

**Product Change Notification
Software Release Notice**

**MultiConnect[®] Conduit[®] Family of Gateways
Conduit Gateway, IP67 Base Station and
Access Point (AP)**



Available March 2019

Date: February 26, 2019

I. Product Change Notification Number

PCN 022619-00

II. Overview

MultiTech is launching a software upgrade for the MultiConnect[®] Conduit[®] family of products, including the MultiConnect[®] Conduit[®], MultiConnect[®] Conduit[®] IP67 Base Station, and MultiConnect[®] Conduit[®] AP Access Point:

- AEP Hardware Versions: AEP version 1.7.x
- mLinux Hardware Versions: mLinux 4.1.x

The purpose of this PCN is to provide customer information on these upgrades and an action plan for previewing and evaluating these upgrades.

III. Timing

- The formal release of AEP and mLinux software is anticipated in March 2019. At that time, all impacted products will be updated to AEP 1.7.x or mLinux 4.1.x
- A beta release of the AEP 1.7.x software is available now for customers to begin their evaluations prior to availability. Visit <http://www.multitech.net/developer/downloads/> for more information.

IV. Models Covered

The following products and ordering part numbers are impacted by this update:

Model Name	AEP Ordering Part Numbers AEP 1.7.x	mLinux Ordering Part Numbers mLinux 4.1.x
MultiConnect® Conduit® IoT Programmable Gateways	MTCDT-246A-US-EU-GB MTCDT-247A-US-EU-GB MTCDT-H5-246A-US-EU-GB MTCDT-H5-247A-US-EU-GB MTCDT-LAT1-246A-US MTCDT-LAT1-247A-US MTCDT-LDC3-246A-JP MTCDT-LEU1-246A-EU-GB MTCDT-LEU1-247A-EU-GB MTCDT-LSB3-246A-JP MTCDT-LVW2-246A-US MTCDT-LVW2-247A-US	MTCDT-246L-US-EU-GB MTCDT-247L-US-EU-GB MTCDT-H5-246L-US-EU-GB MTCDT-H5-247L-US-EU-GB MTCDT-LAT1-246L-US MTCDT-LAT1-247L-US MTCDT-LDC3-246L-JP MTCDT-LEU1-246L-EU-GB MTCDT-LEU1-247L-EU-GB MTCDT-LSB3-246L-JP MTCDT-LVW2-246L-US MTCDT-LVW2-247L-US
MultiConnect® Conduit® IoT Programmable Gateways with LoRa Accessory Cards	MTCDT-246A-868-EU-GB MTCDT-246A-915-US-EU-GB MTCDT-246A-923-JP MTCDT-247A-868-EU-GB MTCDT-247A-915-US-EU-GB MTCDT-H5-246A-868-EU-GB MTCDT-H5-247A-868-EU-GB MTCDT-LAT1-246A-915-US MTCDT-LAT1-247A-915-US MTCDT-LDC3-246A-923-JP MTCDT-LEU1-246A-868-EU-GB MTCDT-LEU1-246A-915-EU-GB-AU MTCDT-LEU1-247A-868-EU-GB MTCDT-LEU1-247A-915-EU-GB-AU MTCDT-LSB3-246A-923-JP MTCDT-LVW2-246A-915-US MTCDT-LVW2-247A-915-US	MTCDT-LAT1-246L-915-US MTCDT-LVW2-247L-915-US MTCDT-LVW2-246L-915-US MTCDT-LEU1-247L-868-EU-GB MTCDT-LEU1-246L-868-EU-GB MTCDT-H5-247L-868-EU-GB MTCDT-247L-868-EU-GB MTCDT-246L-868-EU-GB MTCDT-246L-923-JP MTCDT-LDC3-246L-923-JP MTCDT-LSB3-246L-923-JP
MultiConnect® Conduit® IP67 Base Stations	MTCDTIP-266A-868 MTCDTIP-266A-915 MTCDTIP-266A-923-JP MTCDTIP-267A-868 MTCDTIP-267A-915 MTCDTIP-LAT1-266A-915 MTCDTIP-LAT1-267A-915 MTCDTIP-LDC3-266A-923-JP MTCDTIP-LEU1-266A-868 MTCDTIP-LEU1-266A-915 MTCDTIP-LEU1-267A-868 MTCDTIP-LSB3-266A-923-JP MTCDTIP-LVW2-266A-915 MTCDTIP-LVW2-267A-915	

