



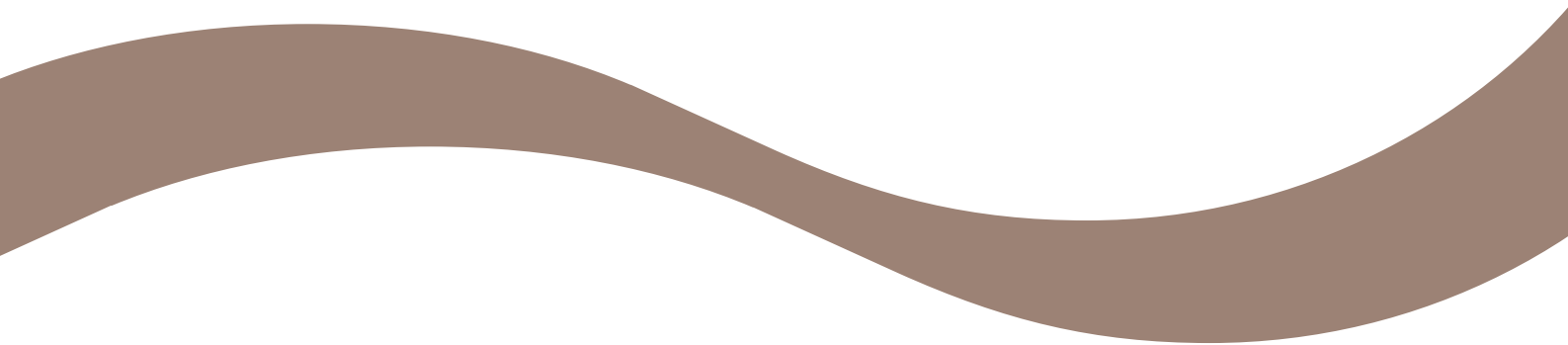
# KEY FEATURE GUIDE

## BioStar 2

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English

**Version 1.00**

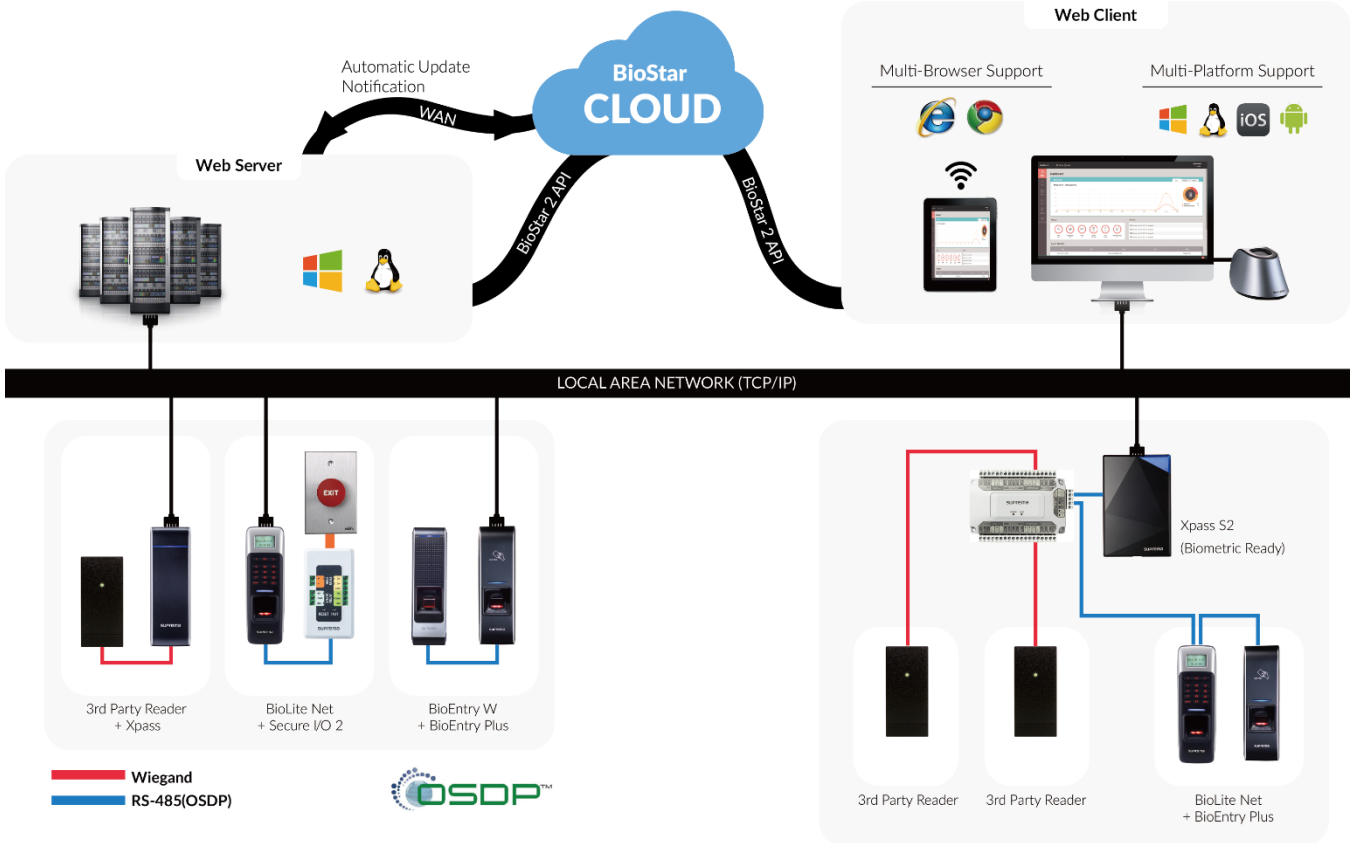


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# BioStar 2: It's a Whole New BioStar

BioStar 2 is a **Web-based Open Security Platform** focused on simplicity, convenience and performance. BioStar 2 is a web based platform and conforms to the HTML 5 standard so that you can use access control system anywhere.



## [Compatible Devices]

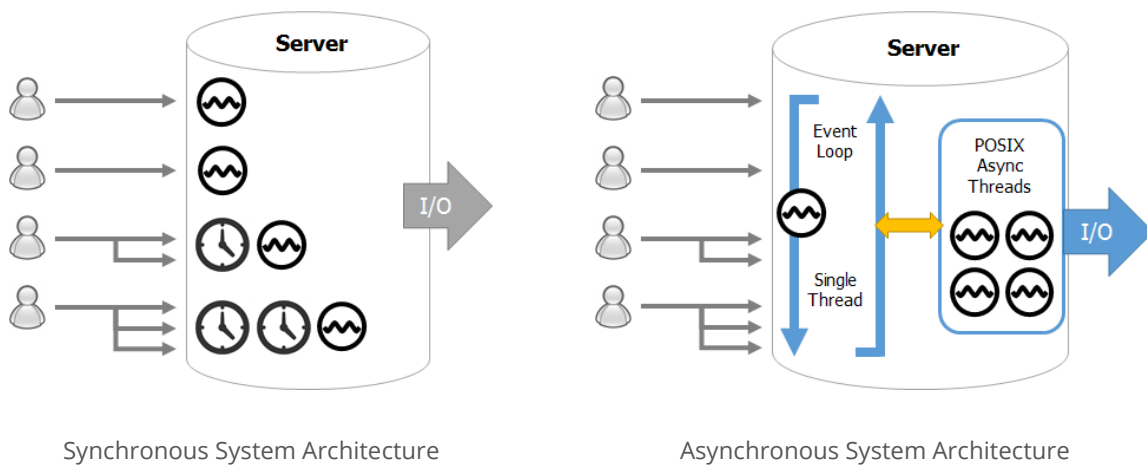


# High Speed Data Transfer and Enhanced Security

## Asynchronous Data Transfer (No performance loss even when connected with a number of devices)

While the devices are synchronizing with the BioStar 1.x server, BioStar restricts user's device interaction to ensure the data integrity. BioStar 1.x has a synchronous data transfer mechanism, meaning that other devices have to wait while one device is synchronizing with the server. If BioStar 1.x transfers data to dozens of devices, users have to wait for an extended time, because the transfer time increases linearly. To overcome this, BioStar 2 adopted an asynchronous data transfer mechanism, which allows multiple devices to communicate with the server at the same time, ensuring a lot faster data transfer speed.

