PRIMAL BROADCASTER

Primal Broadcaster User Guide

A practical guide to music playout, live mixing, voice, scheduling and streaming

WHAT THIS GUIDE COVERS Station setup, music organization, deck and mixer operation, automation, Voice FX, scheduling, streaming and program recording.

Windows desktop application • Source project version 1.2.0 • November 3, 2026

Before you begin

- Connect and test the Windows audio output you intend to use. Keep headphones available for cue monitoring and microphone checks.
- Have supported audio files available. The library accepts MP3, WAV, FLAC, M4A, AAC, WMA, AIFF and AIF files; actual decoding depends on codec support in the application build.
- For streaming, obtain the host, port, source password, mount or stream ID, and station metadata from your streaming host.

Important routing rule The program mix feeds local playback, streaming and station recording. Device mute silences local speakers/headphones only. Cue monitoring is a separate local listening route.

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1. Quick start

Use this sequence to get music playing locally. Configure streaming after confirming the output device and library.

1. Open Primal Broadcaster. Confirm that the Output selector names the speakers or audio interface you want to hear.
2. Choose **Library** → **Scan folder…** and select the music folder. The scan includes subfolders and reads available artist, title, album and genre tags.
3. If the Library panel is hidden, show it from **View** → **Panels**. Search for a track and add it to Queue, or drag a track onto a deck.
4. Show Queue from **View** → **Panels** if needed. Double-click a queued track or choose **Play now** to start it.
5. Set the deck level and crossfader. Confirm the deck status and meters respond.
6. To broadcast, open **Broadcast** → **Encoder setup…**, enter the server details, save, then start the encoder and confirm its connected status.

Area	Use
Top menu	Library actions, playout modes, workspace and panel layout, themes, broadcast and administration.
Top control strip	Transport, master volume, output, local device mute, automation mode, encoder and recording.
Deck panels	Load and play tracks, set markers, seek or scratch, adjust level and monitor meters.
Mixer	Balance channels, use the crossfader and master level; DJ Mode adds independent A/B EQ.
Bottom panels	Queue, Library, History, Cart Wall and Encoder.

2. Installation and first launch

Use the installer supplied for your release, or build from source on Windows. Framework-dependent installers require the .NET 8 Desktop Runtime. Building from source requires the .NET 8 SDK or Visual Studio 2022 with the .NET desktop workload.

On first launch:

- Select the playback device in the Output dropdown. If devices change while the program is running, select the device again.
- Open **Administration** → **Station profile and metadata…** and enter the station identity and metadata template.
- Open **Administration** → **Audio output and safety…** to set master level and limiter/compressor behavior. Begin with conservative levels.
- Open **Broadcast** → **Encoder setup…** to configure the streaming host. The settings apply when broadcasting starts.
- Firebird is optional. Configure it only if Firebird Server is installed and you intend to use it as the station database.

Station data is stored under `%AppData%\PrimalBroadcaster`. Use **Administration** → **Open station data folder** to open it. Back up this folder before moving the application or changing databases.

3. Layout, workspaces and panels

Choose a workspace from **View** → **Workspace**. The selected workspace is remembered.

Workspace	What it provides
Primal Studio	Main two-deck studio with automation controls, mixer, Voice FX and dock panels.
DJ Mode · Dual Turntables	Turntable-focused A/B view with central mixer, independent channel EQ and level, crossfader, master, encoder and recording controls.

Workspace	What it provides
Vinyl Waveforms	Two-deck view with draggable turntables and waveforms.
4 Decks	Four compact decks A–D. Crossfader blends A/C against B/D.
Big Library	Expands the library for browsing.
Mixer	Focuses on the mixer.
Effects	Opens master processing.
Samplers	Shows/focuses the eight-slot Cart Wall.
Mic/Aux	Opens Voice FX controls.

Show, hide and arrange panels

7. Open **View** → **Panels** and check the panels you want. Queue, Library, History, Cart Wall, Encoder, Voice FX and individual decks have visibility controls.
8. Drag a visible panel title to swap its position with another panel in its docking area. Use splitters between panels to change their relative sizes.
9. Visibility, order and width preferences are saved. Choose **View** → **Reset panel layout** to restore the default arrangement.

The deck/mixer/Voice FX strip and lower dock panels are separate layout areas. Moving a title changes order within its area; panels are not freeform desktop windows.

Themes

Open **View** → **Theme** and choose Primal Signal, Aurora Wave, Neon Circuit, Live Ember, Pearl Studio or Primal Retro. Changes apply immediately and persist. Theme selection changes the studio palette, not the audio signal.

4. Music library

Scan a folder

10. Choose **Library** → **Scan folder…** or **File** → **Scan music folder…**.
11. Select the root folder. The scan searches its subfolders and skips paths already in the library.
12. Wait for the completion status. Available artist, title, album, genre and duration tags are added to the library record.

