

WEBGATE

Personal Information Protection Video Masking Solution



User Manual

Product Version v1.4.0 or later

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Written by WEBGATE

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1. Product Overview

Masking Studio is a Windows desktop program that automatically and/or manually mosaics personal information (people, faces) in video. It can load and process not only CCTV backup footage but also general video files in the same way. Backup files (.exe/.re4) from WEBGATE and S-1 recorders (NVR/DVR) can also be opened directly and masked channel by channel.

Key Features

- Combines AI-based automatic detection (full-body people + faces) with manual editing
- Masking filters such as pixelation, blur, and solid color; supports rectangle/ellipse shapes
- Opening WEBGATE/S-1 recorder backup files (.exe/.re4) — edit with the original recording times preserved, and export back to the backup file format (optional password)
- Built-in "activity log" that records major actions such as logins and exports
- Per-account permission management (administrator/editor)
- Fully offline operation (no network required); trial/commercial license system

Note The current version does not support automatic license-plate detection (excluded from scope due to lack of a specialized model). License plates can be masked using manual object addition if needed.

2. Installation and First Run

1. Run the installer MaskingStudio_Setup_v1.4.0_x64.exe.
2. Follow the installation wizard to specify the install path and proceed.
3. During installation, on the license selection page you can choose to start a trial or register a license file (.lic).
4. The installation ID is shown after file copying completes. Copy the installation ID when requesting a commercial license.
5. After installation completes, launch from the desktop/Start menu icon.

Note System requirements: Windows 10 64-bit (1903 or later) or Windows 11 64-bit (any edition). See Chapter 15 for details.

Note Only one instance runs per PC: if you launch the program while it is already running, you will see an "already running" notice and the second instance will close automatically (this applies across different Windows accounts, not just the same one). Launching again after a normal exit works without issue.

3. Login and Accounts

The login screen appears on first run.

Field	Default
ID	admin
Password	Admin@1234
Display Name	Admin (Administrator)



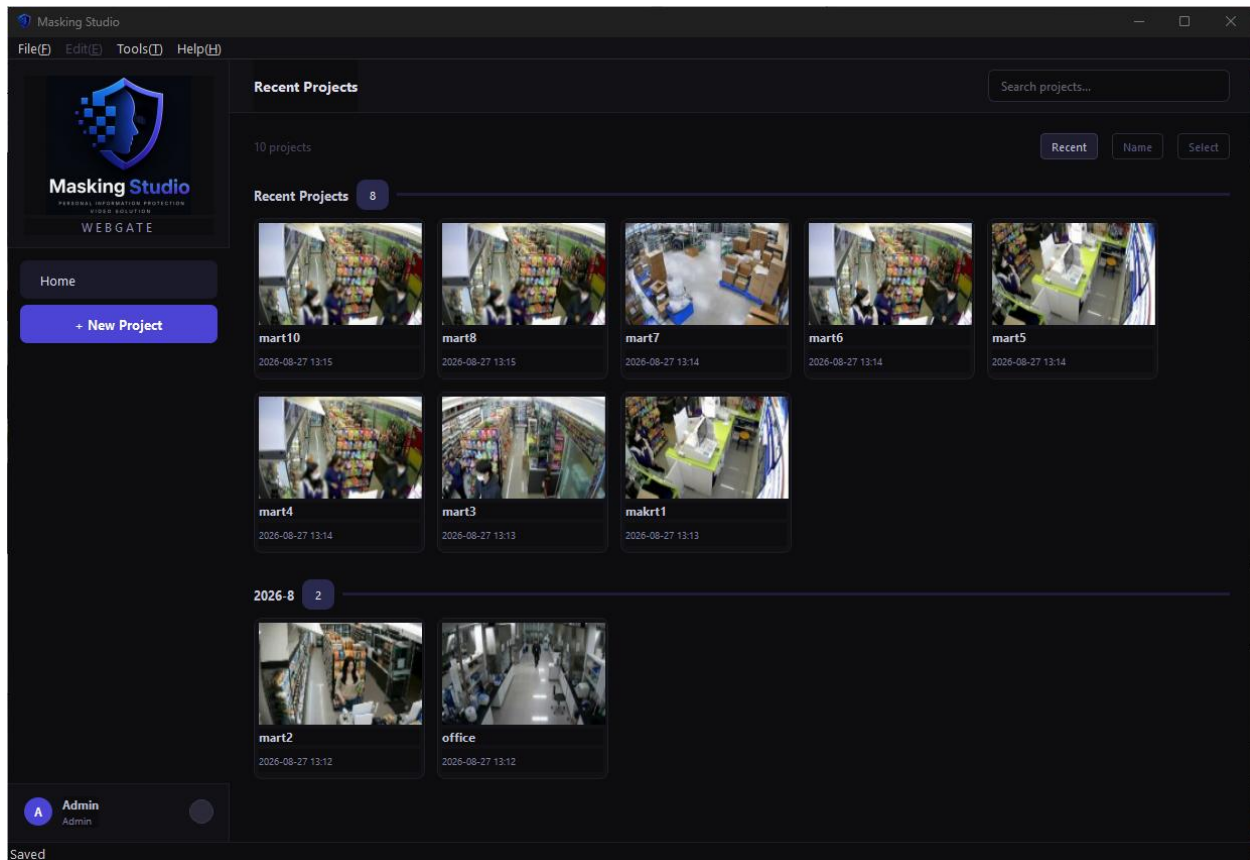
- After first login, we recommend changing the password under Tools > Settings > User Management.
- Password policy: at least 8 characters, including at least one letter, one digit, and one special character.

