

Zebra Data Service (ZDS) Agent



ZEBRA

Configuration Guide

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Overview

The Zebra Data Service (ZDS) agent software is a continuous background service running on all supported Zebra devices. It collects and uploads analytics data from ZDS plug-ins and Zebra-authorized third-party apps.

ZDS collects and transmits data from the moment the device is turned on, and it updates itself and the ZDS plug-ins automatically. Data is uploaded to the Zebra analytics database every 24 hours by default, with transport secured with HTTPS.

Zebra's VisibilityIQ (VIQ) service leverages the data from the ZDS agent to provide you with actionable insight for Zebra Android mobile computers. Zebra recommends that you increase the ZDS data upload frequency to at least four times every 24 hours to improve data availability and accuracy in analytics insight provided by VIQ Foresight (VIQF) and Proactive Battery Replacement (PBR).

ZDS data is required in all VIQF and PBR offerings to ensure that you will have the same level of visibility insight whether you have Mobile Device Management (MDM) in place or not. The following table demonstrates the availability of the VIQF and PBR reports based on different data sources with VIQ offers.



NOTE: In the following table:

- An X indicates that the data source in that column can be used to build the report in that row.
- A yellow background indicates that the report requires ZDS.

Reports	VIQ OneCare Data Sources	VIQ Foresight and PBR Data Sources		
	Zebra Backend Systems	ZDS	42 Gears or SOTI	AirWatch or Mobile Iron
VIQ OneCare Reports				
Contracts	X			
Repair	X			
Repair Lifecycle	X			
Ontime Delivery	X			
Repair Repeat Rate	X			
Repair Return Rate	X			
Top Repair Metrics	X			
Case Lifecycle	X			
LifeGuard Analytics		X		
PBR Reports				
PBR Battery Replacement		X		
VIQ Operational Reports				
Devices				
Total Devices		X	X	X
Devices in Operation*		X	X	X
Newly Activated Devices		X	X	X
Out of Contact Devices		X	X	X
Predictive States		X	X	X
Battery				
Critical Battery Events		X	X	
Battery Swap Activity		X		
Smart Battery Health		X		
Smart Battery Overview		X		
Battery Level		X	X	
Battery Discharge Rate		X	X	

* Devices in Operation requires ZDS for full utilization of options. SOTI and 42 Gears can provide information only for battery-related utilization. AirWatch and MobileIron require ZDS to compute utilization.

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		VIQ OneCare Data Sources	VIQ Foresight and PBR Data Sources		
		Zebra Backend Systems	ZDS	42 Gears or SOTI	AirWatch or Mobile Iron
Reports					
Utilization					
	Applications Analytics		X		
	Device Disruptions		X		
	Memory (RAM) Utilization by App		X		
	Utilization Rightsizing		X	X	
	WLAN Signal Strength		X	X	
	WWAN Utilization		X		
	Physical Memory		X	X	
	Storage Memory		X	X	
	Scan Metrics		X		
	Geo Locations		X	X	
VIQ Vitals					
	Unaccounted For Devices		X	X	X
	Device Utilization		X	X	
	Battery Health		X		
	Hardware Health		X		
	Device Inventory		X	X	X
	Software Health		X		
	Damage and Repairs	X	X		
	Connectivity Health		X		

ZDS Resource Requirements

The following are estimated resource requirements for ZDS:

- ZDS requires approximately 35 MB RAM memory—30 MB for code execution and up to 5 MB for a data collection buffer.
- The impact of ZDS on battery discharge is normally less than 2% over a 24-hour period (battery discharge is less than 0.08% discharge rate per hour).
- ZDS transmissions/uploads are compressed. The amount of data transmitted/uploaded per device is, on average, approximately 70 KB or less per day for 24-hour transmission rates. This normally increases to around 80 KB per day for 6-hour transmission rates.

