

# **BRAVIA Signage**

## **Advanced User Guide**

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# Introduction

This guide describes the settings and usages to extend from initial settings.

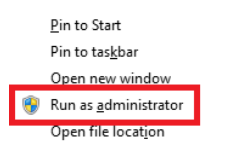
# 1. Advanced usage (for Application)

This chapter describes the procedures to change the settings of BRAVIA Signage Server with `braviasignageserver.xml`, the setting file of BRAVIA Signage Server, as well as the procedures for changing the port number, using authentication, etc.

# 1.1. How to change the port number of the BRAVIA Signage Server (for Windows)

The following procedure shows how to change the port number from initial 8080 to any value. Set up with “Administrative Privileges”.

[1] Run a command prompt with “Administrative Privileges”. Right-click the mouse button on the start menu and select the “Run as administrator” option from the Power User menu.



Run all of the following commands in Command Prompt with “Administrative Privileges”.

[2] Run the following command to stop and uninstall the BRAVIA Signage Server.

```
cd "c:\Program Files (x86)\SONY\BRAVIA Signage"
braviasignageserver.exe stop
braviasignageserver.exe uninstall
```

[3] Run any text editor with “Administrative Privileges”, open “c:\Program Files (x86)\SONY\BRAVIA Signage\braviasignageserver.xml”, add a XML tag with the port number to it as seen below, and save it.

```
<service>
  <id>braviasignageserver.exe</id>
  <name>BRAVIA Signage Server</name>
  <description>BRAVIA Signage Server</description>
  <executable>%BASE%\node.exe</executable>
  <arguments>--harmony "%BASE%\node_modules\node-windows\lib\wrapper.js" -f "%BASE%\server\app.js" -l "BRAVIA Signag
e Server" -g 0.25 -w 1 -r 3 -a n</arguments>
  <logmode>reset</logmode>
  <startmode>Automatic</startmode>
  <env name="NODE_ENV" value="production"/>
  <env name="PORT" value="50000"/>
</service>
```

[4] Run the following command to install and start the BRAVIA Signage Server again.

```
cd "c:\Program Files (x86)\SONY\BRAVIA Signage"  
braviasignageserver.exe install  
braviasignageserver.exe start
```

## 1.2. How to run multiple services of the BRAVIA Signage Server (for Windows)

The following procedure shows how to run multiple services of the BRAVIA Signage Server. Setup with Administrative Privileges.

[1] Copy “braviasignageserver.exe” and “braviasignageserver.xml” in “c:\Program Files (x86)\SONY\BRAVIA Signage\braviasignageserver.xml” with other names. The file name excluding the file extension needs to be the same.

Example) braviasignageserver2.exe and braviasignageserver2.xml

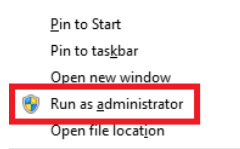
[2] Run any text editor with Administrative Privileges, open the copied XML file, edit it as seen below, and save it.

```
<service>
  <id>braviasignageserver2.exe</id>
  <name>BRAVIA Signage Server (50002)</name>
  <description>BRAVIA Signage Server (50002)</description>
  <executable>%BASE%\node.exe</executable>
  <arguments>--harmony "%BASE%\node_modules\node-windows\lib\wrapper.js" -f "%BASE%\server\app.js" -l "BRAVIA Signag
e Server" -g 0.25 -w 1 -r 3 -a n</arguments>
  <logmode>reset</logmode>
  <startmode>Automatic</startmode>
  <env name="NODE_ENV" value="production"/>
  <env name="PORT" value="50002"/>
  <env name="MONGO_URI" value="mongodb://localhost/braviasignage2"/>
</service>
```

### XML tag definitions)

Tag name	Attribute	Edit	Description
id	-	Required	Name of an exe file
name	-	Optional	Name of the Windows service
description	-	Optional	Description of the Windows service
name	PORT	Required	Port number of the BRAVIA Signage Server The numbers need to be different for each BRAVIA Signage Server.
	MONGO_URI	Required	URI of the database which the BRAVIA Signage uses Assign the database name corresponding with the exe file name. When omitted, the default value is "mongodb://localhost/braviasignage".

