Product Change Notification
Software Release Notes

mLinux 5.3.0b

MultiTech® Conduit® AP Access Point
MultiTech® Conduit® IoT Programmable Gateway
MultiTech® Conduit® IP67 Base Station

Date: January 8, 2021

Product Change Notification (PCN) Number
PCN 01082021-001 (mLinux)

I. Overview
mLinux 5.3.0b is for use on the MultiTech Conduit family of programmable gateways:

- Conduit AP Access Point
- Conduit IoT Programmable Gateway
- Conduit IP67 Base Station

mLinux 5.3.0b is a major software release, built upon mLinux 5.2.7

- Available for download in December
- http://www.multitech.net/developer/downloads/#mlinux
- Part Numbers Impacted

Deprecated Features:

- Ruby
- Node.js

Contents

I. Overview
II. Suggested Action Plan
III. mLinux 5.3.0b Overview
IV. Schedule
V. Upgrade Process
VI. Part Numbers Impacted
VII. mLinux Software
VIII. Additional Information

II. Suggested Action Plan

Customers

1. Download mLinux 5.3.0b
2. Evaluate in your environment
3. Understand the release schedule before deploying to fleet of devices
4. Additional information
   - Technical inquiries: email support@multitech.com
   - Sales inquiries: email sales@multitech.com

Distributors

1. Forward this announcement to others within your organization who are actively involved in the sale or support of programmable IoT gateways
2. Notify existing customers of this change and encourage them to evaluate the new firmware with their custom application

III. mLinux 5.3.0b Overview

mLinux 5.3.0b is a major software release built upon mLinux 5.2.7.

The new features, feature enhancements, bug fixes, and known behaviors announced in mLinux 5.2.7 are also available in mLinux 5.3.0b.

For details about mLinux 5.2.7, refer to Software Release Notice - mLinux 5.2.7

Deprecation (mLinux 5.3.0b) – Node.js and Ruby

1. mLinux 5.3.0b does not include support for Node.js
   - Current mLinux versions (mLinux 5.2.7 and earlier) support Node.js version 0.10.48-r1.7.0
   - The requirement to upgrade to OpenSSL 1.1 in mLinux 5.3.0b means that the Conduit family of programmable gateways can no longer support Node.js applications due to security protocol vulnerabilities that exists within Node.js
2. mLinux 5.3.0b does not include support for Ruby
   - Current mLinux versions (mLinux 5.2.7 and earlier) support Ruby version 2.2.5-r0.0
3. Other software packages have been removed or revised
   - Contact support@multitech.com for details

New Features (mLinux 5.3.0b):

1. Upgrade to Yocto 2.6.4 (codename: Thud)
   - Current mLinux versions (mLinux 5.2.7 and earlier) are built using Yocto 2.2.4 (codename: Morty).
   - Yocto 2.6.4 introduces a large number of new software versions
   - It is recommended that user applications be re-compiled and re-linked using either BitBake or the toolchain to be compatible with newer software libraries
2. Upgrade to OpenSSL 1.1.1b
   - Current mLinux versions (mLinux 5.2.7) supports OpenSSL 1.0.2k
   - mLinux 5.3.0b supports OpenSSL 1.1.1b
3. Support for LXFP utility replaced with UXFP utility
   - Utilities used to upgrade Telit radio firmware
   - UXFP utility: Available on mLinux 5.3.0b and later
     http://www.multitech.net/developer/software/mlinux/using-mlinux/using-uxfp-to-upgrade-telit-firmware/
   - LXFP utility: Available on mLinux 5.2.7 and earlier
     http://www.multitech.net/developer/software/mlinux/using-mlinux/using-lxfp-to-upgrade-telit-firmware/
4. Support added for AS923 LoRa Frequency Plans
   - AS923-1, AS923-2, AS923-3
5. Support added for new software packages
   - Contact support@multitech.com for details

Feature Enhancements (mLinux 5.3.0b)

1. Many current software packages have been revised and support for new software packages has been added. Contact support@multitech.com for details

Known Behaviors (mLinux 5.3.0b)

1. No upgrade package install
   - mLinux 5.3.0b includes a large number of version updates
   - Due to these changes, a full image install is required to move from prior mLinux versions (i.e. mLinux 5.2.7) to mLinux 5.3.0b
   - Failure to perform a full image install in upgrading to mLinux 5.3.0b will result in an upgrade failure

Bug Fixes (mLinux 5.3.0b)

1. Group Sudo changes
   - Path for commissioned users and all users in group Sudo now includes /sbin and /usr/sbin.
   - This existed in versions of mLinux prior to 5.2.7

2. Cellular Modem APN Behavior Changes
   - When changing the cellular modem APN, there was a chance that the device might not register successfully (i.e. bad reception)
   - When this occurs, the cellular modem is left with a mode setting of COPS=2 or CFUN=0. This prevents all future ppp connections
   - This has been corrected. mLinux 5.3.0b checks for CFUN=1 and COPS=0 before attempting to register the cellular modem
   - mLinux 5.3.0b also sets CFUN=1 and COPS=0 before attempting to register the cellular modem

IV. Schedule

There are multiple versions of mLinux software available for customer evaluation and final release.

