many configuration pages within mPower require username and password information Previous versions of mPower allowed this information to be filled in automatically when the user remembers the login credentials. In mPower 6.0.1, autocomplete is disabled and username and password fields must be completed in full by the user NOTE: this behavior differs based on web browser. Some web browsers will ignore these parameters and allow autocomplete to occur 	Enhancement GP-1582 MTX-4474
User Interface <ul style="list-style-type: none"> In earlier versions of mPower, LoRa device CSV file uploads generate a cryptic error message when the CSV file ends with an empty line In mPower 6.0.1, CSV files that end with an empty line will no longer generate this message 	Enhancement TS-5112111

Operating System Updates (mPower 6.0.1)

Upgrade to OpenSSL 1.1 <ul style="list-style-type: none"> mPower 6.0.1 supports OpenSSL 1.1.0o Previous mPower versions supported OpenSSL 1.1.1n Additional information is available <ul style="list-style-type: none"> MultiTech Security Advisories CVE-2022-1292 	GP-1600 MTX-4493
Update to Eclipse Mosquitto MQTT broker <ul style="list-style-type: none"> mPower 6.0.1 supports Eclipse Mosquitto 1.6.14 Previous mPower versions supported Eclipse Mosquitto 1.5.1 	TS-5111321

Networking and Security (mPower 6.0.1)

Continuous Ping <ul style="list-style-type: none"> In previous mPower versions, the Continuous Ping feature returns unexpected ping results In mPower 6.0.1, this has been resolved and mPower returns Ping results in the correct format. 	GP-1660 MTX-4549
Certificate Validation <ul style="list-style-type: none"> In previous mPower versions, X.509 certificate imports are failing OpenSSL is generating to PKCS#8 when generating private keys. mPower expects PKCS#1 This conflict means private user keys are not validated in mPower In mPower 6.0.1, this issue has been resolved. mPower 6.0.1 accepts certificates with PKCS#1 and PKCS#8 keys 	GP-1590 GP-1602 MTX-4505 TS-5111455
SNMP Configuration – Add IP Address <ul style="list-style-type: none"> In previous versions of mPower, when SNMP Server Configuration is Enabled, and in incorrect mask value is entered in the ADD IP ADDRESS window, the window closes and an error message is returned In mPower 6.0.1, when an incorrect mask value is entered, the window remains open and the message “Invalid Network Mask” is displayed 	GP-1645 MTX-4536
DHCP Server Interface <ul style="list-style-type: none"> In previous versions of mPower, when a network interface is excluded from br0 and had its own DHCP server configured, the DHCP server remains enabled when the interface is added back to the br0 In mPower 6.0.1, a yellow warning message is displayed on the NETWORK INTERFACES CONFIGURATION window 	GP-1654 MTX-4542

Bug Fixes (mPower 6.0.1)

Failure to upload and apply a configuration file <ul style="list-style-type: none"> In previous versions of mPower, mPower failed to upload and apply a configuration file when the filename includes a space character The file is not considered valid Behavior was exhibited in: <ul style="list-style-type: none"> Upload X.509 CA Certificates Install Custom Application Upload Device Configuration file Package Management – Upload Package This issue has been resolved in mPower 6.0.1 	GP-1574 MTX-4465
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Bug Fixes (mPower 6.0.1)

Session timeout interrupts upgrades in Web Interface <ul style="list-style-type: none"> In previous versions of mPower, mPower upgrades and cellular radio firmware upgrades are not completed when the session reaches the timeout period (5 minutes by default) This issue has been resolved in mPower 6.0.1 <ul style="list-style-type: none"> The session does not expire while the mPower file or cellular radio firmware file is being uploaded, when the session timeout is 10 minutes or less If the file upload process takes longer than 10 minutes, the process is cancelled due to the API timeout 	GP-1456 MTX-4366
WAN Failover Settings not applied properly <ul style="list-style-type: none"> This issue was originally identified in mPower 6.0.0 In the Web Interface, WAN CONFIGURATION page, Active monitoring settings (Hostname, ICMP Count) are made by the user, but not properly applied This issue has been resolved in mPower 6.0.1 	GP-1591 MTX-4484
Client Authentication, Custom Web Server Certificate Failures <ul style="list-style-type: none"> In previous versions of mPower, failures arise when custom web server certificates do not end with a line <ul style="list-style-type: none"> Incorrect certificate example: (/var/config/server.pem) Correct certificate example: (/var/config/server.pem)_ This issue has been resolved in mPower 6.0.1 	GP-1593 MTX-4485
WWAN Mode <ul style="list-style-type: none"> In previous versions of mPower, while in WWAN mode, when a user disables Data Receive Monitor, submits, saves, and applies the changes, the ppp-rx-monitor process does not stop. This issue has been resolved in mPower 6.0.1 	GP-1628 MTX-4519
WWAN Mode <ul style="list-style-type: none"> In previous versions of mPower, while in WWAN mode, when a user disables ICMP/TCP Check, submits, saves, and applies the changes, the pppcheck process is still present in the list This issue has been resolved in mPower 6.0.1 	MTX-4481 TS-5110508
TCP Mode, WAN Failover <ul style="list-style-type: none"> In previous versions of mPower, WAN Failover does not work in TCP mode. No TCP requests corresponding to the configured settings can be seen on the WAN interface The device interprets that WAN does not have an Internet connection and does not switch to it in case of failover This issue has been resolved in mPower 6.0.1 	GP-1658 MTX-4548
Debug Options <ul style="list-style-type: none"> In mPower 6.0.0, Syslog does not work properly when reset to user-defined default The remote syslog server does not receive logs from devices This issue has been resolved in mPower 6.0.1 	GP-1664 MTX-4551 TS-5111956

Bug Fixes (mPower 6.0.1)

Uploading Custom Applications <ul style="list-style-type: none"> In previous versions of mPower, the form used to upload the custom applications includes information from a previous upload request In mPower 6.0.1, this issue has been resolved. The upload custom application form is empty when the customer starts the upload process 	GP-1631 MTX-4521
Web Interface - LoRa Configuration – Save and Apply <ul style="list-style-type: none"> In previous versions of mPower, the Save and Apply button was not working as intended. After configuration changes are complete, users click Submit, and the Save and Apply button turns red after a short delay. In mPower 6.0.1, when a user clicks Submit, the Save and Apply button turns red immediately, indicating that one additional step is needed to complete the process 	GP-1637 MTX-4524
Customizing the User Interface – Support Information <ul style="list-style-type: none"> The web interface can be customized to display customer-specific support information on a CONTACT INFORMATION window The administrator can customize the user interface and this information can include a custom URL and descriptive text description In previous versions of mPower, if the text field is empty, the custom URL is not displayed on the CONTACT INFORMATION window In mPower 6.0.1, when the text field is empty, the custom URL is displayed on the CONTACT INFORMATION window 	MTX-4537
LoRa Network Server <ul style="list-style-type: none"> In earlier versions of mPower, empty downlinks were sent for each uplink This issue has been resolved in mPower 6.0.1 	-

