

Studio Server Setup Manual

Complete guide to install, configure, and manage your ANIMAFLOW Studio Server for seamless pipeline integration and mobile connectivity.

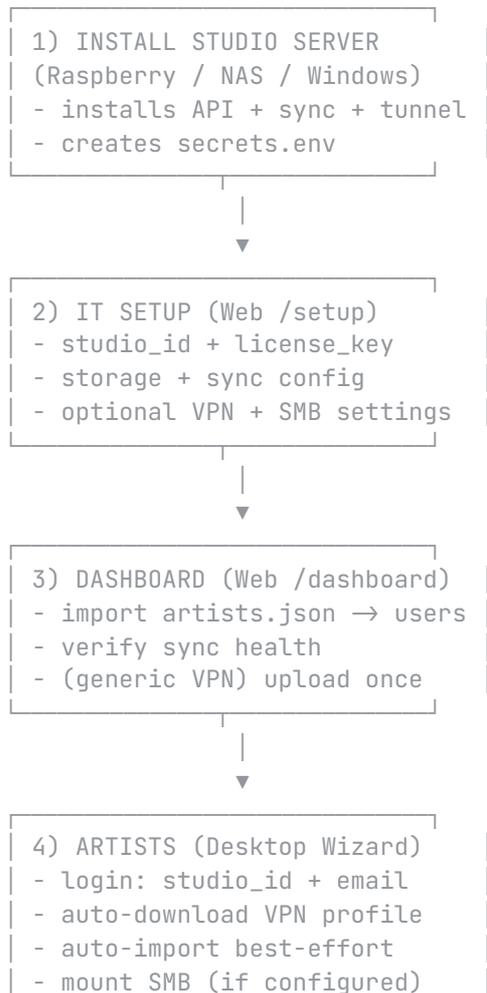
Version 2.5 | January 2026
api.animaflow.xyz

Workflow Overview (Studio → IT → Artists)

Goal

Fully automated studio onboarding with minimal manual steps: Studio Server installs once, IT completes setup and (optionally) provides a single VPN profile, and artists connect using the Desktop Wizard.

End-to-End Workflow



Studio Server **Install + Services**

What runs	Flask API, Sync service, Cloudflared tunnel
Config files	<code>config.json</code> + <code>secrets.env</code>
Idempotent	Yes (re-run safe; does not overwrite existing config)

Security **Secrets + Environment**

Secrets file	<code>/etc/animaflow/secrets.env</code> (Linux/TrueNAS) or <code>C:\\animaflow\\secrets.env</code> (Windows)
Per-studio	<code>STUDIO_ID</code> , <code>LICENSE_KEY</code>
Global	<code>CLOUDFLARED_TOKEN</code> , <code>GEMINI_API_KEY</code>

VPN **Generic Profile Mode (One Profile Per Studio)**

Mode	<code>vpn.profile_mode = generic</code>
IT action	Place the profile at <code>PROJECT_ROOM/vpn/_generic.ovpn</code> (auto-provision via <code>sync_cache/vpn/_generic.ovpn</code> mirror) or upload it once as <code>_generic.ovpn</code>
Artist action	None (Wizard downloads + imports best-effort)