[3] Run a command prompt with Administrative Privileges. Right-click the mouse button on the start menu and select the [Run as administrator] option from the Power User menu.



Run all of the following commands in Command Prompt with Administrative Privileges.

[4] Run the following command to stop and uninstall the BRAVIA Signage Server.

```
cd "c:\Program Files (x86)\SONY\BRAVIA Signage"  
braviasignageserver2.exe install  
braviasignageserver2.exe start
```

[5] Run procedures [1] to [4] for each service of the BRAVIA Signage Server.



## 1.3. Modify Contents Library URL (for Windows)

---

The URL of content previewed from the [Contents Library] page and the URL inserted automatically when adding content from the contents library to a playlist can be changed using the following steps.

[1] Run any text editor with [Administrative Privileges], and open “c:\Program Files (x86)\SONY\BRAVIA Signage\braviasignageserver.xml”. Next, write the following XML tag to specify the contents library’s URL in the file and save it.

```
<service>
  <id>braviasignageserver.exe</id>
  <name>BRAVIA Signage Server</name>
  <description>BRAVIA Signage Server</description>
  <executable>%BASE%\node.exe</executable>
  <arguments>--harmony "%BASE%\node_modules\node-windows\lib\wrapper.js" -f "%BASE%\server\app.js" -l "BRAVIA Signag
e Server" -g 0.25 -w 1 -r 3 -a n</arguments>
  <logmode>reset</logmode>
  <startmode>Automatic</startmode>
  <env name="NODE_ENV" value="production"/>
  <env name="CONTENTS_SERVER_URL" value="http://192.168.1.1/a/b/c"/>
</service>
```

[2] The value configured in step [1] is applied when BRAVIA Signage Server starts. Run the following command in the command prompt with “Administrative Privileges” to re-install and restart BRAVIA Signage Server.

```
cd "c:\Program Files (x86)\SONY\BRAVIA Signage"
braviasignageserver.exe install
braviasignageserver.exe start
```

- If “CONTENTS\_SERVER\_URL” is not in braviasignageserver.xml, BRAVIA Signage refers to the IP address of the network interface, and makes a contents library URL from it. When there are multiple network interfaces with IP addresses, the value used depends on the system.
- If the IP address of the server is changed, BRAVIA Signage Server needs to be rebooted to apply “CONTENTS\_SERVER\_URL”.

## 1.4. How to add user authentication to Operation Web Application

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You can configure the access limitations to Operation Web Application with a user name and password. This section describes the procedure for this configuration.

### Windows

[1] Run any text editor with Administrative Privileges, open “c:\Program Files (x86)\SONY\BRAVIA Signage\braviasignageserver.xml”, edit this file with the following procedure (add “DIGEST\_AUTH.USERNAME” as the user name and “DIGEST\_AUTH.PASSWORD” as the password) and save it. In the following example, “user” and “password” are configured as the user name and the password, respectively.

Generate Password (Command Prompt):

Replace username “user” and password “password” in the command below.

```
> set /P HASH=user:BRAVIA_Signage_Server:password<NUL > digest.txt
> certutil -hashfile digest.txt sha256
SHA256 hash of digest.txt:
b8efe270ceb3b006079eab08d9bb1d7bd1d43262e4dfbbf81514bc10eb2eda7b
CertUtil: -hashfile command completed successfully.
```

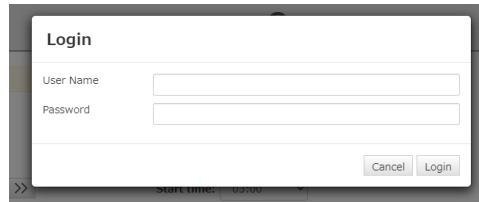
Set the Hash value calculated by the User name and the above command.

```
<service>
  <id>braviasignageserver.exe</id>
  <name>BRAVIA Signage Server</name>
  <description>BRAVIA Signage Server</description>
  <executable>%BASE%\node.exe</executable>
  <arguments>--harmony "%BASE%\node_modules\node-windows\lib\wrapper.js" -f "%BASE%\server\app.js" -l "BRAVIA Signag
e Server" -g 0.25 -w 1 -r 3 -a n</arguments>
  <logmode>reset</logmode>
  <startmode>Automatic</startmode>
  <env name="NODE_ENV" value="production"/>
  <env name="DIGEST_AUTH.USERNAME" value="user" />
  <env name="DIGEST_AUTH.PASSWORD" value="b8efe270ceb3b006079eab08d9bb1d7bd1d43262e4dfbbf81514bc10eb2eda7b"/>
</service>
```

