



# **suprema**

BIOMETRICS & SECURITY

## **20 years of innovation**



**Eng. (PhD). Lóberi López**  
**Technical Pre-Sales Manager**  
**Suprema LATAM**

**SUPrema**  
SECURITY & BIOMETRICS



Biometrics and Security

# Suprema Webinar 2020

## Best Practices: BioStar 2 Device SDK and BioStar 2 API

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### Speaker

Eng. (PhD). Lóberi López

Technical Pre-Sales Manager | Suprema LATAM

Date: Wednesday, June 3, 2020

Time: 5:40 PM, GMT-6, Guatemala City  
(CST)

Recommended Regions to Attend:  
Asia, Latin America

Date: Thursday, June 4, 2020

Time: 8:00 AM, GMT-6, Guatemala City (CST)

Recommended Regions to Attend:  
North America, Latin America, Europe, Middle  
East, Africa

# FAQ about Suprema Webinar

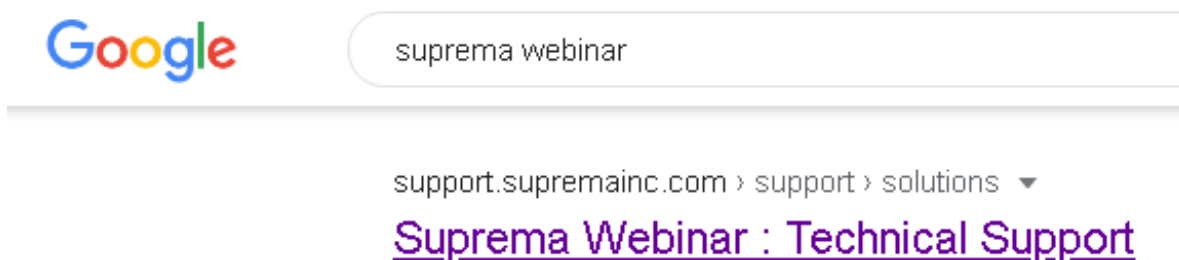
## ❖ How can I find Webinar Contents?

### 1) Email

- ✓ After this webinar, Suprema Team will provide the presentation and the recorded video file to the registered emails. It will take 5 days after reviewing the files with including QA list.

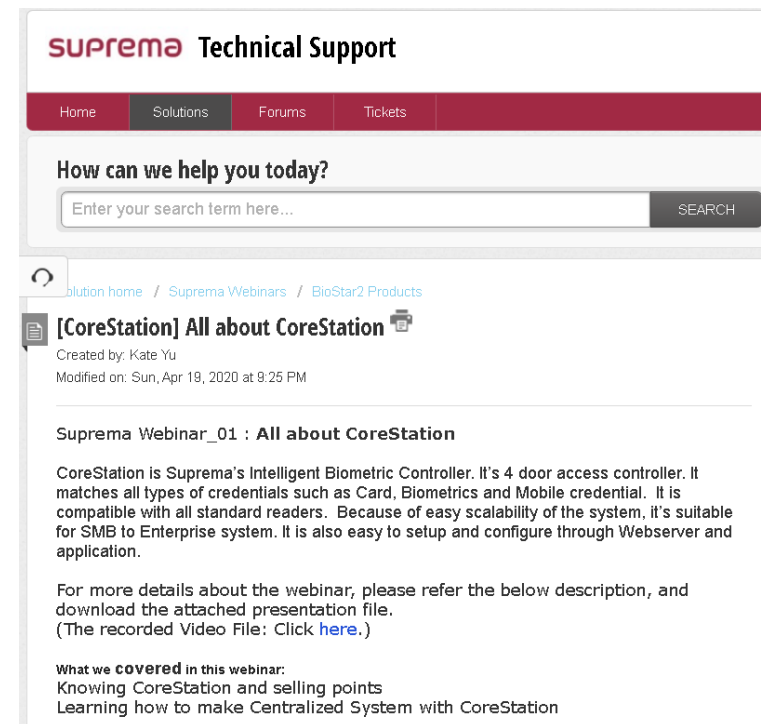
### 2) Website (Suprema Technical Support Site)

- ✓ After this webinar, you can also find the information with including QA list to the below site. Search **Suprema Webinar** on the site. Or, simply google it.
- ✓ <https://support.supremainc.com>



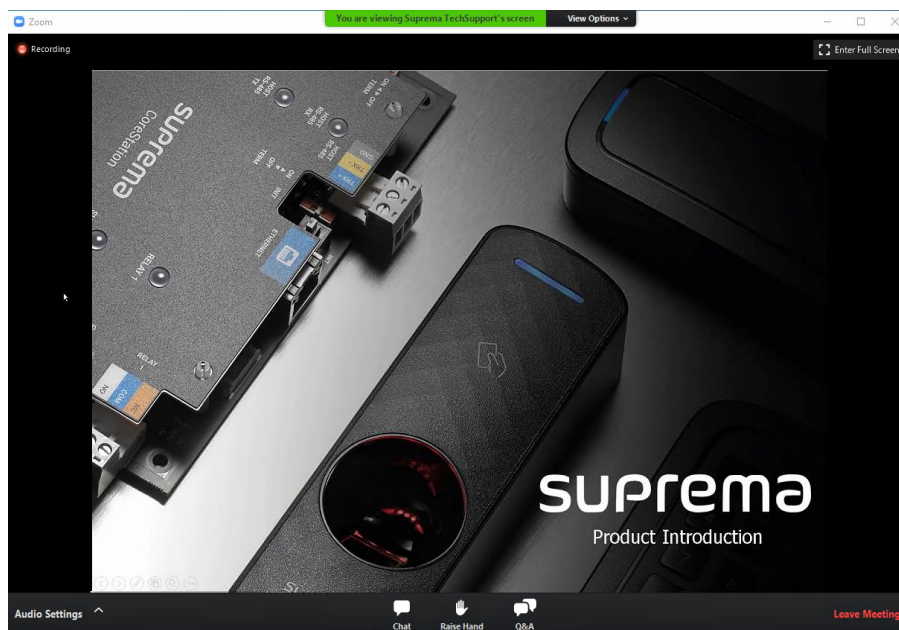
### 3) SNS Channel & YouTube

- ✓ Plus, we will post the information to YouTube, Facebook, and LinkedIn. (Simply search it on each site)

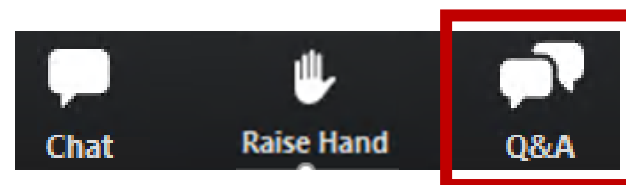
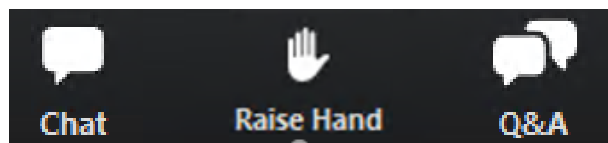


# FAQ about Suprema Webinar

## ❖ How do I inquiry during the Webinar session?



Please mouse over on the bottom of your screen, the 3 buttons as following will come out.

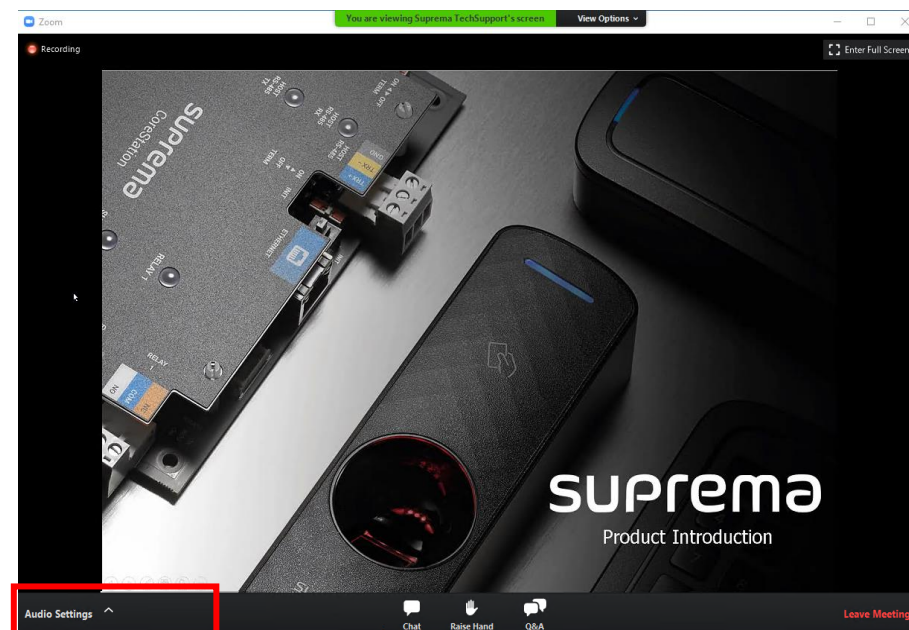


### 1) [Q&A] Box for leaving your question

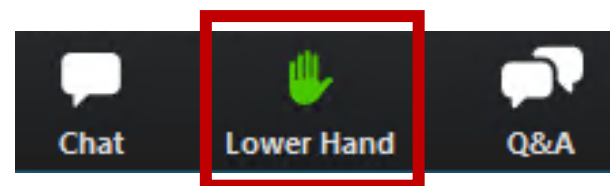
- ✓ During doing webinar, you can leave your questions to **QA box anytime.** Suprema agents in panels will answer in real time.

# FAQ about Suprema Webinar

## ❖ How do I inquiry during the Webinar session?



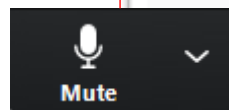
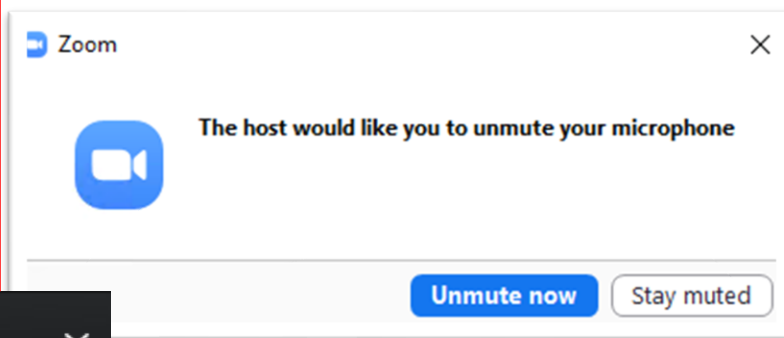
## 2) [Raise Hand] for Question Session



Please click on [Raise Hand] on the menu bar if you have any questions. The color will turn to Green.

Host will allow to unmute your microphone and you will be available to unmute your microphone at the time.

But you can also click [Raise Hand] during webinar anytime if you have questions.





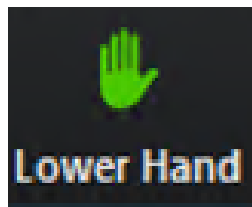
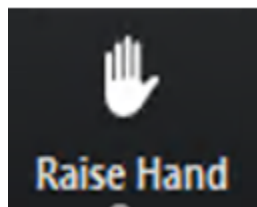
# FAQ about Suprema Webinar

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## ❖ How do I inquiry during the Webinar session?

### Notification: Question Session

- ✓ Between the presentation progress, We will have QA session to make the webinar interactive.
- ✓ You can leave your questions through the **QA box**.
- ✓ Or you can raise your hand from the menu bar, and you will be available to **unmute your microphone** once the host confirms your sign from Attendee's list.
- ✓ ***When you speak through a microphone**, please **introduce your name** and **question**. We will answer one by one, so please kindly wait for your turn.*



Bienvenidos...  
Welcome...  
환영합니다...

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SYMMETRICS & SECURITY





# Suprema Development Tools

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# Check list - Requirements

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1. **Enough Programming Knowledge**
2. **Experience in web-languages like Node JS, Angular JS, etc.**
3. **Experience in languages like C, C++, C# (for Device SDK), and Java, Python, Go, Ruby (for the G-SDK).**
4. **Not being a Microsoft Dwarf! (please explore another options as Linux or MacOSX..)**
  - **Suprema encourages the openness.**

*“you’ll find the real world better than the Matrix”*

## **NOTE:**

**Although this is not a full training guide, it is not intended for end-customers without technical knowledge.**

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# Contents

1. Quick Overview & Tips
2. Considerations
3. Study Cases
  - API Cases
  - SDK Cases
4. Q&A

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# Integration Solutions



**Device  
SDK**



**G-SDK**



**SVP  
Android SDK**



**Local API  
Server**



**BioStar 2  
API**

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# Before Starting...

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What are API & SDK?