- After 3 consecutive failed login attempts, retries are blocked for 30 seconds (reset when the program restarts).
- Roles:
 - Administrator (admin) = all features + account management + activity log viewing
 - Editor = video editing, export, and project management.

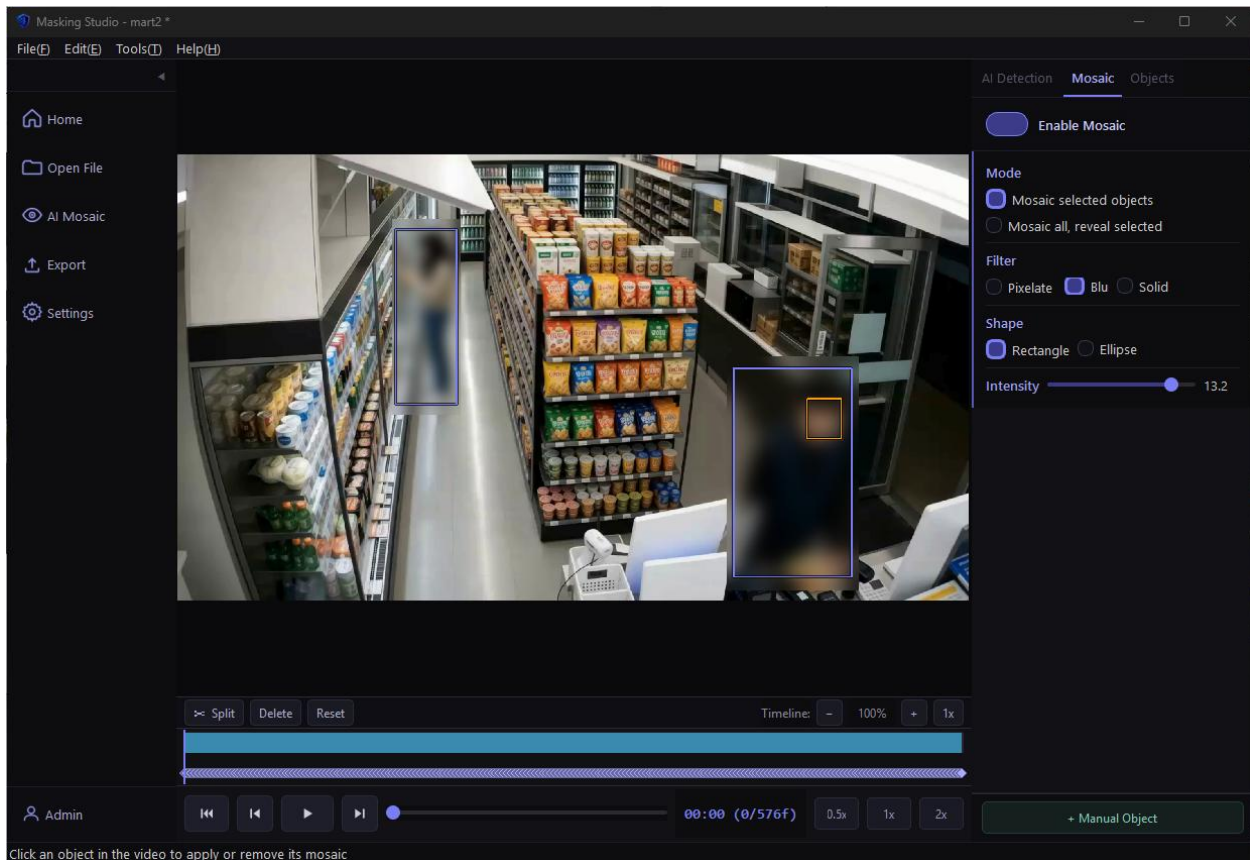
3.1 If You Forget Your Password

- Regular (editor) account: A logged-in administrator can reset it by using the "Change Password" button for that account on the "Tools > Settings > User Management" screen, without needing to know the existing password.
- Administrator account: Another active administrator can reset it the same way.
- If you lose the only administrator account (and no other active administrator is available to reset it): use the "Reset Administrator Password" link at the bottom of the login screen.
 - /
 - ① When you click the link, an installation ID and a reset request code (APR-XXXX-XXXX-XXXX-XXXX) are displayed. Send these to your WEBGATE license contact using "Copy Info" or "Save as Text File" (by phone, email, or any available method).
 - ② Once the contact provides the reset key issued from the license issuance system (a string or a .msrecover file, valid for 24 hours), paste it into the field on the same screen or load it from the file, then click "Execute Reset".
 - ③ If the key is valid, you will be taken to the new password screen (the same password policy applies). After completing setup, return to the login screen and log in with the new password.
- The reset key can be used only once; clicking "Generate New Request Code" invalidates any key issued for the previous code (if lost, the principle is to request again and get a new key).
- After 5 consecutive failed key verifications, the dialog closes (you can reopen it and try again).
- There is no bulk-reset feature that restores the default administrator password (Admin@1234) — this is a security policy.

4. Screen Layout



- Home screen: recent project list (search, sort by recent/name), "+ New Project", "Open File".



- Editing screen (shown when a project is opened):
 - Center: video preview
 - Bottom: timeline (split/delete/reset), playback controls (previous/next frame ◀|▶, 0.5x / 1x / 2x)
 - 3 tabs on the right panel: [AI Detection] / [Mosaic] / [Object List] — the [+ Manual Object] button is on the [AI Detection] tab
 - Top menu: File / Edit / Tools / Help
 - Title bar: license status is always shown (e.g., [Trial (D-7)], [Trial Expired], [Unregistered]; nothing is shown once commercially registered)

Note Menu path summary: Settings, User Management, Activity Log, and Language Settings are all tabs of the Tools > Settings (Ctrl+,) dialog. AI Detection = Tools > AI Detection (F2), Export = Tools > Export (Ctrl+E), License = Help > License.

5. Basic Workflow

