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[System Configuration](#), [BioStar 2](#), [Smart](#), [Card](#)

## How to issue smart cards

The BioStar 2 system is designed to authenticate users by matching the authentication templates stored inside the device with their fingerprint templates. However, there are needs for securing personal information such as fingerprint templates. In BioStar 2, the administrator can use a concept called smart card which will allow issuing cards to store users' fingerprint templates inside the card and they carry it around for authentication. This will lead to a more secure environment since the devices don't need to hold the user information inside them.

To issue a smart card, such as Access on Card or Secure Credential card, you will have to configure the smart card format first and apply it to the device.

While Access on Card doesn't need any user information transferred to the device, Secure Credential Card needs basic user information stored inside the device. Secure Credential Card is used when only to store the fingerprint template inside the card.

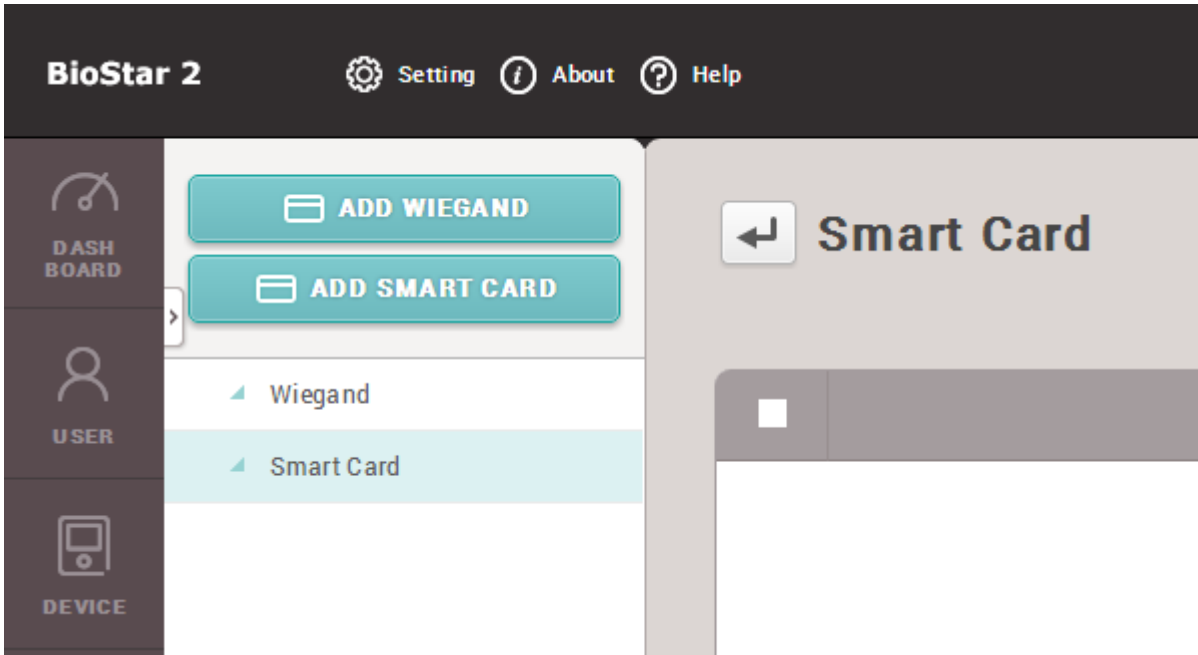
To delete the user fingerprint template information from BioStar 2 DB after writing Access On Card, enable [Delete personal & credential data when issuing an AoC].  
Direction: Settings>Server> [Delete personal & credential data when issuing an AoC]

In addition, please disable [Automatic User Synchronization]. If not, the BioStar 2 server will synchronize the user information to the connected devices automatically.

To understand the benefits and differences between the two smart cards, refer to the following link [FAQ](#)

## Configuring a smart card format

1) Go to **Settings** → **Card Format** → **Add Smart Card**.



2) Enter the name of the smart card format. There are 4 types of cards supported for the AoC card and the SC card, Mifare, iClass, DESFire, and iClass Seos (added in BioStar 2.6). Select the card that will be used for the smart card.

