Release Notes

Scanner SDK for Linux v4.4

July 2020

Contents

Overview

These release notes describe the Software Development Kit (SDK) for Linux, including its functionality, supported scanners and supported distributions.

Functionality,

1. CoreScanner core components and drivers (USB, Imaging).
2. JPOS driver.
3. Development libraries and header files for application developers.
4. Test and Sample utilities
    a. Standard I/O Console based sample application for CoreScanner (C++).
    b. GUI sample application for CoreScanner (C++).
    c. IBM JPOS sample application (Java).
    d. The install verifier app

CoreScanner Driver

1. Supported Com Interfaces - See "Supported Com Protocols" section of document
2. Programmatic API Capabilities
   a. Com protocol switching
   b. Get device topology
   c. Plug and Play (PnP) detection
3. Data Capabilities
   a. Barcode data support
   b. Scale data for MP products
   c. Image capture support including view finder
   d. Video capture support
   e. Intelligent Document Capture (IDC)
4. Sample Apps with Source Code
   a. C++ sample app – Graphical User Interface (GUI) based
   b. C++ console app – Command line control based
5. Firmware update
6. Debugging Tools
   a. Logging / monitoring support

JPOS Driver

1. XML configuration of scanner attributes.
2. Access to Zebra specific functionality through Direct I/O calls
3. Sample applications
   a. JPOS sample app
   b. Direct I/O sample app
4. Logging support
5. JPOS exceptions for failures (Troubleshooting)

JPOS Remote Management Solution

1. New tool to perform remote management activities via JPOS driver.
2. Command line tool and executed by a shell script
3. Logging support
4. Exceptions or error message will be printed to the console during the tool execution.

Install Verifier App

1. This standalone application allows a user to verifying the SDK and its drivers (CoreScanner and JPOS driver) installed properly and are functioning correctly
2. Application will output an event log as documentation and to assist with debugging issues
3. Installation Option: tarball

Host Device Details

See the "Installation Options (Supported Distributions)" table – shown below.

For the latest SDK updates, please visit Zebra Scanner SDK

For support, please visit http://www.zebra.com/support.

Device Compatibility

For the compatible devices list, please visit following page.

https://www.zebra.com/us/en/support-downloads/software/developer-tools/scanner-sdk-for-linux.html

Supported COM Protocols

SDK supported communication protocols include:

- USB - IBM Table-Top
- USB - IBM Hand-Held
- HID Keyboard Emulation
- USB - Symbol Native API (SNAPI) with Imaging Interface
- USB - Symbol Native API (SNAPI) without Imaging Interface

	Query Assets Information	Host Switching	Imaging and Video	Faster Firmware Update	Management and Firmware Update	Barcode	JPOS Driver
IBM Table-Top USB	X	X			X	X	X
IBM Hand-Held USB	X	X			X	X	X
IBM OPOS - IBM Hand-held USB with Full Scan Disable							
HID Keyboard Emulation		X					
USB CDC Host							
Symbol Native API (SNAPI) with Imaging Interface	X	X	X	X	X	X	X
Symbol Native API (SNAPI) without Imaging Interface	X	X			X	X	X
Wincor-Nixdorf RS-232 Mode B							
Simple Serial Interface (SSI) over RS232							
Simple Serial Interface (SSI) over Bluetooth Classic							
Simple Serial Interface (SSI) over Bluetooth Low-Energy (BLE)							
Simple Serial Interface (SSI) over MFI							

Version History

Version 4.4.1-11 – 07/2020

1. Added supports for Ubuntu 20.04 (64bit) and CentOS 8.1 (64bit).
2. Logging Agent bundled with Linux SDK.
   a. The Logging Agent allows a 3rd party management console to track scanner information including the scanner's health by parsing a Logging Agent generated log file.
   b. The Logging Agent is configurable for example it can be output for all devices (1,000s of log files) or just devices that meet a specific condition like failed a firmware update (a few log files).
   c. The Logging Agent can document the following information:
      i. Asset information
      ii. Statistics for example battery charge level or UPCs scanned
      iii. Firmware failures and or firmware success
      iv. Parameter value(s) changed. Achieved by tracking parameter 616 (config file name changed to "Modified")
3. Added support for composite barcode types.
4. Bug fix – Sample application freeze resolved on scanner PNP.
5. Bug fix – Sample application RSM attributes list shows the correct permissions for each attribute.

Version 4.4.1-8 – 04/2020

1. Added option for enabling new Zebra HID API instead of using native OS provided HID API. Zebra HID API enabled through a configuration setting, switching from libusb to hidraw.
2. Add support for additional distributions: Raspbian 8 and ARM7L (32-bit ARM processor). Note this Linux OS runs on Raspberry PI 3.0 hardware.
3. Bug fix – Resolved app responding delay by sending the Direct I/O commands using the HID API directly from the comlib to the scanner.
4. Bug fix - Synchronization block introduce when consuming the events from CoreScanner to JPOS driver. Otherwise, the single core POS system is missing different events from different logical devices (JPOS)

Version 4.4.1-4 – 01/2020

1. Added ability to discover, communicate and manage a third level cascaded device. The SDK now supports connecting cordless scanners like a DS2278 and cradle to a MP7000. The MP7000 is connected to the host.