Model Name	AEP Ordering Part Numbers AEP 1.7.x	mLinux Ordering Part Numbers mLinux 4.1.x
MultiConnect® Conduit® IP67 Base Stations (supports Semtech Geolocation Reference Design)		MTCDTIP-LAT1-270L-915 MTCDTIP-LAT1-275L-915 MTCDTIP-LVW2-270L-915 MTCDTIP-LVW2-275L-915 MTCDTIP-LEU1-270L-868 MTCDTIP-LEU1-275L-868
MultiConnect® Conduit® AP (Access Point)	MTCAP-LNA3-915-001A MTCAP-LEU1-868-001A MTCAP-915-001A MTCAP-868-001A	

V. AEP 1.7.x Overview

Minimum System Requirements (AEP 1.7.x):

To install AEP 1.7.x, the Conduit gateway must have the proper software (SW) version:

- AEP 1.4.x, AEP 1.5.x, or AEP 1.6x.
- If running a software version lower than AEP 1.4, please install AEP 1.4 before loading AEP 1.7.x
 - Note: if you are running AEP that is older than 1.3.3 (e.g., 1.2.2), you must do a staged upgrade to 1.3.3 before you can upgrade to AEP 1.7.x

Current and New AEP Software Versions:

Current MTCDT, MTCDTIP and MTCAP software versions:

- AEP 1.4.x
- AEP 1.5.x
- AEP 1.6.x

New MTCDT, MTCDTIP and MTCAP software:

- AEP 1.7.x

New Features in Software Version AEP 1.7.x

The feature enhancements for software version AEP 1.7.x are listed below. For a complete list of new software features, visit <http://www.multitech.net/developer/downloads/>

(Note: Software release notes will be available in March 2019)

Feature Enhancements (AEP 1.7.x):

- LoRa Network Server: Updated to version 2.2.6
- GPS functionality: Re-architected for better performance and consistency
- Configurations downloaded from the device now no longer contain the AppManager.json file.
- A radio reboot feature has been added to reboot the radio when ppp has been unable to connect after all backoff timers have been exercised or ping/tcp connect has failed for 2 hours
- Custom Apps install was enhanced: back up the current app if one exists, and restore it if the new app install fails.
- MultiConnect® mCard™ MTAC-XDOT Gateway Accessory Card: Support added
- MultiConnect® mCard™ Accessory cards: Support for two LoRa cards has been added
- MultiConnect® mDot and xDot Support
 - Added RU864 (864- 870 MHz) to support Russia
 - Added support for Class B LoRa devices

- Added multicast support for Class C LoRa devices

Bug Fixes (AEP 1.7.x):

A number of software bugs have been reported, identified, and corrected in AEP 1.7.x.

- The ICCID on the Radio Status Page has been added back in.
- Radio switching between AT&T and Verizon on the MTCAP models with the LNA3 radio has been fixed.
- A number of help links in the Web UI have been fixed including SMS Configuration.
- Custom Apps: Fixed a race condition between restoring Custom Applications and reboot in User-Defined-Defaults restore.
- SMS issues with international numbers have been fixed.

Visit <http://www.multitech.net/developer/downloads/> for a complete listing.

Beta Release (AEP 1.7.x):

For a limited time, a beta release of AEP 1.7.x is available for review. Customers who are interested in evaluating the beta release prior to the formal release can visit

<http://www.multitech.net/developer/downloads/> and follow the upgrade instructions.

Once AEP 1.7.x is completed, the beta release will be replaced with the final release for all customers to use.

