

INTEGRATION MANUAL

BARCO ALCHEMY

CRESTRON 4-SERIES MODULE

This module controls show playback on a Barco Alchemy cinema server from a Crestron 4-Series processor. It logs in with a user account and sends SOAP (XML) requests over HTTPS on port 43758. It loads shows, runs transport controls, and reports playback progress, the show list, lamp hours and storage status.

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01 AT A GLANCE

REQUIREMENTS

- Crestron 4-Series control processor.
- Barco Alchemy reachable from the processor over the network on TCP port 43758 (HTTPS).
- A user account on the Alchemy (username and password) that is allowed to log in and control playback.
- The IP address of the Alchemy. The module will not start if the IP address, username or password is empty.

CONNECTION

ITEM	DETAIL
Protocol	SOAP (XML) over HTTPS, HTTP POST requests
Port	43758 (fixed)
Encryption	TLS 1.2, cipher suite TLS_RSA_WITH_AES_128_CBC_SHA
Server certificate	Accepted without validation (self-signed certificates work)
Authentication	Username and password login at connect

ITEM	DETAIL
Polling	Playback status every 100 ms; projector and storage status every 1 second
Timeouts	10 seconds to connect, 30 seconds per request

02 LICENSING

01 BUY A LICENSE Enter the processor serial and a site name, then pay by card.	02 INSTALL THE LICENSE FILE We email a license file locked to that processor. Load it and the module unlocks.	03 LOAD THE MODULE Add it to your 4-Series program.
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Each license is for one processor. To run the module on another processor, buy a license for that processor's serial.

03 CONFIGURATION

Add one entry for each Barco Alchemy to `SourceConfig.json`. Key names are case-sensitive.

KEY	TYPE	DEFAULT	DESCRIPTION
<code>driverName</code>	text	—	Must be River.Barco.Alchemy.Ip.
<code>ipAddress</code>	text	—	IP address of the Barco Alchemy. Required.
<code>username</code>	text	—	Alchemy user account used to log in. Required.
<code>password</code>	text	—	Password for the Alchemy user account. Required.

EXAMPLE ENTRY

Replace the values in angle brackets with your own.

```
[
  {
    "id": 1,
    "name": "<Barco Alchemy name>",
    "sortOrder": 1,
    "driverName": "River.Barco.Alchemy.Ip",
    "ipAddress": "<device IP address>",
    "username": "<username>",
    "password": "<password>"
  }
]
```

04 SETUP

1. On the Alchemy, confirm a user account that can log in and control playback.
2. Make sure the processor can reach the Alchemy on TCP port 43758. HTTPS with TLS 1.2 must be allowed between them.
3. Add the module to your program and enter the Alchemy IP address, username and password.
4. Connect the module. It logs in, starts polling, and loads the show list from the Alchemy.
5. Set the scan rate to a value from 30 to 180 seconds. This is how far Rewind and Fast Forward jump.
6. Turn Auto Start on if shows should start playing as soon as they finish loading.
7. Load a show from the list and test Play, Pause, Stop and the skip and scan controls.

05 CONTROLS

CONTROL	WHAT IT DOES
CONNECT	Logs in to the Alchemy and starts polling. Login is retried every 5 seconds until it succeeds.
DISCONNECT	Stops polling and login retries, then logs out of the Alchemy if logged in.
LOAD SHOW	Loads a show by its position in the show list, starting at 1. If something is playing or paused, the module stops it first and waits up to 10 seconds for the stop. Ignored if the number is outside the list or the show is already loaded.
PLAY	Starts playback. Sent only when the player is paused or stopped.
PAUSE	Pauses playback. Sent only when the player is playing.
STOP	Stops playback when playing or paused. When already stopped, it returns the position to the start of the show.
EJECT	Unloads the current show. If playing or paused, the module stops first and waits up to 10 seconds before unloading.
PREVIOUS CLIP	Jumps to the previous clip in the show. Sent only when playing or paused.
NEXT CLIP	Jumps to the next clip in the show. Sent only when playing or paused.
REWIND (REVERSE SCAN)	Jumps back by the scan rate in seconds, not past the start. Works when playing, paused or stopped. The module stops if needed, moves the position, then starts playback.
FAST FORWARD (FORWARD SCAN)	Jumps ahead by the scan rate in seconds, not past the end of the show. Works when playing, paused or stopped. The module stops if needed, moves the position, then starts playback.