Known Behaviors (mPower 6.0.1)

User Interface (LoRaWAN) <ul style="list-style-type: none"> In mPower 6.0.1, LoRaWAN, Packets, Packet Details are not being displayed properly This issue has been fixed in mPower 6.0.4 	TS-5111718
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Schedule (mPower 6.0.1)

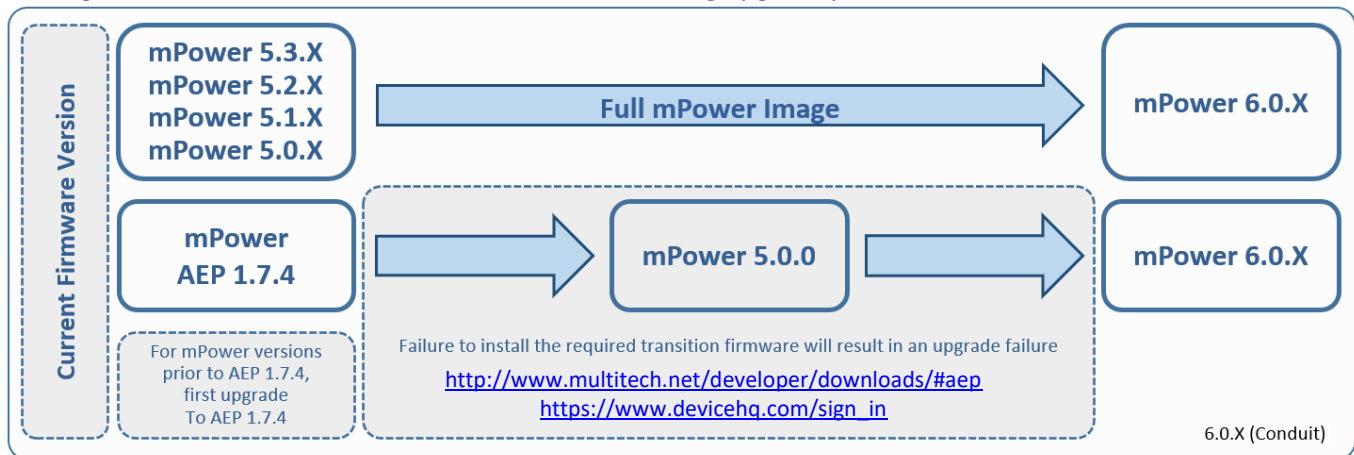
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 - mPower 6.0.1 Availability: May 2022
 - Visit <http://www.multitech.net/developer/downloads/>
 - DeviceHQ: May 2022
- Manufacturing Updates:
 - Devices that ship from MultiTech starting in September 2022 will include mPower 6.0.1
 - New devices will begin shipping with mPower 6.0.1 immediately, including:
 - Conduit gateways with new MTAC-003 LoRa Gateway Accessory Cards (MTCDDT .R3 models)
 - Conduit base stations with new MTAC-003 LoRa Gateway Accessory Cards (MTCDDTIP .R3 models)
 - See part numbers impacted for details
- Differential Images:
 - Differential mPower updates are not available for mPower 6.0.1

Models Impacted (mPower 6.0.1)

- MultiTech Conduit® Gateway
 - MTCDDT-240A, MTCDDT-246A, MTCDDT-247A
 - MTCDDT-L4E1, MTCDDT-L4G1, MTCDDT-L4N1, MTCDDT-LAT3, MTCDDT-LAP3, MTCDDT-LDC3, MTCDDT-LSB3
 - Hardware versions: MTCDDT-0.1, MTCDDT-0.2
- MultiTech Conduit® IP67 Base Station
 - MTCDDTIP-266A, MTCDDTIP-267A
 - MTCDDTIP-L4E1, MTCDDTIP-L4G1, MTCDDTIP-L4N1, MTCDDTIP-LAP3, MTCDDTIP-LDC3, MTCDDTIP-LSB3
 - Hardware versions: MTCDDTIP-0.0, MTCDDTIP-0.1
- MultiTech mCard™ Gateway Accessory Cards
 - MTAC-LORA-H-868, MTAC-LORA-H-915, MTAC-LORA-H-923-JP
 - MTAC-003E00, MTAC-003U00
 - MTAC-GPIO, MTAC-MF5ER-DTE, MTAC-MF5ER-DCE, MTAC-ETH, MTAC-XDOT
 - Note: MultiTech mCard available individually and in select Conduit gateways (MTCDDT-series) and IP67 base stations (MTCDDTIP- series)
- MultiTech Conduit® IP67 200 Series Base Station
 - MTCDDTIP2-EN
 - MTCDDTIP2-L4E1, MTCDDTIP2-LNA3
 - Hardware Version: MTCAP-0.0
- MultiTech Conduit® AP Access Point
 - MTCAP-868, MTCAP2-868, MTCAP-915, MTCAP2-915
 - MTCAP-L4E1, MTCAP2-L4E1, MTCAP-LNA3, MTCAP2-LNA3
 - Hardware Version: MTCAP-0.0

Upgrade Process (mPower 6.0.1)

To install mPower 6.0.1, the Conduit gateway must be upgraded to mPower 5.0.0 or higher. Customers that are running earlier versions of mPower should use the following upgrade process.



Differential file updates are also available. Visit <https://support.multitech.com/> to create a support case and request access to differential file updates.