[2] The setting is configured when BRAVIA Signage Server starts. The procedure to stop and start BRAVIA Signage Server is the same as the

procedure in [2.1. How to back up and restore the database \(for Windows\)](#).

[3] When you open Operation Web Application, the following screen opens. Enter the user name and password configured in step [1].



## Synology NAS

[1] Sign in Synology NAS as administrator.

[2] Run “File Station” and move to “docker > bs1” folder and download the “bs1.env.txt” file to your PC.

[3] Generate a password on your PC, edit the file and save it. In the following example, “user” and “password” are configured as the user name and the password, respectively.

Generate Password (Command Prompt):

Replace username “user” and password “password” in the command below.

```
> set /P HASH=user:BRAVIA_Signage_Server:password<NUL > digest.txt
> certutil -hashfile digest.txt sha256
SHA256 hash of digest.txt:
b8efe270ceb3b006079eab08d9bb1d7bd1d43262e4dfbbf81514bc10eb2eda7b
CertUtil: -hashfile command completed successfully.
```

Set the Hash value calculated by the User name and the above command.

```
BS1_PORT=8080
BS1_HOST_IP=192.168.100.100
BS1_DIGEST_USERNAME=user
BS1_DIGEST_PASSWORD=b8efe270ceb3b006079eab08d9bb1d7bd1d43262e4dfbbf81514bc10eb2eda7b
```

[4] Upload the file to “docker > bs1 > bs1.env.txt”.

[5] Restart BRAVIA Signage on Package Center on Synology NAS.

## 1.5. Logging and log files (for Windows)

---

Log files are output in case unexpected behavior or errors occur in BRAVIA Signage, such as system failure during operation. When contacting customer support for troubleshooting, etc., the information in these log files helps you explain your situation.

### Saved folder and file name

Log files are saved in the “%USERPROFILE%\AppData\Local\bravia-signage\logs\” folder.

The names of log files of BRAVIA Signage Server include the port number used by BRAVIA Signage Server, in the format “bs1-server-{portnumber}.log”. The names of log files of BRAVIA Signage Player include the port number of BRAVIA Signage Server and the display’s MAC address, in the format “bs1-player-{port-number}-{mac-address}.log”.

### Log rotation

Log files are rotated and managed in the following way. The maximum number of rotated files generated is 30.

- The log files of BRAVIA Signage Server are rotated by date. Rotated files are saved with the file name plus the date, in the format “bs1-server-{port-number}.log-{YYYY-MM-DD}”.
- The log files of BRAVIA Signage Player are rotated by file size. Rotated files are saved with the file name plus the generation of rotation, in the format “bs1-player-{port-number}-{mac-address}.{index}.log”.

### Logging configurations

The maximum generation and file size to rotate in BRAVIA Signage Player can be changed with `braviasignageserver.xml` with the

following procedure:

[1] Run any text editor with Administrative Privileges, open “c:\Program Files (x86)\SONY\BRAVIA Signage\braviasignageserver.xml”, edit this file with the following procedure (add “MAX\_LOG\_FILE\_SIZE” as the log file size to rotate and “MAX\_LOG\_BACKUP\_SIZE” as the maximum generation number) and save it. In the following example, “50 MB” (52,428,800 bytes) and “10” are configured as the file size to rotate and the maximum generation number, respectively.

```
<service>
  <id>braviasignageserver.exe</id>
  <name>BRAVIA Signage Server</name>
  <description>BRAVIA Signage Server</description>
  <executable>%BASE%\node.exe</executable>
  <arguments>--harmony "%BASE%\node_modules\node-windows\lib\wrapper.js" -f "%BASE%\server\app.js" -l "BRAVIA Signag
e Server" -g 0.25 -w 1 -r 3 -a n</arguments>
  <logmode>reset</logmode>
  <startmode>Automatic</startmode>
  <env name="NODE_ENV" value="production"/>
  <env value="52428800" name="MAX_LOG_FILE_SIZE"/>
  <env value="10" name="MAX_LOG_BACKUP_SIZE"/>
</service>
```

[2] The setting is configured when BRAVIA Signage Server starts. The procedure to stop and start BRAVIA Signage Server is the same as the procedure in [2.1. How to back up and restore the database \(for Windows\)](#).

