User Guide

Zebra Data Service (ZDS) 2.0

Device analytics data collection components

CONFIDENTIAL

USER GUIDE VERSION 0.3
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1 Introduction

1.1 Purpose

The Zebra Data Service consists of a service engine and collection agents that work together to collect machine data from the devices and deliver it to a cloud-based backend server. Machine data is then analyzed by server-side logic to provide insights about device usage patterns.

See Appendix 1 (Section 7.1) for more information about machine data.

1.2 Scope

This document covers the device-side ZDS analytics components to provide help installing and configuring the devices.

1.3 Intended Audience

This document is intended for end-users as an aid to device configuration and basic troubleshooting of ZDS components.

Reference Materials

[1] Zebra TechDocs: http://techdocs.zebra.com/zds

[2] Tech Docs for MX: http://techdocs.zebra.com/mx

[3] Analytics Manager CSP: http://techdocs.zebra.com/mx/analyticsmgr

[4] Power Manager CSP: http://techdocs.zebra.com/mx/powermgr

[5] Stage Now: http://techdocs.zebra.com/stagenow/

2 Overview

2.1 Zebra Data Service

The Zebra Data Service (ZDS) is a continuous background service running on all supported Zebra devices and is responsible for collecting and uploading analytics data coming from ZDS plug-ins and Zebra-authorized third-party apps. Data is uploaded to the Zebra analytics database every 24 hours by default with transport secured with HTTPS. ZDS updates itself and the ZDS Plugin, and can accept configuration changes such as upload interval (5-minute min.) and data-collection events using a barcode scanned by the device.

Configurable data upload parameters:

- A maximum of about 70KB of data can be collected per day.
- A maximum of about 2MB of (compressed) data can be uploaded per day. This higher limit allows ZDS to upload cached data in case ZDS was not able to upload data on previous days.
- A maximum of 5MB of data can be stored in the ZDS database. When the maximum is reached, older data is replaced by newer data.

NOTE: ZDS is enabled on all devices out of the box and transmits collected device data automatically soon after an internet connection is available. To disable data collection, please see Configuring ZDS beginning on page 6.

2.2 Zebra Data Service Plugin

The Zebra Data Service is responsible for collecting machine data. Please see Appendix 1 (Section beginning on page 18) for more information.

2.3 Application Binary Size

- Zebra Data Service: ~2 MB
- Zebra Data Service Plugin: ~200 KB

3 Configuring ZDS

3.1 Setup Wizard and Settings Application

- ZDS can be turned On or Off from the EULA UI application

3.2 Analytics Manager CSP

- Configuration of ZDS can be done through the Analytics Manager CSP
- Analytics Manager CSP also can be used to enable/disable ZDS
- **More information**: https://techdocs.zebra.com/mx/analyticsmgr/

3.3 StageNow Barcodes

- **More information**: http://techdocs.zebra.com/stagenow/3-1/gettingstarted/

4 ZDS EULA

4.1 Overview

The ZDS EULA application allows the device user to enable or disable data collection. The EULA is available on both GMS and non-GMS devices.

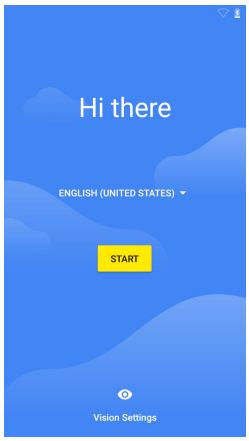
The EULA setup wizard appears when a factory-fresh device boots for the first time (or after factory reset). The EULA page also can be accessed from Android Settings panel. The state of the toggle button on the EULA screen shows the state of the analytics data collection, **which is enabled by default**.

- The device user can choose to enable/disable ZDS using the toggle switch
- The toggle switch can be disabled by the device administrator
- On value tier devices such as TC20 and TC25 and if premium staging applications such as StageNow are used:
  - Analytics will be enabled by default
  - Analytics cannot be disabled from Analytics Manager CSP
  - Analytics cannot be turned off from EULA as Toggle switch will be disabled

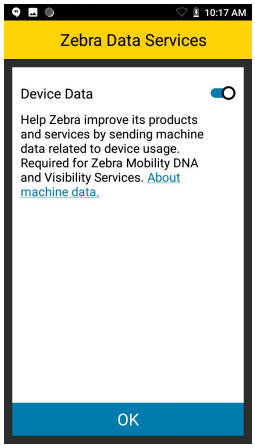
Please Appendix 1 (page 18) for more details about EULA for ZDS.