Version 4.4.1-2 – 10/2019

1. Added "DotCode" and "GridMatrix" symbology support to JPOS and SDK Sample Applications. Note the Linux SDK already supported these symbologies.
2. Added Java 12 UI enhancements to JPOS Sample Application. Note no change required in the JPOS driver.

Version 4.4.0-18 – 08/2019

1. Added Scale Live Weight event support for Multi-Plane scanners.
2. Vendor specific capability, 'CapStatusUpdate' enabled in JPOS Scale driver.
3. Implemented 'StatusNotify' property in JPOS driver.

Version 4.4.0-15 – 06/2019

1. Added get next Attribute RSM command support in CoreScanner.

Version 4.4.0-14 – 06/2019

1. "EAN13 Supplementary of 5" symbology support added into JPOS Sample Application.

Version 4.4.0 – 03/2019

1. Added JPOS 1.14 standard compatibility for the JPOS driver.
2. Introduced a JPOS based asset query capability (model #, serial #, date of manufacture, firmware version).

Version 4.3.3 – 01/2019

1. Enhanced Linux log file format to mirror Zebra's Windows SDK logging format
2. Added ability to customize logging capabilities via the CoreScanner configuration file. Settings include
    a. Log file storage path
    b. Number of stored log file. For example, save the last 50 files.

Version 4.3.1 – 08/2018

1. Added support for JPOS Scale Asynchronized Read Weight -1 (forever) timeout support.
2. Added support for Intelligent Document Capture (IDC).
3. Added ability to specify an on board udev library using the CoreScanner's configuration file instead of the system default.

Version 4.2.4 – 04/2018

1. JPOS Scale Read Weight Asynchronized mode support.
2. JPOS Statistics reporting support for Scale.

Note C++ applications cannot be compiled with C++ 11 based compilers without setting _GLIBCXX_USE_CXX11_ABI macro to 0. Below definition will be used to set ABI to the old C++ version.

#define _GLIBCXX_USE_CXX11_ABI 0

Version 4.1.11 – 01/2018

1. Host variant switching from CDC to management modes.

Version 4.1.0 – 10/2017

1. Support for custom PIDs.

Version 4.0.0 – 05/2017

1. Source tarball.
2. Install Verifier application added.

Version 3.0.0 – 08/2016

1. IBM TT, IBM HID, SNAPI firmware download support.
2. SNAPI fast firmware downloads support.
3. SNAPI Imaging and Video capturing.
4. API events like PNP events.
5. Detecting HIDKB devices.

Version 2.0.0 – 02/2016

1. Existing drivers were rebranded from Motorola to Zebra.

Version 1.3.0 – 08/2015

1. Supports for Ubuntu 14.04, Ubuntu 12.04, SLES 11, CentOS 6.3 distributions.
2. Concurrent application support for Scanner and Scale of MP6200 in JPOS.
3. Cascaded device support for MP6200, Presentation Cradle and Standard Cradle.

Components

Component or Module	File	Installation Path
CoreScanner libraries and symbolic links	libcs-iudev.so.4.4.0	/usr/lib/zebra-scanner/corescanner
	libcs-comm.so.4.4.0	
	libcs-common.so.4.4.0	
	libcscl-snapi.so.4.4.0	
	libcs-client.so.4.4.0	
	libcs-clientscanner.so.4.4.0	
	libcs-clientscale.so.4.4.0	
	libcscl-ibmtt.so.4.4.0	

	libcscl-ibmhh.so.4.4.0	
	libcscl-hidkb.so.4.4.0	
	libcs-client.so -> libcs-client.so.4.4.0	
	libcs-clientscale.so -> libcs-clientscale.so.4.4.0	
	libcs-clientscanner.so -> libcs-clientscanner.so.4.4.0	
	libcs-comm.so -> libcs-comm.so.4.4.0	
	libcs-common.so -> libcs-common.so.4.4.0	
	libcs-iudev.so -> libcs-iudev.so.4.4.0	
	libcscl-hidkb.so -> libcscl-hidkb.so.4.4.0	
	libcscl-snapi.so -> libcscl-snapi.so.4.4.0	
	libcscl-ibmtt.so -> libcscl-ibmtt.so.4.4.0	
	libcscl-ibmhh.so -> libcscl-ibmhh.so.4.4.0	
CoreScanner Daemon	Cscore	/usr/bin/
Init scripts for CoreScanner daemon for many distributions	cscored-ubuntu	/usr/share/zebra-scanner/sbin/
	cscored-suse	
	cscored.service	
	cscored.lsb	
JPOS driver and SDK libraries	xml-apis.jar	/usr/lib/zebra-scanner/javapos/jpos/
	xercesImpl.jar	
	JposServiceScanner.jar	
	JposServiceScale.jar	
	JposServiceOnScanner.jar	
	JposServiceOnScale.jar	
	JposServiceJniScanner.jar	