Add individual files and search

Choose **Library** → **Add files…** or **File** → **Add audio files…** and select one or more supported files. You can also drag supported files or folders from File Explorer into Library or Queue. Drag a file to a deck to load it; drag a track to a Cart Wall button to assign that cart.

- Type in the Library search field to filter tracks. **Library** → **Clear search** clears the filter.
- Choose **Library** → **Refresh metadata and genres…** to reread tags for existing files.
- Automatic silence detection can be enabled in **Administration** → **Automation and playout rules…**. It can set leading-silence cue-in and trailing-silence transition markers during imports/scans.
- If artist/title data is missing, correct the file tags in a tag editor and refresh metadata. Filename is used as a fallback title.

The library stores file paths; it does not copy audio into the station data folder. Keep files in place and accessible. If a file is moved or renamed, re-add or rescan the updated path.

5. Deck operation and audible scratching

Decks load and play independently. A/B are the normal pair; C/D are available in 4 Decks mode. A deck displays its track, artist/album, elapsed and remaining times, waveform, playback position, transport, cue/intro/outro markers, channel level and meter.

Load and play

- Drag a library track, queued track or supported audio file onto a deck. You can also right-click a library row and choose **Load to Deck A** or **Load to Deck B**.
- Use **Play/Pause** to start or pause. **Stop** returns the track to its cue-in position. The top transport operates on the current program deck.
- Drag the waveform seek control to move to another track position.

Cue and markers

- The deck **Cue** button stores the current position as that track's cue-in marker. Starting/stopping returns to cue-in.
- **Set Intro** stores the current position as intro-end. **Set Outro** stores an outro/crossfade point used by automatic transitions.
- **Clear** removes cue-in, intro and outro markers. Marker edits are saved to the matching library record.
- **Cue Monitor** is different from the Cue marker button. It routes a playing deck to local headphone/cue monitoring and suppresses that deck from the broadcast program. Turning Cue Monitor off while cue-auditioning pauses the deck to prevent it leaking into program audio.

Scratch with the platter

13. Open **View** → **Workspace** → **Vinyl Waveforms** or **DJ Mode**.
14. Click and hold the platter, then move the pointer around it. The movement scrubs the track position; reverse pointer movement moves the play position backward.
15. A playing deck continues while you move the platter. If it was paused, it temporarily starts so the scratch can be heard, then pauses on release.

Scratch behavior: The platter performs audible seek-based scrubbing. It is not a motorized turntable simulation with continuous reverse playback or torque/pitch modeling. Check the channel level, crossfader and Cue Monitor if you cannot hear the deck.

6. Mixer, output and cue monitoring

Each deck has its own channel volume. The crossfader blends A to the left and B to the right; in 4 Decks mode, A/C are the left side and B/D are the right. At center, both sides pass. The master control sets overall program level.

DJ Mode adds A/B low, mid and high tone controls. **Administration** → **Audio output and safety…** or **Broadcast** → **Audio processing…** opens master-bus processing.

Output and mute

Select a Windows playback device from the top Output dropdown. If an interface is connected or disconnected during a session, reselect the output. Master processing is shared by local playback, streaming and recording.

Device mute silences local playback only. Streaming and station recording continue. To stop program audio on-air, pause/stop the playing deck or lower the program level; device mute does not silence the stream.

Cue Monitor sends a deck to local headphones while suppressing it from the stream. Voice FX has separate Air and Cue routing. Use headphones to prevent speaker sound feeding back into the microphone.

7. Playlist and automation

Build and edit the queue

16. Select tracks in Library and use **Add to playlist**, double-click the selection or drag tracks into Queue.
17. Reorder rows by dragging or use **Up** and **Down**. Select tracks and use **Remove** or **Clear** to edit the queue.

18. Double-click a queued track or choose **Play now**. The app crossfades from the current track when a transition is available.
19. Use **Next track** when you want to advance.

Choose a mode

Mode	Behavior	Good for
Manual	Operator chooses/starts tracks. Auto-advance can separately step through a prepared playlist.	Live presenting and hands-on control.
Auto Queue	Keeps a configured number of upcoming tracks visible, but leaves playout under operator control.	Preparing the next-up list.
Auto DJ	Starts playout if needed and selects more tracks automatically from the library.	Continuous or unattended music rotation.

Choose the mode in the toolbar selector. In **Administration → Automation and playout rules…**, set queue target, recent-track avoidance, artist separation, genre rotation, repeat behavior, crossfade duration and silence recovery. Genre rotation depends on tracks having genre tags. Queue edits are saved as they happen.

Crossfade and silence recovery

- Crossfade duration is configurable. A track's outro marker can set its transition point; otherwise the configured duration is used.
- Optional silence recovery monitors the processed program while the encoder is connected. After sustained silence reaches the selected threshold/duration, it can advance the queue or select a library track. A cooldown limits repeated triggers.
- Keep monitoring the station; silence recovery is not an alarm system and does not provide a detailed recovery log.