Log in → (start trial or register commercially) → new project → open video → AI automatic detection → (adjust existing objects if needed) → check mosaic → (commercial license) export →

play back the result file to confirm

6. After logging in, from Home click "+ New Project" → enter a name → create the project.
7. Load a video via "Open File" or by dragging and dropping it onto the playback area.
8. On the editing screen, perform AI detection, manual editing, and mosaic settings.
9. Use Export to generate the result video, then play it back to confirm.

Note Check that the status bar at the bottom shows "AI detection ready" before starting detection (the AI model loads in the background right after login).

5-1. Opening WEBGATE/S-1 Recorder Backup Files

Open .exe/.re4 files backed up from a WEBGATE or S-1 recorder (NVR/DVR) just like a regular video, with [Open File] or drag and drop.

- In the [Select Channel] window, pick a channel and press [Open This Channel] to open only that channel in the editor (one channel at a time). It is converted to a working file without quality loss, and you can cancel while it is in progress.
- Use the icons next to the search box to switch between list view and grid view, and search by channel number or name. Channels without recordings are dimmed.
- For a password-protected backup, enter the password in the [Backup password] window. If it is wrong, you can enter it again. The password is never stored, so you enter it again when you reopen the project.
- Time display, playback and export follow the original recording times (original times are kept even when the frame interval varies). 960×1080 (1080N) channels are shown in a 16:9 aspect ratio.
- The project stores the location and channel of the original backup file. If the original file is moved or changed, the project is not restored.

6. AI Automatic Detection

Performed from the [AI Detection] tab on the right.

- Detection targets: people (full body) and faces are always detected together. There is no option for the user to choose which classes to detect — to keep only certain classes, disable individual tracks in the [Object List] tab after detection.
- Confidence (5 levels): Broad (0.30) · Low (0.45) · Normal (0.55, default) · High (0.70) · Precise (0.85). Lower values detect more but increase false positives.

- Detection interval: detect every N frames (a smaller interval is denser but increases keyframe count and processing time).
- Detection mode: New Detection (resets existing results before detecting) / Add to Existing (cumulative detection).
- Click [▶ AI Detection] → a progress dialog appears (you can click [■ Stop] partway through) → keyframes and tracks are generated automatically on completion.
- [Reset All Objects] deletes automatic and manual objects in bulk.