	JposServiceJniScale.jar	
	JposLogger.jar	
	javaPOS114.jar	
	JLogger.jar	
	logback-core-1.2.3.jar	
	logback-classic-1.2.3.jar	
	lsf4j-api-1.7.25.jar	
CoreScanner libraries for JPOS JNI	libcs-jniscanner.so.4.0.0	/usr/lib/zebra-scanner/javapos/jni/
	libcs-jniscale.so.4.0.0	
	libcs-jniscanner.so -> libcs-jniscanner.so.4.0.0	
	libcs-jniscale.so -> libcs-jniscale.so.4.0.0	
CoreScanner console sample application source codes and executable files	src/ConsoleSampleEventListener.cpp	/usr/share/zebra-scanner/samples/console-app/
	src/ConsoleMain.cpp	
	include/ConsoleSampleEventListener.h	
	include/ConsoleMain.h	
	bin/corescanner-console-app	
CoreScanner GUI sample application (Source code and executable files)	include/xml_formatter.h	/usr/share/zebra-scanner/samples/gui-app/
	include/util.h	
	include/scanner.h	
	include/debug.h	
	include/pugiconfig.hpp	
	include/pugixml.hpp	
	src/xml_formatter.cpp	
	src/util.cpp	

	src/pugixml.cpp	
	src/main.cpp	
	src/debug.cpp	
	gui.xml	
	Makefile	
	images/empty.png	
	bin/corescanner-gui-app	
JPOS sample application	JposTest.jar	/usr/share/zebra-scanner/samples/jpos-sample-app/
	jpos-sample-app.sh	
	build.xml	
JPOS direct I/O sample application	JposTestDio.jar	/usr/share/zebra-scanner/samples/jpos-directio-app/
	jpos-directio-app.sh	
JPOS based Remote Management Solution	jposRemoteManagement.jar	/usr/lib/zebra-scanner/javapos/jpos
	jposRemoteManagementTool.jar	/usr/share/zebra-scanner/remote-management
	remote-management.sh	
	jpos-remote-management.xml	/usr/share/zebra-scanner/javapos/xml/
JPOS configuration and property files	xml/jpos.xml	/usr/share/zebra-scanner/javapos/
	config/rsm-id.xml	
	config/rsm-id.dtd	
	config/msijpos.properties	
Source code for JPOS sample application	All .java files located inside the directory	/usr/share/zebra-scanner/samples/jpos-sample-app/src/com/jpos/POStest
Source code and	All .java files located inside the directory	/usr/share/zebra-

Installation Options (Supported Distributions)

Supported distributions and their installation options.

Installation Options

Supported Distribution	RPM_Package_x86_64bit	RPM_Package_x86_32bit	Debian_Package_x86_64bit	Debian_Package_x86_32bit	Debian_Package_ARM_32bit	Source_Tar_GZ_Package
CentOS 8.1	X	NA	NA	NA	NA	X
CentOS 7.3	X	NA	NA	NA	NA	X
CentOS 7	X	X	NA	NA	NA	X
CentOS 6.3	X	X	NA	NA	NA	X
SLES 15	X	NA	NA	NA	NA	X
SLES 12	X	NA	NA	NA	NA	X
SLES 11 SP3	X	X	NA	NA	NA	X
SLES 11 SP2	X	X	NA	NA	NA	X
Open SUSE13.1	X	NA	NA	NA	NA	X
Red Hat 7.4	X	NA	NA	NA	NA	X
Ubnutu 20.04	NA	NA	X	NA	NA	X
Ubuntu 19.04	NA	NA	X	NA	NA	X
Ubuntu 18.04	NA	NA	X	NA	NA	X
Ubuntu 16.04	NA	NA	X	X	NA	X
Ubuntu 14.04	NA	NA	X	X	NA	X
Ubuntu 12.04	NA	NA	X	X	NA	X
Debian 9.5	NA	NA	X	X	NA	X
Debian 8	NA	NA	X	X	NA	X
Debian 7	NA	NA	X	X	NA	X
Raspbian 8	NA	NA	NA	NA	X	X
Other *	NA	NA	NA	NA	NA	X
	x86	x86	x86	x86	ARM7L	x86

* Customer Testing Required

Dependencies and Package Installation

Boost and libusb libraries are dependent packages for CoreScanner and SDK for Linux. Distribution based versions are stated in below installation guides.

1. Package installation guide for Debian based systems (Ubuntu)
2. Package installation guide for RPM based distributions (SLES 11)