- Downloadable Versions
  - mLinux 5.3.0b Availability: January 2021
  - Visit http://www.multitech.net/developer/downloads/#mlinux
  - Upgrade Instructions: http://www.multitech.net/developer/software/mlinux/upgrading-mlinux/
- Manufacturing
  - mLinux 5.3.0b Availability: April 2021
  - See Ordering Numbers Impacted for details on when mLinux 5.3.0b will be available for different devices

V. Upgrade Process

At any time in the upgrade process, customers can send an email to support@multitech.com or call +1(763) 717-5863.

mLinux Upgrade Instructions:
http://www.multitech.net/developer/software/mlinux/upgrading-mlinux/

mLinux Changelog:
http://www.multitech.net/developer/software/mlinux/mlinux-changelog/

VI. Part Numbers Impacted

The following ordering part numbers are impacted by these updates:

Model Name	Ordering Part Numbers
Conduit® AP Access Point	
Status: Active [2]	**Status: NEOL [3]**
MTCAP-868-001L [2] MTCAP-868-041L [2] MTCAP-915-001L [2] MTCAP-915-041L [2] MTCAP-L4E1-868-001L [2] MTCAP-L4E1-868-041L [2] MTCAP-LAP3-915-001L [2] MTCAP-LAP3-915-041L [2] MTCAP-LNA3-915-001L [2] MTCAP-LNA3-915-041L [2]	
Conduit® IoT Programmable Gateways	
Status: Active [2]	**Status: NEOL [3]**
MTCDT-246L-US-EU-GB [2] MTCDT-247L-US-EU-GB [2] MTCDT-L4E1-246L-EU-GB [2] MTCDT-L4E1-247L-EU-GB [2] MTCDT-L4N1-246L-US [2] MTCDT-L4N1-247L-US [2] MTCDT-LDC3-246L-JP [2] MTCDT-LDC3-247L-JP [2] MTCDT-LSB3-246L-JP [2]	MTCDT-H5-246L-US-EU-GB [3] MTCDT-H5-247L-US-EU-GB [3]
Conduit® IoT Programmable Gateways with LoRa Accessory Cards	
Status: Active [2]	**Status: NEOL [3]**
MTCDT-246L-868-EU-GB [2] MTCDT-246L-923-JP [2] MTCDT-247L-868-EU-GB [2] MTCDT-L4E1-246L-868-EU-GB [2] MTCDT-L4N1-246L-915-US [2] MTCDT-LAP3-246L-915-AU [2] MTCDT-LDC3-246L-923-JP [2] MTCDT-LSB3-246L-923-JP [2]	MTCDT-H5-247L-868-EU-GB [3]

VI. Part Numbers Impacted (continued)

Model Name	Ordering Part Numbers
Conduit® IP67 Base Stations	
Status: Active [2]	**Status: NEOL [3]**
MTCDTIP-266L-868 [2] MTCDTIP-266L-868/2 [2] MTCDTIP-266L-868/915 [2] MTCDTIP-266L-915 [2] MTCDTIP-266L-915/2 [2] MTCDTIP-266L-923-JP [2] MTCDTIP-266L-923KR [2] MTCDTIP-267L-868 [2] MTCDTIP-267L-868/2 [2] MTCDTIP-267L-915 [2] MTCDTIP-267L-915/2 [2] MTCDTIP-L4E1-266L-868 [2] MTCDTIP-L4E1-267L-868 [2] MTCDTIP-L4N1-266L-915 [2] MTCDTIP-L4N1-266L-915/2 [2] MTCDTIP-L4N1-267L-915 [2] MTCDTIP-L4N1-267L-915/2 [2] MTCDTIP-LAT3-266L-915 [2] MTCDTIP-LDC3-266L-923-JP [2] MTCDTIP-LSB3-266L-923-JP [2]	
Conduit® IP67 Base Stations with Geolocation	
Status: Active [2]	**Status: NEOL [3]**
MTCDTIP-L4E1-270L-868 [2] MTCDTIP-L4E1-275L-868 [2] MTCDTIP-L4N1-270L-915 [2] MTCDTIP-L4N1-275L-915 [2] MTCDTIP-LAT3-275L-915 [2] MTCDTIP-LDC3-270L-923-JP [2] MTCDTIP-LDC3-275L-923-JP [2]	

VII. mLinux Software

mLinux is an open source embedded Linux distribution. It's built using the open source Yocto Project which uses the OpenEmbedded-Core build framework. A pre-built Linux image ships with each Conduit Base Station as well as the source code and build system for creating your own custom image.

- Open source embedded Linux distribution based on Yocto project
- Linux version (Linux 4.9), including access to over 500 resolved Common Vulnerabilities and Exposures (CVE)
- Hardware support for cellular, LoRaWAN, WiFi/BT, and GNSS/GPS
- LoRa packet forwarder
- Tool chain for creating custom images
- WAN connection via Ethernet or cellular
- Cellular PPP, DHCP client and server
- Firewall configuration via iptables
- Full root console access via SSH and serial debug port
- Language support: Python, C, C++, Javascript
- Package upgrade support: Java, Perl, Ruby, Mono C#
- opkg package manager with limited package feed
- Basic router functionality with built-in Linux
- Software configurable USB device port
- Lighttpd web server

Detailed information about getting started and using mLinux can be found at:
http://www.multitech.net/developer/software/mlinux/

VIII. Additional Information

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

World Headquarters – USA
+1 (763) 785-3500 | sales@multitech.com

EMEA Headquarters – UK
+(44) 118 959 7774 | sales@multitech.co.uk

MultiTech Developer Resources: www.multitech.net
An open environment where you can ask development related questions and hear back from MultiTech engineering or a member of this community.

Knowledge Base: http://www.multitech.com/kb.go
Immediate access to support information and resolutions for all MultiTech products.

MultiTech Support Portal: https://support.multitech.com/support/login.html
Create an account and submit a support case directly to our technical support team.

MultiTech Website: www.multitech.com