Note Detection range limits: the AI Detection panel has no direct "start-end frame" input field. To exclude an unwanted range, cut and delete that clip in the timeline — only the remaining range will be detected (see Chapter 9).

7. Mosaic Settings

Configured from the [Mosaic] tab on the right.

- Mosaic enable toggle: when off, detected objects are only shown, and masking is not applied.
- Filters (3 types): Pixelate / Blur / Solid Color (black box).
- Shape: Rectangle / Ellipse.
- Intensity: adjusted with a slider. It scales automatically in proportion to the box's shorter side rather than as an absolute pixel value.
- Mode: "Mosaic selected objects" / "Mosaic all, reveal selected".
- In the [Object List] tab you can turn masking on/off for individual tracks.
- You can also click a person directly on the video to apply or remove the mosaic, in either mode.
- To protect privacy, a person's face cannot be revealed while that person is covered (covering a person also covers their face).

8. Manual Editing and Correction

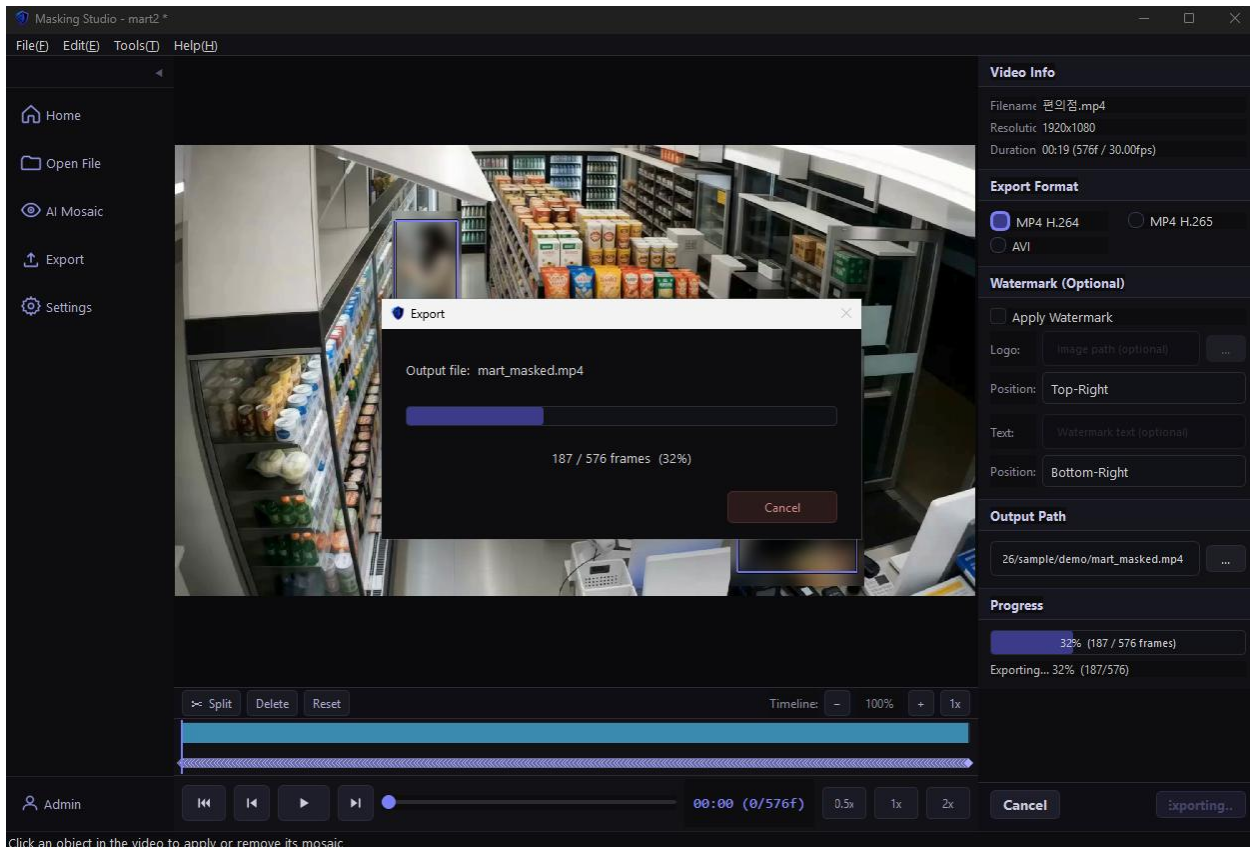
- Add manual object (commercial license only): press [+ Manual Object] on the [AI Detection] tab, then drag a box on the video. Masking starts from the frame where you drew the box.
 - When you draw the box or drag it to a new position, it is recorded on that frame and the view moves to the next frame automatically. Resizing stays on the same frame so you can fine-tune it.

