

# Zabbix meets IoT

## - Reloaded -



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**ZABBIX**  
TRAINING PARTNER



## THE SENSOR MEASURES:



Sensor Data (10 items)		
Temperature External [C]		
Air Pressure [Pa]	99.58 KP	-3.05 P
Dewpoint [C]	11.2 C	-0.02 C
Equivalent Carbon-Dioxide ECO2 [ppm]	759 ppm	-33 ppm
Humidity [%]	41.69 %	-0.02 %
Iaq Baseline	38027	
Temperature [C]	25.13 C	-0.02 C
Total Volatile Organic Compound TVOC [ppb]	54 ppb	-5 ppb
VCC [V]	3.97 V	
WIFI RSSI [dBm]	-70 dBm	-12 dBm

## SMART VERSATILE WIFI BASED IOT ENVIRONMENT SENSOR WITH NATIVE **ZABBIX** SUPPORT

- ✓ Native Zabbix Support for 3.0+
- ✓ Central configuration management
- ✓ Mobile operation up to 1 year
- ✓ Out of the box Zabbix Templates
- ✓ OTA (over the air) update
- ✓ Optional external sensor
- ✓ Native Cloud connection support
- ✓ OEM versions available
- ✓ Optional 5V USB Power supply

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**Q:** Is it based on a Raspberry Pi?

**Q:** Does it run under Linux/Rasbian?

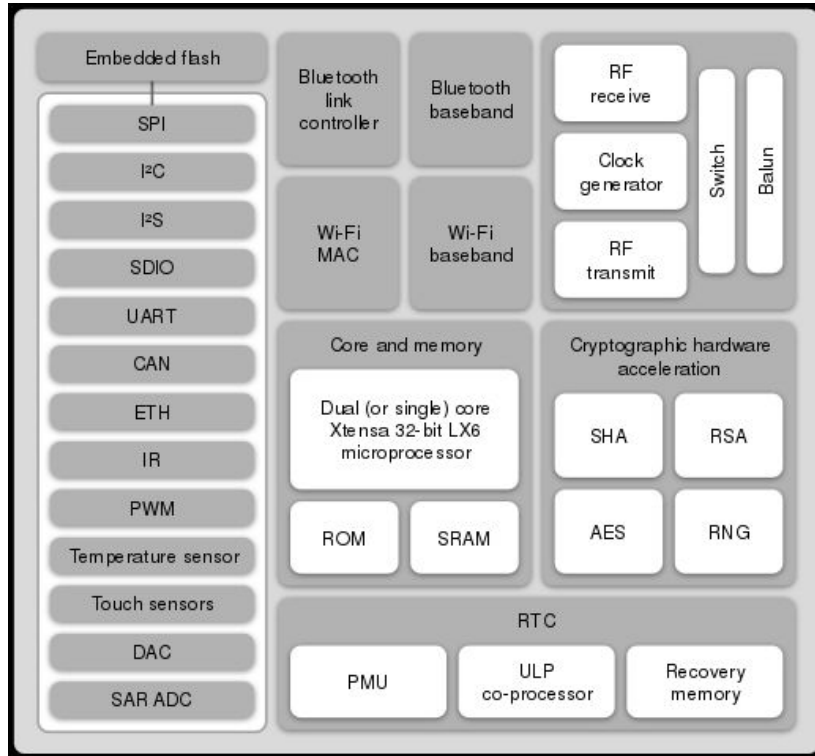
**Q:** Does it use the Zabbix Agent?



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Espressif ESP32 function block diagram



## Software Environment

- Programming Language: C/C++
- Espressif native IDF (IoT Development Framework)
- FreeRTOS Realtime Operating System (with support from Amazon)



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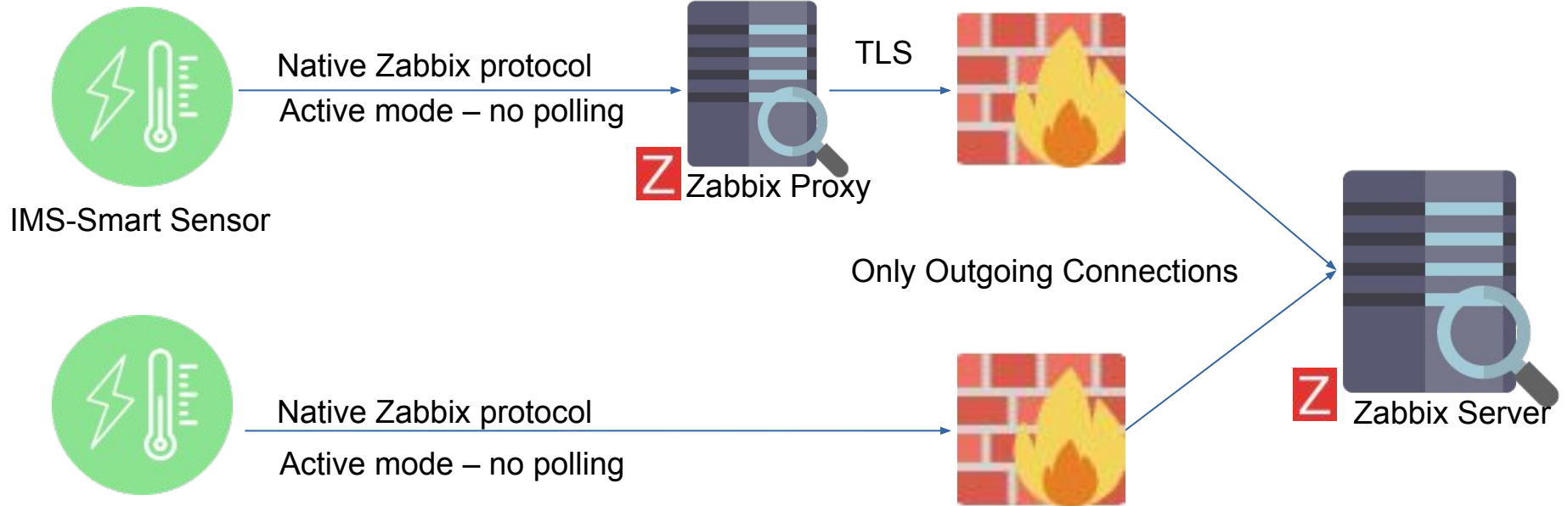