CONTROL	WHAT IT DOES
AUTO START ON / OFF / TOGGLE	When on, the module sends Play as soon as a show finishes loading. The setting is saved on the processor.
SCAN RATE UP / DOWN / SET	Changes the scan jump size in seconds. Accepted range is 30 to 180. Values outside the range are ignored. The setting is saved on the processor.

06 FEEDBACK

FEEDBACK	WHAT IT REPORTS
SHOW PLAYING	Title of the show loaded in the player. Shows "Please select show list" when nothing is loaded.
TRANSPORT STATE	Current player state as text, such as Playing, Paused or Stopped.
ACTIVE TRANSPORT BUTTON	Highlights Play, Pause, Stop or Eject to match the player state. Eject is active when the player is cleared or ejected.
LOADING	True while the Alchemy is loading a show selection.
ELAPSED TIME	Time played so far, as mm:ss, or hh:mm:ss for an hour or more.
TOTAL TIME	Length of the loaded show, same format.
REMAINING TIME	Time left in the show, same format.
PROGRESS PERCENT	Current position as a percentage of the show length.
POSITION AND DURATION	Current position and show length in milliseconds.
SHOW LIST	Shows on the Alchemy in server order. Each entry has a title, duration, whether it is the show selected in the player, whether it has an immersive sound track (with its sound info), and whether it has encrypted clips.
LAMP HOURS	Projector lamp run time in whole hours.
STORAGE STATE	Storage status text reported by the Alchemy.
STORAGE SIZE	Total storage size in bytes.
USED STORAGE	Used storage in bytes.
AUTO START	Current Auto Start setting.
SCAN RATE	Current scan jump size in seconds.

07 REMOTE AND KEYPAD BUTTONS

Standard button names the module responds to.

BUTTON	ACTION
Play	Play
Pause	Pause
Stop	Stop (returns to start if already stopped)
Exit	Eject (unload the current show)
PreviousTrack	Previous clip
Rewind	Reverse scan by the scan rate
FastForward	Forward scan by the scan rate

08 HOW IT BEHAVES

- On connect, the module logs in with the configured username and password. If the login fails or gets no answer, it tries again every 5 seconds until it succeeds.
- After login, it polls playback status every 100 ms and projector and storage status every 1 second.
- The show list is read on the first status poll and again whenever the Alchemy reports that its show list changed.
- If the Alchemy reports a failed login (status 10508) on any request, the module stops polling and goes back to retrying the login every 5 seconds.
- Requests are sent one at a time with a 50 ms gap. User commands go ahead of polling requests.
- Commands that do not fit the current player state are ignored. For example, Play is ignored while already playing.
- After 3 communication failures in a row (network errors, timeouts, HTTP 408 or HTTP 5xx responses), the module pauses all traffic for 30 seconds and then tries again. User commands are rejected during the pause.
- When Auto Start is on, the module sends Play each time the player finishes loading a show.
- Auto Start and scan rate are saved on the processor and restored when the program restarts.
- On disconnect, the module stops polling and logs out of the Alchemy.

09 TROUBLESHOOTING

IF YOU SEE	TRY THIS
The module does not start and reports that the IP address, username or password cannot be empty.	Enter all three values in the module configuration.
The module keeps retrying the login and the log shows a failed login.	Check the username and password and that the account can log in to the Alchemy. The module retries every 5 seconds on its own.
No status updates and the log shows the connection paused or request errors.	Check that the processor can reach the Alchemy IP address on TCP port 43758 over HTTPS with TLS 1.2. After 3 failures the module waits 30 seconds before trying again.
A transport button does nothing.	Check the player state. Play works only from paused or stopped, Pause only while playing, and clip skip only while playing or paused.
Load show does nothing.	Check that the show list has loaded, that the number is within the list (starting at 1), and that the show is not already loaded.
A show loads but does not start.	Turn Auto Start on, or press Play after the show finishes loading.
Scan rate does not change.	The value must stay between 30 and 180 seconds. Steps that go outside this range are ignored.
Show playing reads "Please select show list".	No show is loaded in the player. Load a show from the list.
The log shows a command failed with status <code>ServerRejectedCommand</code> .	The Alchemy refused the command. Check the player state and the account rights on the Alchemy.

10 NOTES

- The port is fixed at 43758 and cannot be changed in the module.
- The module does not check the Alchemy's HTTPS certificate, so a self-signed certificate is fine.
- Show numbers used by Load show follow the order of the show list as reported by the Alchemy.

SUPPORT

Our team of experienced developers is here to ensure your success. Email hello@rivercontrols.com or call +1 855-606-6695, and include your processor serial and order number.