- Use ◀ / ▶ at the bottom (or the ← / → keys) to jump by the set number of frames, or move the seek bar/timeline forward; the masked range extends to that point (moving backward does not shorten it).
 - Press [Done] to save, or [Cancel] to discard the object you added.
 - To cover a fixed area to the end: draw the box on the first frame, move the seek bar to the end of the video, and press [Done].
- In the trial version, you can select, edit, and delete existing objects detected by AI. Adding a new manual object to cover something AI missed requires a commercial license.
 - During fully manual keyframe editing (scene-move) mode, the play button and previous/next frame buttons are disabled — exit the mode via Done/Cancel to use them again.

9. Timeline and Clip Editing

- You can jump to a specific point in the timeline (seek) and move frame by frame for fine adjustment.
- Clip editing: split, delete, reset (including restore). Cutting and deleting an unwanted range excludes it from AI detection and export.
- Undo/redo: Ctrl+Z / Ctrl+Y (up to 50 steps). Undo applies only to clip operations (split/delete/reset) — adding manual objects, changing mosaic settings, and deleting individual objects are not currently undoable.
- Timeline operations remain responsive even for long videos with a large number of keyframes (tens of thousands to 100,000+).

10. Export



Performed from the sidebar/Tools > Export (Ctrl+E) panel.

11. Choose the output format: MP4 (H.264) / MP4 (H.265) / AVI. When a WEBGATE/S-1 backup file is open, the [WEBGATE (.exe)] or [S-1 (.exe)] format is also available (see 10-1). The source codec is detected and an output format is suggested automatically.
12. Use "Browse" to specify the save path and file name.
13. After closing the path selection dialog, a confirmation popup "Export to this path?" appears (default is Yes). Yes = start immediately; No = apply the path only, then start manually with the [Export] button.
14. If the path matches an existing file, an overwrite confirmation is shown.
15. Progress is displayed, and a playable result file is created on completion.

Note The export panel does not disappear even if clicked repeatedly (it switches exclusively with the AI mosaic panel). The watermark (logo/text) is an optional feature you can turn on or off. In the trial version, export is disabled, so a commercial license must be registered to produce a result file. If the watermark logo image is larger than the video resolution, it is automatically scaled down to no more than 1/6 of the video's width. If the original video has audio, the audio is preserved in the result video.

10-1. Exporting as a Backup File (.exe)

The [WEBGATE (.exe)] or [S-1 (.exe)] format appears only when a WEBGATE/S-1 backup file is open (shown to match the recorder family of the original).

- The masked channel is saved with its original codec, quality, recording times and channel name, and MiniPlayer is included so it plays on double-click. The default file name is <original name>_CH<channel>_masked.exe.
- Turn on [Password-protect backup] to enter a new password twice when exporting (1-16 English letters, digits or symbols; spaces and characters such as Korean cannot be typed in the backup player MiniPlayer and are not allowed). The original backup's password is not reused.
- If the original is an encrypted backup, [Password-protect backup] starts turned on. Turn it off yourself to export without a password.
- If you cancel the password entry, the export does not start (it is never saved without a password instead).
- Exports to MP4/AVI are also saved according to the original recording times.

11. Saving and Loading Projects

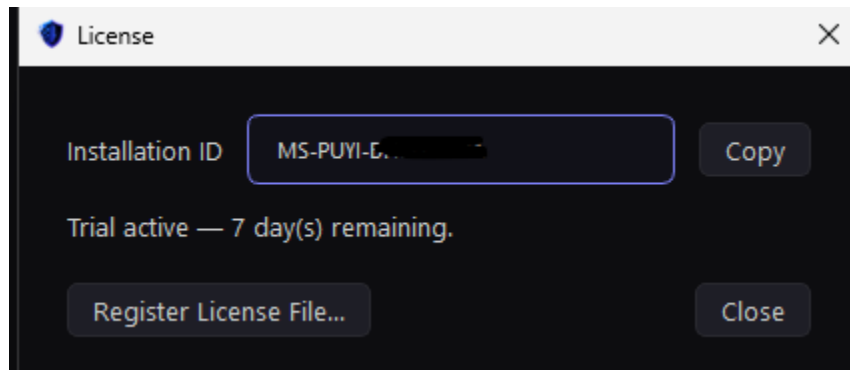
- When there are unsaved edits, an unsaved indicator (*) appears on screen. When moving to Home, logging out, or exiting the program, a popup lets you choose Save / Discard / Cancel — "Save" applies the changes, "Discard" reverts to the last saved state, and "Cancel" stays on the current screen.
- As an exception, once AI detection completes it is saved automatically once, and a notice that it was saved appears at the bottom of the screen. Other manual edits are not saved automatically.
- You can continue previous work from the "Recent Projects" list on the Home screen.
- Save As and project sharing by an administrator are supported.
- When creating a new project or loading a new video, AI/mosaic-related settings do not carry over from previous values — they always reset to defaults.