You can use hexadecimal Keys starting in BioStar 2.6. Refer to the [How to Configure Hexadecimal Card Key](#)

DESFire cards are only supported if the encryption type is DES/3DES.

Refer to the [FAQ article](#) to check which devices/firmware support SEOS cards.

3) You can select to use up to 2 card keys for the card. To use the Secondary Key, you will have to activate it first. Check the checkbox if you need to use the key.

If you're trying to write a key to a blank card without a key, configure the primary key and turn on the secondary key but leave the secondary key blank.

The screenshot shows the 'Information' section of a configuration tool. At the top, the 'Name' is 'Mifare Layout' and the 'Secondary Key' toggle is turned on to 'Active'. Below this are tabs for 'MIFARE', 'iCLASS', 'DESFire / Mobile', and 'iCLASS Seos'. Under the 'MIFARE' tab, there are fields for 'Primary Key' (two rows of asterisks) and 'Secondary Key' (checked checkbox, 'New Secondary Key' field, and 'Confirm New Secondary Key' field). A 'Start Block Index' is set to 4. On the right, a red note states: 'The key values made with 2.5v or before need to be converted to HEX through the below before applying.' Below this note is a 'Convert to HEX' button and a 'Converting Result:' label.

This screenshot shows the 'Information' section with 'Name' set to 'Test' and 'Secondary Key' toggle set to 'Active'. The 'MIFARE' tab is selected. The 'Primary Key' has two rows of four asterisks. The 'Secondary Key' checkbox is checked, and its field contains six asterisks. The 'Start Block Index' is set to 4.

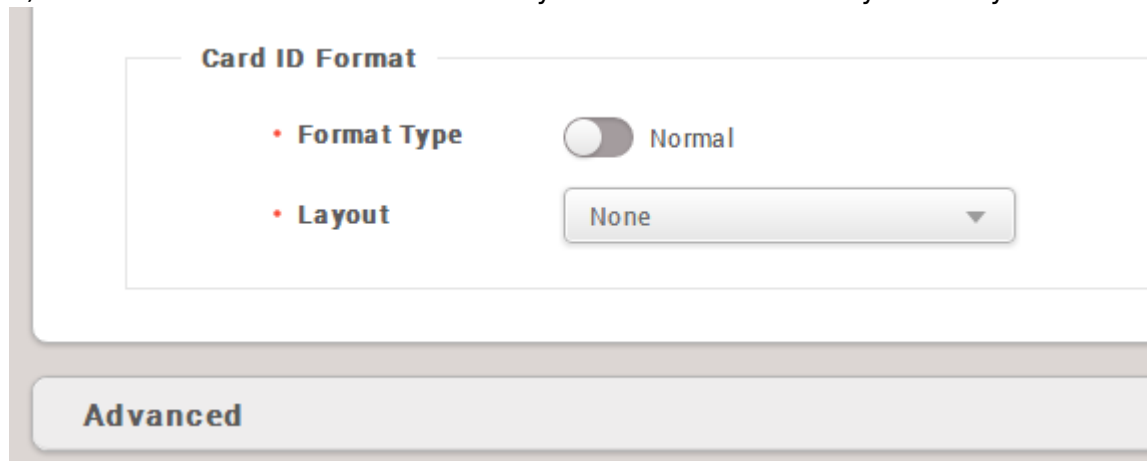
4) You can configure how many templates you want to store inside the card and which block to start storing the information on. You can also configure the template size if you don't have enough space on the card to fit the template.

The screenshot shows two configuration sections. The first section has 'Start Block Index' set to 8. The second section, titled 'Layout', has 'Template Count' set to 2 and 'Template Size' set to 300.

## Applying the configured smart card format to the devices

To make the device read the smart cards, you will have to set the device to have the smart card format.