This asynchronous system architecture ensures no performance loss even when connected with large number of devices.



## SQLite, Light and High Performance Database

BioStar 2 uses SQLite, a light and high performance database. It's easy to program languages like Python and C++, and doesn't require additional installation and settings.

SQLite has several advantages over the existing DBMS like the followings:

- A database in SQLite is a single disk file, so it ensures portability.
- It can create a terabyte-sized data file.
- The memory usage is efficient.
- SQLite ensures ACID(Atomic, Consistent, Isolated, Durable) for safe database transactions. ACID is guaranteed in case of system error or power failure.

## Encrypted Communication

BioStar 2 carries out its communication using encryption standards. You can set the web server to communicate with web browsers using the HTTPS protocol for extra security. The communication between the server and the devices is protected by AES<sup>1</sup> and critical information such as PIN and password is protected by SHA<sup>2</sup>.

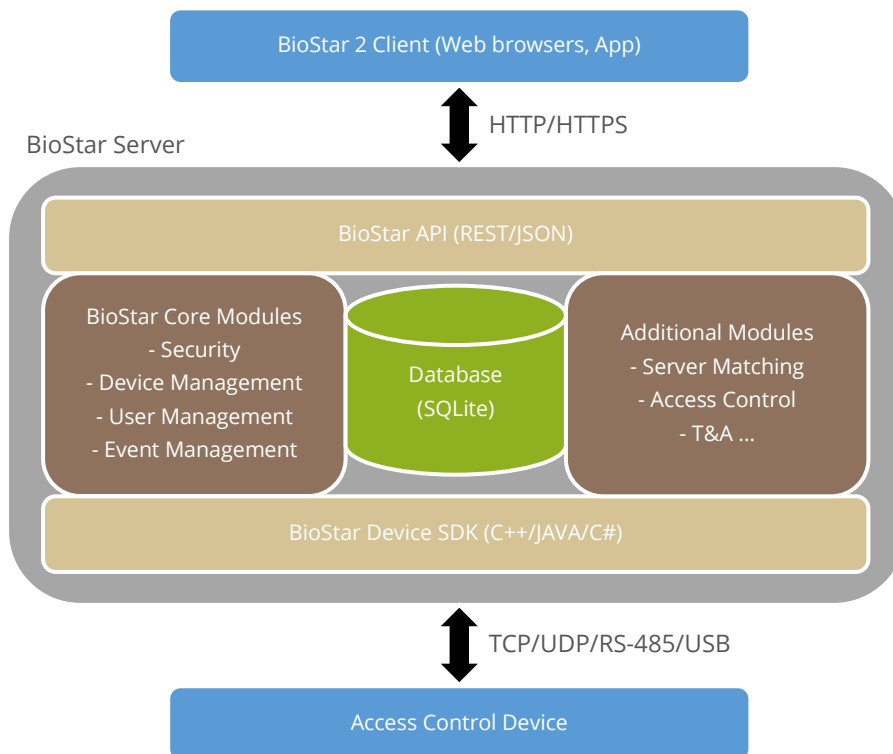
### ! Note

- <sup>1</sup>AES (Advanced Encryption Standard): AES is an international data encryption standard algorithm established by the U.S. National Institute of Standards and Technology.
- <sup>2</sup>SHA (Secure Hash Algorithm): SHA is a collection of cryptographic hash functions, published by the U.S. National Institute of Standards and Technology. The SHA family includes SHA-0, SHA-1, SHA-256/224 and SHA-512/384.

## Expandable Platform

### BioStar 2 & Open API

BioStar 2 utilizes RESTful<sup>1</sup> API and uses JSON<sup>2</sup> as data-interchange format. This allows web browsers to communicate with the BioStar server and makes it possible for users to access the BioStar server from any operating system. Plus, it's easy to integrate with other web based systems and develop Android and iOS apps using BioStar API.