8. Cart Wall and instant sounds

The Cart Wall has eight assignable buttons for station IDs, jingles, promos and spots. It is a movable panel and is also reached from **View → Workspace → Samplers**.

20. Show Cart Wall from **View → Panels** if it is hidden.
21. Right-click a cart to select an audio file, or drag a library track/file onto the button.
22. Click an assigned cart to play it over the program. Cart playback does not replace the active playlist deck or change its now-playing metadata.
23. If a source file was moved/deleted, right-click and assign its new path.

Keep cart audio and master levels controlled because carts play over the program.

9. Voice FX and voice tracking

Configure and enable the microphone

24. Open the Voice FX panel or choose **Broadcast → Voice FX…**.
25. Select **Config**, choose the Windows recording device and save the input.
26. Click **Mic On**. Mic capture is off by default. Speak and watch the input meter; avoid clipping.
27. Press and hold **Press to Talk** for a short live break. Use **Lock Talk** only when you want the mic to remain open after a click, then turn it off afterward.

Air and Cue routes

Control	Route	Use
Air	Microphone enters program mix, stream and station WAV recording.	Live on-air speech.
Cue	Microphone enters local cue monitoring.	Private mic check or voice-track recording.
Air off + Cue on	Voice is monitored locally and excluded from program mix.	Off-stream voice break.

EQ, filters and dynamics

- **EQ** opens a voice equalizer with low, mid, high, Sub 70 Hz and Air 11 kHz bands, each adjustable by ±12 dB, plus low/mid and mid/high crossover controls.
- **Dynamics / FX** provides a mic high-pass rumble filter, noise gate, compressor threshold/ratio/makeup gain and automatic music ducking.
- Small changes are easier to monitor. A gate set too high can cut quiet words; excess compression or makeup gain can raise room noise.
- Voice processing applies to broadcast and cue paths. Music ducking applies to the program when Mic Air is enabled.

Record a voice track

28. Turn Mic On and confirm the selected input is working.
29. For an off-stream break over music, turn Mic Air off, enable Mic Cue and enable Cue Monitor on the backing deck.
30. Choose **Record voice track**, speak over the backing track, and stop recording when finished. The WAV is added to the library.

The current voice-track recorder captures the local monitor mix as one WAV. It is not a multitrack editor with separate voice/music timing lanes.

10. Scheduling shows, playlists and commercials

Open **Broadcast → Scheduler…**. Times use the computer's local clock. Scheduled blocks may trigger even when ordinary Auto Advance is off.

31. Select a date and 24-hour time in HH:mm format.
32. Choose One time, Daily or Weekly. For Weekly, check the days to run.
33. Choose Show, Playlist or Commercial break and select one or more audio files in the intended order.
34. For a Show, optionally select a spot list and set the minutes of show audio between commercial insertions.
35. Choose **Add schedule**. Use the On checkbox to enable/disable a scheduled item; select it and choose **Remove selected** to delete it.

Scheduled files must remain available at their saved paths. A missing file is reported in the main status area at trigger time. Show tracks and selected spots are assembled into one ordered block.

11. Streaming with the Encoder

Configure the server

36. Open **Broadcast → Encoder setup…** or use Setup beside the Encoder control.
37. Choose Icecast 2, Shoutcast v1 or Shoutcast v2. Enter host, port and source password.
38. For Icecast, enter the source username and mount supplied by your host. For Shoutcast v2, enter Stream ID and, when needed for title updates, the admin password. Shoutcast source connections use the listening port plus one.
39. Choose an MP3 bitrate from 32 to 320 kbps. Fill stream name, genre, description and website, then save.
40. Start broadcasting and wait for Connected. Confirm meters, uptime and listener count when the server supports those values.

Metadata and reconnect

Configure the metadata template in **Administration → Station profile and metadata…**. The default is artist – title. Template fields include artist, title, album and genre. Metadata updates when a new program track becomes active.

Administration → Startup and reconnection… controls auto-start, auto-reconnect and retry delay. Test server credentials and reconnect behavior before relying on unattended use.

Server	Connection notes
Icecast 2	Often port 8000; source user commonly `source`; mount may be `/stream`. Use source password.
Shoutcast v1	Enter listening port; encoder connects to port + 1. Use server password.
Shoutcast v2	As with v1, plus Stream ID. Admin password may be needed for track-title updates.

12. Recording, meters and history

Click **Record** in the top strip or use **Broadcast → Start / stop recording**. Choose a WAV filename to start. Click Record again to stop and finalize the file. The recording captures the processed program mix used by the encoder; local device mute does not stop it.