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**What  
is API  
& SDK?**

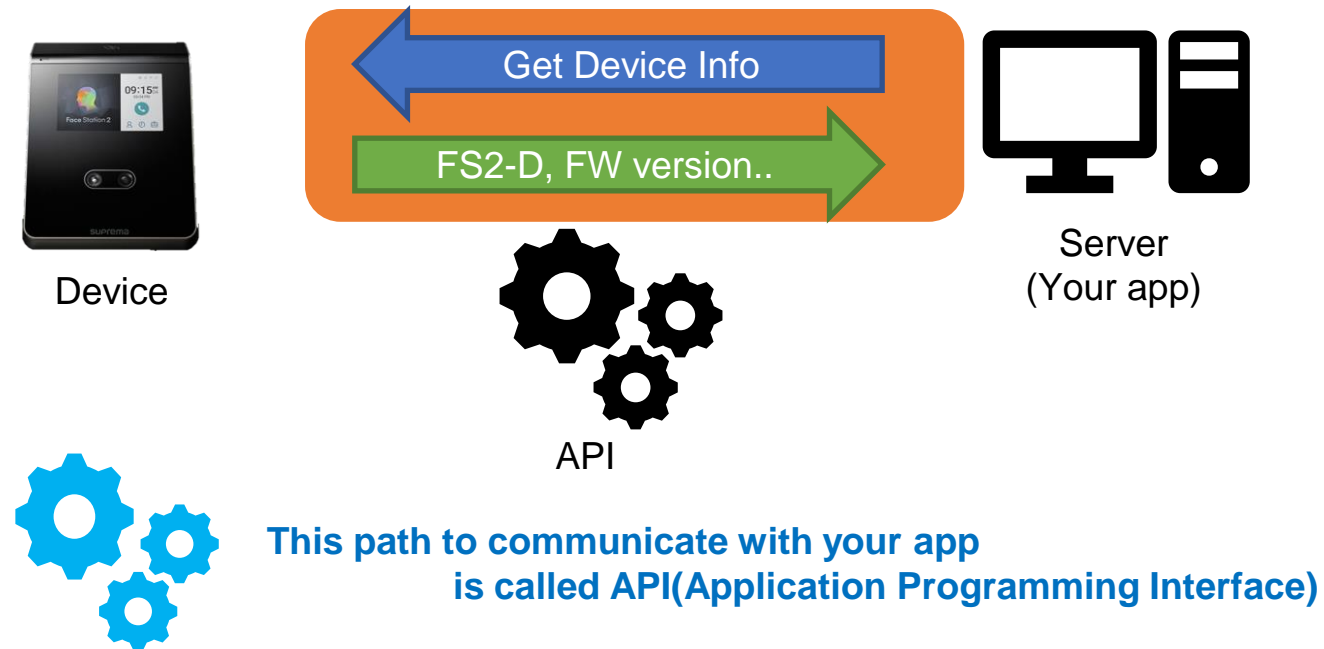


**In case you get confused...**



# What are API & SDK?

## What is API?

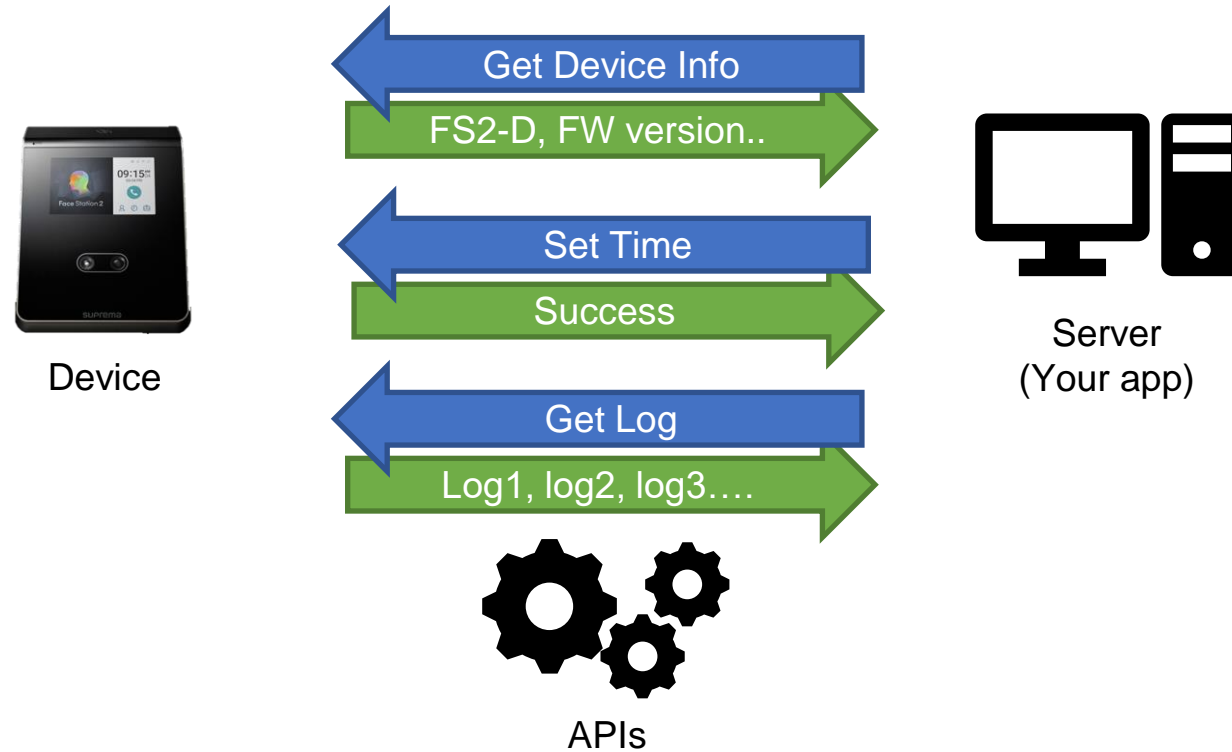


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# What are API & SDK?



**Several method calls are necessary for every purpose**

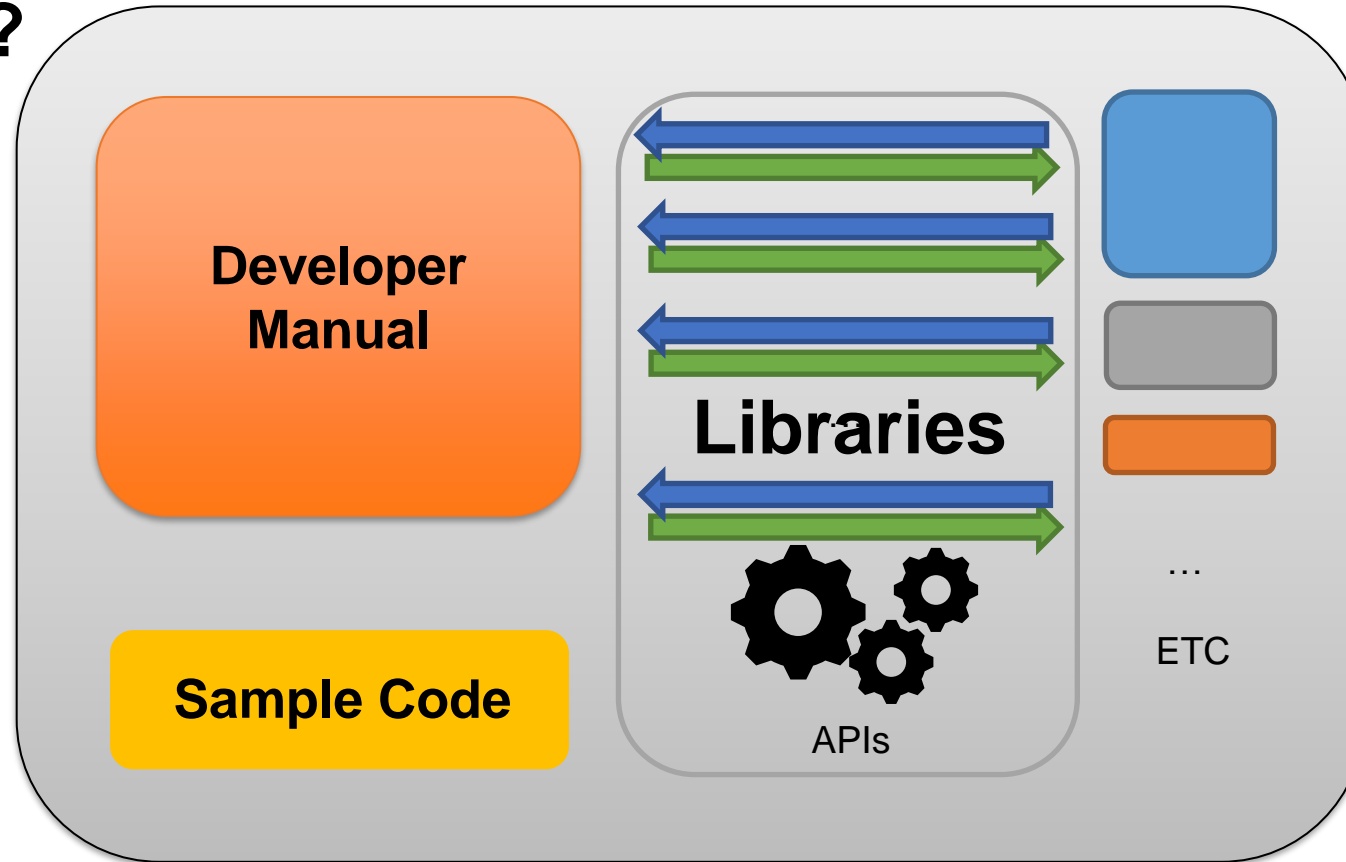
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# What are API & SDK?

## What is SDK?



This package is called SDK (**Software Development Kit**)

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# About the compatible Hardware

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- **Compatible Hardware with the Device SDK & G-SDK**

- All Suprema Devices are compatible with the Device SDK. However, the available instructions for each one of them depends on the specific model you may be working with.

- **Devices compatible with the API (All)**

- All Biostar2-compatible devices are supported by the API

- **SVP Android SDK**

- Biostation A2 (OMNIS)
- Novus

These devices are compatibles



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# When should we use the SDK & G-SDK?



- When we want to build our own server to handle the Suprema devices.
- When we want to directly access the device to extract information (without Biostar 2).
- When we want to have a single system able to integrate hardware from several brands.

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# When should we use the API? (Both types)



- When you may want to have a custom UI for specific developed features and still utilize the underlying Biostar 2 server capabilities.
- When we may want to integrate the Biostar 2 APP to our own system/platform.
- When you want to easily integrate Biostar 2 with your system.

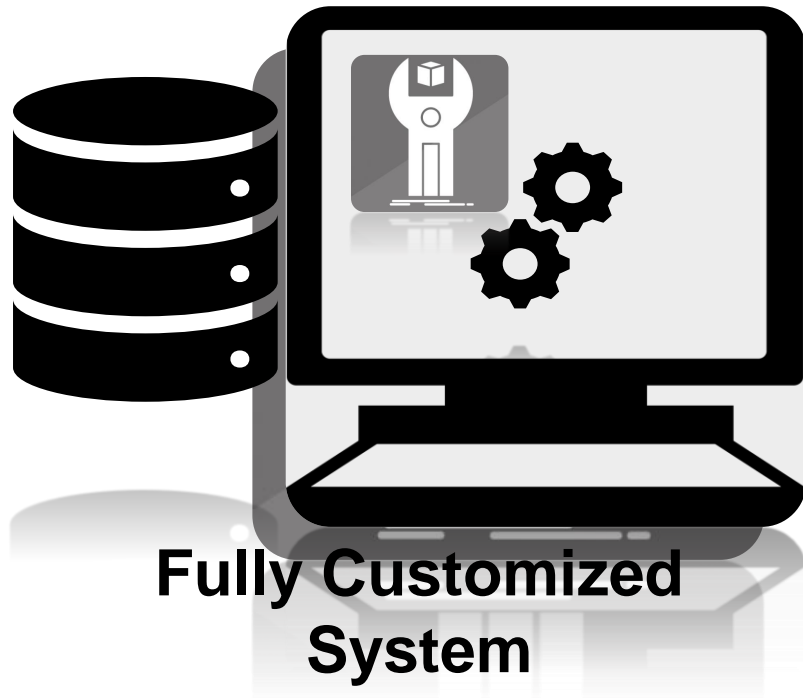
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# When should we use the SVP Android SDK?



- When you are an advanced distributor/integrator/user who wants to adjust the functionalities of our devices to expressly fit your needs.
- When you want to develop your own firmware
- When you want to develop solutions for Time & Attendance on Android applying the versatility and efficiency of our hardware.