**Q:** How does the Network  
Communication work?



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Network communication between IMS-Smart Sensor and Zabbix



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**Q:** How does the configuration look in Zabbix?



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## „Device Info“ and „Fails“

### Device Info (5 Items)

Contact <a href="#">contact</a>	180d		Zabbix trapper	2019-10-11 22:24:10	Office Team Live
Device Type <a href="#">devicetype</a>	180d		Zabbix trapper	2019-10-11 22:24:10	IMS-Smart
Geo Latitude <a href="#">geolatitude</a>	180d		Zabbix trapper	2019-10-11 22:24:10	56.955020
Geo Longitude <a href="#">geolongitude</a>	180d		Zabbix trapper	2019-10-11 22:24:10	24.117517
Location <a href="#">location</a>	180d		Zabbix trapper	2019-10-11 22:24:10	Office IntelliTrend

### Fails (8 Items)

Error [Env] <a href="#">enverror</a>	180d	365d	Zabbix trapper	2019-10-11 22:24:10	0
Error [IAQ Internal] <a href="#">iaqerrorstatus</a>	180d	365d	Zabbix trapper	2019-10-11 22:24:10	0
Error [IAQ] <a href="#">iaqerror</a>	180d	365d	Zabbix trapper	2019-10-11 22:24:10	0
Error [TempE] <a href="#">tempeerror</a>	180d	365d	Zabbix trapper	2019-10-11 22:24:10	0
Fails [Connection] <a href="#">cfails</a>	180d	365d	Zabbix trapper	2019-10-11 22:24:10	0
Fails [Sensors] <a href="#">sfails</a>	180d	365d	Zabbix trapper	2019-10-11 22:24:10	0
Fails [Transmission] <a href="#">tfails</a>	180d	365d	Zabbix trapper	2019-10-11 22:24:10	0
Fails [WiFi] <a href="#">wtfails</a>	180d	365d	Zabbix trapper	2019-10-11 22:24:10	0

## „Sensor Availability“ and „Sensor Data“

### Sensor Availability (3 Items)

Sensor found [Env] <a href="#">hasenv</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	1
Sensor found [IAQ] <a href="#">hasiaq</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	1
Sensor found [TempE] <a href="#">hastempe</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	0

### Sensor Data (12 Items)

Air Pressure [Pa] <a href="#">press</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	99.62 KP
Battery Charge [%] <a href="#">batterycharge</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	100 %
Dewpoint [C] <a href="#">dew</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	8.21 C
Equivalent Carbon-Dioxide ECO2 [ppm] <a href="#">eco2</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	470 ppm
Humidity [%] <a href="#">hum</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	41.6826 %
IAQ Baseline <a href="#">iaqbaseline</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	13451
IAQ disabled [Status] <a href="#">iaqdisabled</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	Enabled (0)
Temperature External [C] <a href="#">tempe</a>	180d	365d	Zabbix trapper		
Temperature [C] <a href="#">temp</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	21.3 C
Total Volatile Organic Compound TVO... <a href="#">tvoc</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	10 ppb
VCC [V] <a href="#">vcc</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	4.3 V
WiFi RSSI [dBm] <a href="#">rssi</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	-73 dBm





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„Stats / Configuration“ - Total number of metrics send to Zabbix (in current release): **39**

Stats (11 Items)						
Connect Time Server [sec] <a href="#">sctime</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	0.051 sec	
Connect Time WIFI AP [sec] <a href="#">wctime</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	0.945 sec	
Firmware [Version] <a href="#">version</a>	180d		Zabbix trapper	2019-10-11 22:34:13	1.4.2	
IAQ heating time [sec] <a href="#">iaqheatingtime</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	1200 sec	
Interval <a href="#">interval</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	10 Minutes	
OTA Config Interval [measurements] <a href="#">otaconfiginterval</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	24 Measurements	
OTA Config [Status] <a href="#">otaconfigstatus</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	NO_REQUEST (0)	
OTA Firmware Interval [measurements] <a href="#">otafwinterval</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	168 Measurements	
Reason [Restart] <a href="#">reason</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	DEEPSLEEP_RESET (5)	
Reason [Wakeup] <a href="#">wareason</a>	180d	365d	Zabbix trapper	2019-10-11 22:34:13	TIMER (4)	
Serialnumber <a href="#">serial</a>	180d		Zabbix trapper	2019-10-11 22:34:13	040B0BBF713C	

\* Name

Type

\* Key

Type of information

Units

\* History storage period

\* Trend storage period

Show value

Allowed hosts

New application

Applications

„Out-of-the-box“ template available for Zabbix 3.0+



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## Thank You!



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