BrightSign ISAAC App

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Getting Started

In order to run BrightSign ISAAC App, you will need the following in addition to your BrightSign players.

- High performance Micro-SDHC card with enough capacity for ~24hr of expected content
- ISAAC Workspace version 2.5.1+
- BrightSignOS 9.1.XXX
- A reliable network connection between your ISAAC platform and all BrightSign players on the network

Download

The BrightSign ISAAC App SD card image is available in two locations:

- In ISAAC Workspace via the "Download Bundle" button in a "BrightSign Fleet" module, under the "General" tab.
- From the `Ecosystem > BrightSign` section on the ISAAC website.

Installation

Once the BrightSign ISAAC App image has been downloaded, follow the steps below to complete the installation:

1. Extract the contents of the autorun.zip to the root of your SD card.
   Once complete, the root directory should contain the following items:

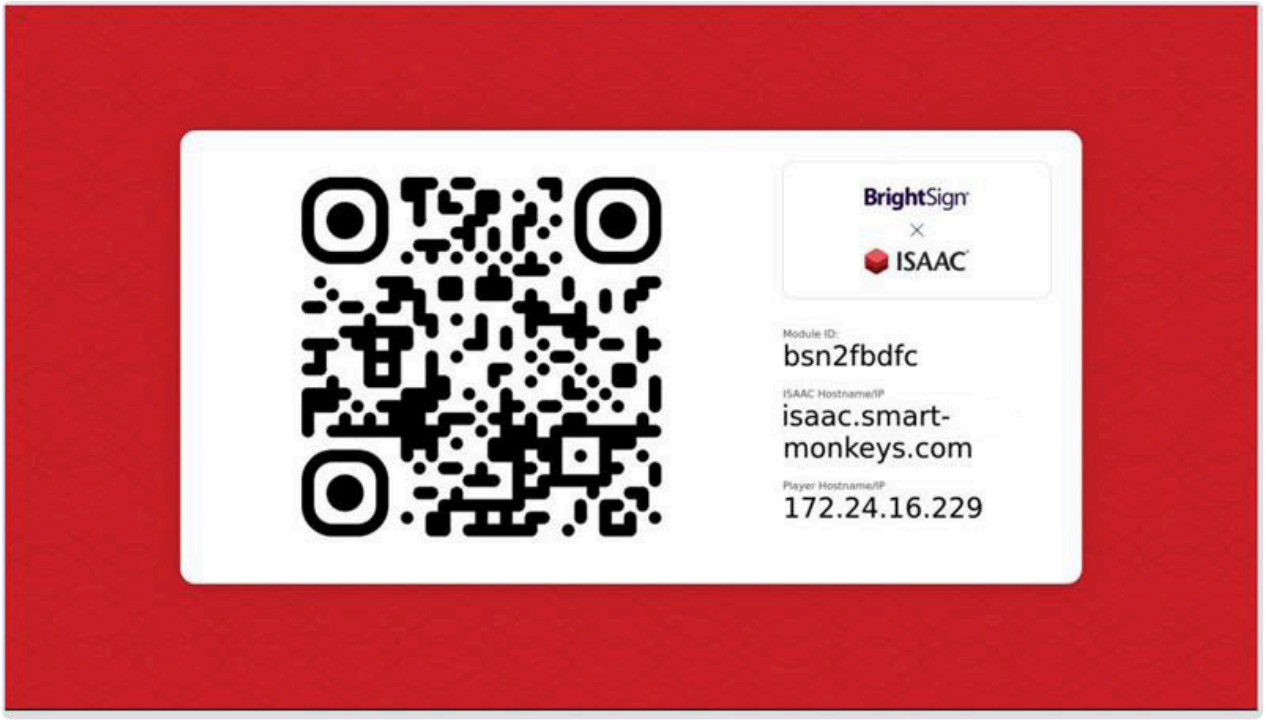
```
/
|-- autorun.brs
|-- autozip.brs
|-- index.js
|-- html/
|-- index.html
|-- index.css
|-- isaacmedia/
```

2. Create or edit the config.ini with desired settings (optional, but must be placed in the root directory).

```
# Your ISAAC IP address or hostname
isaacHostname = 0.0.0.0
# Manually specify unique player ID
moduleID = "MyUniqueModuleID"
# Specify API Token
apiToken = "af4e993d72c2..."
```

See Configuration for more options.

3. Install the SD card into the player.
4. Connect player to the network and power on.
5. Wait for BrightSign ISAAC App Splash Screen to populate.