4.2 EULA Setup Wizard

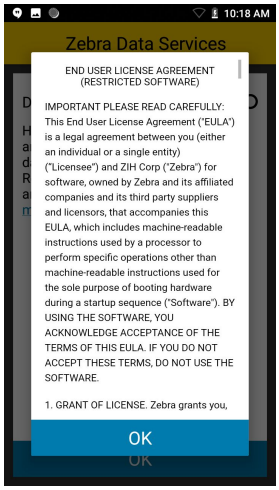
- On GMS devices, the Google setup wizard is displayed when device boots up for the first time (the location consent screen might not appear on all devices).



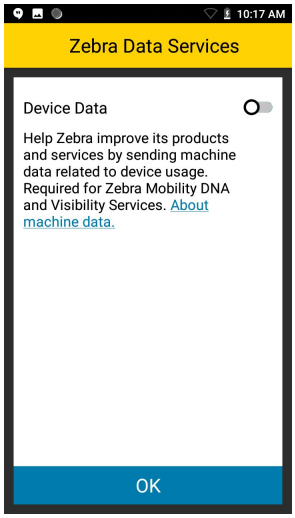
- The EULA Setup Wizard is employed on devices running Nougat and higher (except WT6000) and appears immediately after the Google Setup Wizard:



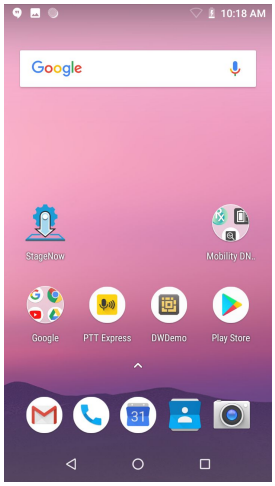
- The EULA can be viewed by clicking on “About Machine Data"



- Disable data collection by toggling off the switch and clicking the “OK” button:



- Clicking “OK” dismisses the Setup Wizard and returns to the Android Home Screen:

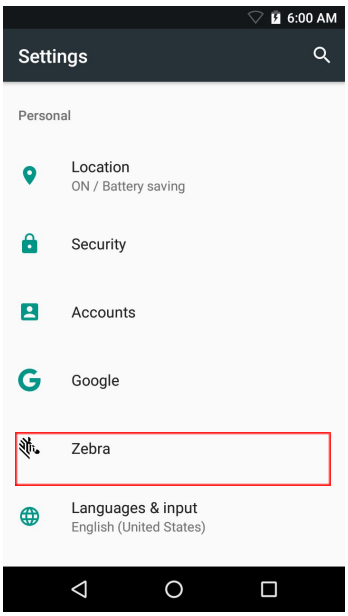


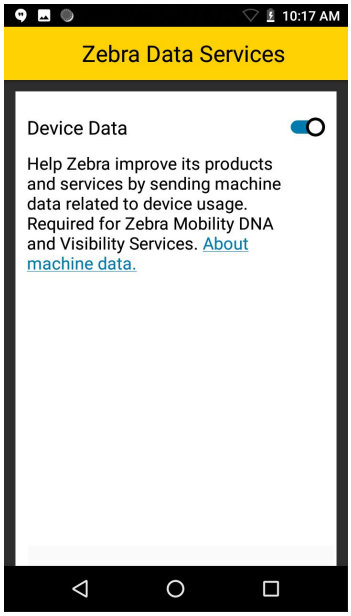
4.3 Notes on EULA Setup Wizard

- The Google Setup Wizard is shown only when the device is fresh "out of the box" or after performing a Factory Reset (not after an Enterprise Reset).
- StageNow barcodes to bypass the Google Setup Wizard also bypass the EULA Setup Wizard.
    - Please see Power Manager documentation for more information about how to bypass setup wizards.
- Once completed or bypassed, the EULA Setup Wizard is not shown again unless a Factory Reset is performed.

4.4 Accessing EULA from Settings Application

The EULA can be accessed by clicking on "Zebra" in the Android Settings panel, which also is where data collection can be enabled or disabled.