Using an old configuration file on new Conduit devices may result in the new devices becoming non-functional. To successfully update new Conduit devices, create separate configuration templates for each type of Conduit device:

- Hardware model (MTCAP, MTCDT, MTCDTIP)
- Hardware version (MTCAP-0.0, MTCDT-0.1, MTCDT-0.2, MTCDTIP-0.0, MTCDTIP-0.1)
- Cellular radio (-L4G1, -L4N1, -L4E1)
- mPower version (mPower 5.3.7, mPower 5.3.8s-s1, mPower 6.0.0)

When upgrading a device fleet:

9. Upgrade the mPower version on one device
10. Modify the user-specific configuration settings
11. Perform in-house testing and adjust settings if necessary
12. Use the newly developed configuration file as part of field updates when the new version of mPower is widely deployed

mPower 6.0.0 Changelog and Overview

Released: May 2022

Status: Retired September 2022. Replaced by [mPower 6.0.1](#)

Updates in mPower 6.0.0, from [mPower 5.3.X](#)

New Features & Enhancements	Operating System	Networking & Security	Bug Fixes	Known Behaviors	Deprecations	Schedule	Models Impacted	Upgrade Process
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New Features and Enhancements (mPower 6.0.0)

Software & Services	
<p>Overview: Updated messaging when partial configuration is applied by DeviceHQ</p> <ul style="list-style-type: none"> In mPower 6.0.0, when a device checks into DeviceHQ and performs a partial configuration upgrade, the system displays a status message on Web UI: <p style="text-align: center;">Partial configuration has been applied. The system is going down for reboot now. (DATE/TIME)</p> <ul style="list-style-type: none"> In previous mPower releases, the Web UI does not show a message 	Enhancement GP-418 MTX-4140 IN003879
<p>Overview: Multiple LoRa User Interface and API Changes</p> <ul style="list-style-type: none"> Added Duty-cycle info to Gateways page if ISRAEL plan is selected or duty-cycle is enabled Added Default Device Profile for local join server on Key Management page API Default packet forwarder GW SOURCE for EUI to hardware <ul style="list-style-type: none"> The web page would not load an EUI unless the Basic Settings were shown Add delete all end-device and session records button Add option to append csv/json device records to the current list on key management page Add button to delete all items from downlink queue for all devices API options to get a single device or session record use DevEUI <ul style="list-style-type: none"> /api/lora/devices/00-11-22-33-44-55-66-77 /api/lora/sessions/00-11-22-33-44-55-66-77 Added option for setting multicastGroupID for operations Add option for max FUOTA packet size <ul style="list-style-type: none"> Field in Network Settings > Datarate settings Field in Operations > Show Settings section 	Enhancement
<p>Overview: LoRa Firmware Update Over The Air (FUOTA) Updates</p> <ul style="list-style-type: none"> LoRa FUOTA Version 1.0.17 Added an option for maximum packet size to control fragmentation Added an option for setting multicast group ID 	Enhancement

New Features and Enhancements (mPower 6.0.0)

<p>Overview: LoRa Network Server Changes</p> <ul style="list-style-type: none"> • LoRa Network Server Version 2.5.37 • Add setting for max FOTA packet size (maxRx2PacketSize) • Add a command to delete all queued downlinks • Add a command to get single device or session by EUI • Add a command to delete all devices and sessions • Add a command to add list of devices or sessions • Publish lora/<APP-EUI>/<DEV-EUI>/moved topic when device is deleted by command, from user interface or DeviceHQ <ul style="list-style-type: none"> ◦ Message contains list of GW-EUI • Database backup to tar.gz <ul style="list-style-type: none"> ◦ Backup to RAM and move into /var/config directory ◦ Reduce database in /var/config/ to one-fifth <ul style="list-style-type: none"> ▪ 2MB database takes 400K with redundant backup files • Activate Tx Param controller for LW102 AU915 and AS923 devices on Join • LENS: published moved MQTT messages when check in update moves devices • LNS version 2.5.37 added fields to the “up” mqtt messages <ul style="list-style-type: none"> ◦ name – device name ◦ product_id – device product ID ◦ serial_number – device serial number ◦ hardware_version – device hardware versionm ◦ firmware_version – device firmware version 	Enhancement
<p>LoRa Default App Changes</p> <ul style="list-style-type: none"> • MQTT QoS and Persist settings • MQTT Resubscribe on connect • Add ClientID configuration option • Add subscriptions for downlinks from remote broker <ul style="list-style-type: none"> ◦ lorawan/gweui/deveui/down ◦ lorawan/gwuuid/deveui/down • Add subscription for moved devices to publish to remote broker • lorawan/appeui/deveui/moved 	Enhancement
<p>LoRa Packet Forwarder Changes</p> <ul style="list-style-type: none"> • Packet Forwarder Version 4.0.17 • LoRa Gateway Version 5.0.11 • Add hardware reset on start-up and restart • Support added for two MTAC-LORA-H-868 or two MTAC-LORA-H-915 LoRa gateway accessory cards 	Enhancement
<p>LoRa: Semtech LoRa Basics™ Station Changes:</p> <ul style="list-style-type: none"> • Updated to version 2.0.6-5 • AU915 Channel Plan – Default transmit power changed to 30 dBm • 16 Channel support added – Ability to manage MTC DT and MTC DTIP devices with two MTAC gateway accessory cards as one 16-channel device on The Things Network 	Enhancement GP-1459 GP-1270 TS-5107644

New Features and Enhancements (mPower 6.0.0)

<p>Hardware Support</p> <p>Overview: New hardware versions are available for Conduit devices. mPower 6.0.0 identifies the Conduit hardware version and only allow users to download approved mPower versions, preventing a mismatch between hardware and software.</p> <p>Feature: Downgrade Protection</p> <ul style="list-style-type: none"> mPower 6.0.0 includes a means of identifying MTCDT (MTCDT-0.2) and MTCDTIP (MTCDTIP-0.1) devices with substitute components and limits the version of mPower that customers can use <ul style="list-style-type: none"> Devices with substitute components can only be used with mPower 5.3.7 and later Future mPower versions will not allow MTCDT-0.2 and MTCDTIP-0.1 devices with substitute components to downgrade to versions of mPower prior to mPower 5.3.7 Error Messages: If a user attempts to downgrade a device with substitute components to an incompatible firmware version, an error message will be displayed: <ul style="list-style-type: none"> Downgrade using API Command: <ul style="list-style-type: none"> "Firmware check failed. Invalid firmware version for [MTCDT-0.2] hardware." "Firmware check failed. Invalid firmware version for [MTCDTIP-0.1] hardware." Downgrade using DeviceHQ: <ul style="list-style-type: none"> "Software check failed. Invalid firmware version for [MTCDT-0.2] hardware." "Software check failed. Invalid firmware version for [MTCDTIP-0.1] hardware." MTCAP, MTCAP2, and MTCDTIP2 devices do not include downgrade protection This feature was originally introduced in mPower 5.3.7 	<p>New Feature</p> <p>GP-1431</p> <p>MTX-4299</p> <p>GP-1385</p>
<p>MultiTech mCard™ Gateway Accessory Cards (MTAC Series)</p> <ul style="list-style-type: none"> Support for new MTAC LoRa Accessory Cards <ul style="list-style-type: none"> MTAC-003E00 - 868 MHz LoRa Accessory Card, Antenna Sold Separately MTAC-003U00 - 915 MHz LoRa Accessory Card, Antenna Sold Separately Updated features include: <ul style="list-style-type: none"> Network-based sensor location using fine timestamping and Time Difference of Arrival (TDOA) from at least three gateways Additional spreading factors (SF5 – SF12) allow for optimized network performance, increased LoRa traffic (especially in dense LoRa networks), and improved end-device battery performance Reference Known Behaviors for information on using multiple MTAC LoRa Accessory Cards in MTCDT devices MultiTech mCard available individually and in select Conduit gateways (MTCDT-series) and IP67 base stations (MTCDTIP- series) 	<p>New Feature</p> <p>-</p>

