



# ATEM Fleet Admin user guide

ATEM Fleet Admin **provisions a whole rig of Blackmagic ATEM switchers from one place**. You describe each switcher once in model-aware forms, then either export a loadable config folder per device or push the settable part straight down the network.

**Before you rely on this:** "Connect & apply" writes to real switchers immediately, with no confirmation and no undo — on an already-configured rig, it overwrites. Live apply also **cannot set everything**; three settings always remain unset afterwards, by protocol limitation. And the ATEM Mini's streaming/recording XML is **reconstructed rather than verified**, because no Mini save file was available as ground truth.

This project was written with AI assistance and reviewed by a human. Review it before relying on it on a live install.

## Pick your run target

The same tool ships two ways, sharing all the provisioning logic:

- **Electron desktop app** — native file dialogs; macOS, Windows and Linux.
- **Web app + av-launcher tray shell** — a local Node server serving the same UI in a browser, wrapped in a menu-bar app.

The UI is identical. **One behaviour differs, and it matters:**

|                     | Electron                      | Web / tray                                                           |
|---------------------|-------------------------------|----------------------------------------------------------------------|
| Open / save a fleet | native file dialog            | browser download / upload                                            |
| Generate folders    | <b>you pick the directory</b> | <b>writes to the server's configured export directory, no picker</b> |

In the web target, "Generate folders" writes files **on the machine running the server**, not the machine running the browser. The health endpoint reports where, and the UI shows it — but if you are driving it remotely, the folders are not on your laptop.

## Building a fleet

Add a switcher, pick its model, and fill in the forms. The forms are **model-aware**: you only see the tabs and options that model actually has, so an ATEM Mini Extreme doesn't offer SuperSource and a 4 M/E doesn't offer streaming.

The screenshot shows the ATEM Fleet Admin interface. On the left, a sidebar lists three ATEM devices: ATEM 1 (ATEM Mini Extreme ISO), ATEM 2 (ATEM Mini Extreme ISO), and ATEM 1 (ATEM 4 M/E Broadcast Studio 4K). The main panel is titled 'ATEM 1' and 'ATEM 4 M/E Broadcast Studio 4K'. It has tabs for Project, Inputs / Outputs, Transitions / FTB, DVE, SuperSource, Media Pool, and Media Players. The 'Inputs / Outputs' tab is selected. It displays a table of inputs with columns for ID, Short (4), and Long name. The inputs are numbered 1 to 19, with short names CAM1 to CAM19 and long names Camera 1 to Camera 19. To the right of the table is a section for 'OUTPUT ROUTING' with a list of AUX inputs (AUX 1 to AUX 19) and their corresponding output destinations (Camera 1 (1)). At the bottom of the main panel, there is a 'Generate folders' button and a note: 'Connect & apply selected. Set a network address on the Project tab to apply live.'

*Note the **Short (4)** column — the switcher's own limit, and the reason long names get truncated.*

What the forms cover: input/output names · show/project name (the recorder filename) · recording bitrate · recording mode (program vs ISO) · output sources including UVC · SuperSource layout and sources · media pool items · media player assignments · streaming destination, key, type and bandwidth · fade-to-black · default transition time and type · DVE settings.

**Two models ship:** ATEM Mini Extreme ISO and ATEM 4 M/E Broadcast Studio 4K. They span the two hardware classes; other models need a catalog entry — see [DEVELOPING.md](#).

## Path A — Generate folders

The higher-fidelity route. It writes a loadable config per device:

```
<OutputDir>/<FleetName>/<DeviceName>/config.xml
<OutputDir>/<FleetName>/<DeviceName>/Media/ ...
```

Drag the `Media/` files into the switcher's media pool, then use ATEM Software Control's **Load** to apply `config.xml`.

### Check `mediaMissing` on every export

If a media item has no file path, or its file can't be copied, **the export does not fail**. The item is listed under "media missing" for that device and everything else continues.

So a device that reports success can still have an **empty `Media/` folder**. That is exactly what a mistyped or moved source path looks like. Check the missing list before you leave site.

### Device names that sanitise alike will collide

Folder names have `< > : " / \ | ? *` and whitespace replaced with `_`, and trailing dots stripped. **`Studio 1` and `Studio/1` both become `Studio_1`, and the second overwrites the first.** There is no uniquing and no warning. Name devices distinctly.