Measurements that were made for some customers yielded the following averages for other rates:

Customer Transmission/Upload Rate	Average Data Per Day
4-hour	85 KB
2-hour	225 KB
1-hour	250 KB
30-minute	400 KB

Prerequisites for Data Transmission to VIQ

For ZDS agent to transmit data to VIQ, the following prerequisites must be met:

- Enable ZDS agent on all devices.
- Enable network connectivity on all devices (WWAN or WLAN based).
- Ensure that each device can connect to the internet.
- If devices are behind a corporate firewall, ensure that the ZDS cloud server can be reached from the devices. The server information and port used by ZDS are the following:
 - Server 1 address: analytics.zebra.com using IP address 104.198.59.61 on Port 443
 - Server 2 address: device-https.savannacore.zebra.com using IP address 34.68.84.87 on Port 443
- Use Ping or a similar network tool to confirm communication between the device network and the ZDS server(s). After you verify the connection, all devices on that network should be able to connect to and send collected data to the server(s). ZDS uses the following, which also must be visible on the network for ZDS operation:
 - connectivitycheck.android.com
 - connectivitycheck.gstatic.com
 - google.com



NOTE: Zebra recommends using DNS server names instead of IP addresses when whitelisting (also called "allowlisting") to avoid service interruptions and required router changes if IP addresses change in the future.

Verifying That ZDS Is Enabled on Devices

There are two ways that you can check if ZDS is running on your devices:

- If you have an MDM with the devices enrolled, you can check if the following package names show up for your devices on the MDM console:
 - `com.symbol.dataanalytics.apk` | Main analytics engine for ZDS
 - `com.symbol.dataanalytics.dca.apk` | Data collection plug-in for ZDS
- You can check the ZDS status on individual devices to which you have access. For instructions to verify if ZDS is running on a device, refer to the [VIQ ZDS Agent Verification Guide](#).

Modifying ZDS Configuration

This section describes the types of ZDS agent configurations, the options for changing the configurations using barcodes or XML, and where to get additional resources.

ZDS Agent Configurations

The following configurations for the ZDS agent can be modified:

- **ZDS agent enablement**

Some customers disable the ZDS agent during device staging. If you have done this, you need to enable the ZDS agent after you purchase the VisibilityIQ Foresight service so you can view the insights based on the ZDS data on the VisibilityIQ portal.

- **ZDS data upload frequency**

The ZDS agent can accept configuration changes, such as to the upload interval and data-collection events, when needed. ZDS uploads data every 24 hours by default. Zebra recommends that you increase the ZDS data upload frequency to at least four times every 24 hours.

If the 24-hour upload default setting is used rather than a more frequent upload setting, a device is more likely to miss the data upload window if the device is in “sleep” mode or if internet access is not available. Hence, the analytics insight from VIQ will be impacted due to a lack of data.

- **Non-default data collection points**

Certain ZDS data used by VIQF reports are not collected by default. This data includes GPS and WLAN data collection, which are not collected by default to protect privacy. Enable these additional data collection points, as needed:

WLAN	To see the last known BSSID in the Out of Contact Report or to collect data for the WLAN Signal Strength report, enable WLAN data collection.
WWAN	To see the WWAN signal strength and related failures, enable WWAN data collection. (Android 10 and later)
GPS	If you have GPS-enabled devices and wish to view data within the Geo Location report, enable GPS data collection.
Drop Detection	To see how many times a device has been dropped under the Damage and Repairs vital, enable drop detection collection. (Android 7 and later)

Application Crash	To see how many Application crashes happened and the crashed app details under the Software Health vital, enable application crash data collection. (Android 13 and later, and from BSPs released after July 2024)
Battery Stats	To see battery usage by app under the Software Health vital, enable Battery Stats data collection. (Android 13 and later, and from BSPs released after July 2024)
Low RAM	To see how many times the device ran into RAM conditions under the Hardware Health vital, enable low-RAM event data collection. (Android 7 and later)

For more detailed information regarding the ZDS agent, go to techdocs.zebra.com/zds/about/.

Changing the Configuration Using Barcodes or XML Files

There are two ways to change the configuration of the ZDS agent.

- Using barcodes
- Using an XML file

These configuration files (barcodes and XML) can be obtained from [this .zip file](#).

Using Configuration Barcodes

You can use the barcode file obtained in the .zip file to change the configuration on individual devices. Because this option requires access to the devices to perform manual procedures, this method is suitable for scenarios with a small number of devices to be configured.

On each device:

1. Open StageNow.
2. Scan the appropriate barcodes.
3. Verify that a success message was received in StageNow.

If a success message was received, the device should now be collecting and sending data per the new configuration.

Using an XML File

To configure the ZDS agent on a large number of devices, deploy a configuration XML file via a tool authorized with Zebra MX framework. Typically, these tools are MDMs, test tools, or StageNow.

Obtaining Configuration Files

Configuration files (barcodes and XML) can be obtained from [this file](#).

For more detailed information regarding the ZDS agent, go to techdocs.zebra.com/zds/about/.