New Features and Enhancements (mPower 6.0.0)

<p>Overview: Cellular radio improvements for devices used on the AT&T network</p> <p>Feature: Disabled voice support</p> <ul style="list-style-type: none"> mPower 6.0.0 disables voice support for new voice-capable radios in an AT&T-compatible configuration The change affects the following list of AT&T-compatible voice-capable cellular radios: <ul style="list-style-type: none"> -L4N1 radios with the “AT&T-compatible” firmware image -L4G1 radios with AT&T SIM cards installed -LNA7 radios with AT&T SIM cards installed If the system detects that the modem is -L4N1, -L4G1, or -LNA7 and the carrier is AT&T, it checks for the voice-related configuration in the modem. If the voice support is enabled and SMS-only mode is disabled, the system executes AT commands to disable voice support and enable SMS-only mode UI changes <ul style="list-style-type: none"> If the voice support is disabled, the Wake Up On Call feature does not support the Wake Up settings “On Caller-ID” and “On Ring.” The system displays a message if one of these settings is enabled when user saves changes in the Wake Up On Call configuration <p style="text-align: center;">On Ring and On Caller ID options cannot be enabled in the Wake Up On Call configuration as voice calls are not supported by your carrier</p> The radio-query has a new option (--voice-support) that allows the user to get the current voice support settings set in the cellular radio <ul style="list-style-type: none"> radio-query --voice-support shows the information in the following format: <pre>{ "smsOnly": "Indicates that registration flag is enabled or not : BOOL" "voiceEnabled": "Indicates that voice support is enabled or not : BOOL" }</pre> The radio-cmd has a new option (--disable-voice-support) that disables support of voice calls. It accepts no additional parameters and returns “0” on success and “1” on failure. <ul style="list-style-type: none"> Usage: <pre>root@mtcdt:/var/config/home/admin# radio-cmd --disable-voice-support</pre> <p>Success</p> There is no command to enable voice support. To enable voice support, the user shall use the appropriate AT commands 	<p>New Feature</p> <p>GP-1364</p> <p>MTX-4206</p> <p>GP-1390</p> <p>MTX-4251</p>
<p>Serial Port Configuration</p> <ul style="list-style-type: none"> Models Impacted: MTCDDT with MTAC-MFSER-DTE or MTAC-MFSER-DCE Gateway Accessory Card Device is configurable to one of the following protocols: RS-232, RS-485 (half-duplex), or RS485 (full duplex) If RS-485 is selected, the checkbox RS-485 Termination is shown. RS-485 termination should be enabled if this is the first or the last device in the chain 	<p>New Feature</p> <p>GP-1178</p> <p>MTX-3995</p> <p>MTX-4337</p>

New Features and Enhancements (mPower 6.0.0)

<p>UXPF utility upgrade</p> <ul style="list-style-type: none"> Utilities used to upgrade Telit radio firmware (v.1.7.2-0) Models Impacted: MTCAP-L4E1, MTCAP-LNA3, MTCDT-L4E1, MTCDT-LAT3, MTCDT-L4N1, MTCDTIP- L4E1, MTCDTIP-L4N1 http://www.multitech.net/developer/software/mlinux/using-mlinux/using-uxfp-to-upgrade-telit-firmware/ 	<p>Enhancement GP-1079 MTX-4037</p>
Fieldbus Protocols	
<p>Overview: Updates to Modbus slave feature</p> <ul style="list-style-type: none"> Modbus Slave feature is updated in mPower 6.0.0 to use the generic implementation for all band-related queries This enables future support of new cellular radios For Modbus query information: http://www.multitech.net/developer/software/mtr-software/mtr-modbus-information/ 	<p>Enhancement GP-862 MTX-4190</p>
<p>Overview: Setting improvements for Modbus RTU/TCP Gateway and Serial-IP, allows configuration of the Serial Port so the Serial Port can be used by other features such as GPS</p> <ul style="list-style-type: none"> Mode dropdown is added to the General Configuration pane. It allows users to enable one of the following features: <ul style="list-style-type: none"> Disabled (default). Serial-IP and Modbus RTU/TCP Gateway are disabled Serial-IP Modbus RTU/TCP Gateway Serial-IP and Modbus RTU/TCP Gateway cannot work simultaneously To use Modbus Gateway, check Protocol under IP Pipe and select SSL/TLS <ul style="list-style-type: none"> Modbus RTU slave is connected to the Serial Port and a remote Modbus TCP Master Modbus Gateway application works as a translator between Modbus RTU (slave) and Modbus-TCP (master) devices Without Modbus Gateway enabled, the Serial-IP feature simply passes raw data between the serial DB9 interface and the socket representing the TCP connection in the system to a configured remote device When the Modbus Gateway is enabled, its application runs in the system. The application works as a translator converting between the Modbus-TCP and Modbus RTU protocols. The Modbus Gateway passes data between an RTU connected to the serial port and a Modbus TCP remote client/server 	<p>Enhancement GP-1432 MTX-4301</p>
User Experience (mPower 6.0.0)	
<p>Overview: Material design icons simplifies Web UI.</p> <ul style="list-style-type: none"> Material design icons are added throughout the Web UI Material design icons are a set of universal icons used to improve usability and simplicity Additional Information: https://materialdesignicons.com/ 	<p>Enhancement GP-1362 MTX-4201</p>
<p>Overview: The device images used in the Web UI have been updated</p> <ul style="list-style-type: none"> Updated product images added to the First-Time Setup Wizard and Support Page 	<p>Enhancement GP-1371 MTX-4217</p>