### ! Note

- <sup>1</sup>REST: REST stands for REpresentational State Transfer and refers to a software architecture style for distributed system like web services. It represents the information resource using HTTP URI and represents behaviors using HTTP methods (GET, POST, PUT, DELETE, etc.).
- <sup>2</sup>JSON: JSON stands for JavaScript Object Notation. It can describe the complex relationships between objects with characters, parentheses, symbols and etc. and can be used in various languages such as PHP, C# and Python.

# Key Features

## Easy to Monitor & Review

BioStar 2 provides dashboard and monitoring feature for a quick glance on all major access control events. The dashboard highlights major system indicators like various event logs, system information, notice and alarms. The monitoring page provides information on real-time events, door status, and alert history.



## Automatic Server Update

Rather than a complicated update process that demands extensive IT support, BioStar 2 automatically updates the system through the cloud. Once the feature has been enabled, the system will automatically download and update the system whenever updates are available to keep the system up to date. During the update, the system creates a backup of the last successful system launch, and can be restored if there is a problem during update or usage.

## Automatic Data Synchronization

- Access Group data synchronization: Basically, the access group related data including Door, Access Group, Access Level, Schedule, Holiday, and Blacklist is automatically transferred to the devices whenever there's a change in the data (e.g. when the user modified the door settings or added a new access group). The access group related data synchronization is not optional and there's no way to turn this feature off.
- User data synchronization: Unlike the access group data synchronization, the user data synchronization feature is optional. When the **Automatic User Synchronization** option is set to **All Devices** in BioStar 2, the user data stored on the server is automatically transferred whenever there's a change in the data (e.g. when the user modified the name of a user or added a new user). If the option is turned off, you need to manually transfer the users to the devices.

## Batch Editing

Make edits to multiple users and devices at the same time by using batch editing. This batch editing feature will save your time and effort.

### [Batch Editing of Users]

Users (2)

- Group
- Status  Active
- Period  AM 12:00 ~  PM 11:59
- Access Group
- BioStar Operator

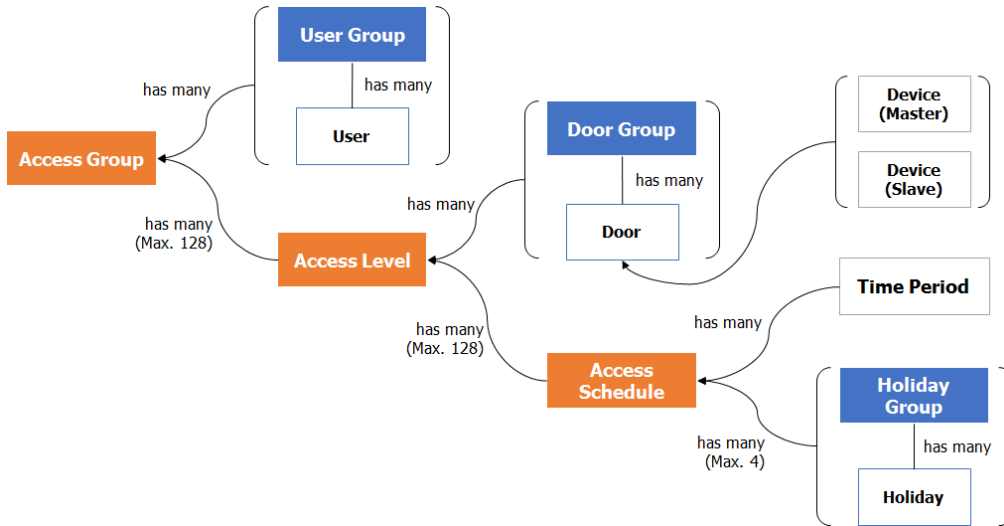
### [Batch Editing of Devices]

Devices (3)

- Use DHCP  Use DHCP
- Subnet Mask
- Gateway
- Device Port
- Connection Mode  Device → Server Connection
- Server IP
- Server Port
- RS485
- Baud Rate

## Schedule, Access Level and Access Group

The access privilege of a user in BioStar 2 is determined based on **Access Level** and **Access Group**. An access level consists of door groups and schedules, and an access group consists of user groups and access levels. The concept of access level is newly introduced in BioStar 2 and ensures more flexibility than BioStar 1.x. With access level, you can configure or change the settings of user, door and schedule respectively.