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# Biostar 2 Device SDK



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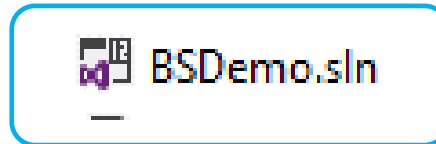
# Developer support

- Documentation
- Manuals
- Forum
- Github



## Online Documentation



## Sample Codes C# (with Marshalling)



## C++ Libraries

 BS\_SDK\_V2.dll  
 BS\_SDK\_V2.lib

Windows

 libBS\_SDK\_V2.so

Linux

**BioStar 2 Device SDK** is provided as libraries, including sample code in C #

<http://kb.supremainc.com/bs2sdk/>

# Overview – BioStar 2 Device SDK

Download the SDK - link on Github

[https://github.com/supremainc/BioStar2\\_device\\_SDK](https://github.com/supremainc/BioStar2_device_SDK)

The screenshot displays the GitHub repository for `supremainc / BioStar2_device_SDK`. The `Code` tab is selected, showing the `master` branch. The `SDK_Release` folder is highlighted in the left sidebar, and the `BioStarSDK_V2.6.4.1_20200225.7z` file is highlighted in the main content area. A green arrow points from the `SDK_Release` folder to the file, and another green arrow points from the file to a window showing the package contents.

**Official Package**

**Package Contents**

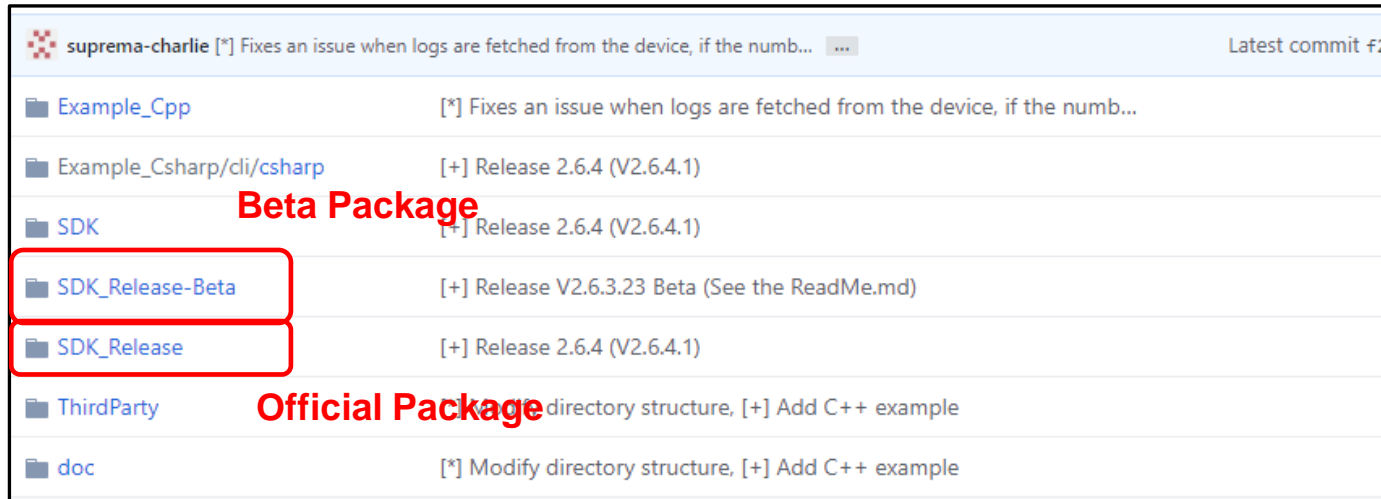
- Document
- Example
- Include
- Lib

# Overview – BioStar 2 Device SDK

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**Download the SDK - link on Github**

[https://github.com/supremainc/BioStar2\\_device\\_SDK](https://github.com/supremainc/BioStar2_device_SDK)



The screenshot shows a GitHub repository directory listing for 'suprema-charlie'. The repository has a commit titled '[\*] Fixes an issue when logs are fetched from the device, if the numb...' and the latest commit is #23. The directory listing includes the following items:

Item	Description
Example_Cpp	[*] Fixes an issue when logs are fetched from the device, if the numb...
Example_Csharp/di/csharp	[+] Release 2.6.4 (V2.6.4.1)
SDK	[+] Release 2.6.4 (V2.6.4.1)
SDK_Release-Beta	[+] Release V2.6.3.23 Beta (See the ReadMe.md)
SDK_Release	[+] Release 2.6.4 (V2.6.4.1)
ThirdParty	directory structure, [+] Add C++ example
doc	[*] Modify directory structure, [+] Add C++ example

Red annotations on the image include:

- A red box around 'SDK\_Release-Beta' with the text 'Beta Package' in red.
- A red box around 'SDK\_Release' with the text 'Official Package' in red.

## Official VS Beta Package

### Beta

It has been distributed including the latest bug fixes and features but has not yet passed QC yet.

### Official

The official product with registration completed after the quality control process

# Considerations (1)

---

The recommendations are as follows:

1. The user must have extensive programming knowledge (languages: C, C ++ and / or C #)
2. The examples provided are in C #, libraries are also provided for Linux, in the case you may want to work with them. If you happen to have any issue, please open a ticket in our support website and we will be glad to help you.
3. In this link: <http://kb.supremainc.com/bs2sdk/doku.php?id=en:start> You will find all the documentation related to the SDK, name of each function included in the SDK, and simple ways to implement them (in case you start working with it, please read carefully the content described there).
4. No support on programming aspects with no direct relation to the Suprema Devices... the SDK is intended to be used by users/programmers/distributors who know what they are doing.  
Example: we have received questions like: **How do I read an answer in JSON?**... This topic is a general programming question for new programmers, not directly related with a Suprema device implementation. In case you do not know how to do that, please be aware of great tools for new programmers as: Stackoverflow, or best friends like Google search, etc. They will surely be able to assist you in such questions ;).



## Considerations (2)

---

5. The SDK does not work in parallel with Biostar2, you must choose one out of the two of them to use (if a device is registered under Biostar2, it cannot be used with the SDK at the same time, and vice versa).
6. Working with the SDK means the customer wants to build their own system from scratch (literal), or to integrate the Suprema devices to an existing platform (BMS, VMS, etc). In the former case they must take care of configuring their own server, database schema, and the way to manage connections between components. Similarly for the latter case.
7. It is IMPORTANT to note that the SDK only interacts with the Suprema devices, it does not provide any other method or instruction.



8. Although the SDK allows controlling Suprema devices in a granular way, it is not recommended for initial users because, although its features are complete, the preconditions and prerequisites can be somehow overwhelming for an inexperienced user.
9. Examples and considerations for the G-SDK will come soon.

---

# Example code and quick start guide

- [http://kb.supremainc.com/bs2sdk/doku.php?id=en:getting\\_started](http://kb.supremainc.com/bs2sdk/doku.php?id=en:getting_started)
- [http://kb.supremainc.com/bs2sdk/doku.php?id=en:quick\\_guide](http://kb.supremainc.com/bs2sdk/doku.php?id=en:quick_guide)
- [https://github.com/supremainc/BioStar2\\_device\\_SDK](https://github.com/supremainc/BioStar2_device_SDK)
- <http://kb.supremainc.com/bs2sdk/doku.php?id=:en:start>
- <https://support.supremainc.com/a/forums/>

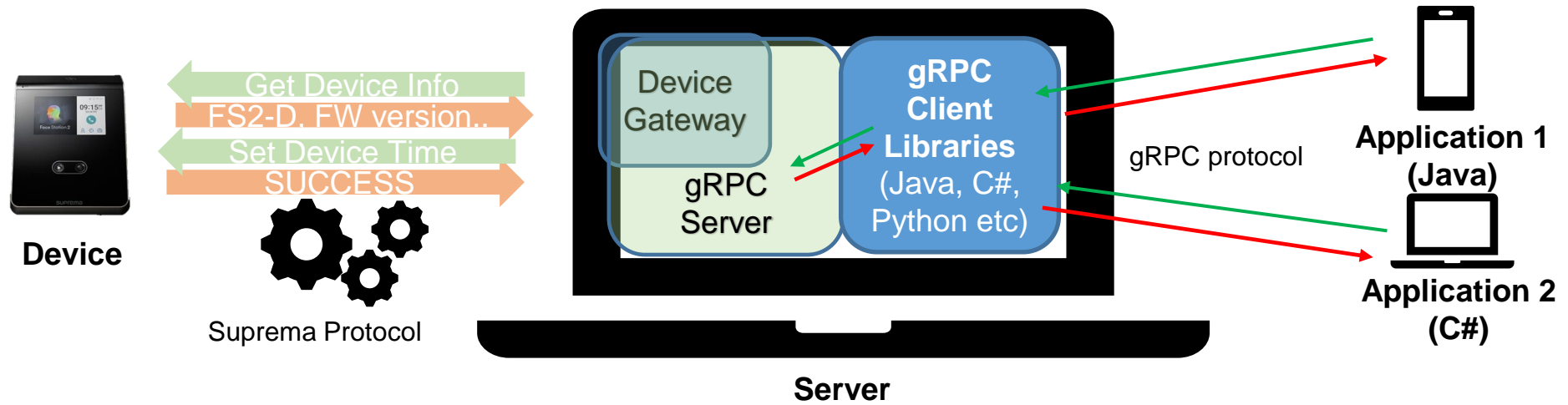
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# Suprema G-SDK

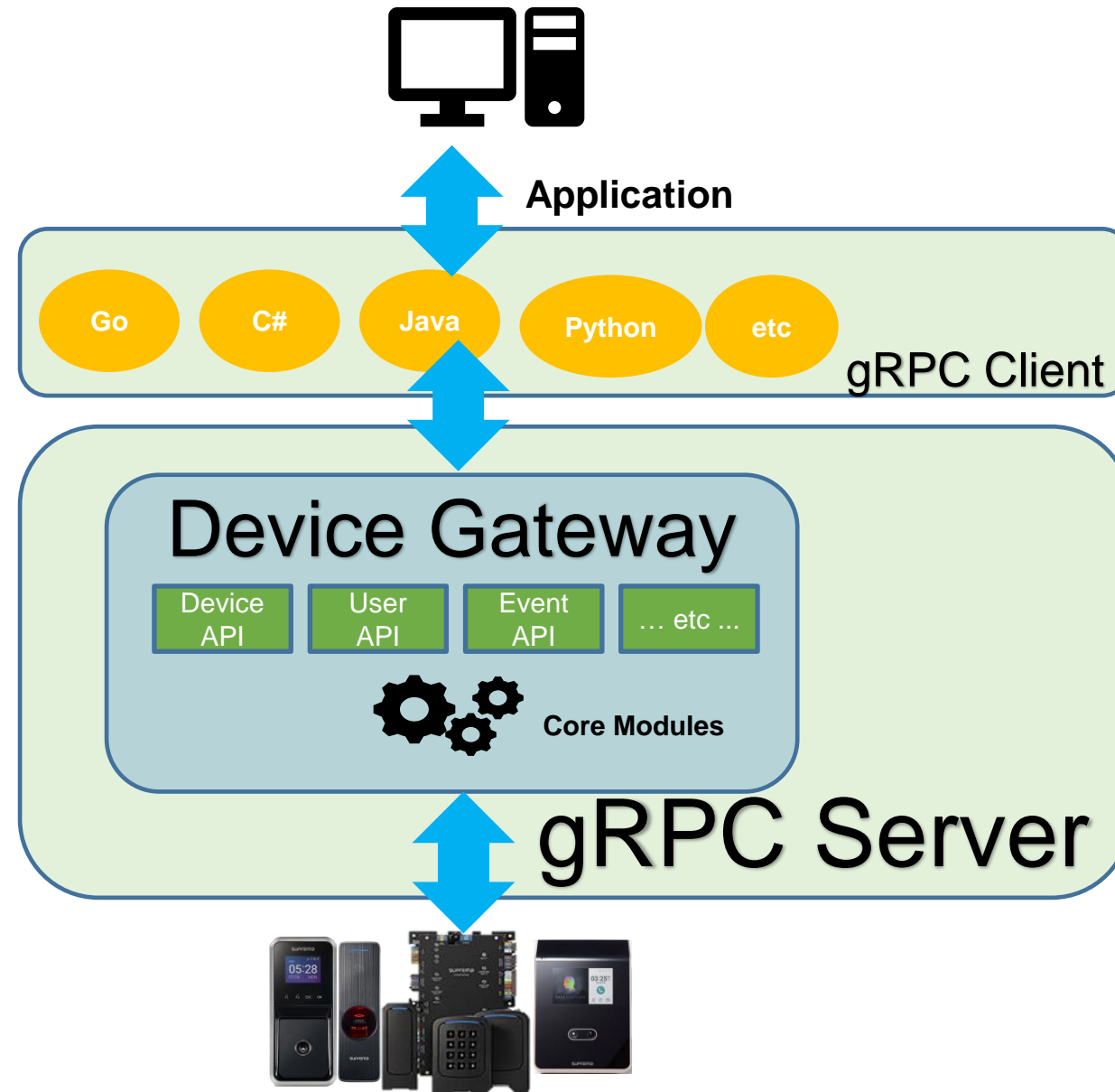


C-2DK

# Suprema G-SDK



# Suprema G-SDK



---

# Comparison



VS



C-2DK



# Comparison



	Device SDK	G-SDK
Implementation	<ul style="list-style-type: none"><li>• Shared Libraries</li></ul>	<ul style="list-style-type: none"><li>• Client Libraries</li><li>• Device Gateway</li></ul>
OS Supported	<ul style="list-style-type: none"><li>• Windows</li><li>• Linux</li></ul>	<ul style="list-style-type: none"><li>• Windows</li><li>• X86, Amd64, Arm Linux</li><li>• Mac OSX</li></ul>
Supported Languages	<ul style="list-style-type: none"><li>• C++</li><li>• C# sample</li></ul>	<ul style="list-style-type: none"><li>• Example nodes: C++, Java, Python, Go, Ruby, C#, Node.js, Android Java, Objective-C, PHP, Web</li><li>• C#, Java, Python, GO.</li></ul>
Supported Features	<ul style="list-style-type: none"><li>• Almost all the features: RS485, Wiegand, Zone etc</li></ul>	<ul style="list-style-type: none"><li>• Simple features</li><li>• Not supported (yet) RS485, Wiegand, Zone etc</li></ul>



Biostar 2 API



# Advantages of using the API over the SDK

Allows you to use Suprema devices with third-party software,

And still be able to configure using Biostar2.