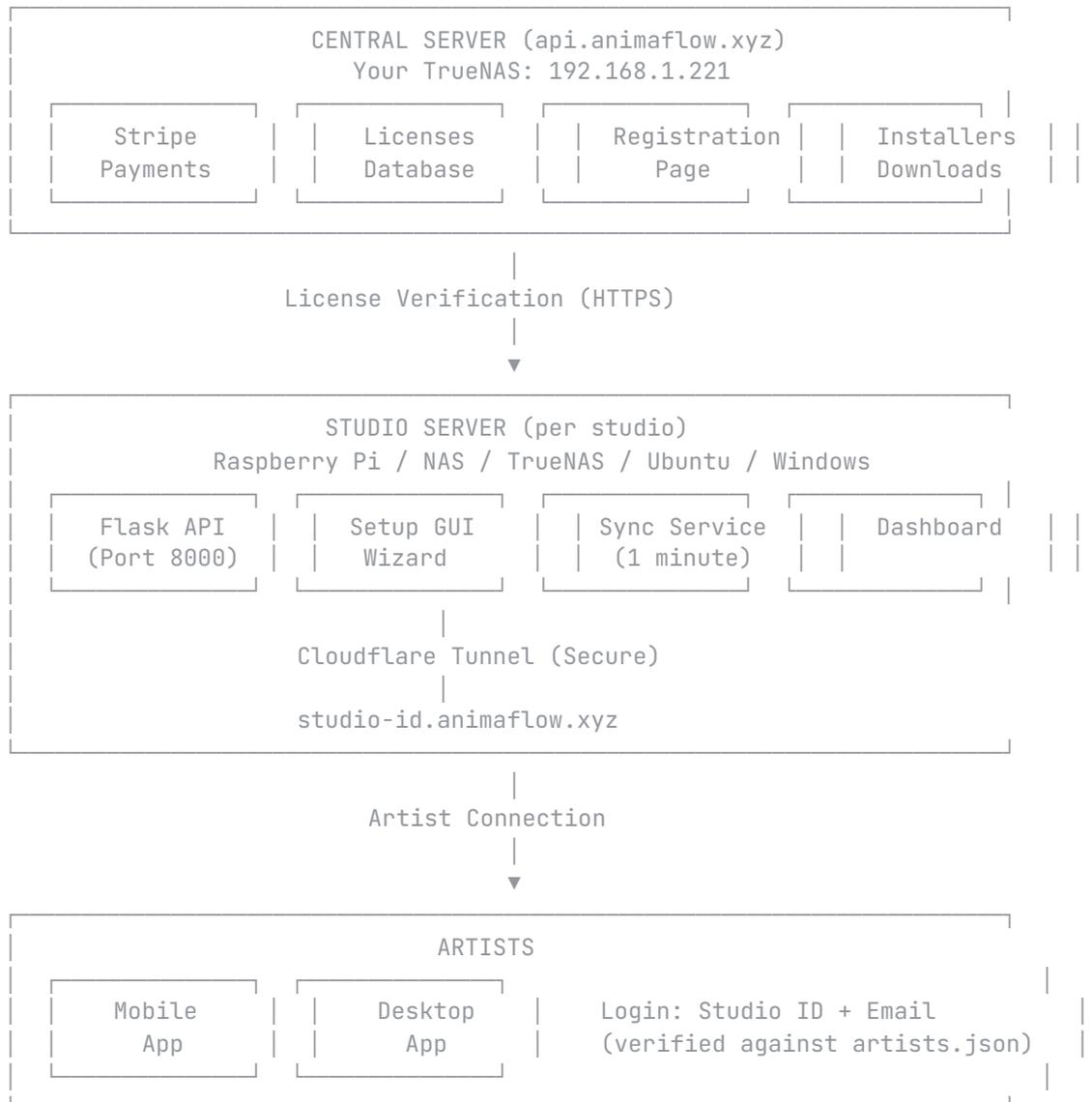
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1. Architecture Overview

ANIMAFLOW uses a distributed architecture with a central licensing server and individual studio servers. This design ensures maximum flexibility while maintaining security and ease of management.