Operating System Updates (mPower 6.0.0)

<p>Updated Yocto Version</p> <ul style="list-style-type: none"> Yocto version updated to Dunfell (version 3.1). Previous versions of mPower used Yocto Thud (version 2.6) 	GP-1322 MTX-4162
<p>Updated Linux Kernel</p> <ul style="list-style-type: none"> Linux kernel updated to version 5.4 Previous versions of mPower used Linux kernel v4.9.240 	-
<p>Updated Python</p> <ul style="list-style-type: none"> Python updated to version 3.8.11 Previous versions of mPower used Python 2.7 	GP-1224 MTX-4164
<p>DeviceHQ/Node-RED Custom Application</p> <ul style="list-style-type: none"> mPower 6.0.0 does not include support for the DeviceHQ/Node-RED Custom Application Native support for Node-RED was deprecated in mPower 5.3.3 For details on other methods to create custom applications, see creating a custom application 	Deprecation -
<p>RF Survey</p> <ul style="list-style-type: none"> The RF Survey is not available for LTE devices and is removed from mPower 6.0.0 Page 404 is displayed when trying to access the page using the direct link: /rf_survey 	Deprecation GP-1444 MTX-4321

Networking and Security (mPower 6.0.0)

<p>IP Masquerading</p> <p>The IP Masquerading feature allows users to enable or disable IP Masquerading for WAN interfaces of the device</p> <ul style="list-style-type: none"> Main points <ul style="list-style-type: none"> IP Masquerading feature can be used with WAN interfaces only IP Masquerading is enabled by default. When IP Masquerading feature is enabled, the device performs IP address translation of client network traffic to the corresponding WAN interface When IP Masquerading feature is disabled, the device passes client network requests unchanged to the corresponding WAN interface API Changes <ul style="list-style-type: none"> api/ni/nis: "wanMasquerade" option is added for each network interface 	New Feature MTX-4104
<p>Remote Syslog Feature Enhancement: TCP and SSL/TLS support</p> <ul style="list-style-type: none"> New settings are implemented for the Remote Syslog feature: <ul style="list-style-type: none"> TCP Protocol support SSL/TLS Protocol support Configurable Port The Hostname read-only field is added to the Remote Syslog pane. The hostname value is a part of log entries that are transferred to the remote Syslog Server. The hostname value can be configured in the Hostname Configuration pane on the Status Global DNS page API Changes <ul style="list-style-type: none"> api/syslog api/help/syslog api/secureprotocols/rsyslogd 	New Feature GP-869 MTX-4178 GP-1365 MTX-4205

Networking and Security (mPower 6.0.0)

Support 802.1X authentication on the Ethernet interface(s)

- 802.1X Authentication feature is available for Ethernet network interface (Eth0) if it is not in the Bridge (BR0). For other network interfaces, including Bridge (BR0), this feature is not available and is hidden on Web UI
- The 802.1X Authentication settings depend on the Authentication Method. By default, the Authentication Method is NONE
- The system supports the following authentication methods:
 - EAP-PWD
 - EAP-TLS
 - EAP-TTLS
 - EAP-PEAP

The following settings are available and depend on the Authentication Method:

Setting	Description
Authentication method	Type of the authentication
Username	Identity (user name) to authenticate the user in the inner (phase 2) authentication
Password (not used in EAP-TLS)	The secret string to be used for EAP-PWD authentication
Anonymous ID	Anonymous identity to authenticate the user in the outer (phase 1) authentication
CA Certificate (not used in EAP-PWD)	X.509 Certification Authority certificate
Domain Match (not used in EAP-PWD, optional)	Domain substring for server certificate validation
Subject Match (EAP-TLS only, optional)	Subject substring for server certificate validation
Client Certificate (EAP-TLS only)	X.509 client certificate
Private Key (EAP-TLS only)	Private key of the client
Private Key Password (EAP-TLS only)	Password to decrypt the private key
Authentication Method (EAP-TTLS and EAP-PEAP only)	Type of the inner (phase 2) authentication
PEAP Version (EAP-PEAP only)	Version of the PEAP protocol

New Feature

GP-355
GP-1328
MTX-3053
MTX-4119
MTX-4170

Ping Feature Settings: New Options

- Number of Requests: The number of ping requests. The default is 4. The maximum is 120
- Packet Size (Bytes): Specifies the number of data bytes to be sent.
 - Packets include an additional 28 bytes of data (8 bytes ICMP header and 20 bytes IP header)
 - The default packet size is 56 bytes (which equates to into 84 bytes of data due to ICMP header and IP header)
- When packet size of 0 bytes is requested, the actual packet size is 28 bytes due to ICMP header and IP header
- Do Not Fragment: Enable to prevent fragmentation. Without fragmentation, the ping fails if the ping packet exceeds MTU size for the network path. By default, the option is disabled

New Feature

GP-1279
MTX-4036
MTX-4131

Networking and Security (mPower 6.0.0)