## 2. Advanced usage (for Infrastructure)

This chapter describes the procedures for the operation and management of system infrastructure, such as DB backup, the customization of system architecture, etc.

## 2.1. How to back up and restore the database

---

This software uses a MongoDB as database software. Backup of this software is executed by backup methods of MongoDB. There are two methods of back up.

### [1] Copying underlying files

It's easy and fast, but you need to stop BRAVIA Signage Server while backing up.

### [2] By using mongodump

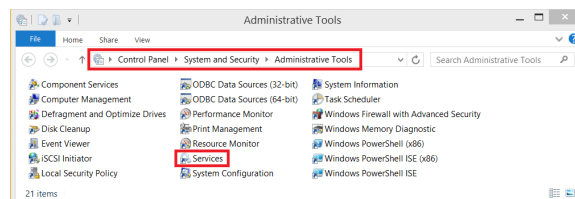
You can back up while BRAVIA Signage Server is running, but much time is required to back up and restore. A sufficient PC spec is required when you back up while BRAVIA Signage Server is running because it requires many database accesses.

You can also use MMS (MongoDB Management Service). Refer to the official MongoDB web site on how to use MMS. Back up the database and restore with “Administrative Privileges”.

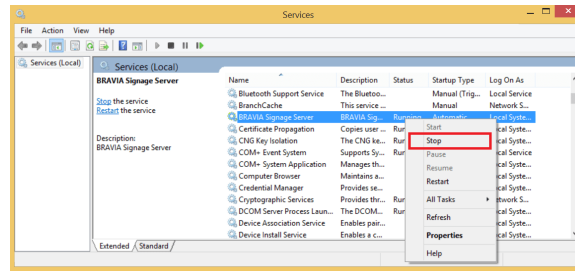
## 2.1.1. Backup by copying underlying files

### Backup

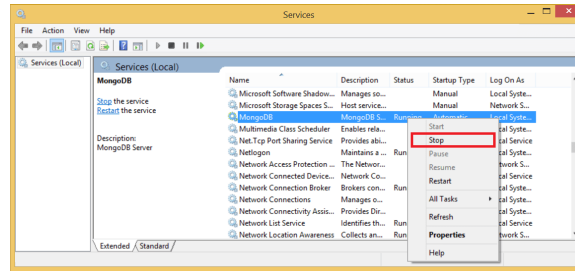
[1] Open [Control Panel] > [Security and System] > [Administrative Tools], then open [Services].



[2] Select “BRAVIA Signage Server”, then right-click and select [Stop] in the [Services] window.

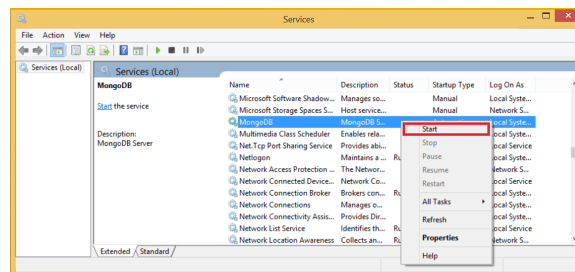


[3] Select “MongoDB”, then right-click and select [Stop] in the [Services] window.

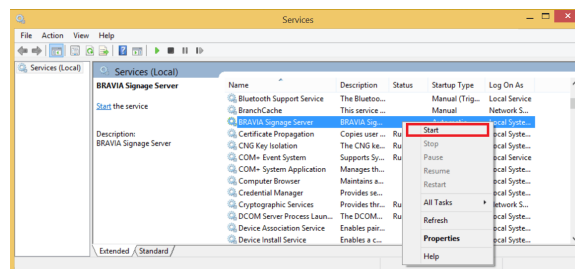


[4] Copy the “C:\data\db” directory to any path as backup.