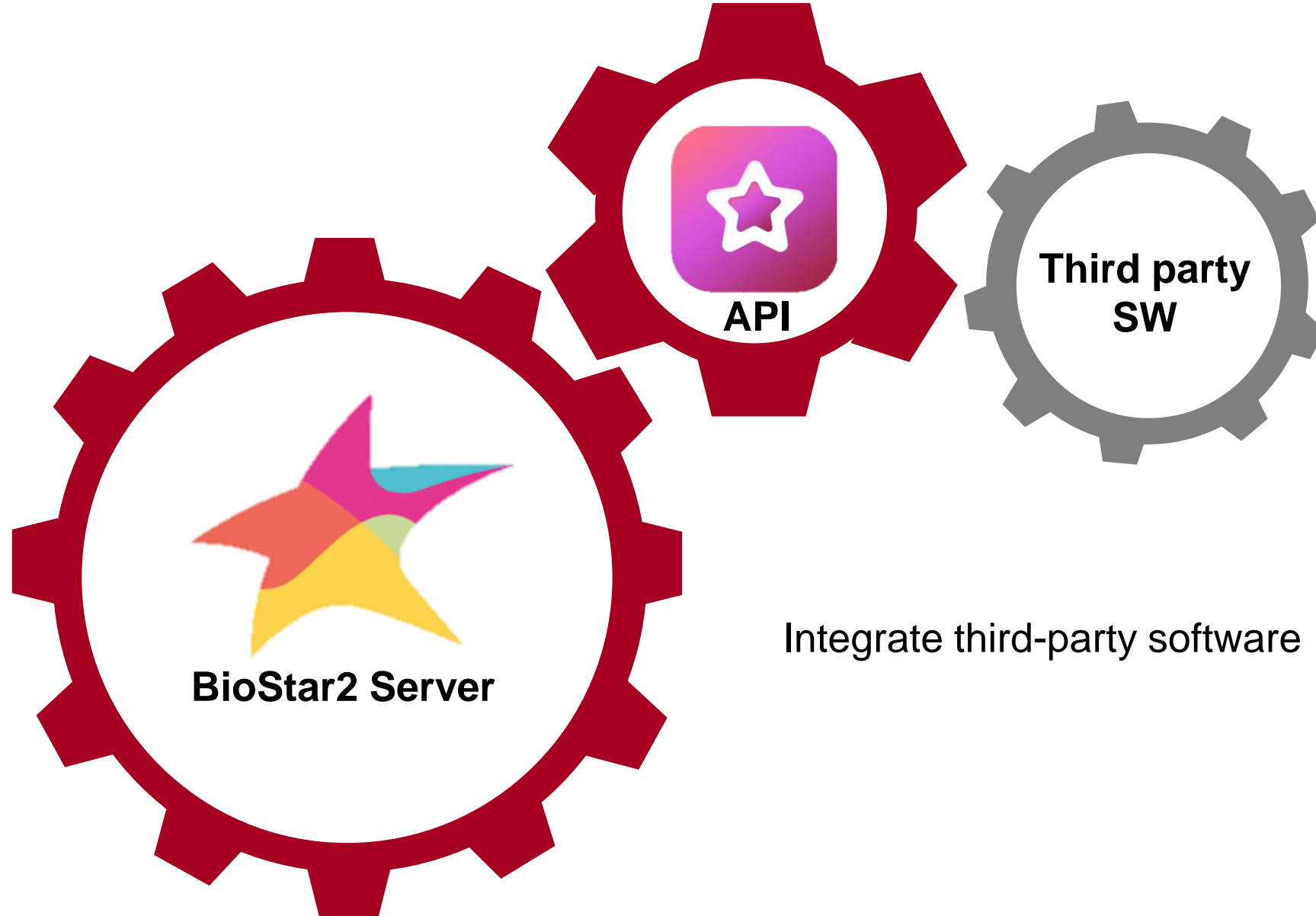
Direct communication with Biostar2 server

No need to build a different database

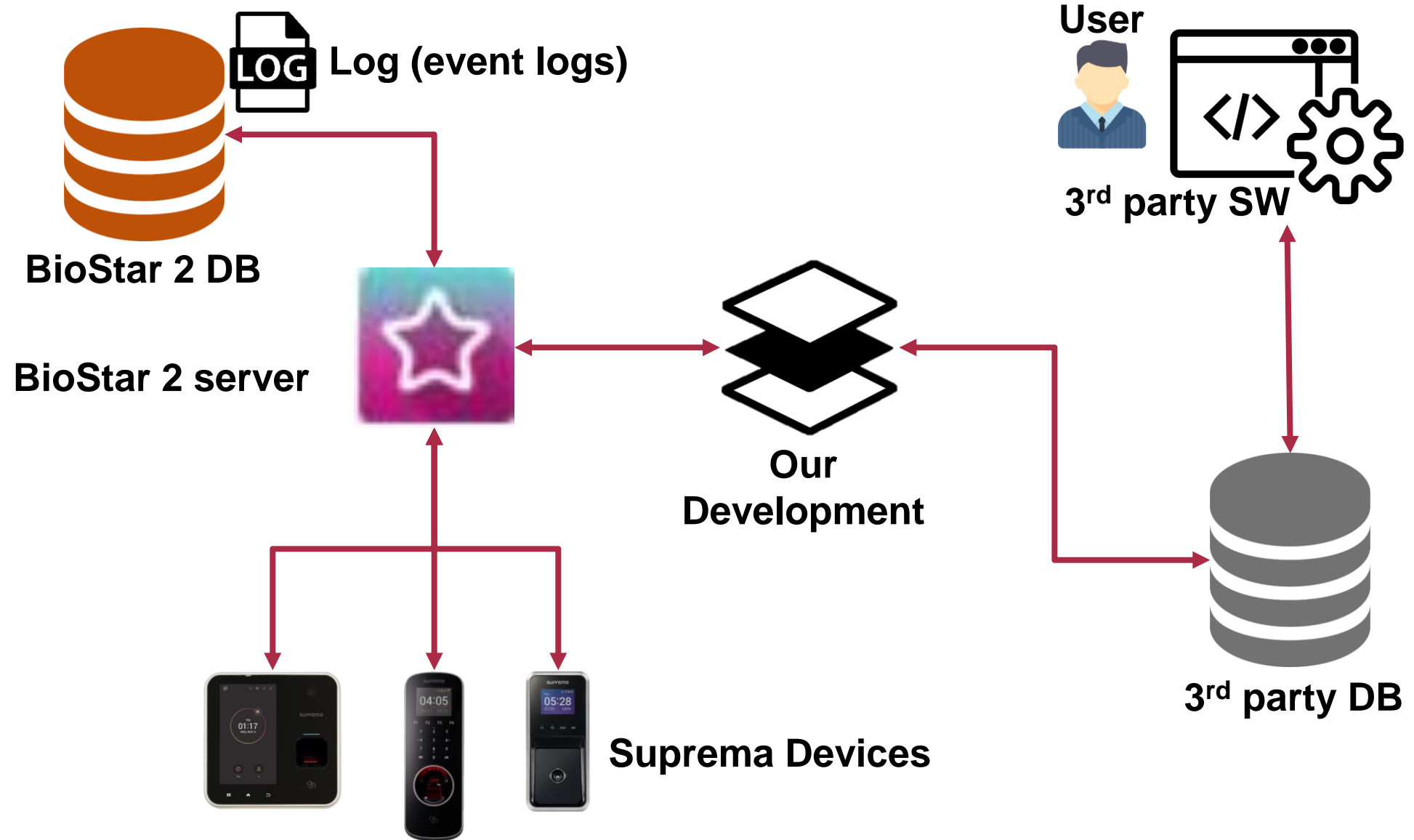
You can use the Suprema APP

# Why the API?

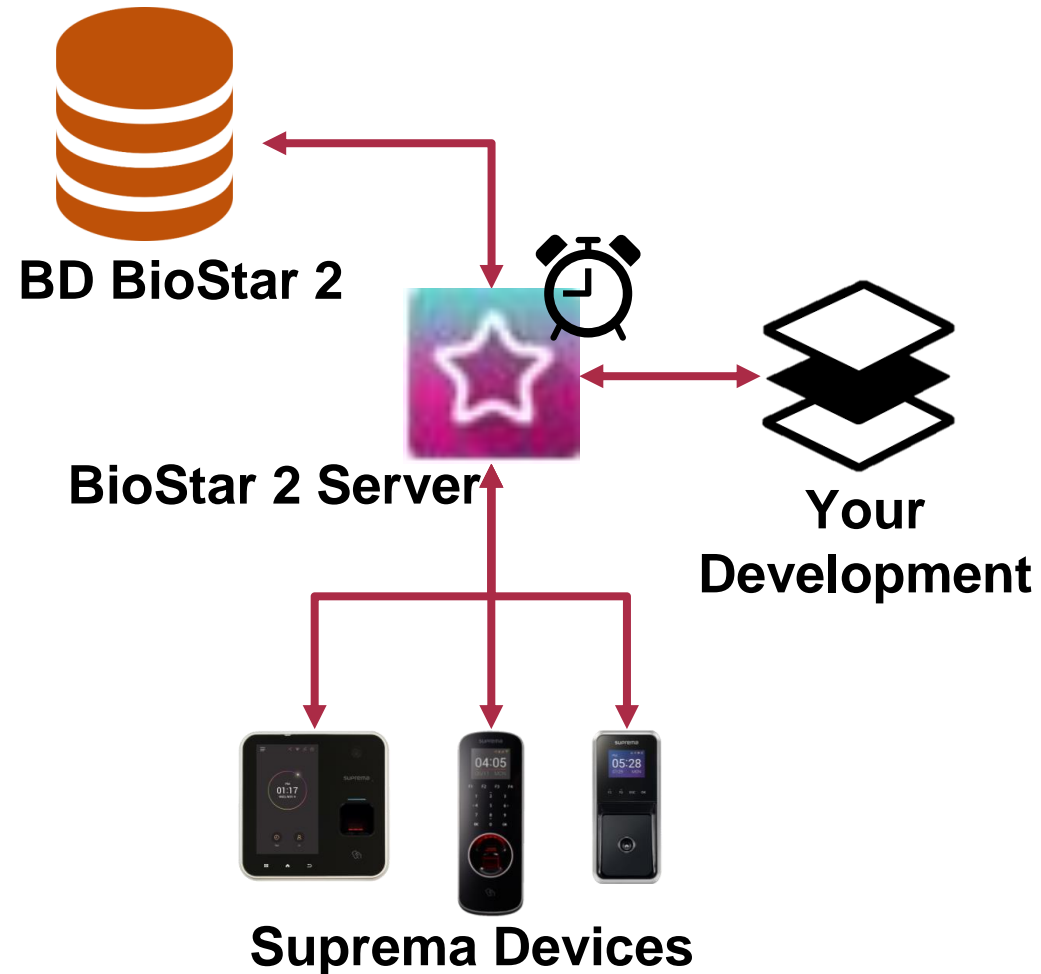
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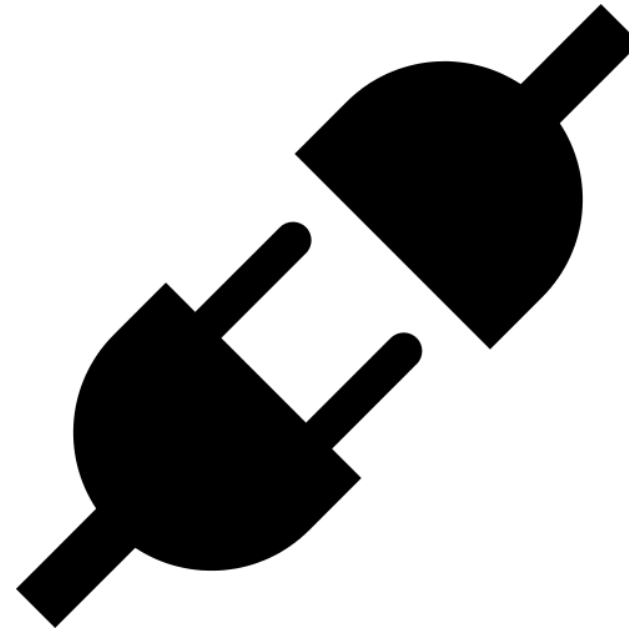
## When to use the API?