- Viewers/listeners shows the count supplied by the active encoder when supported by the server.
- Peak displays program level. Use channel/master controls and processing to keep levels safe.
- The Encoder window shows connection state, bitrate, listener count, uptime and data sent.
- History records tracks when they become active on program output. Up to 200 recent entries are kept.

13. Administration and Firebird station database

Tab	Main settings
Station	Station identity and now-playing metadata template.
Automation	Auto Advance, Auto DJ/Auto Queue, queue target, artist/recent spacing, repeat, silence detection/recovery and crossfade.
Audio	Output device, master level, limiter and compressor.
Startup	Initial workspace and encoder startup/reconnection behavior.
Database	Optional Firebird connection, database path/alias, credentials, connection test and create-if-missing option.

Use Firebird

41. Install Firebird Server separately and verify its service is running. The app can open Windows Services but does not install or start the service.
42. Open **Administration → Firebird database…**. Enter host, port, database path/alias, user and password.
43. Use **Test connection**. If Create database if missing is checked, the test may create the selected file. The Firebird service account needs server-side path access.
44. Enable Firebird as primary and save. Existing JSON state is migrated where database keys are absent. Local JSON snapshots continue as backups.
45. To return to JSON mode, disable Firebird and save; confirm the status reports JSON storage.

Encoder and Firebird passwords are currently stored unencrypted in local user configuration files. Protect the Windows account and station data folder. Use a dedicated Firebird account with only the permissions required by the station.

14. Common workflows

Prepare a manual show

46. Scan the music folder and confirm track metadata.
47. Add the intended sequence to Queue and arrange it. Confirm all files are available.
48. Set transition duration and channel levels. Use Cue Monitor to preview an off-air deck.
49. Select Manual mode, start the opening track and choose subsequent tracks yourself.
50. Monitor levels and status; use Next track when ready.

Run continuous Auto DJ

51. Add enough tracks and verify artist/genre tags.
52. Set queue target and rotation rules in Administration → Automation.
53. Select Auto DJ. It starts a track if necessary and continues selecting from the library.
54. Monitor encoder and meters. Switch back to Manual to resume operator-controlled playout.

Cue a track privately

55. Load a track on the non-program deck.
56. Enable Cue Monitor and press Play. Listen on headphones.
57. Adjust its channel level while monitoring.
58. Turn off Cue Monitor before sending the deck into program. A cue-only audition pauses when cue is disabled.

Broadcast and record

59. Start music and confirm mixer routing.
60. Start the encoder and wait for Connected.
61. Click Record and choose a WAV path if you need an archive.
62. Monitor meters, listener count and encoder uptime.
63. Stop recording and then stop the encoder at the end of the session.

15. Troubleshooting

Symptom	Checks
No local audio	Confirm Output device; raise master/deck levels; center the crossfader; confirm deck is playing; check Device Mute. Reselect output after device changes.
Stream connected but silent	Check deck playback, channel fader, crossfader and master level. Cue Monitor suppresses a deck from program.
Server connection fails	Recheck host, port, password, mount/Stream ID, server type and network access. Shoutcast uses port + 1 for source connection.
Listener count absent	Some servers do not return a count. Check the host dashboard.
Microphone silent	Check Windows recording-device selection, Mic On, input gain, device permissions and physical mic mute.
Mic echo/feedback	Use headphones, lower speakers, and confirm Air/Cue routing.
Track will not load	Confirm file exists and codec is supported. Re-add after path changes; check another app is not locking it.
Scratch silent	Confirm loaded track, deck level, crossfader and Cue Monitor routing. Scratching is audible seek-based scrubbing.
Scheduled item did not play	Check Enabled, local date/time, recurrence days and source-file paths.
Firebird unavailable	Confirm Firebird Server service, host/port, path/alias, credentials and server-side file permissions.

16. Current capabilities and limits

- The project includes library import/search, four decks, queue and Auto DJ, cue/transition markers, audible seek-based scratching, Cart Wall, Voice FX, scheduling, Icecast/Shoutcast MP3 streaming, WAV station recording and recent history.
- Voice tracking records the local monitor mix as one WAV; there is no separate multitrack editor.
- Scheduler supports one-time, daily and selected-weekday blocks with optional show spot intervals. Reusable clockwheel templates and advanced event-driven commercial rules are not available yet.
- Built-in streaming output is MP3. AAC requires an external encoder.
- Master three-band tone, compression and limiting are available. Advanced processing chains and detailed loudness reporting are not included.
- Firebird is an optional external database service and is not bundled or installed by the application. JSON is the default and backup store.
- Normal broadcast operation depends on an available audio device and a reachable streaming server. Test the exact Windows audio device, microphone, server and reconnect behavior before going live.

Pre-air check: Before a scheduled or public broadcast, run a short test. Verify music, microphone, carts, cue routing, metadata, recording and local device mute on the actual hardware and server.