[5] Select “MongoDB”, then right-click and select [Start] in the [Services] window.



[6] Select “BRAVIA Signage Server”, then right-click and select [Start] in the [Services] window.



## Restore

[1] Execute steps [1] to [3] of “Backup” in 2.1.1.



[2] Delete the “C:\data\db” directory.

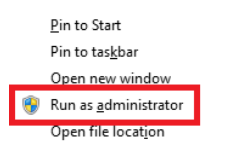
[3] Copy a backup directory to “C:\data\db”.

[4] Execute steps [5] and [6] of “Backup” in 2.1.1.

## 2.1.2. Backup by using mongodump

### Backup

[1] Run a command prompt with Administrative Privileges. Right-click the mouse button on the start menu and select the [Run as administrator] option from the Power User menu.



Run all of the following commands in Command Prompt with Administrative Privileges.

[2] Run the following command for backup. Specify any path for a backup file.

```
"C:\Program Files\MongoDB\Server\3.0\bin\mongodump.exe" --out "D:\mongo-backup"
```

### Restore

[1] Execute the procedure [1] to [3] at “Backup” in 2.1.1.

[2] Delete the “C:\data\db” directory.

[3] Run the following command to create directories where database files will be saved.

```
mkdir C:\data\db
```

[4] Execute the procedure [5] at “Backup” in 2.1.1.

[5] Run the following command to restore. Specify the backed up file.

```
"C:\Program Files\MongoDB\Server\3.0\bin\mongorestore.exe" "D:\mongo-backup"
```

[6] Execute the procedure [6] at “Backup” in 2.1.1.

## 2.2. How to migrate the server

---

The following steps show how to run the BRAVIA Signage Server on other server PC with the existing data.

[1] Back up the database on the source server. Refer to [2.1. How to back up and restore the database](#) on how to backup.

[2] Install the BRAVIA Signage Server on the destination server. Refer to “BRAVIA Signage User Guide” on how to install the server.

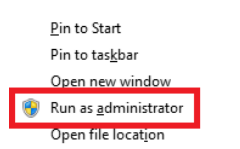
[3] Restore the database on the destination server. Refer to [2.1. How to back up and restore the database](#) on how to backup.

## 2.3. How to operate MongoDB with a separate server PC

The following steps show how to separate PCs that the BRAVIA Signage Server and MongoDB run on.

[1] Install the BRAVIA Signage Server and MongoDB to separate PCs. Refer to “BRAVIA Signage User Guide” on how to install BRAVIA Signage and the official MongoDB web site on how to install MongoDB.

[2] Run a command prompt with Administrative Privileges. Right-click the mouse button on the start menu and select the [Run as administrator] option from the Power User menu.



[3] Run the following command to stop the BRAVIA Signage Server.

```
cd "c:\Program Files (x86)\SONY\BRAVIA Signage"
braviasignageserver.exe stop
```

[4] Run any text editor with Administrative Privileges, open “c:\Program Files (x86)\SONY\BRAVIA Signage\braviasignageserver.xml”, edit with the following procedures and save it. Refer to [1.2. How to run multiple services of the BRAVIA Signage Server](#) for XML tag definitions. The following example shows a case where the Server IP address MongoDB runs on is “192.168.10.10”.

```
<service>
  <id>braviasignageserver.exe</id>
  <name>BRAVIA Signage Server</name>
  <description>BRAVIA Signage Server</description>
  <executable>%BASE%\node.exe</executable>
  <arguments>--harmony "%BASE%\node_modules\node-windows\lib\wrapper.js" -f "%BASE%\server\app.js" -l "BRAVIA Signag
e Server" -g 0.25 -w 1 -r 3 -a n</arguments>
  <logmode>reset</logmode>
  <startmode>Automatic</startmode>
  <env name="NODE_ENV" value="production"/>
  <env name="PORT" value="50000"/>
  <env name="MONGO_URI" value="mongodb://192.168.10.10/braviasignage"/>
</service>
```

[5] Run the following command to restart the BRAVIA Signage Server.

```
cd "c:\Program Files (x86)\SONY\BRAVIA Signage"
braviasignageserver.exe start
```

## 2.4. Reverse Proxy Server configurations

---

BRAVIA Signage Server communicates with BRAVIA Signage Player and a browser (Operation Web Application) on the client PC. You can insert the reverse proxy server between these. This section describes the configuration.