- You can have up to 128 access levels.
- You can have up to 128 access groups.
- You can assign a maximum of 128 doors to one access level.
- You can assign a maximum of 16 access groups to one user.

## Trigger & Action

You can receive an alert email or make the devices send a predefined signal when specific events have occurred on certain devices and doors. Different events can be registered to the devices and doors respectively.

Name: Trigger and Action 1    Schedule: Always

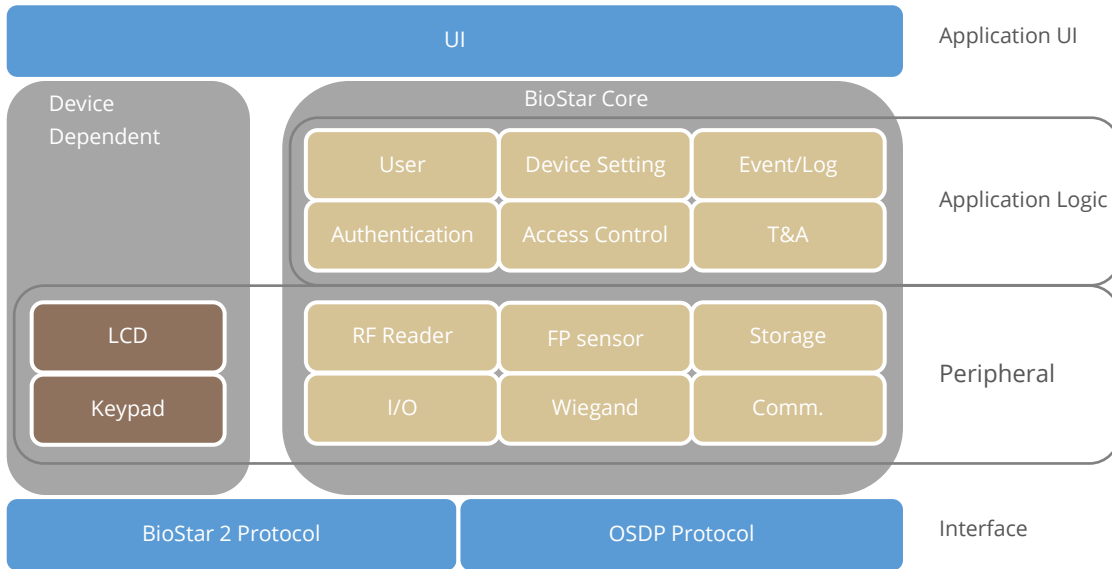
Device	Event	Device	Action
<input type="checkbox"/> All Devices	<input checked="" type="checkbox"/> TAMPER_ON	<input type="checkbox"/> All Devices	Relay
<input checked="" type="checkbox"/> BioLiteNet 538101268 (192.168.1.1)	<input checked="" type="checkbox"/> RS485_DISCONNECTED	<input checked="" type="checkbox"/> BioLiteNet 538101268 (192.168.16.141)	Relay 0
<input type="checkbox"/> BioLiteNet 538101276 (192.168.1.1)	<input type="checkbox"/> SYSTEM_RESET	<input checked="" type="checkbox"/> BioLiteNet 538101276 (192.168.16.116)	Signal
			Custom



# Enhanced Features

## Device UX Improvements

You might find some inconsistencies between the BioStar 1.x devices in menus, options, and logics. BioStar 2 has tried to tackle the inconsistencies and as a result, BioStar 2 devices offers a fully integrated, easy-to-use, and intuitive user experience.



[Comparison of BioStar 1.x and BioStar 2]

	BioStar 1.x	BioStar 2
Max Number of Devices	512	1,000
Max Number of Cards per User	1	8
Max Access Groups per User	4	16
Operating System	Windows	Windows, Linux*
Supported Database	MSSQL (Default) Oracle, MySQL	SQLite

\*: Will be available later.