<p>Continuous Ping</p> <ul style="list-style-type: none"> The Continuous Ping feature allows users to start a continuous ping to an IP address or URL through a specific interface Continuous Ping is available on the Debug Options page To start a continuous ping, users specify IP Address or URL, Network Interface, Packet Size, and enable or disable the Do Not Fragment option <ul style="list-style-type: none"> Continuous Ping starts when the user clicks the Start Continuous Ping button <ol style="list-style-type: none"> The system starts pinging The button label changes to Stop Continuous Ping The message “Ping is in progress...” is displayed next to the button Continuous Ping stops when the user clicks the Stop Continuous Ping button <ol style="list-style-type: none"> The system stops pinging The button label changes to Start Continuous Ping The ping results are shown next to the Start Continuous Ping button API Changes <ul style="list-style-type: none"> api/stats/continuousPing - Continuous Ping status is stored in the “isRunning” field 	<p>New Feature GP-1229 MTX-4033 MTX-4131</p>
<p>ICMP Keep Alive feature</p> <ul style="list-style-type: none"> Overview: Sometimes when working with private networks, the size of the ping request is regulated. It needs to be configurable to satisfy private network requirements In mPower 6.0.0, new setting “Packet Size (Bytes)” is added next to the ICMP Count in the ICMP/TCP Check pane <ul style="list-style-type: none"> The Packet Size setting specifies the number of data bytes to be sent Packets include an additional 28 bytes of data (8 bytes ICMP header and 20 bytes IP header) The default packet size is 56 bytes (which equates to into 84 bytes of data due to ICMP header and IP header) When packet size of 0 bytes is requested, the actual packet size is 28 bytes due to ICMP header and IP header 	<p>New Feature GP-79 MTX-4167</p>
<p>Firewall Status Page</p> <ul style="list-style-type: none"> The Status page is added under the Firewall main menu Firewall status page contains Filter tables in the Filter Rules pane, NAT tables in the NAT Rules pane, and iptables-save command output in the IP Tables Dump The Download button allows users to download an archive file that contains the same information that is displayed on Web UI; there are three files in the archive: <ul style="list-style-type: none"> iptables-filter.log iptables-nat.log iptables-save.log API Changes. The following API endpoints are added: <ul style="list-style-type: none"> https://192.168.2.1/api/firewall/downloadStatus https://192.168.2.1/api/firewall/status 	<p>New Feature MTX-4106</p>

Networking and Security (mPower 6.0.0)

<p>IPSec Tunnels</p> <ul style="list-style-type: none"> The “Allow All Traffic” checkbox is added to the IPsec tunnel configuration. The option is disabled by default when adding a new tunnel When the checkbox is disabled, all traffic through the tunnel is dropped and the user has to add firewall rules manually to allow the traffic. Enabling the checkbox allows all traffic through the tunnel without creating explicit rules to allow traffic by subnet and/or connection attributes When performing a firmware upgrade from a previous firmware version that does not have this setting, all existing tunnels will have the “Allow All Traffic” checkbox enabled and corresponding firewall rules will be set in the system, so nothing will change in tunnel behavior after upgrade When adding a new tunnel, if the “Allow All Traffic” checkbox is not checked, then all traffic through the tunnel will be dropped. The user will have to add a corresponding firewall rules on the Firewall Settings page API Changes <ul style="list-style-type: none"> The “allowAllTraffic” is added to the api/ipsecTunnels collection 	<p>New Feature GP-1361 MTX-4200</p>
<p>IPSec Tunnels - Multiple Remote Networks Support</p> <ul style="list-style-type: none"> The system allows to specify multiple local networks and remote networks when configuring an IPsec tunnel API changes <ul style="list-style-type: none"> “remoteSubnets” array replaced the “remoteNetworkIp” and “remoteNetworkMask” in the /api/ipsecTunnels collection 	<p>New Feature GP-1337 MTX-4180</p>
<p>Ping Feature – Update the Network Interfaces List</p> <ul style="list-style-type: none"> The list of the network interfaces available in the Network Interface dropdown list is updated. The list of available network interfaces depends on the hardware configuration. The following network interfaces are available: <ul style="list-style-type: none"> ANY BRIDGE (BR0) CELLULAR WI-FI WAN WI-FI AP ETHERNET (ETH0) 	<p>Enhancement GP-1320 MTX-4150</p>
<p>PPP-IP Pass-through / Serial Modem Mode - Hide Ping features from the Debug Options Page</p> <ul style="list-style-type: none"> PPP-IP Pass-through Mode: <ul style="list-style-type: none"> It is not possible to Ping directly from the device The Ping and Continuous Ping features are not available in the Debug Options Page Serial Modem Mode: <ul style="list-style-type: none"> Continuous Ping feature is not available Ping feature is available. Network Interface options: ANY, BRIDGE (BR0) and ETHERNET (ETH0) 	<p>Enhancement MTX-4093</p>

Networking and Security (mPower 6.0.0)

<p>Service Statistics Enhancement The status for new services are added to the Service Statistics Page. Services and their possible statuses are listed below:</p> <p>SNMP Server</p> <ul style="list-style-type: none"> ○ SNMP Server is disabled ○ SNMP Server is running ○ SNMP Server is stopped <p>Security Violation</p> <ul style="list-style-type: none"> ○ Security violation is disabled ○ Security violation has not been detected ○ Security violation has been detected (shown if the /var/log/tomoyo/reject_003.log log is NOT empty) <p>Reverse SSH</p> <ul style="list-style-type: none"> ○ Reverse SSH service is disabled ○ Reverse SSH service is running ○ Reverse SSH service is stopped <p>MQTT Broker</p> <ul style="list-style-type: none"> ○ MQTT Broker service is disabled ○ MQTT Broker service is running ○ MQTT Broker service is stopped <p>Remote Management</p> <ul style="list-style-type: none"> ○ Displaying statuses from the Remote Management page <p>Continuous Ping</p> <ul style="list-style-type: none"> ○ Continuous Ping is running ○ Continuous Ping is disabled 	<p>Enhancement GP-1295 MTX-4142</p>
<p>Support Static IP on Wi-Fi as WAN</p> <ul style="list-style-type: none"> • Ability to disable DHCP Client and enable Static mode is implemented for WLAN0 (Wi-Fi as WAN) network interface • In mPower 6.0.0 the WLAN0 network interface can be configured in the following modes: <ul style="list-style-type: none"> ○ DHCP Client (default) ○ DHCP Client – Addresses Only ○ Static 	<p>Enhancement GP-76 MTX-4186 SP-5084144</p>
<p>Web Server X.509 Certificate - Default details are updated</p> <ul style="list-style-type: none"> • The CN value in the default Web Server X.509 certificate is changed from ocg.example.com to mtx.example.com 	<p>Enhancement GP-1247 MTX-4058</p>

Networking and Security (mPower 6.0.0)