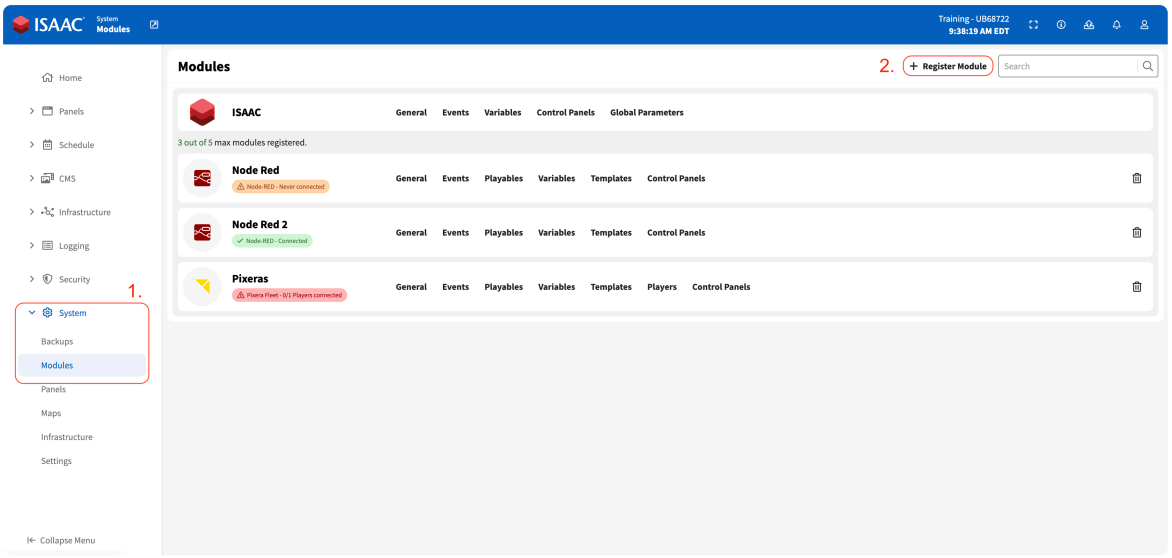


6. Installation complete!

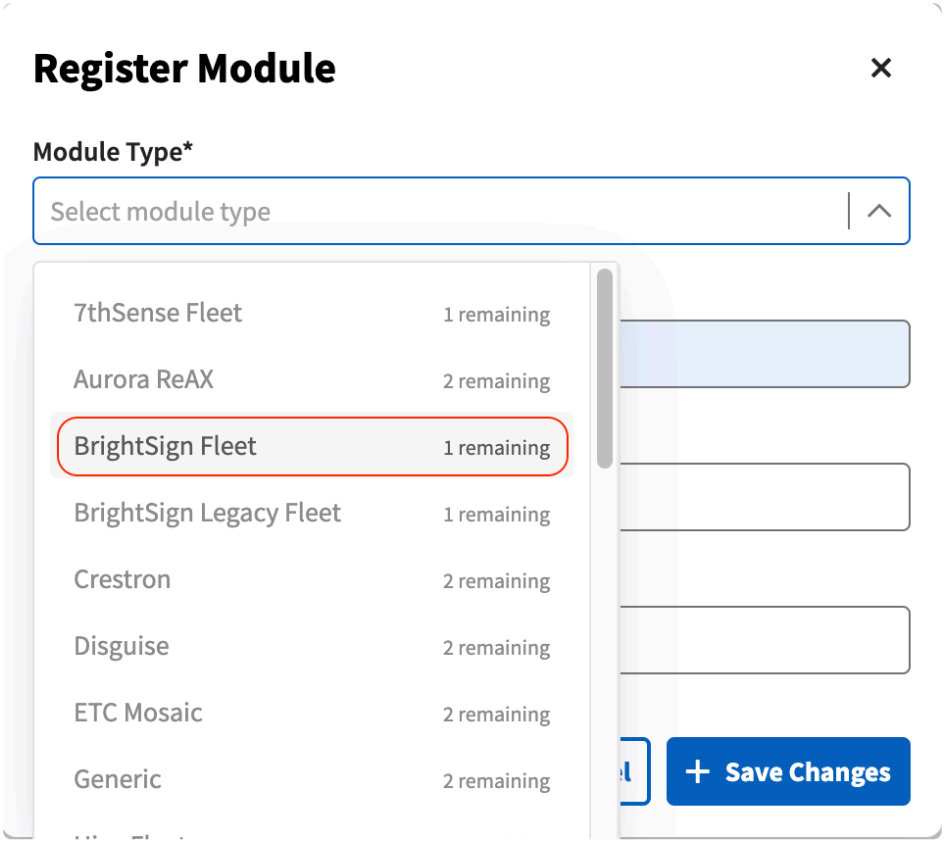
Setup In ISAAC Workspace

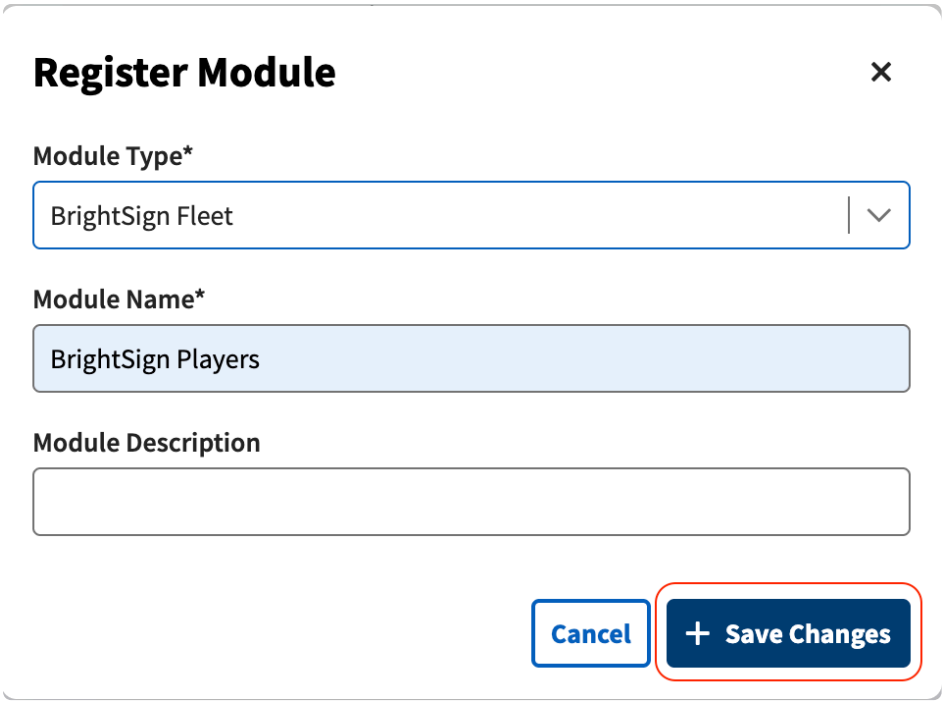
To utilize a player with the BrightSign ISAAC App firmware, a "BrightSign Fleet" module and player(s) must be created.

1. In ISAAC Workspace Navigate to `System > Modules` and select `+ Register Module` in the top right.



2. For **Module Type** select "BrightSign Fleet".
3. Provide a **Module Name** of your choice and optionally, a **description**.
4. Select `+ Save Changes`.





5. Navigate to the **Players** tab of your newly created module.
6. In the **Players** tab, select the `+ Add Player` button.
7. Provide an easily identifiable **Player Name** and optionally, a **description**.
8. Input the unique **Module ID** displayed on the output of the player. (See Configuration for additional details)
9. Enable "**Direct media playback**" if you would like to schedule ISAAC CMS content on this player.
10. Repeat steps 6 through 9 for other players as necessary.

Configuration

The BrightSign ISAAC App firmware allows for configuration in two separate locations:

- The `config.ini` file in the root of the SD card.
- The WebUI accessible via the player's IP address in a web browser.

config.ini

The `config.ini` file allows the user to specify defaults for a player and is the recommended means of setting up a large amount of players. Settings specified in this file override any of the defaults provided by the firmware. This file is the preferred location to define the IP address of the ISAAC Workspace on your network and is the only location to specify Expanded Options.

Parameter	Options	Notes	Default
moduleID	Module ID String	Identifies the Player communicating with ISAAC. This should be the unique Module ID as configured in the BrightSign Fleet Module.	n/a
isaacHostname	ISAAC Hostname String	The hostname, FQDN, or IP Address of the ISAAC Workspace. For values other than an IP Address, DNS configuration may be required.	n/a
apiToken	API Token String	Currently unused; intended for future use to secure the player’s connection to ISAAC.	n/a

WebUI

The web user interface is the ideal location to define user settings after a player has been imaged and installed. Any settings configured in the WebUI override any system defaults as well as the `config.ini`. Clearing any of the values in the WebUI will revert the system to the preferences established in the config.ini or any system defaults. This is the recommended location to set the Player/Module ID after install.