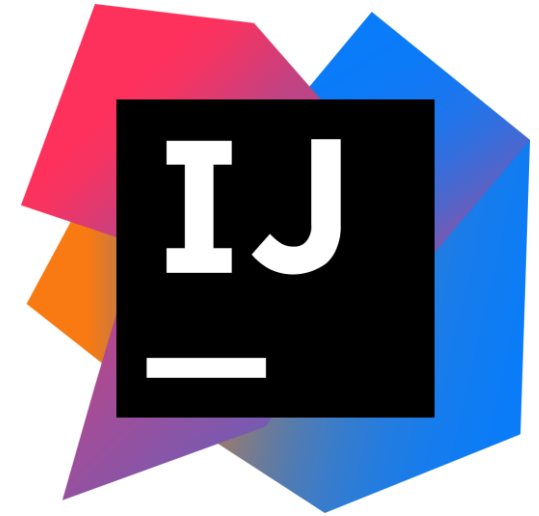


## How to retrieve event logs in real time



**Through WebSocket**





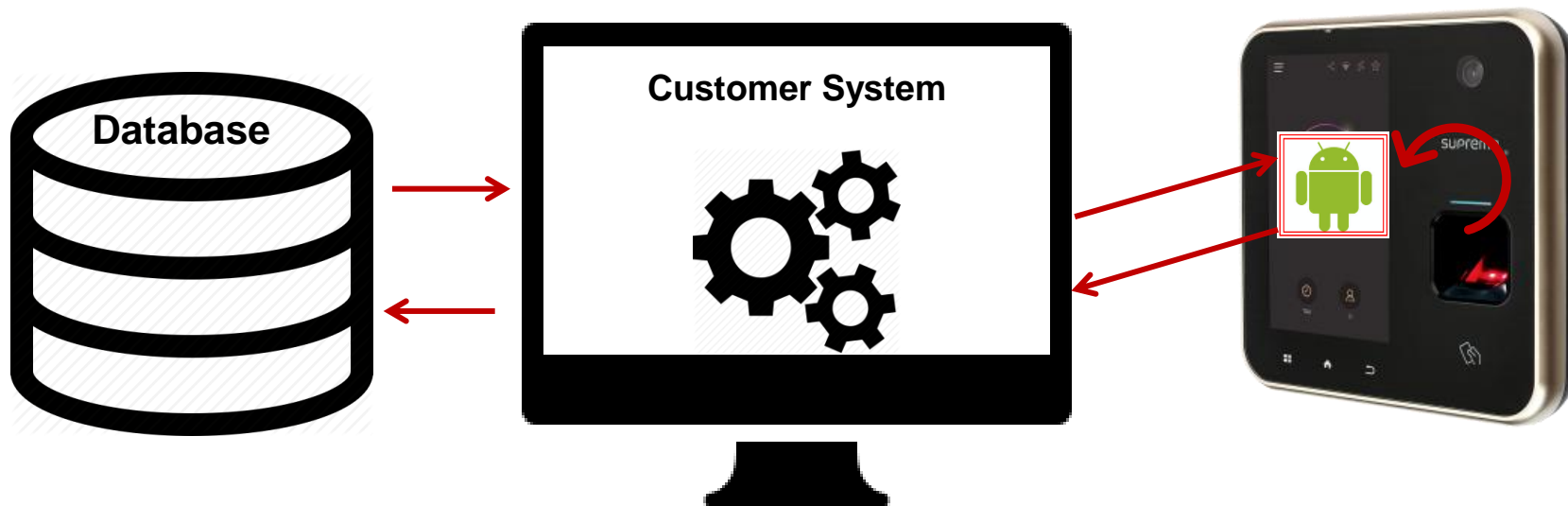
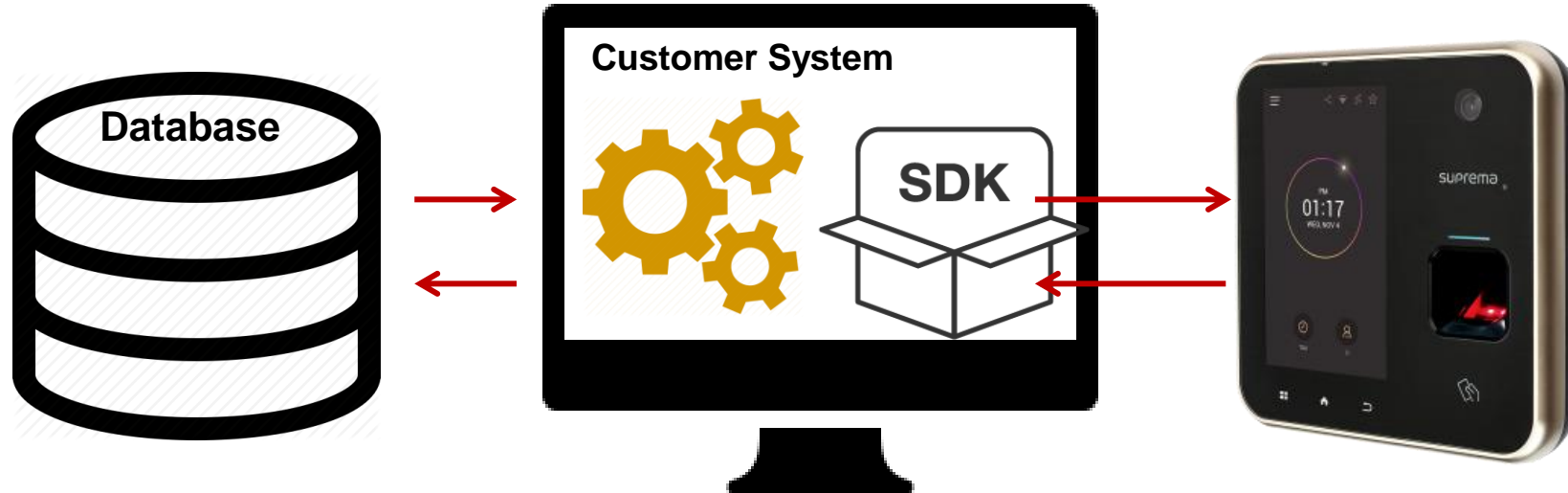
**Useful tools for development**



Android SVP SDK



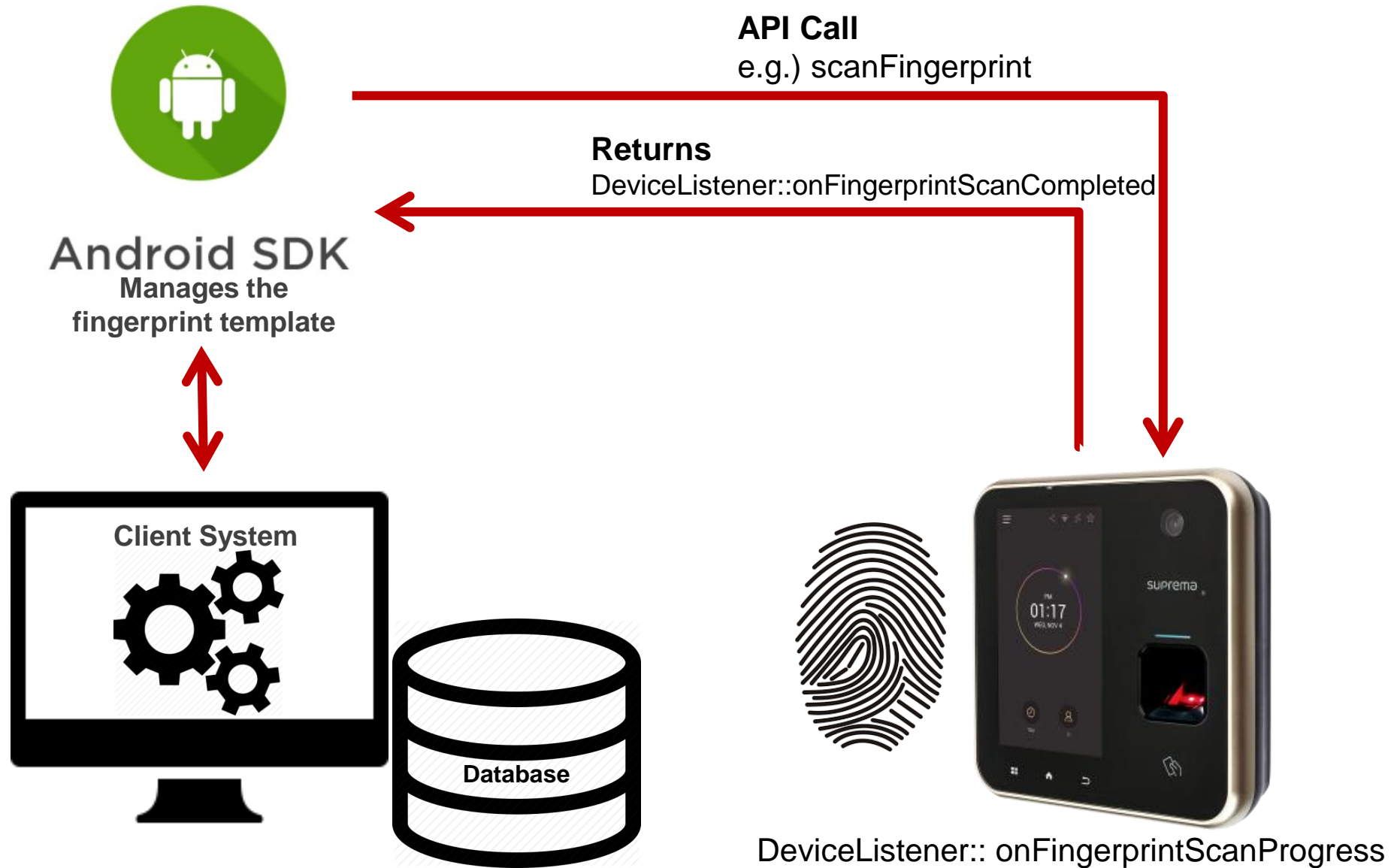
# Comparison between SDKs



# How does the device SDK do it?



# How does the SVP Android SDK do it?



# How to get started

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SVP Android SDK  
Build something great.

Trace / Development Environment Settings / SDK Introduction / 참조 / Fingerprint API / Fingerprint API / Quick Guide / SVP Android SDK / SVP Android SDK

enstart

SDK Introduction

Release Notes

Development Environment Settings

Quick Guide

API & References ▾

Useful Links ▾

The Suprema Versatile Platform (SVP) Android SDK is a programming interface designed to take advantage of the core functions of Suprema devices in other software. The SDK is made up of a set of APIs that make it easy to use the Suprema device's functionality for developing solution applications for time and attendance on Android.

- Build a biometric solution: Suprema's powerful biometric technology is available.
- Support for the latest Android OS: Provides the optimized performance and robust security based on Android 8.0 (Oreo).

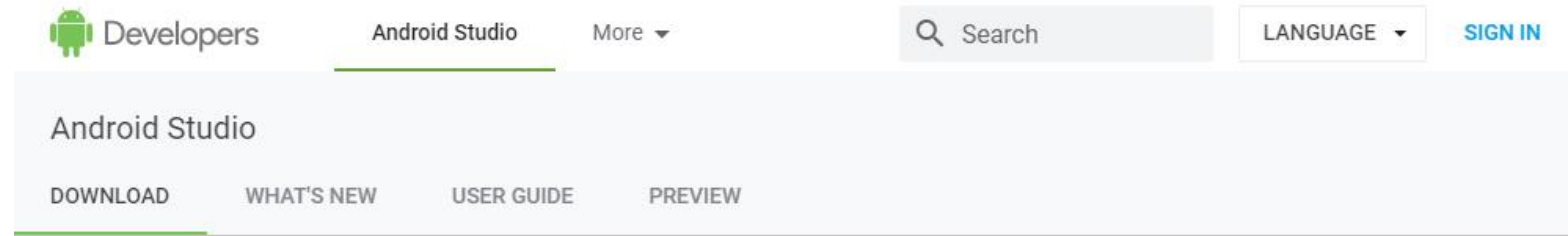
Last modified: 2019/01/03 08:33 by kyle

Log In

SDK Manual available online:

<http://kb.supremainc.com/svpsdk/doku.php?id=en:start>

# Getting Started (2)



- Download Android Studio

<https://developer.android.com/studio>

androidstudio

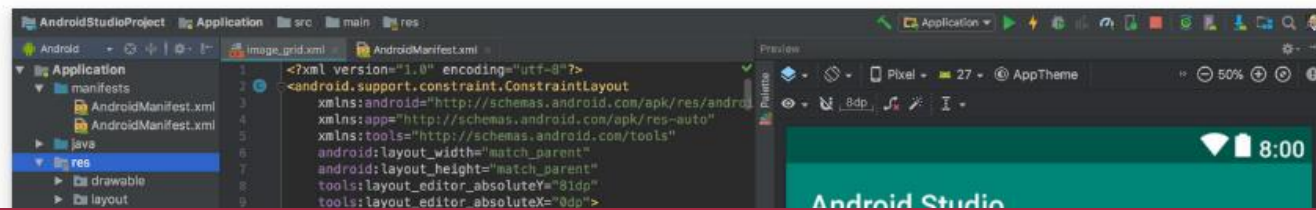
Android Studio provides the fastest tools for building apps on every type of Android device.