<p>Firewall Settings Improvement</p> <ul style="list-style-type: none"> • Firewall “Normal Settings” is the default mode. This view was formerly “Advanced Settings” <ul style="list-style-type: none"> ○ Prerouting Rules ○ Input Filter Rules ○ Forward Filter Rules ○ Output Filter Rules • Firewall “Legacy Settings” now includes the following. This view was formerly “Normal Settings” <ul style="list-style-type: none"> ○ Port Forwarding ○ Input Filter Rules ○ Output Filter Rules 	<p>Enhancement GP-1426 MTX-4286</p>
<p>IPsec, GRE, OpenVPN Tunnels - Enabled checkbox is moved to the tunnel configuration page</p> <ul style="list-style-type: none"> • This is an improvement that does not affect the GRE, IPsec and OpenVPN functionality and API • The “Check” icon in the Enabled column on the GRE, IPsec or OpenVPN Tunnel Configuration page does not allow the user to enable or disable a tunnel • To enable or disable a tunnel, click the Enabled checkbox while adding or editing tunnel 	<p>Enhancement GP-1392 MTX-4255</p>
<p>SNMP Configuration Page - Network Address and Mask validation, IP address conversion to the Network address</p> <ul style="list-style-type: none"> • In previous mPower releases, the system displayed an error if the entered IP Address and Mask do not match while adding an IP network to the Allowed IP Addresses list on the SNMP Configuration page • In mPower 6.0.0 the system automatically converts the IP address based on the Mask value, and adds a corresponding valid Network Address to the list 	<p>Enhancement GP-1468 MTX-4387</p>
<p>Network IP and Mask validation (GRE and IPsec Configuration)</p> <ul style="list-style-type: none"> • The system (Web UI) checks the entered IP Address and Mask and automatically converts the IP address value to a valid Network Address while adding or editing GRE or IPsec Tunnels • The API validation of the entered Network Address and Mask is implemented, and the system does not allow to save the settings if the Network Address and Mask do not match • For example, user enters Remote Network Route as 192.168.2.2 and the Remote Network Mask as 24 while editing a GRE Tunnel. The Network Address in this case is 192.168.2.0, and the system will automatically change it and add a valid Network address, so the remote network route will be a valid value of 192.168.2.0/24 • The same conversion is performed for Local Networks and Remote Networks when adding or editing an IPsec tunnel 	<p>Enhancement GP-1453 GP-1287 MTX-4353 MTX-4118</p>

Bug Fixes (mPower 6.0.0)

<p>Reset to User Defined Defaults shall restore custom applications</p> <ul style="list-style-type: none"> If a custom application is installed while a user sets the current configuration as user-defined defaults, the system shall try to restore it when performing reset to User Defined defaults Main use case <ul style="list-style-type: none"> Install a custom application, configure the device, save the changes, and set the current configuration as user-defined defaults Change the configuration (make any changes you need), save and apply the changes. Click "Reset to User Defined Defaults" Result <ul style="list-style-type: none"> Device reboots overlays is reset The system installs the custom application from /var/persistent Device reboots again as soon as the custom app is installed. NOTE: Actual behavior depends on the custom application When device boots, the custom application is installed 	<p>Applications GP-1326 MTX-4154</p>
<p>libmts-io</p> <ul style="list-style-type: none"> MCC and MNC values are retrieved incorrectly from table In mPower 6.0.0, MCC and MNC values are retrieved correctly for further carrier detection 	<p>Hardware GP-114 MTX-4168</p>
<p>Rogers Wireless – Web Interface Update</p> <ul style="list-style-type: none"> In mPower 6.0.0, the Web Interface (Cellular, Radio Status) has been updated to display the following with a Rogers SIM is inserted in the device Home Network: Rogers Wireless In earlier versions of mPower software, the Web Interface (Cellular, Radio Status) displays the following when a Rogers SIM was inserted in the device Home Network: Rogers AT&T Wireless 	<p>Hardware GP-1388</p>
<p>SMS - quotation mark character (Double universal) " is displayed with the backslash \ character in the received SMS message (like an escaped character)</p> <ul style="list-style-type: none"> An extra slash character is added before the quotation mark " in the sent and received messages In mPower 6.0.0, the issue is resolved, and an extra slash is no longer added to the Sent and Received SMS messages 	<p>User Experience MTX-4359</p>
<p>Device UI inaccessible after firmware upgrade if User Authentication enabled</p> <ul style="list-style-type: none"> If User Authentication feature was enabled prior to the firmware upgrade, UI will be inaccessible with SSL error when the upgrade is finished. To restore access to the device user should either reboot the device or restart lighttpd service. This may lead to the issues with upgrade in the field if there is no physical access to the device and no ssh access or SMS commands are enabled This issue exists in previous released firmware (mPower 5.2.1 and mPower 5.3.0) In mPower 6.0.0, the issue is resolved, and user can access the device after performing upgrade if the User Authentication is enabled 	<p>User Experience GP-1301 MTX-4143</p>

Bug Fixes (mPower 6.0.0)

<p>Cellular Radio Firmware Upgrade Changes</p> <ul style="list-style-type: none"> • Menu name changed to "Cell Radio FW Upgrade" • Page name changed to "Cellular Radio Firmware Upgrade" • "Cell Radio Firmware Upgrade" shall be in the setup menu, below time configuration (PPP-IP pass-through mode and serial modem mode) 	<p>User Experience GP-1451 MTX-4343</p>
<p>Custom OpenVPN config breaks iptables</p> <ul style="list-style-type: none"> • Customer unsuccessfully tried to setup a VPN connection using custom OVPN config file. • Upon investigation the root cause was found in this string: <i>remote 20.191.55.208 1194 udp</i> • If we split the string to these two, VPN connection works properly: <i>proto udp</i> <i>remote 20.191.55.208 1194</i> • Corresponding changes are implemented, and such custom configuration can be applied, and the tunnel connection will be established successfully 	<p>Networking GP-1421 MTX-3873 SP-5105937</p>
<p>Save & Apply restart redirects to LAN when connected through WAN</p> <ul style="list-style-type: none"> • When connected through the WAN, the Web UI redirects to a LAN IP (Ethernet eth0) when executing a Save & Apply that requires a reboot • In mPower 6.0.0, if the current device IP is external (public) IP address or this is a domain name, redirection will be performed to the same address. Otherwise, the system will redirect to LAN IP address 	<p>Networking GP-1006 IN-4375 MTX-4040</p>
<p>PPP-IP Passthrough Mode – multiple farpd instances are running if connection re-establishes</p> <ul style="list-style-type: none"> • In some cases, there are multiple farpd instances running at the same time. The issue occurs when the PPP-IP Passthrough mode cellular connection is interrupted. When the cellular connection reestablishes, the system runs a new farpd instance, but does not end the previous one. This issue does not affect the functionality • In mPower 6.0.0, when cellular connection re-establishes and new settings are obtained, the farpd service restarts and there is only one farpd service in the services list 	<p>Networking MTX-4350</p>

Known Behaviors (mPower 6.0.0)