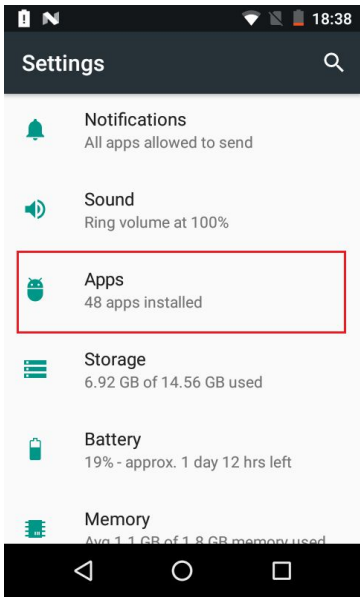
5 Troubleshooting

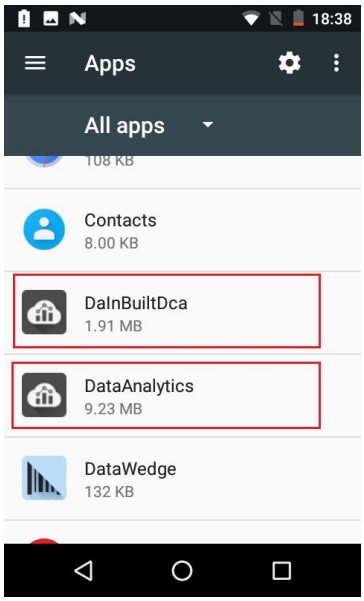
5.1 Renaming of Data Analytics to Zebra Data Service

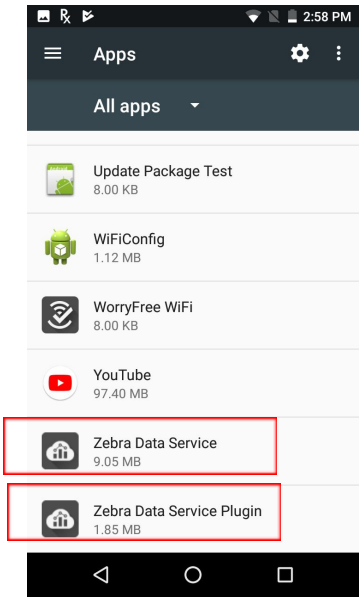
- Older devices might contain components with similar functionality. These were called **“DataAnalytics”** and **“DaInBuiltDca” (version 3.4.0.1153 and lower)**
- On newer devices the components are called **“Zebra Data Service”** and **“Zebra Data Service Plugin” (version 3.5.0.1029 and higher)**

5.2 Getting the Version of Analytics Applications

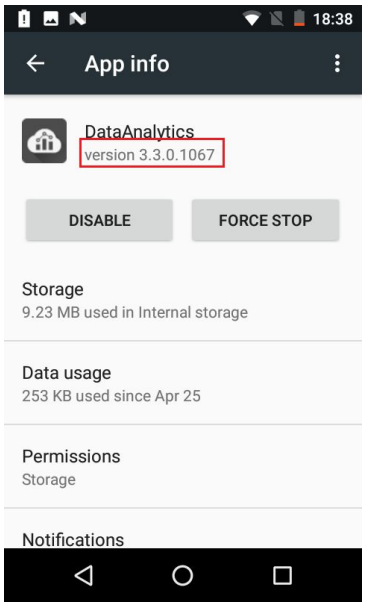
- Navigate to device **Settings** -> **Apps**
- On the “All apps” screen, click on the menu icon (in the upper-left corner) and select “Show System” to display a list of all system applications.
- Scroll through the apps to find the Analytics apps:

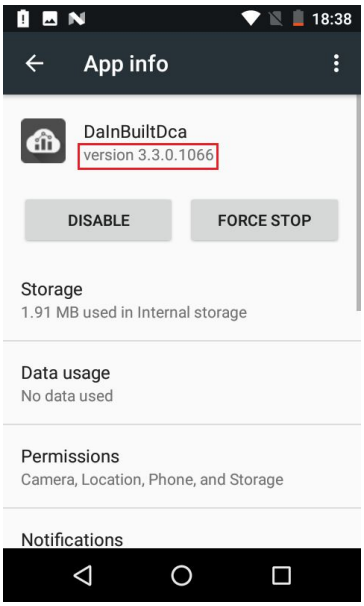


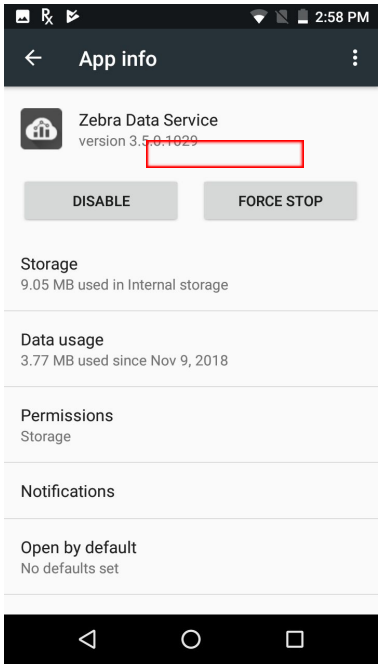


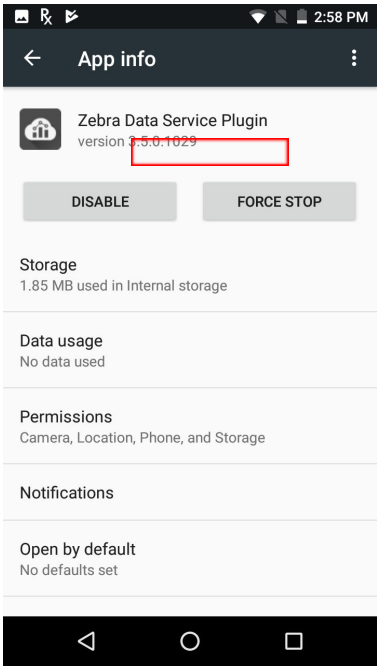


- Click on each application and note the version number, which changes based on the latest self-update version made available by Zebra.


18:38
App info
DataAnalytics
version 3.3.0.1067
DISABLE
FORCE STOP
Storage
9.23 MB used in Internal storage
Data usage
253 KB used since Apr 25
Permissions
Storage
Notifications


18:38
App info
DaInBuiltDca
version 3.3.0.1066
DISABLE
FORCE STOP
Storage
1.91 MB used in Internal storage
Data usage
No data used
Permissions
Camera, Location, Phone, and Storage
Notifications


2:58 PM
App info
Zebra Data Service
version 3.5.0.1029
DISABLE
FORCE STOP
Storage
9.05 MB used in Internal storage
Data usage
3.77 MB used since Nov 9, 2018
Permissions
Storage
Notifications
Open by default
No defaults set

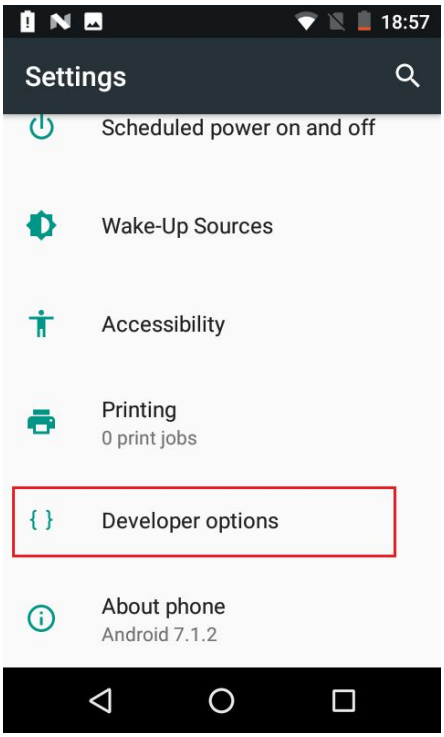

2:58 PM
App info
Zebra Data Service Plugin
version 3.5.0.1029
DISABLE
FORCE STOP
Storage
1.85 MB used in Internal storage
Data usage
No data used
Permissions
Camera, Location, Phone, and Storage
Notifications
Open by default
No defaults set