DOWNLOAD ANDROID STUDIO

3.4.1 for Windows 64-bit (971 MB)

DOWNLOAD OPTIONS

RELEASE NOTES

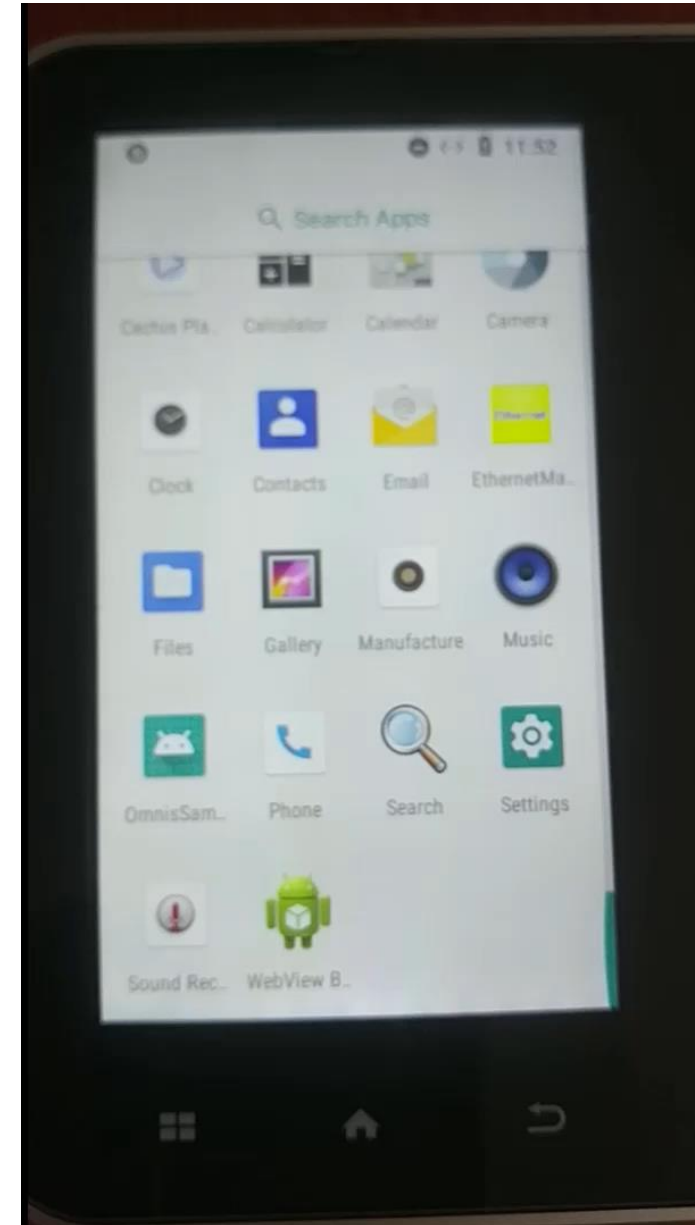


# Video Demonstration

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► The following menus available in the Demo APP through the SDK

- The device turns on
- Open the Omnis APP
- Test fingerprint authentication
- Enroll fingerprint
- Verification
- Update your fingerprint
- Delete data



# Study Cases

Best practices from development experiences of partners in the Region.

**NOTE:** Some cases do not include the name of end-customer due to non-disclosure agreement.

# API Integration Cases

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# Visitors Software

- ✓ **Company:** Welcome Technologies
- ✓ **Integration:** Visitors' Software homologated to Biostar 2

## Key Features:

- ✓ Integrates Suprema devices with 3rd party AC brands for Visitors management.
- ✓ Online registration prior visit.
- ✓ Document Recognition.
- ✓ Enrolls fingerprint and prints visitors' sticker. Relays data to AC platform.
- ✓ Auto Check out.
- ✓ Upcoming Facial recognition integration (FaceStation 2, FaceLite)



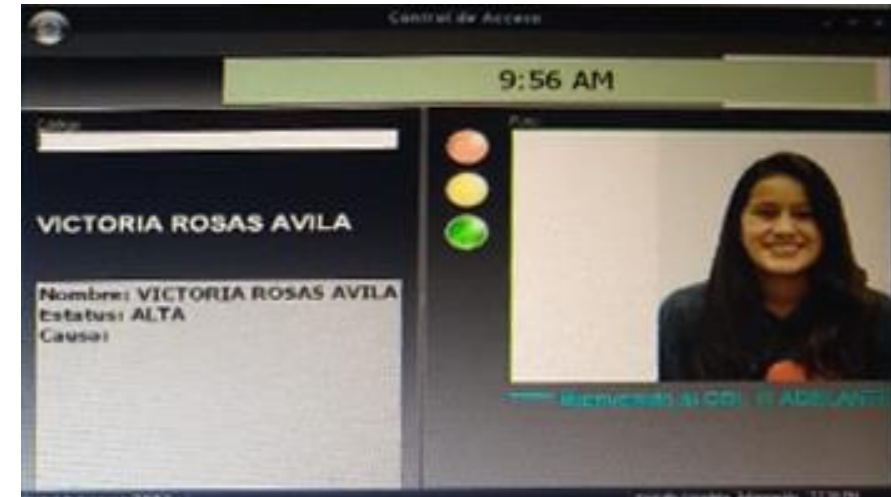
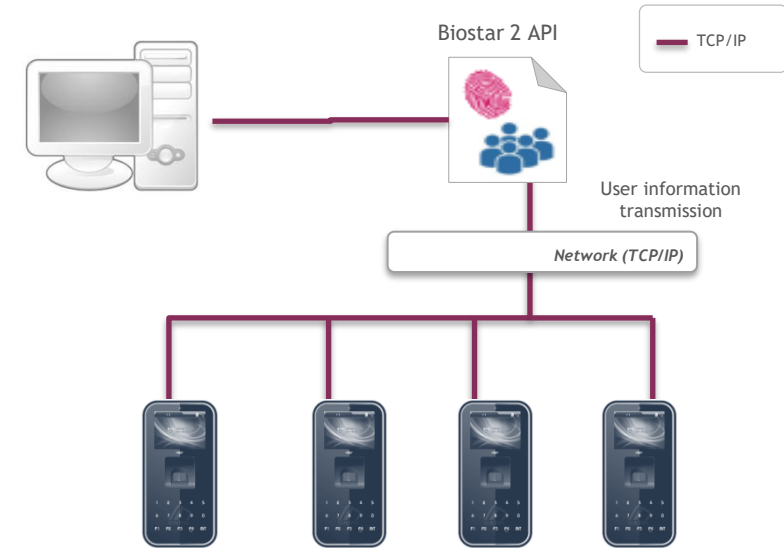
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# Partner admission management

- ✓ **Company:** Israeli Sports Centre
- ✓ **Integration:** Partners Management system
- ✓ **Key Features:** BioStation L2 managing the turnstile system, websocket connection between Biostar 2 (API) and the Partner management system to retrieve and show suitable partner data on screen when the partner uses fingerprint to punch in all in realtime.



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# Personnel and Visitors Platform

- ✓ **Company:** Tigo (Telecomm)
- ✓ **Integration** Data Center Auth / Visitors
- ✓ **Key Features:** ERP, TIER3



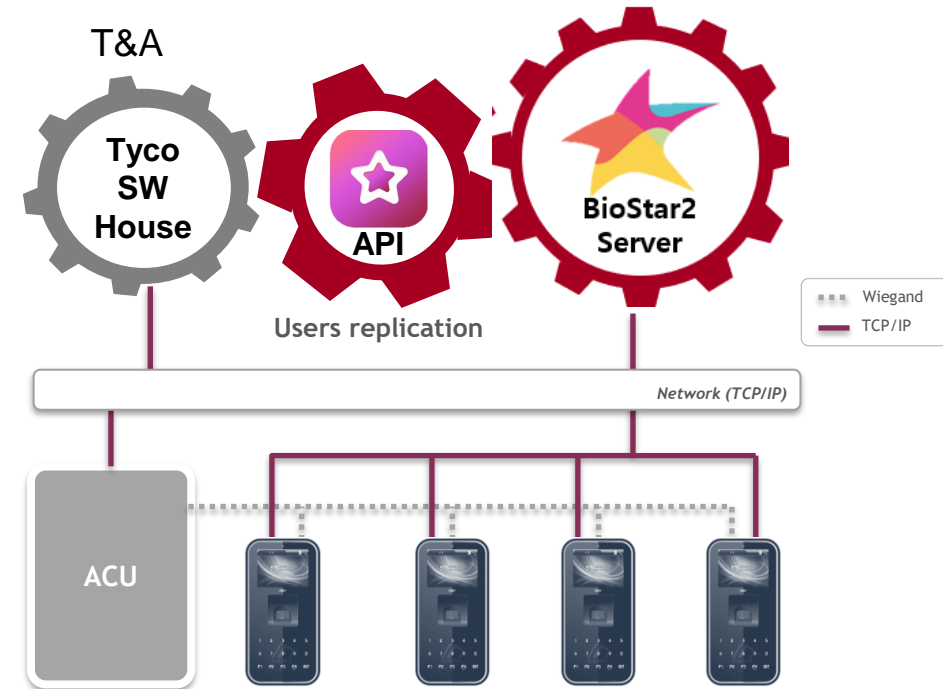
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## API Integration for Countries> Guatemala, El Salvador, Honduras

- ✓ **Company:** Nestle
- ✓ **Integrated to:** TYCO / SW House
- ✓ **Key Features:** Users creation handled by Software House and information replication to Biostar2 done by API and DB Integration.



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# Visitors Software

**Name:** InAccess

**Company:** DRAMS

**Key Features** > Fingerprint and Facial Visitors Enrollment, also integrates Visitors Picture via Webcam (when fingerprint enrollment is used), Biomini, Visitors Cards, Different Visitors Profiles/Access Rights

Visitor Type A

Visitor Type B

Cards

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# Food Court Management Platform

**Key Features** > Fingerprint utilized to print lunch (meals) tickets (Connection via TCP and USB), integrated to TnA Suprema Module.



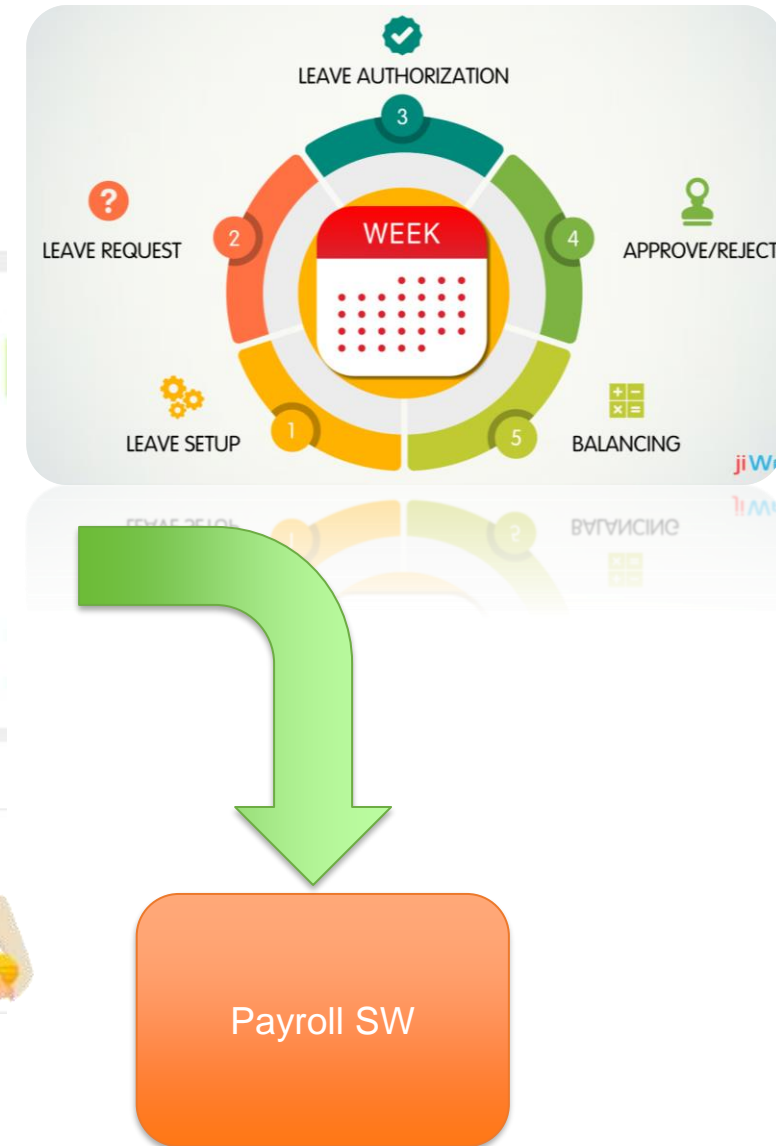
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# Time & Attendance System