Expanded Options

The following table details additional options available in `config.ini` and their function.

⚡ These options are not currently implemented, but are defined for future use.



Parameter	Options	Notes	Default
localMediaEnabled	true/false	Determines if local media appears as playables on the ISAAC schedule.	false
localMediaPath	relative/file/path	Overrides the storage location of local media for ISAAC scheduling.	
adminPanelEnabled	true/false	Enables or disables the WebUI.	true
splashScreenEnabled	true/false	Determines if BrightSign ISAAC App splash screen appears on boot (true) or if system displays black (false).	true
variableUpdateInterval	time (seconds)	Specifies the frequency of variable updates sent to ISAAC.	5
scheduleUpdateInterval	time (seconds)	Specifies the frequency of schedule update checks.	10
defaultStateRefreshRate	time (seconds)	Specifies the frequency of polling the players "default State", this dictates loop mode.	10
instantPlayCacheRate	time (seconds)	Specifies the frequency of refreshing the force cache content used for instant play.	10



Network Settings

DHCP

The player defaults to receiving its network configuration using DHCP. By not specifying the static IP parameters as detailed below the player will fall back to this functionality.

Static

To set a static IP address, add and configure the following parameters to the `config.ini` file.
All parameters must be included for the static configuration to be accepted by the player.

Parameter	Options	Notes
playerIP	ipv4 address	Sets the static IP of the player ex. "192.168.0.2".
playerGateway		Identifies the gateway IP of the network ex. "192.168.0.1".
playerBroadcast		Identifies the broadcast address of the network ex. "192.168.0.255".
playerSubnet		Sets the subnet mask for the player ex. "255.255.255.0".

NTP

It is recommended to establish NTP for all AV systems to enhance scheduling accuracy and precision in larger installs. While NTP does not provide frame accurate synchronization, it does greatly enhance precision between multiple on-site systems. When possible, it is recommended to utilize an on-site NTP source.

Parameter	Options	Notes
ntpServer	ipv4 address	Sets the IP address for an NTP server.



Video Settings

By default, the player will attempt to autodetect the resolution of the connected display. If this needs to be overridden, adding the following parameters to `config.ini` will allow you to specify the output.

Parameter	Options	Notes	Default
videoMode	BrightSign Supported Video Mode	Sets the video format of the display. Must be a BrightSign supported option.	auto
videoRotation	"normal", 90°, 180°, 270°	A BrightSign supported display rotation setting.	normal

Changing these values will require a reboot of the player, which may power cycle while changes are applied.

For more BrightSign video mode options, please see the following guide: https://docs.brightsign.biz/technical/video-modes

Media Playback

The BrightSign ISAAC App application allows for the playback of image and video uploaded to the ISAAC Workspace. These media objects can be assigned to a player via "Loop Mode" or by scheduling the playable on the ISAAC Schedule. For more information on using Loop Mode or scheduling playables in ISAAC Workspace, please consult the ISAAC User Manual and other documentation available at https://www.isaacplatform.com/resources/support-documents.



Content Limitations

The BrightSign hardware has various limitations on what types of media may be played back. The link below details the video requirements and optimizations.

https://docs.brightsign.biz/technical/optimize-video-quality#8gwQV

The BrightSign ISAAC App is tested with the following formats for playback and looping functionality.

- H.264 encoded MP4 videos
- H.265 encoded MP4 videos
- PNG Images
- JPEG Images

Loop Mode

In the link above, it is indicated that looping media must "use PCM audio encoded with the SOWT codec." As there is little documentation available online regarding this codec, we have done our own research for what formats of media the player will accept for seamless looping. Based on our testing, video files should either be encoded without an audio track or encoded as uncompressed WAV audio embedded within the file. Other audio codecs may produce inconsistent results, and compressed audio in particular has been observed to interfere with seamless loop playback.

Change Log

Version 2.1.3

- Improved caching error handling for malformed CMS Objects
- Improved error handling for content starting or finishing while in power save mode.

Version 2.1.2

- config.ini comments using `;` or `#` are now supported
- Improved error handling for BrightSignOS temperature readings.
- WebUI stability improvements