12. Trial and License

- On first run, you can start a 7-day trial from the license notice window. The trial can be started only once per PC (installation ID); it does not restart even after uninstalling and

reinstalling. The title bar shows the remaining period, e.g., [Trial (D-7)]. During the trial period you can use AI automatic detection, all masking filters/intensity/shapes/modes, and select, edit, and delete existing detected objects. Adding new manual objects and exporting are commercial-license-only.

- Commercial registration: in the license notice window, or via Help > License Info/Registration, select and register the license file (.lic) you were issued.



- The system verifies the signature and the installation ID together. A license issued for a different PC will not register.
- In an expired trial or unregistered state, creating new projects, opening existing projects, opening video files, AI detection, mask editing, adding new manual objects, and exporting are all restricted. The license registration notice, the activity log (audit log), and the version info screen remain usable. A project that was already open can still be saved after expiry, but it cannot be reopened or exported. If the program is left running when the trial period ends, the restriction takes effect within about one minute without needing a restart, and existing detected objects are not deleted.

Note Licenses are issued and managed separately by WEBGATE. An installation ID is required to request one. You can check the installation ID in the installer during setup, and afterward via Help > License Info/Registration.

12-1. Automatic Update Check

Automatic update checking works only with a commercial (purchased) license; in the trial version, the Help > Check for Updates menu item is disabled.

With a commercial license, the program automatically checks the server for a new version every time it runs. If the network or server check fails, it does not affect normal use of the program.

If a new version is available, you can review the version number and update notes, then choose

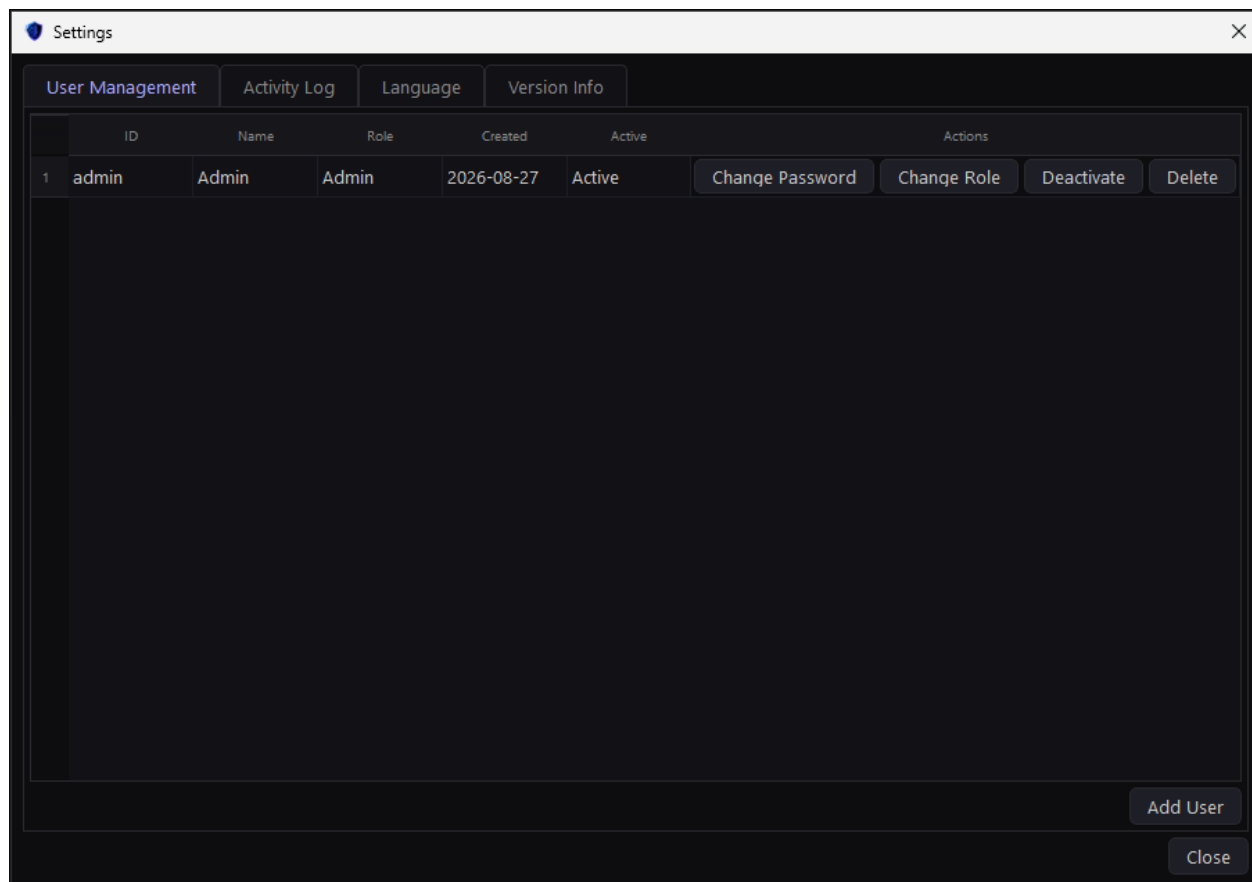
[Download], [Later], or [Skip This Version]. Once the download finishes, you can install right away with [Install] or check the file location with [Open Folder].