### Configuration for BRAVIA Signage

[1] config.txt of BRAVIA Signage Player

The “server” key must NOT be the URL of BRAVIA Signage Server. It MUST BE the URL of the reverse proxy server. The directory name can also be included in the URL specified in the “server” key of config.txt. For example, “http://192.169.10.10:50000/dir1/dir2” can be specified in the “server” key.

### Configuration for reverse proxy server

[2] Communication between BRAVIA Signage Player and Reverse Proxy Server

BRAVIA Signage Player accesses the URL starting with “/socket.io-player/” in the communication with BRAVIA Signage Server. Configure the proxy pass of the reverse proxy server to “http://{server-ip:service-port}/socket.io-player/”. {server-ip:service-port} indicates the server IP address which BRAVIA Signage Server runs on and the BRAVIA Signage Server port number.

[3] Communication between Operation Web Application and Reverse Proxy Server

Operation Web Application accesses the URL starting with “/” in the communication with BRAVIA Signage Server. Configure the proxy pass

of the reverse proxy server to “http://{server-ip:service-port}/”.

# Appendix I. Performance

## 2. Performance

---

BRAVIA Signage can manage up to 600 displays. In this section, as performance indicators, shows the upper limit of data BRAVIA Signage is able to manage in the case 600 displays are used.

### Condition on evaluation

- **[1] BRAVIA Signage Server**

OS	Windows Server 2012 R2
CPU	Intel Core i7-6700
Memory	16GB
Network	100BASE-TX
Others	Only BRAVIA Signage Server runs. Contents Library runs on another server.

- **[2] BRAVIA Signage Player**

Use the 2 displays and emulated 598 BRAVIA Signage Player on PCs.

2014 non Android TV	W7C Series	1
2015 Android TV	X85C Series	1
Emulation on PCs	Use PCs with spec to evaluate.	598 instances

## Results

Items		Upper Limit	Descriptions
Display Management	Display [TV/group]	30	The number of displays (upper limit) per group
	Group	20	The number of groups (upper limit) that BRAVIA Signage is able to manage
Playlist	Playlist	50	The number of playlists (upper limit) that BRAVIA Signage is able to manage
	URL [URL/playlist]	20	The number of URLs (upper limit) per playlist
Schedule Delivery	Schedule (day of week)	20	The number of schedules (upper limit) that BRAVIA Signage is able to manage
	Schedule (date)	20	The number of schedules (upper limit) that BRAVIA Signage is able to manage
	Slot [slots/schedule]	20	The number of slots (upper limit) per schedule
Interrupt Delivery	Interrupt delivery	30	The number of interrupt delivery (upper limit) that BRAVIA Signage is able to manage
Power Management	Schedule (day of week)	20	The number of schedules (upper limit) that BRAVIA Signage is able to manage
	Schedule (date)	20	The number of schedules (upper limit) that BRAVIA Signage is able to manage
	Slot [slots/schedule]	20	The number of slots (upper limit) per schedule
Event Log	Event	30 days	The number of events (upper limit) saved in DB. (Unit is converted as day.)



# Change History

## 1.7.4

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- All: Modified the chapter structure and missing descriptions, and described expressions, designs.
- Chapter 1
  - 1.5: Added procedures due to additional feature.
- Chapter 2
  - 2.4: Added descriptions for procedure.

# 1.8.1

---

- Chapter 1
  - 1.4 Added procedures of how to add authentication for Synology NAS.

## 1.8.2

---

- Chapter 1
  - 1.5: Changed the output destination folder of the log file.

## 1.8.3

---

- Chapter 1
  - 1.4: Updated the setting method according to the change of authentication to DIGEST authentication.
  - 1.5: Changed the output destination folder of the log file.