### The Mini's streaming/recording XML is unverified

No ATEM Mini save file was available as ground truth, so the Mini's `<Streaming>` and `<Recording>` XML elements are **reconstructed from the protocol**, and should be validated against a real Mini before you rely on them.

**For those two fields specifically, live apply is the authoritative route**, not the XML. The big-switcher XML *is* validated against a real autosave file.

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## Path B — Connect & apply

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Set a network address on the Project tab and click **Connect & apply selected**. It connects and applies the settable subset, reporting a status per setting group.

| Applied live             | Reported as folder-export only     |
|--------------------------|------------------------------------|
| Input names              | <b>UVC / USB-C output routing</b>  |
| Output routing (AUX)     | <b>Recording bitrate / quality</b> |
| SuperSource boxes        | <b>Media pool items</b>            |
| Media player assignments |                                    |
| Default transition rate  |                                    |
| Fade to black rate       |                                    |
| Streaming service        |                                    |
| Recording ISO mode       |                                    |

**After a completely successful live apply, three things are still not set on the switcher:** the USB webcam routing, the recording quality, and the media pool contents. The Ethernet protocol cannot reach them.

The result marks those steps **skipped, not failed** — deliberately, so nothing is applied silently and nothing is falsely reported as done. **Skipped is not an error. It is a to-do.** Use the folder export for those three.

Other behaviours worth knowing:

- **Input short names are truncated to 4 characters**, silently — that is the switcher's limit.
- **The transition rate and fade-to-black rate are applied to every M/E** on the model, not just M/E 1.
- **A connection failure appears as a single "Connect" step in error**, not as a crash — so a device that was never reached looks like a normal result with one bad row. Check `connected` .

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## A sensible order of operations

1. Build the fleet and save the project file.
2. **Generate folders first**, and check every device's `mediaMissing` list.
3. Load `config.xml` on each switcher via ATEM Software Control, and drag the media in.
4. Use **Connect & apply** for the settable subset when you want to push a change without walking round the rig — remembering it can't do the three skipped groups.
5. Keep the fleet project file. It is the only record of what you intended.

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## The web target has no authentication

Defaults are `localhost:4720` , which is safe. But the host is configurable ( `ATEM_FLEET_ADMIN_HOST` ), and **binding anything other than localhost exposes, with no password:**

- an endpoint that **reconfigures real switchers on your network**, and
- an endpoint that **writes files onto the host's filesystem**.

There is no token, no login and no TLS. Leave it on localhost.

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## Troubleshooting

| Symptom                                                       | Cause                                                                                                                                                 |
|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Export succeeded but <code>Media/</code> is empty             | Source files missing or unreadable — check the media-missing list; it is not an error.                                                                |
| A device's folder is missing or has the wrong contents        | Two device names sanitised to the same folder name and one overwrote the other.                                                                       |
| Live apply reported "skipped" rows                            | Expected. Those settings can't be reached over Ethernet — use the folder export.                                                                      |
| Applied everything, USB output still wrong                    | UVC routing is folder-export only.                                                                                                                    |
| Applied everything, recording quality unchanged               | Recording bitrate is folder-export only.                                                                                                              |
| Input names came out truncated                                | Short names are cut to 4 characters — a switcher limit.                                                                                               |
| <code>config.xml</code> won't load into ATEM Software Control | Usually a model mismatch — the <code>product</code> string has to match exactly. For a Mini's streaming/recording sections, note they are unverified. |
| Everything reported error                                     | Check <code>connected</code> — a failed connection shows as a single Connect step in error.                                                           |
| "unknown ATEM model"                                          | The model isn't in the catalog. Two ship; others need adding.                                                                                         |
| Generated folders aren't where I expected (web target)        | They are on the server's machine, under its export directory.                                                                                         |
| Unsigned tray app's helpers die silently on macOS             | Approving the <code>.app</code> doesn't unquarantine its bundled binaries. See <code>Launcher/SIGNING.md</code> .                                     |

## See also

- [API.md](#) — HTTP/IPC surfaces, the model catalog, the full apply-step table
- [DEVELOPING.md](#) — the run targets, the three tsconfigs, the catalog invariant
- [README](#) — what it does, field coverage, the two output paths