Upgrading AEP Firmware (AEP 1.7.x):

Instructions on upgrading AEP firmware can be found on the MultiTech Developer Website:

<http://www.multitech.net/developer/software/aep/upgrading-the-aep-firmware/>

1. Download the latest firmware file from the [Downloads](#) page.
2. Log into the AEP Web interface.
3. In the left navigation pane, click **Administration > Firmware Upgrade**.
4. Click Browse and select the [conduit_EP-X_upgrade.bin](#) file.
5. Click **Start Upgrade**.
6. After the firmware upgrade is complete, log back into the web GUI and verify the firmware version shown at the top of the page.
7. If you want to save any Node-RED applications, you have two options:
 - If you have a DeviceHQ account, upload Node-Red apps to DeviceHQ. (Recommended)
 - If you do not have a DeviceHQ account, save Node-RED apps you want to keep. Node-RED flows are stored on the Conduit at [/var/config/app/current/flows.json](#). You can export flows to the clipboard from the Node-RED menu or use a tool like WinSCP or SCP in Cygwin to copy [flows.json](#) to your PC.

VI. mLinux 4.1.x Overview

Current and New mLinux Software Versions:

Current MTCDT, MTCDTIP and MTCAP software versions:

- mLinux 4.0.1

New MTCDT, MTCDTIP and MTCAP software:

- mLinux 4.1.x

New Features in Software Version mLinux 4.1.x

The feature enhancements for software version mLinux 4.1.x are listed below. For a complete list of new software features, please visit <http://www.multitech.net/developer/downloads/>

(Note: Software release notes will be available in March 2019)

Overview of changes for mLinux 4.1.x (from mLinux 4.0.1):

- Sprint Radio Support: General support for Sprint LTE Category 1 radio added
- MTCAP ifplugd: ifplugd support is now available on the Conduit AP models
- Removal of MultiConnect mCard (MTAC) Drivers:
 - Drivers for MultiConnect mCard (MTAC cards) are no longer present in the MTS-IO module
 - This makes it easier for customers to write modules and create custom MultiConnect mCard (MTAC) cards using the general purpose GPIO driver
- MTS-IO Module Split
 - The MTS-IO driver (main board driver) was split from the MultiConnect mCard (MTAC) card drivers
 - Each MultiConnect mCard (MTAC) card now has its own driver/module
 - This makes it easier for customers to write their own drivers for custom MTAC Cards
- MTAC-XDOT
 - New driver and utility for new MTAC-XDOT MultiConnect mCard accessory card
- MTAC-PULSE
 - New driver for new MTAC-PULSE MultiConnect mCard accessory card
- LoRa Packet Forwarder 4.0.1 with GPSD Compatibility
 - Allows both NTP and LoRa packet forwarder to acquire the time from the GPS. This does not work on LoRa 2.1/MTCDTIPHP.
- LNA3/Verizon Outgoing SMS
 - Fixes a bug that prevented outgoing SMS messages on Verizon networks using the Conduit Access Point (model number: MTCAP-LNA3-915-001L)
- GPSD 3.18.1
 - Ubxtool command for configuring and querying U-Blox GPS.
- LoRa Network Server 2.1.5
- Package Upgrade from mLinux 4.0.1 to mLinux 4.1.0
 - mLinux 4.0.1 factory image can be updated to 4.1.0 without touching user installed updates
- LoRa XDOT Util
 - Utility for upgrading the XDOT firmware.

Upgrading mLinux Firmware (mLinux 4.1.x):

There are three means of upgrading the existing mLinux firmware to mLinux 4.1.x

1. Upgrading mLinux using an image install
2. Updating packages during a reboot
3. Creating an update package that uses opkg

1. Upgrading mLinux using an image install

The command `/usr/sbin/mlinux-firmware-upgrade` may be used to upgrade the firmware. The upgrade file should be placed in `/var/volatile` or one of its subdirectories. The command must be run as the root user.