<p>The following devices and device configurations cannot be downgraded from mPower 6.0.X to mPower 5.3.7 or mPower 5.3.8:</p> <ul style="list-style-type: none"> • MTCDDT-XXXX.R3 devices <ul style="list-style-type: none"> ○ MTCDDT with new gateway accessory card: MTAC-003U00 (868 MHz) ○ MTCDDT with new gateway accessory card: MTAC-003E00 (915 MHz) • MTCDDTIP-XXXX.R3 devices <ul style="list-style-type: none"> ○ MTCDDTIP with new gateway accessory card: MTAC-003U00 (868 MHz) ○ MTCDDTIP with new gateway accessory card: MTAC-003E00 (915 MHz) 	<p>Known Behavior</p>
<p>The following devices and device configurations can be downgraded from mPower 6.0.0 to mPower 5.3.7 or mPower 5.3.8</p> <ul style="list-style-type: none"> • When the downgrade process is complete, a factory default is recommended • MTCDDT devices with gateway accessory card: MTAC-LORA-H-868 or MTAC-LORA-H-915 • MTCDDTIP devices with gateway accessory card: MTAC-LORA-H-868 or MTAC-LORA-H-915 • MTCAP, MTCAP2 devices • MTCDDTIP2 devices 	<p>Known Behavior</p>

Known Behaviors (mPower 6.0.0)

MTCDT- devices can only be used with one version of MTAC LoRa Gateway Accessory Card			Known Behavior
AP1	AP2	Support	
MTAC-LORA-H	None	Supported	
MTAC-LORA-H	MTAC-LORA-H	Supported	
MTAC-003	None	Supported	
MTAC-003	MTAC-003	Supported	
MTAC-LORA-H	MTAC-003	Not Supported	
MTAC-003	MTAC-LORA-H	Not Supported	

Deprecations (mPower 6.0.0)

DeviceHQ/Node-RED Custom Application <ul style="list-style-type: none"> mPower 6.0.0 does not include support for the DeviceHQ/Node-RED Custom Application Native support for Node-RED was deprecated in mPower 5.3.3 For details on other methods to create custom applications, see creating a custom application 	-
Python 2 support <ul style="list-style-type: none"> Python 2 is not present in mPower. Only Python 3.8.11 is supported. 	GP-1224 MTX-4164
RF Survey <ul style="list-style-type: none"> The RF Survey page is removed from mPower 6.0.0 Page 404 is displayed when trying to access the page using the direct link: /rf_survey 	GP-1444 MTX-4321

Schedule (mPower 6.0.0)

- Downloadable Versions
 - mPower 6.0.0 Availability: May 2022
 - DeviceHQ: May 2022
- Differential Images:
 - Differential mPower updates are not available for mPower 6.0.0

Models Impacted (mPower 6.0.0)

- MultiTech Conduit® Gateway
 - MTCDDT-240A, MTCDDT-246A, MTCDDT-247A
 - MTCDDT-L4E1, MTCDDT-L4G1, MTCDDT-L4N1, MTCDDT-LAT3, MTCDDT-LAP3, MTCDDT-LDC3, MTCDDT-LSB3
 - Hardware versions: MTCDDT-0.1, MTCDDT-0.2
- MultiTech Conduit® IP67 Base Station
 - MTCDDTIP-266A, MTCDDTIP-267A
 - MTCDDTIP-L4E1, MTCDDTIP-L4G1, MTCDDTIP-L4N1, MTCDDTIP-LAP3, MTCDDTIP-LDC3, MTCDDTIP-LSB3
 - Hardware versions: MTCDDTIP-0.0, MTCDDTIP-0.1
- MultiTech mCard™ Gateway Accessory Cards
 - MTAC-LORA-H-868, MTAC-LORA-H-915, MTAC-LORA-H-923-JP
 - MTAC-003E00, MTAC-003U00
 - MTAC-GPIO, MTAC-MFSEER-DTE, MTAC-MFSEER-DCE, MTAC-ETH, MTAC-XDOT
 - Note: MultiTech mCard available individually and in select Conduit gateways (MTCDDT-series) and IP67 base stations (MTCDDTIP- series)
- MultiTech Conduit® IP67 200 Series Base Station
 - MTCDDTIP2-EN
 - MTCDDTIP2-L4E1, MTCDDTIP2-LNA3
 - Hardware Version: MTCAP-0.0
- MultiTech Conduit® AP Access Point
 - MTCAP-868, MTCAP2-868, MTCAP-915, MTCAP2-915
 - MTCAP-L4E1, MTCAP2-L4E1, MTCAP-LNA3, MTCAP2-LNA3
 - Hardware Version: MTCAP-0.0

Additional Information

mPower Software Lifecycle Management

<https://www.multitech.com/documents/publications/sales-flyers/mPower%20Software-Lifecycle%20Management.pdf>

mPower 5.X Software Release Notes

<https://www.multitech.com/documents/publications/sales-flyers/mPower>

Security Advisories

<https://www.multitech.com/landing-pages/security>

Downloads

<http://www.multitech.net/developer/downloads/>

Getting Started

<http://www.multitech.net/developer/software/aep/creating-a-custom-application/>

API Reference:

<http://www.multitech.net/developer/software/mtr-api-reference/>

Support:

Visit <https://support.multitech.com/> to create a support case

DeviceHQ, Cloud-based IoT Device Management

Login: https://www.devicehq.com/sign_in

MultiTech Developer Resources

www.multitech.net

Knowledge Base

<http://www.multitech.com/kb.go>

MultiTech Support Portal

support.multitech.com

Create an account and submit a support case directly to our technical support team.

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Revision History

Version	Author	Date	Change Description
-008	DT	01/10/2023	mPower 6.0.4 added
-007	DT	10/7/2022	mPower 6.0.2 added
-006	DT	09/16/2022	mPower 6.0.1 added MTCDTIP-L4E1-270A removed from mPower 6.0.1 models impacted. Last supported in mPower 5.3.3
-005	DT	08/08/2022	Editorial updates
-004	DT	07/25/2022	mPower 6.0.0 – Upgrade process updated
-003	DT	07/14/2022	mPower 6.0.0 – Hardware support updated mPower 6.0.0 – Known Behaviors updated mPower 6.0.0 -- Schedule updated mPower 6.0.0 -- Models Impacted updated
-002	DT	05/19/2022	mPower 6.0.0 -- GPSD support removed
-001	DT	05/03/2022	Initial version