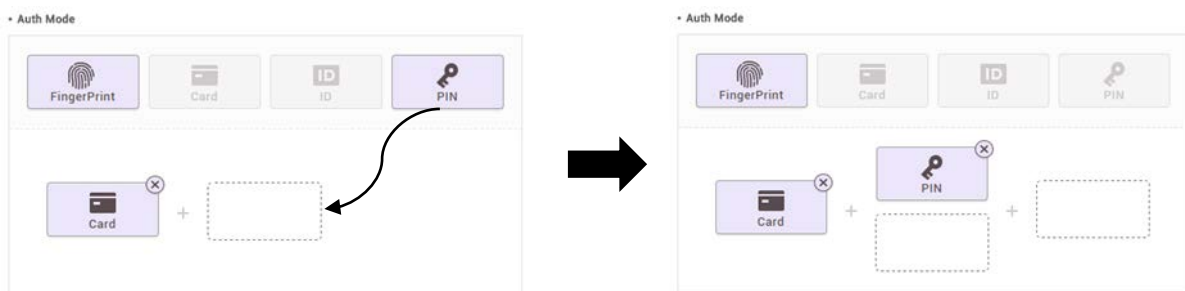
## Centralized Access Control Mode

There has been a big improvement in the master-slave mode in BioStar 2. In the centralized access control mode, one master device can have up to 31 slave devices by connecting them through the RS485 daisy chain configuration. The slave devices will be used as dummy readers in this setting, and the authentication is performed on the master device. RS485 connection bandwidth restricts maximum number of the slave devices to 7 using the fingerprint authentication mode.



## More Intuitive User Interface on Private and Device Authentication Modes

BioStar 2 improves usability by introducing an intuitive user interface on the private and device authentication modes. You can just drag and drop the desired credentials to configure the authentication settings.



## Time Zone

You can set different time zones for different devices and then the devices will display the time according to the time zone. The time of every log will be recorded on the basis of UTC+0, and BioStar 2 displays the logs using the BioStar 2's time zone. For example, let's say the device is installed in New York with the time zone of New York(UTC-5) and the BioStar server is located in Korea with the time zone of Korea (UTC+9). If a user authenticates oneself on the device at 9:00 AM local time, the device will display 9:00 AM for the event time while the BioStar server will display 10:00 PM for the event time.

## Administrator per Device

With BioStar 1.x, you cannot assign an administrator per device. An admin user also carried role of administrator of the devices. However, BioStar 2 allows you to assign an administrator per device. You can assign one of the following administrative privileges to an administrator: All, User and Configuration.

## Ten Fingerprints Enrollment for Every Device Type

With BioStar 1.x, the maximum number of fingerprints per user varies depending on the device type. We have focused on maintaining the consistency across the device types while developing BioStar 2. With BioStar 2, you can enroll up to 10 fingerprints per user regardless of the device type.

## Wiegand Settings

BioStar 2 provides four pre-defined settings as shown below and the users can customize Wiegand setting.

[Pre-defined Wiegand settings]

<input type="checkbox"/>	Name	Total Bits	Number of IDs	Number of Parity Bits
<input type="checkbox"/>	26 bit SIA Standard-H10301	26	2	2
<input type="checkbox"/>	HID 37 bit-H10302	37	1	2
<input type="checkbox"/>	HID 37 bit-H10304	37	2	2
<input type="checkbox"/>	HID Corporate 1000	35	2	3

[Customizing a Wiegand setting]

**Information**

Name

Description

Total Bits

ID Field

	Start Bit	End Bit	Size	
ID0	<input type="text"/>	<input type="text"/>	0	<input type="button" value="Add"/>

Parity Bits

Position	Type	Start Bit	End Bit	Size	
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## Evolving BioStar 2

It's too early to be surprised. More features will be available soon.



- Brand-new BioStar 2 compatible devices are coming!
- BioStar 2 Mobile
- BioStar 2 API
- BioStar 2 Device SDK
- Time & Attendance
- Server Matching
- Zones (Local & Global)
- Intrusion Alarm
- Visual Map
- Badging
- IP Camera Integration
- Visitor Management



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