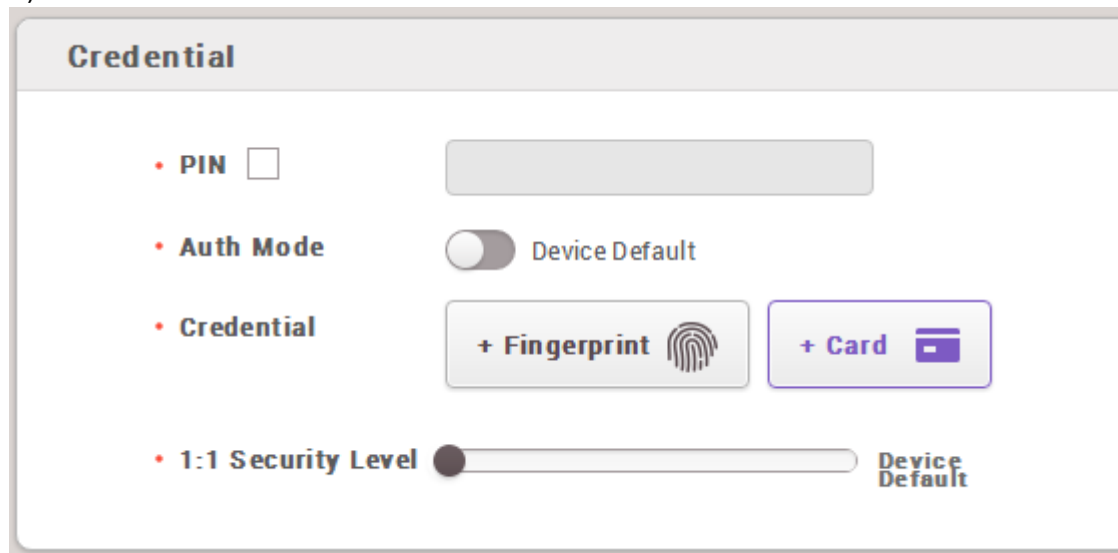
- 1) Go to **Device** → **Select the device** → **Authentication Tab** → **Card ID Format**.
- 2) You will find the smart card format layout menu. Select the layout that you want to apply.



## Formatting a card

The card needs to be formatted before being used as a smart card. The card information stored in the blocks will be deleted.

- 1) Go to **User** → **Select a user** → **+ Card**.



- 2) Select **Read Card** from the **Card Type** menu.

**Enroll Card**✕

• **Card Type**

• **Card Layout Format**

• **Device**

• **Smart Card Type**

**Information**

• **Card ID**


• **Access Group**

• **Fingerprint**

• **PIN**


• **Period**

**1st Finger**



Duress

**2st Finger**



Duress

**Format Card**

**Read Card**

**Cancel**

3) Select the device to format the card.

4) Click **Format Card** and place the card on the device. If the format is successfully done, you will hear a sound from the device.

### Issuing a smart card

1) From the same screen, please change the **Card Type** to **Enroll Smart Card**.

Enroll Card✕

• **Card Type** Enroll Smart Card ▼

• **Card Layout Format**

• **Device** None ▼

• **Smart Card Type** Secure Credential Card ▼

**Information**

• **Card ID** 2

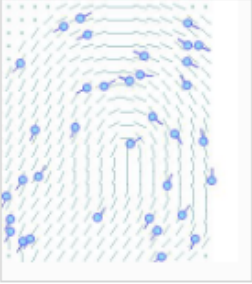
• **PIN**

• **Fingerprint**

1st

**1st Finger**



Duress

Write Smart Card Cancel

- 2) Select the device to enroll the smart card.
- 3) Select the smart card type. Access on Card and Secure Credential Card is supported.
  - 3-1) The Access on Card will use the user ID same for the secure ID.
  - 3-2) The Secure Credential Card's secure ID can be modified.
- 4) Select the fingerprint template to be written on the card. For example, click the **1st** button to select the 1st template to be written on the card. The template will get highlighted. A fingerprint must be added first to use the template.

**Enroll Card**✕

• **Card Type**

• **Card Layout Format**

• **Device**

• **Smart Card Type**

**Information**

• **Card ID**

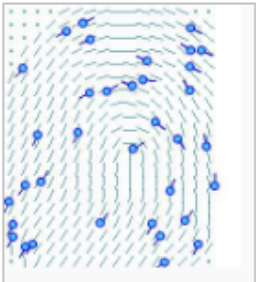
• **PIN**

• **Fingerprint**

**1st**

**1st Finger**



Duress

**Write Smart Card**

**Cancel**

5) Click the **Write Smart Card** button.

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