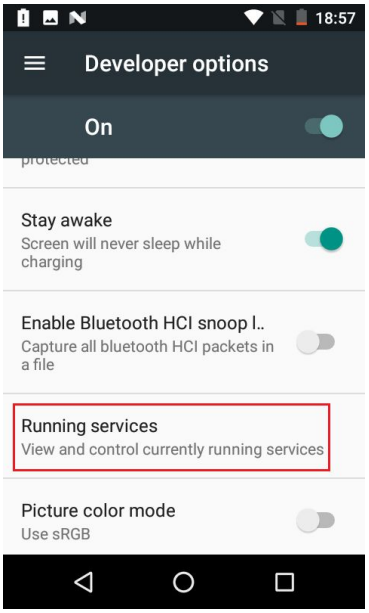
Checking from EULA Screen

- Check the sate of toggle button in the EULA app to determine whether Analytics is disabled (OFF)
- Refer to **Section 4.4** for details

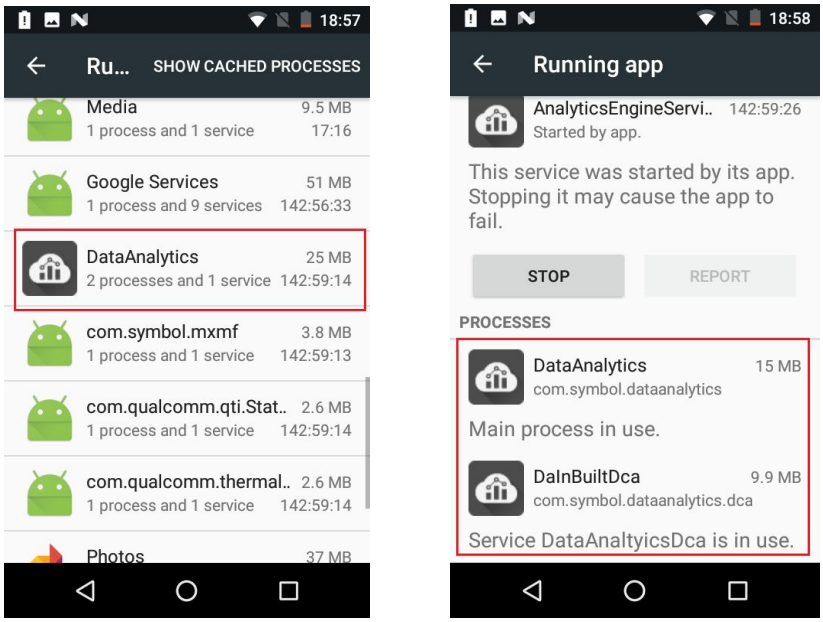
5.3 Checking from Running Services

- In the Android Settings panel, go to Developer Options -> Running services -> and scroll down to Data Analytics (old) or Zebra Data Service (new).
- Click to see whether the processes are running:

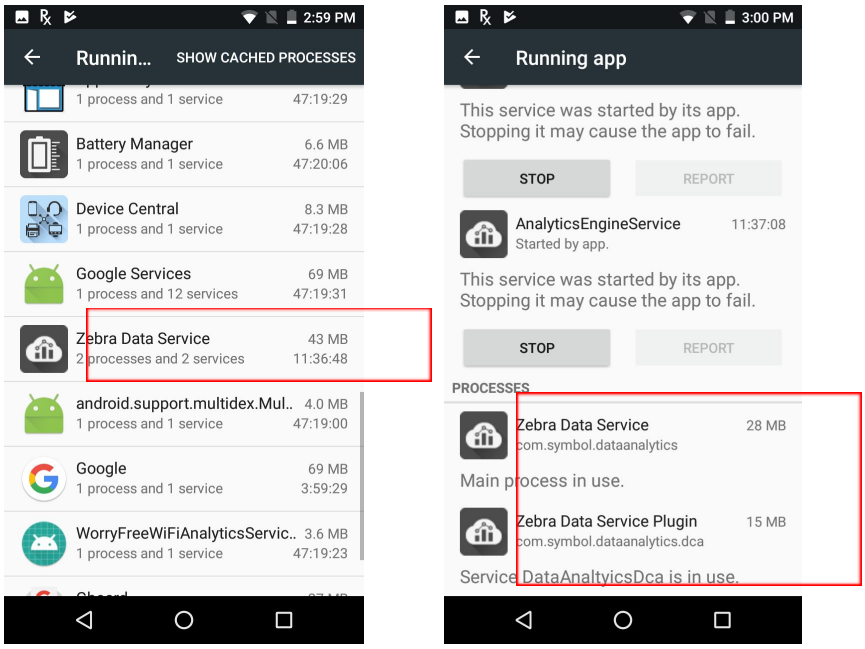




- Note: To enable developer options go to Settings -> About Phone -> Build Number -> click on the build number repeatedly (about seven times) until it displays a toast message indicating that the developer option is enabled.