Choosing Install closes the current program, installs the new version, and relaunches it automatically. The installer file is integrity-checked immediately after download and again right before installation; if verification fails, it will not be installed. Selecting Help > Check for Updates lets you check again immediately, regardless of the automatic check result.

13. Language Settings

- Supported languages: Korean / English / Japanese / Chinese.
- Change it under Tools > Settings > Language; it takes effect after restarting.
- On first run with no saved language setting, the program displays in the OS language if it is a supported language (English/Japanese/Chinese), or in Korean otherwise.

14. Administrator Features (Accounts, Activity Log)



Access from Tools > Settings using an administrator (admin) account.

- User management: add new operator accounts, change roles (admin <-> editor), deactivate/reactivate, permanently delete (only possible for accounts with no usage history at all - projects, sharing, exports, activity log, etc.; if there is history, only deactivation is allowed), change password (policy is checked automatically).
- Role changes, deactivation, and deletion cannot be applied to your own account or to the last remaining active administrator account; up to 3 administrators and up to 10 editors can be registered (including inactive accounts).
- Activity log (audit_log): you can view, filter, and export to CSV the history of major actions such as logins, exports, and account changes.

15. Recommended/Minimum System Requirements

15-1 Recommended Specifications

This is the baseline for reliably running long tests (a 1-hour CCTV video, AI detection + export).

Item	Specification
OS	Windows 11 64-bit (Home/Pro/Enterprise, any)
CPU	Intel Core i7-14700F (14-core) class
RAM	32GB
GPU	NVIDIA GeForce RTX 3050 (6GB) class - DirectML acceleration confirmed
Storage	SSD, at least 100GB free space

15-2 Minimum Specifications

Item	Minimum Spec	Notes
OS	Windows 10 64-bit (1903+) / Windows 11	Some UI assumes 1903+
CPU	Intel Core i5 8th gen+ / AMD Ryzen 5+ (4 cores/8 threads+)	Decoding and tracking are CPU-heavy, so lower-spec systems will feel a larger slowdown on long videos
RAM	16GB	Setting a short detection interval can increase keyframes to the tens of thousands-100,000+ range

Item	Minimum Spec	Notes
GPU	A DirectX 12-capable GPU (including integrated graphics)	Works on CPU even without one. A high-end GPU is not required
Storage	SSD recommended, at least 3x the source size in free space	Export temp files and the result file can exist at the same time

Note Performance characteristics: the actual bottlenecks are video decoding (CPU) and Optical Flow tracking (CPU); GPU acceleration (DirectML) applies only to person-detection inference, so the perceptible improvement is limited. As a result, CPU core count/clock speed affects processing time more than the GPU does.

15-3 Processing Time Reference

The figures below are approximations based on measurements from processing 1080p (FHD) video with a detection interval of 5 and the blur filter on a recommended-spec GPU PC. Actual times vary greatly with the number of people in the video, resolution, codec, and detection interval, so use these only as rough planning estimates.