There are two types of upgrade files. One type is created by the build named `*upgrade*.bin` and found in the deploy image directory of the build see:

<http://www.multitech.net/developer/software/mlinux/mlinux-building-images/building-a-custom-linux-image/>

Example image upgrade files:

`build/tmp/deploy/images/mtcdt/mlinux-factory-image-mtcdt-upgrade.bin`
`build/tmp/deploy/images/mtcap/mlinux-mtcap-image-mtcap-upgrade-withboot.bin`

Files with `withboot` in the name include the bootstrap and U-Boot partitions. Unless you are upgrading from mLinux 3 to mLinux 4, it is usually not necessary to update bootstrap or U-Boot

2. Updating packages during a reboot

The second type of upgrade file does not do a complete firmware update. It updates packages using the `opkg` command. A package update only affects packages that are changed. Unlike an image update, most files are maintained.

The purpose of updating packages during a reboot is to provide greater resources (memory and temporary file space) for the upgrade. Very small upgrades to commands can be applied without rebooting using the `opkg` command and the feeds. See: <http://www.multitech.net/mlinux/feeds>

If you have initscripts 2.0-r155.43 (mLinux 4.0.0 or greater), it is possible to upgrade packages using `mlinux-firmware-upgrade`.

These files are found at [http://www.multitech.net/mlinux/upgrade/\[version\]](http://www.multitech.net/mlinux/upgrade/[version]) when available. The version pertains to the version where the fix applies.

Since these are not image updates, they may take longer to apply. They leave the configuration alone, except for the packages being updated. NOTE: Make sure that newly installed packages are correctly configured.

3. Creating an update package that uses opkg

This method uses opkg and local files.

See an update package example: <http://multitech.net/mlinux/upgrades/example/>

Carefully review the initial list of packages and verify that they match the final list. Packages may be split or merged. In these cases a package may need to be removed or added, not just updated. Packages may require other packages. So dependencies also need to be in the update package tree. An easy way to determine what packages are required is to use the mLinux feeds, <http://www.multitech.net/mlinux/feeds/> with **opkg**. The file `/etc/opkg/mlinux-feed.conf` may need to be configured for the desired level of mLinux in the update.

The update package is a tar file containing **IPK files** and a **shell script** to initiate the update.

VII. MultiConnect[®] Conduit[®] IoT Gateways

MultiConnect[®] Conduit[®] family of products is the industry's most configurable, manageable, and scalable cellular communications gateways for industrial IoT applications. Network engineers can remotely configure and optimize their Conduit performance through DeviceHQ[®], the world's first IoT Application Store and Device Management platform.

The award-winning MultiConnect Conduit series comes in three variants designed to address specific IoT gateway use cases:

- **MultiConnect Conduit:** Indoor industrial gateway, ideal for environments that require metal casing for protection against particles and debris and require an industrial temperature range.
- **MultiConnect Conduit IP67 Base Station:** Outdoor IP67-rated gateway ideal suited for performing in harsh environments such as rain, snow, extreme heat, and high winds.
- **MultiConnect Conduit AP:** Indoor access point ideal for commercial environments (e.g., hotels, offices, retail facilities) to deepen LoRa coverage in difficult to reach places where cell tower or rooftop deployments may not perform as well.

VIII. Action Requested:

Forward this announcement to others who are actively involved in the sale and support of the Conduit product family and consider the following options to help ensure that this new software version does not impact their deployment schedules:

1. Review the changelog and upgrade instructions for AEP 1.7.x and/or mLinux 4.1.x <http://www.multitech.net/developer/downloads/>
2. Screen all incoming shipments to understand the software version(s) being received.
3. Test and evaluate AEP 1.7.x and/or mLinux 4.1.x (beta release or final release) to understand if any changes are required to the customer's application.
4. Visit the MultiTech Product Support Portal <https://support.multitech.com/support/login.html> if there are any questions or if additional information is required. New customers can also register for an account if necessary.

IX. Additional Information

If you have any questions regarding this Product Change Notification, please contact your MultiTech sales representative or visit the technical resources listed below:

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MultiTech Website: www.multitech.com

MultiTech Developer Site: www.multitech.net

MultiTech Support Portal: <https://support.multitech.com/support/login.html>