Time & Attendance Integration to Custom SW and Payroll SW

**Key Features** > Allows users to request/schedule a leave via Web.  
Integrated with Suprema TnA Module and to a 3rd party Payroll SW



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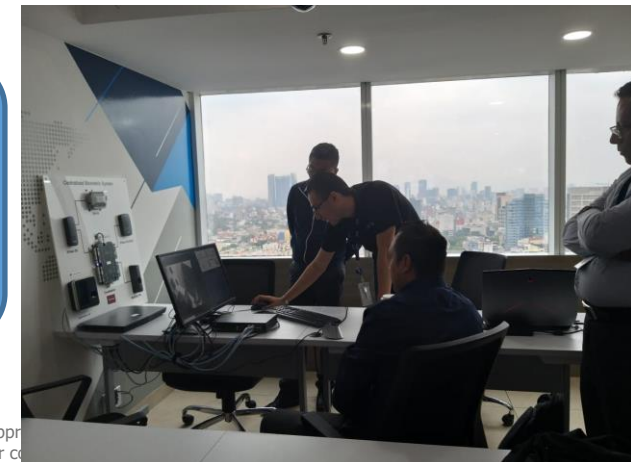
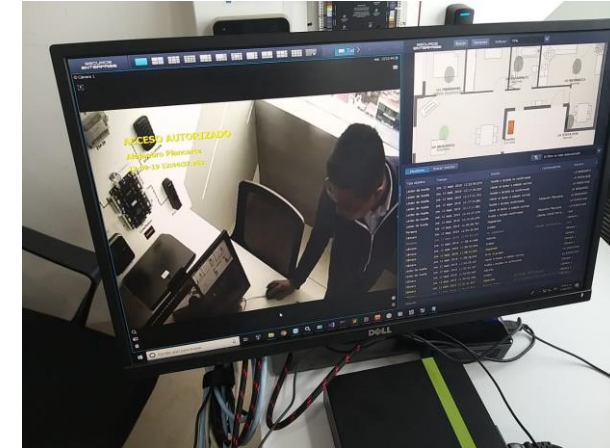
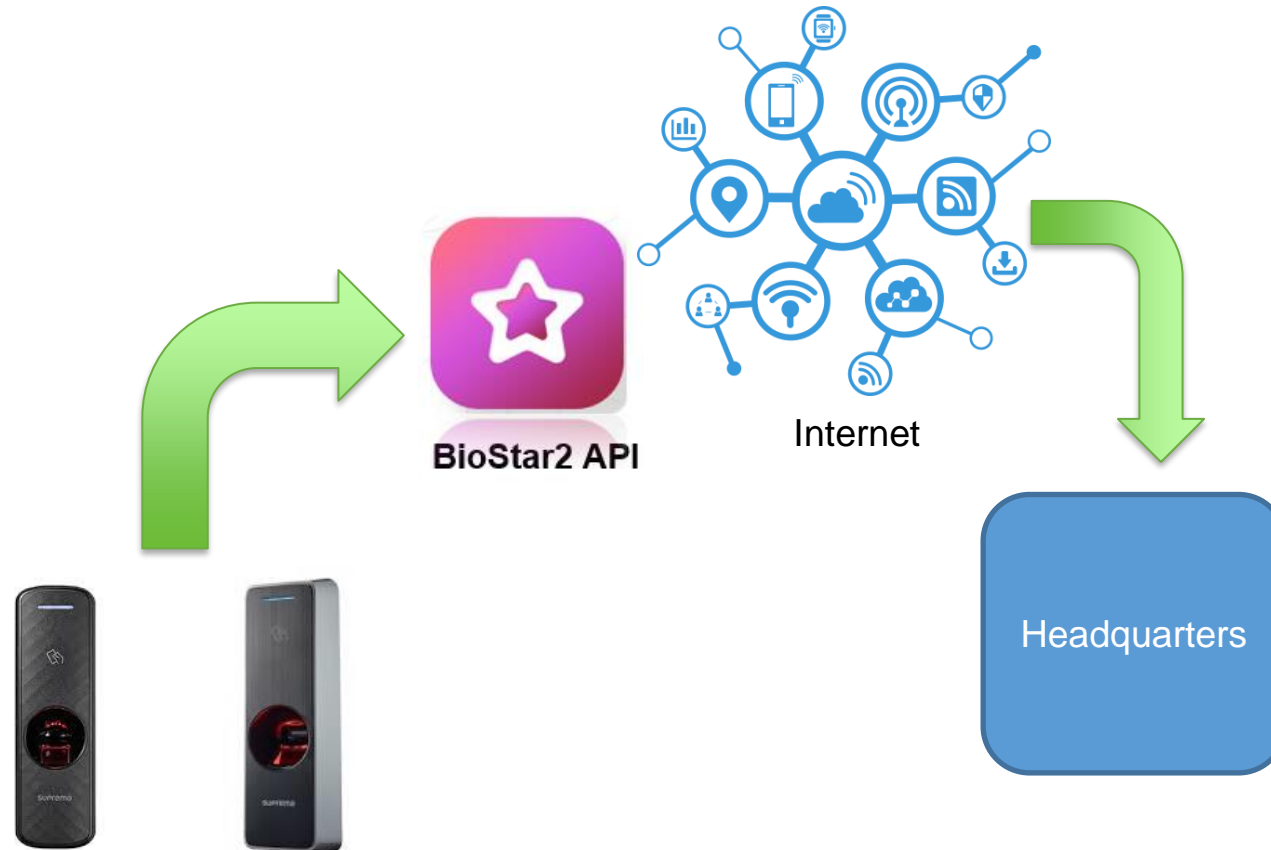
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# Time & Attendance System



- ✓ **Time & Attendance**
- ✓ **Company (Partners) > SACMAG / Syscom**
- ✓ **Key Features > Consolidation, Remote authentication & Staff Control**



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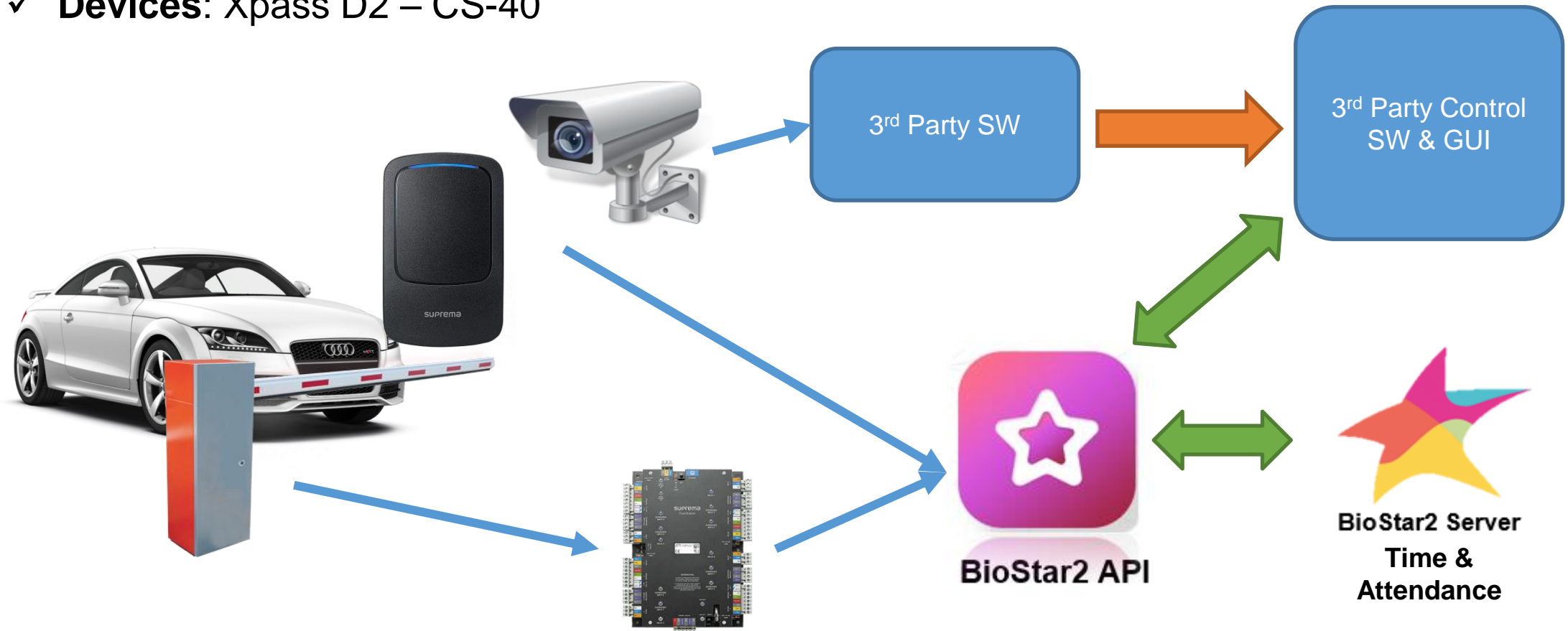
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for informative purpose and was not



# Parking System

- ✓ Parking Platform integrated to the TnA System inside of one of the most prominent Enterprise Business Towers in Guatemala
- ✓ **Devices:** Xpass D2 – CS-40



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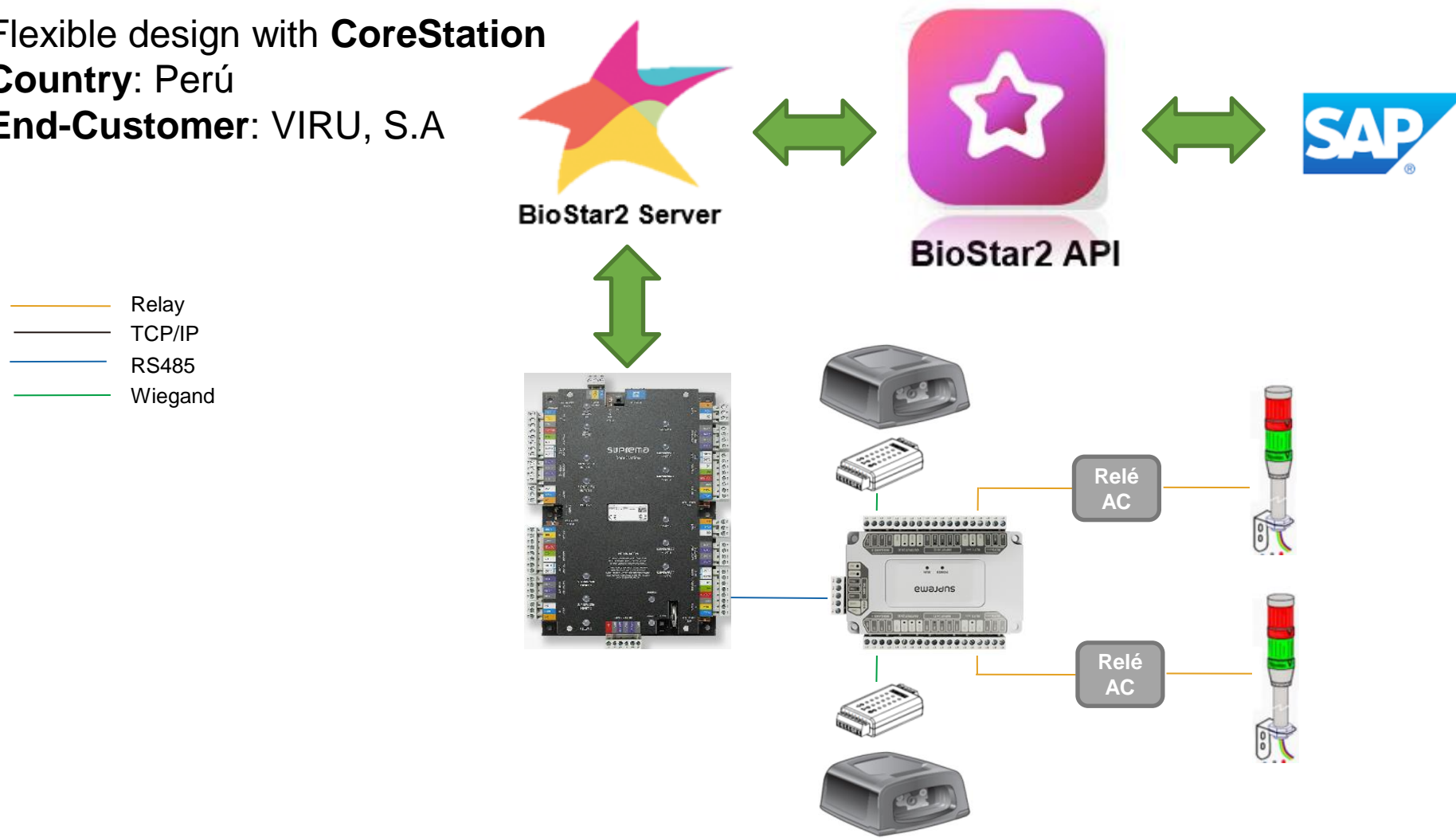
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# CoreStation integrated to SAP