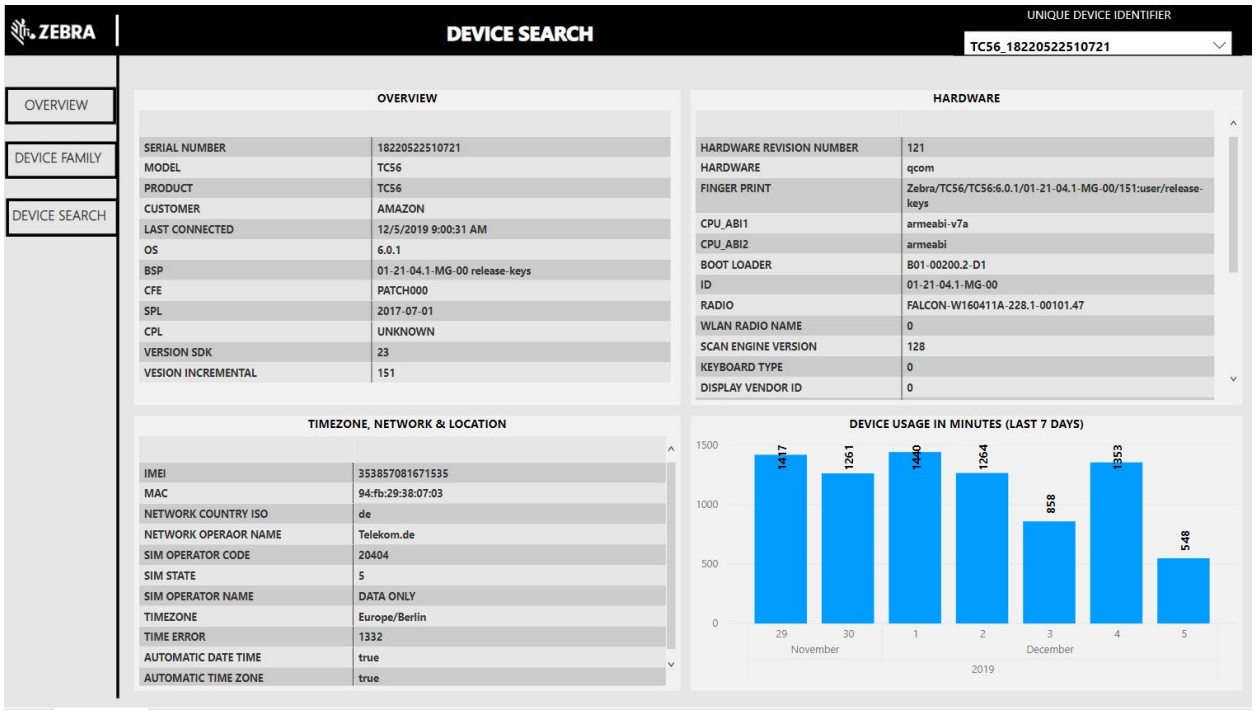
(OLD)



(NEW)

5.4 Checking Last Connected time from Analytics Server

- When was the last time that my device connected to analytics server?
- Answer: Log in to the Analytics server linked below and enter the serial number of the device. In the Overview section, the Last Connected row displays the last known date and time when this device was connected to the server.
- NOTE: For recently deployed devices, it might be necessary to wait 24 hours before data is displayed to allow the data collection service to complete one cycle.
- Analytics Server URL (login required)
- Click on “Device Search”