Video Length	AI Detection (approx.)	Export (approx.)
1 minute	1-2 minutes	1-2 minutes
10 minutes	14-16 minutes	10-18 minutes
(reference) 1 hour	~1.5 hours	1-2 hours

- On a PC without a GPU (integrated graphics, virtual machine, etc.), AI detection takes 2-3 times longer.
- Reducing the detection interval (e.g., 5 -> 1) increases the number of detected frames, so processing time increases proportionally.
- Export encoding is performed by the CPU, so more CPU cores means faster processing (H.265 is somewhat slower than H.264). This is why the export time range is wide.
- For short videos (e.g., 1 minute), the fixed overhead of things like model loading is a larger share, so the multiplier can appear somewhat higher.

Note The figures above are converted from measurements taken during development/verification (15-minute and 1-hour videos) and do not guarantee performance on any specific customer PC. If you need accurate figures, we recommend measuring directly on that PC with a short sample.

16. Troubleshooting

Symptom	Check / Action
"AI detection ready" does not appear on the status bar / AI detection is disabled	The model may have failed to load. Gather the diagnostic log below and contact us. Non-ASCII account paths and unsupported GPU environments are now handled automatically (v0.9.10.4/5/10)
AI detection catches almost no people (remote desktop / PC with integrated GPU)	This may be a DirectML inference issue. The program automatically judges this using a reference image and switches to CPU (v0.9.10.10). If the problem persists, gather logs and contact us
CCTV backup video plays back sped up	The file's frame rate is inflated in the container. It is corrected automatically to the actual frame rate (v0.9.10.6)
Clicking AI Detection after the trial has expired	The license registration notice is shown without a progress window, and existing objects are preserved (this is expected behavior)
Opening a backup file (.exe/.re4) asks for a password	Enter the password set when the backup was made on the recorder. If it is wrong, you can enter it again. The password is not stored, so you must enter it again when you reopen the project
"Unsupported encryption method" notice when opening a backup file	Please back up again on the recorder without a password

Diagnostic log location: %ProgramData%\WEBGATE\MaskingStudio\MaskingStudio.log (the top item to collect first when investigating causes such as AI model load failures)

17. Frequently Asked Questions (FAQ)

Q. Can I choose which targets (people/faces) to detect?

A. Detection always covers people and faces together. To keep only certain targets, turn off individual tracks in [Object List] after detection.

Q. Are vehicle license plates masked automatically too?

A. The current version does not support automatic license plate detection. With a commercial license you can mask them using manual object addition; in the trial version, adding new manual

objects is restricted.

Q. How do I detect only a specific range?

A. Cut and delete the clip for the unwanted range in the timeline - only the remaining range will be detected.

Q. Is the original video's audio included in the result video?

A. If the original video has an audio track, the audio is preserved in the exported result. If the original has no audio, or audio merging fails, the file may be saved silent.

Q. Can I turn the watermark on and off in the trial version too?

A. The watermark setting itself can be chosen even in the trial version. However, since export is restricted in the trial version, you must register a commercial license to produce a result file with the watermark applied.

Q. What happens if the watermark logo image is too large?

A. It is automatically scaled down to no more than 1/6 of the video's width. No separate setting is needed.

Q. I forgot my login account password.

A. Another administrator can reset it from User Management. If you have lost the only administrator account, you can recover it directly via the "Reset Administrator Password" link on the login screen (see section 3.1).

Q. I registered a license from a different PC, and it isn't working.

A. A license is tied to the installation ID of the PC it was issued for (hardware binding). You need to request reissuance using the installation ID of the PC you're using.

Q. Can I open a recorder backup file (.exe) directly?

A. Yes. Opening a WEBGATE/S-1 recorder backup file (.exe/.re4) shows the channel selection window, and you can edit and export the chosen channel with its original recording times (see 5-1).

Q. How do I keep a manually drawn box until the end of the video?

A. Draw the box on the first frame, move the seek bar to the end of the video, and press [Done]; the whole range is masked (see Chapter 8).

18. Appendix: Supported Formats and Shortcuts

Supported Formats

Category	Format
Input	MP4 (H.264/H.265), AVI, MKV, MOV, M4V, TS, WEBGATE/S-1 backup (.exe/.re4)
Output	MP4 (H.264), MP4 (H.265), AVI, WEBGATE/S-1 backup (.exe — when a backup file is open)

Key Shortcuts

Function	Shortcut
Open Settings	Ctrl+,
AI Detection	F2
Export	Ctrl+E
Undo / Redo (clip operations)	Ctrl+Z / Ctrl+Y
Play / Pause	Space
Previous / Next frame	← / →
Help	F1

Contact: your WEBGATE representative. This manual is kept in sync with the product version.