Flexible design with **CoreStation**

**Country:** Perú

**End-Customer:** VIRU, S.A



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# Device SDK Integrations

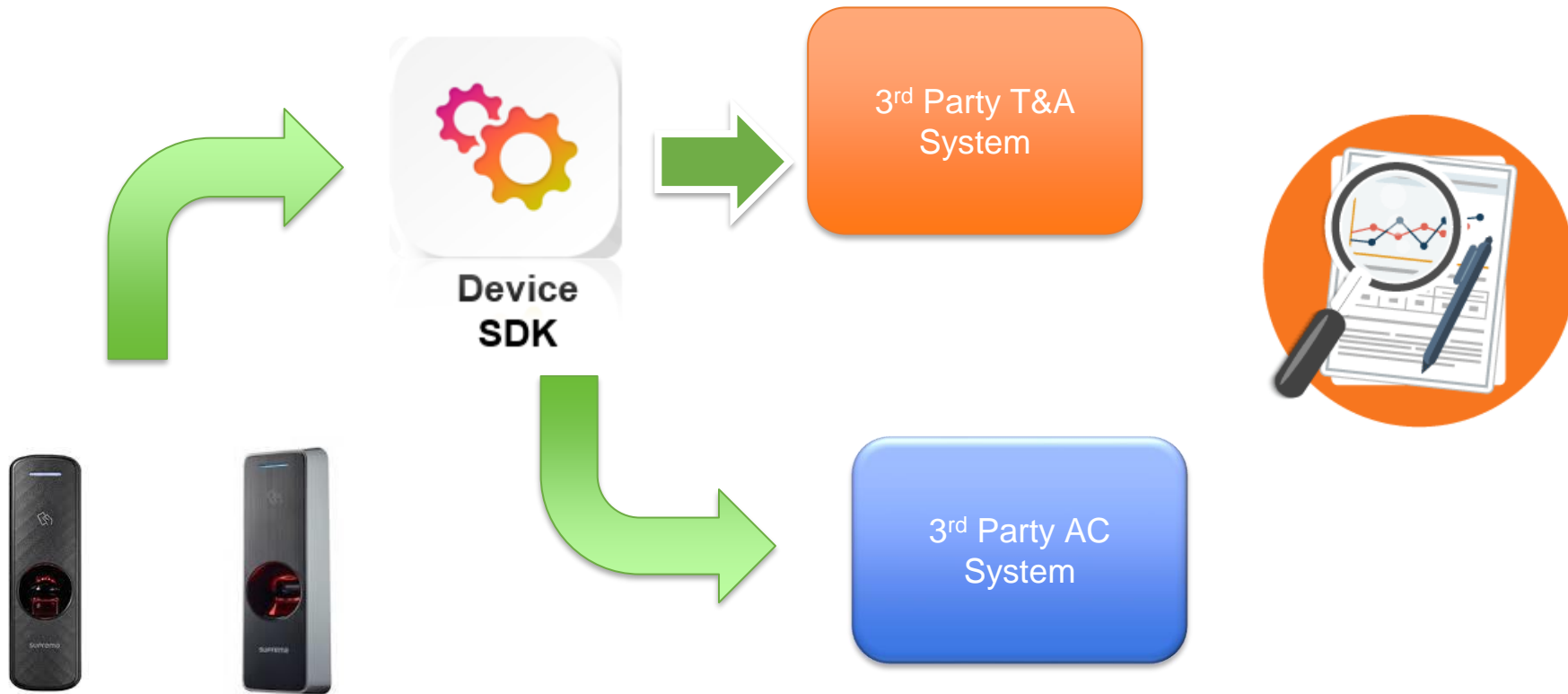
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## Time & Attendance Custom Platform

**Key Features** > Suprema Device SDK to access the devices, extract the information to later generate all kind of reports and personnel controls



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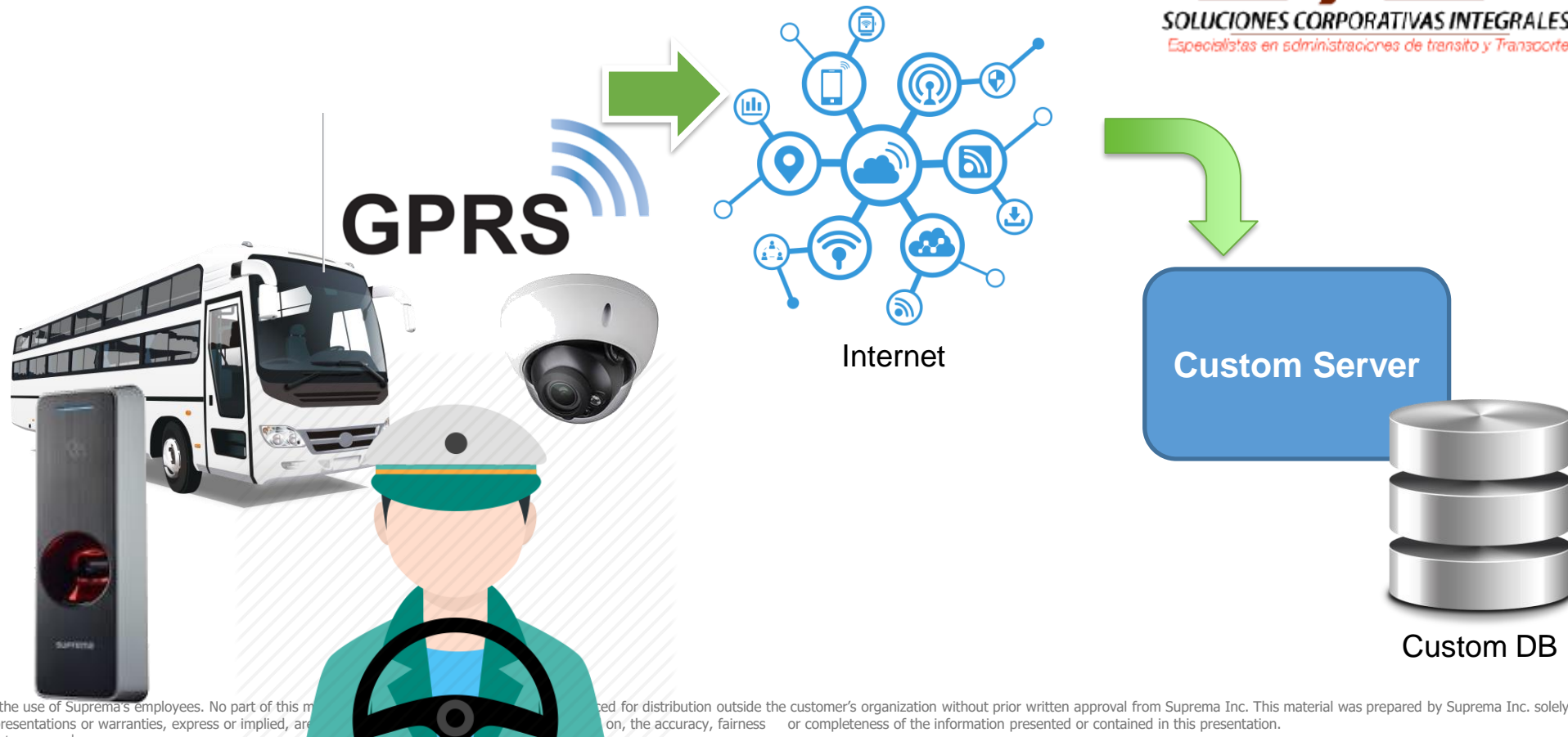


# Time and Attendance on the way

T&A on the way

**Company** > Soluciones Corporativas Integrales

**Key Features** > CCTV, and LTE, combined with the BioEntry W2 to a 3<sup>rd</sup> party Software through the Device SDK



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# Vault Authentication System

- ✓ **Company** > Arquero/Anixter
- ✓ **Key Features** > The Strengths of both FaceStation 2, BioEntry W2 combined to produce a stronger dual simultaneous and user parallel authentication.



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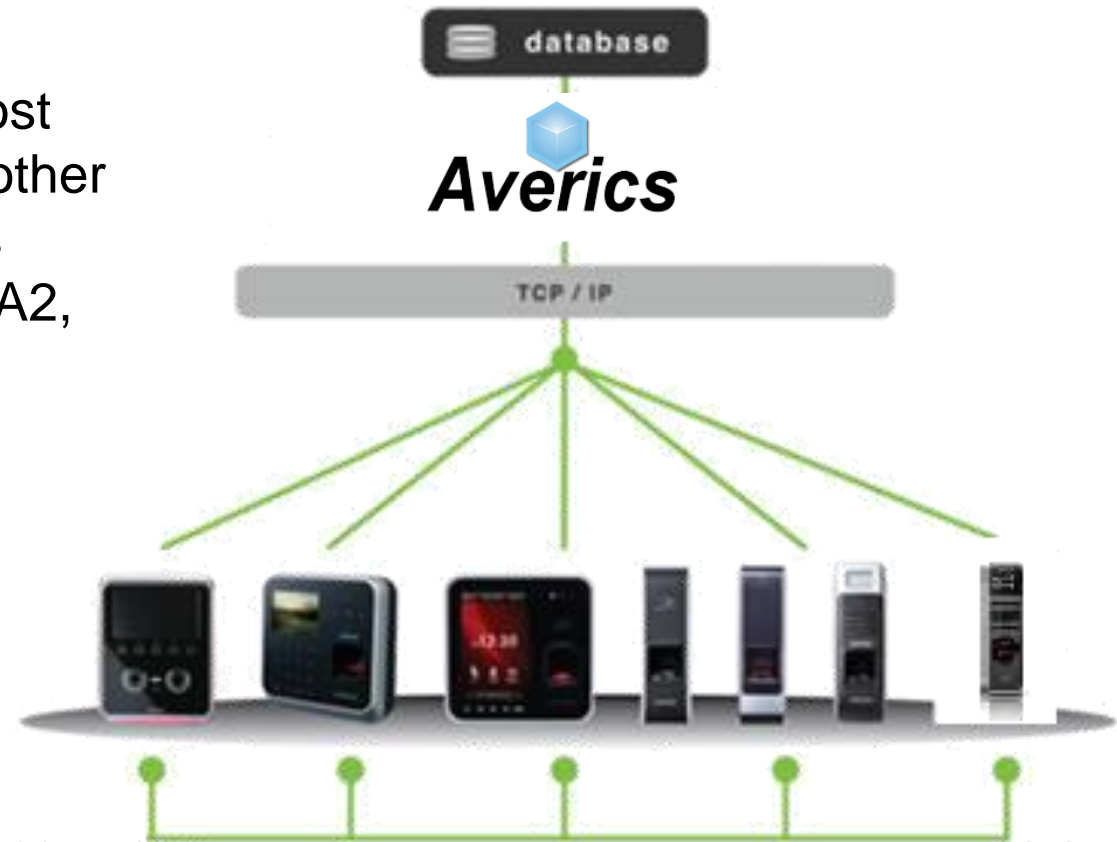
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## Integrations on the Way

- ✓ **Software** > Averics Unity
- ✓ **Company** > Suprema/Averics Systems
- ✓ **Key Features** > Integration almost ready with CoreStation besides other slave and standalone devices as BioEntry W2, R2, Biostation L2, A2, BioLite N2 also in the list



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# Conclusions

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- Through the SDKs (Device SDK and G-SDK) it is possible to access the Suprema devices directly. Although it allows us to have a much more granular control of our devices' functionalities, we shall take care of building / configuring the remaining components in order to bring about a complete platform (DB schemas, etc.), or to integrate to an existing one (in case of BMS, VMS, etc). Therefore, we shall be experienced users or programmers.
- If, perhaps we are not that experienced in programming or when it is simply not the goal of our implementation to go for a deeper type of integration, we can use the API instead (Local or Web), make use of the available functions and create an integration with other software or GUI and continue using the Biostar 2 server power as backbone with a different frontend.
- When we are a bit bolder and want to jump to another level, then we can use the SVP Android SDK to build our own firmware, using the Suprema hardware as in the case of BioStation A2 (OMNIS) or NOVUS as a base.



# Towards the Future...

Imagine the  
opportunities that  
unfold when all  
the integration  
power between  
platforms is in  
YOUR hands!...





# Questions?



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Muchas Gracias  
Thanks a lot  
Grazie mille  
정말 감사합니다

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