ZEBRA
DEVICE SEARCH
UNIQUE DEVICE IDENTIFIER
TC56_18220522510721
OVERVIEW
DEVICE FAMILY
DEVICE SEARCH
OVERVIEW
SERIAL NUMBER 18220522510721
MODEL TC56
PRODUCT TC56
CUSTOMER AMAZON
LAST CONNECTED 12/5/2019 9:00:31 AM
OS 6.0.1
BSP 01-21-04.1-MG-00 release-keys
CFE PATCH000
SPL 2017-07-01
CPL UNKNOWN
VERSION SDK 23
VESION INCREMENTAL 151
HARDWARE
HARDWARE REVISION NUMBER 121
HARDWARE qcom
FINGER PRINT Zebra/TC56/TC56:6.0.1/01-21-04.1-MG-00/151:user/release-keys
CPU_ABI1 armeabi-v7a
CPU_ABI2 armeabi
BOOT LOADER B01-00200.2-D1
ID 01-21-04.1-MG-00
RADIO FALCON-W160411A-228.1-00101.47
WLAN RADIO NAME 0
SCAN ENGINE VERSION 128
KEYBOARD TYPE 0
DISPLAY VENDOR ID 0
TIMEZONE, NETWORK & LOCATION
IMEI 353857081671535
MAC 94:fb:29:38:07:03
NETWORK COUNTRY ISO de
NETWORK OPERAOR NAME Telekom.de
SIM OPERATOR CODE 20404
SIM STATE 5
SIM OPERATOR NAME DATA ONLY
TIMEZONE Europe/Berlin
TIME ERROR 1332
AUTOMATIC DATE TIME true
AUTOMATIC TIME ZONE true
DEVICE USAGE IN MINUTES (LAST 7 DAYS)
1500
1000
500
0
1417
1261
1440
1264
858
1353
548
29
30
1
2
3
4
5
November
December
2019

6 FAQ

#	Questions	Answers
1.	What is the package name of the current agent?	There would be two apks 1. com.symbol.dataanalytics.apk - Main analytics engine 2. com.symbol.dataanalytics.dca.apk - Data collection plug-ins
4.	What is the port and IP address that the agent will attempt to communicate to?	Server address: http://analytics.zebra.com Server Port: 443
5.	How can the customer block the installation of the new agent if they choose to do so? (for example, if a package does not reside on the device, customers can not disable it via MX.)	can be disabled vis AnalyticsManagerCSP https://zebra.sharepoint.com/:w:/s/converge/enterprise-softwarebangalore/Analytics/EbuPtgeh_dxFjP18S13kVMYBLxAF3DWmfLM08BO3JPqJHQ Refer section 3,4
6.	How frequently will the agent report back?	Once in 24 hours
7.	How much data is sent back during each sync?	~70 KB
8.	What is the size of the agent?	~2.2 MB

7 Appendix - 1

7.1 ZDS Machine Data

Standard Data

- Device Info & Device Utilization
- BSP, LG patch & Security patch levels
- RAM available
- Flash info & health
- Battery info & health
- Data Traffic statistics: Wi-Fi / Cellular / Bluetooth / Ethernet
- WLAN Connectivity Info
- WWAN Connectivity Info
- Apps Info and usage
- Additional Apps Info (Value-adds): MX STATS, SimulScan, EMDK, Data Wedge, EHS, StageNow
- Scanner Info and statistics
- Reboots – system and app caused
- ANR
- CPU, Memory usage (Planned)

Optional - based on specific services

- Location: Cellular, GPS
- Location: WLAN, Bluetooth (Planned)

7.2 EULA: About Machine Data

- https://www.zebra.com/content/dam/zebra_new_ia/en-us/channel/terms-conditions/na/zebra-restricted-eula-170515.pdf

7.3 Supported Devices

Device	Android 4.x (KitKat)	Android 5.x (Lollipop)	Android 6.x (Marshmallow)	Android 7.x (Nougat)	Android 8.x (Oreo)	Android 9.x (Pie)
TC55	●					
MC40	●	●				
MC9200	●					
TC70/TC75	●	●				
ET5X		●	●			
TC8000		●				
VC8000		●				
MC3300				●		
VC80X					●	
TC20/25				●	●	
EC30					●	
ET51/ET56					●	
L10 Android					●	
MC33X					●	
MC9300					●	
PS20					●	●
TC70X/TC75X			●	●	●	
TC51/TC56			●	●	●	
TC52					●	●
TC57					●	
TC72					●	●
TC77					●	
TC8300					●	
WT6000		●		●		