System Architecture

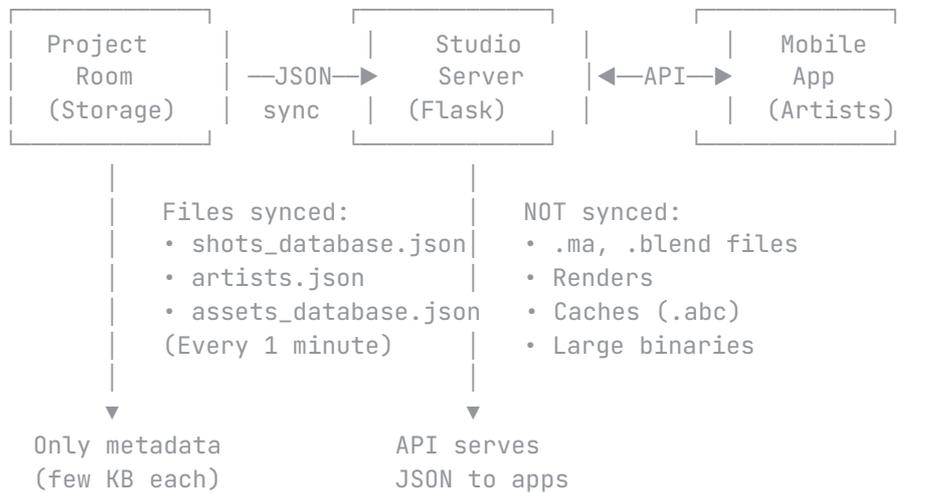


Key Components

Component	Location	Purpose
Central Server	api.animaflow.xyz	License management, payments, installer downloads
Studio Server	Your hardware	Project sync, artist authentication, mobile API
Cloudflare Tunnel	Cloud	Secure remote access without port forwarding
Project Room	Your storage	All project files and JSON metadata

Data Flow

Sync Data Flow



Important

The sync service only transfers small JSON metadata files, never large assets. This ensures fast synchronization even over slow connections.

2. Requirements

Hardware Requirements

Server Type	Best For	Minimum Specs
Raspberry Pi 4/5	Small studios, budget option	4GB RAM, 32GB SD + external SSD
Synology / QNAP NAS	Studios with existing NAS	Any model with SSH access
TrueNAS	Medium studios	8GB RAM
Ubuntu Server	Full control needed	2GB RAM, 20GB disk
Windows Server	Windows-only environments	4GB RAM
Docker	Any platform	Docker installed

Network Requirements

- Stable internet connection (minimum 5 Mbps upload)
- Free Cloudflare account for tunnel
- Access to port 8000 on local network
- Static IP recommended (or DHCP reservation)

Software Requirements

- Python 3.9 or newer
- pip (Python package manager)
- curl (for downloads)
- Web browser for setup

Good News

The installer automatically installs all required Python packages. No manual dependency management needed!

3. Studio Registration

Before installing the server, you must register your studio and obtain a license key.

1 Visit Registration Page

Go to <https://api.animaflow.xyz/register>

2 Choose Your Plan

Plan	Price	Artists
Individual	\$250/month	1 artist
Studio	\$4,000/month	15-50 artists
Enterprise	Contact us	50+ artists

3 Fill Registration Form

- **Studio ID:** Unique identifier (lowercase, no spaces) e.g., `pixar` , `studio-ranfa`
- **Studio Name:** Display name
- **Admin Email:** Your email address
- **Server Type:** Select your server type

4 Complete Payment

Pay via Stripe (or enter coupon code if provided).

5 Save Your License Key

After payment, you'll receive a license key like:

ANIMAFLOW-XXXXX-XXXX-XXXX-XXXX

Save this key! You'll need it during server setup.



Keep Your License Key Safe

Your license key is sent to your email and shown on screen after payment. Store it securely - you cannot recover it without contacting support.

4. Server Installation

Choose the installation method that matches your server type. All installers are available at api.animafLOW.xyz/download/

Raspberry Pi Installation

```
# Download installer
curl -sL https://api.animafLOW.xyz/download/install_raspberry.sh -o install.sh

# Run installer
sudo bash install.sh
```



Supported models: Raspberry Pi 3, 4, and 5 (all architectures detected automatically).

Ubuntu / Debian Installation

```
# Download installer
curl -sL https://api.animafLOW.xyz/download/install_ubuntu.sh -o install.sh

# Run installer
sudo bash install.sh
```

RHEL / AlmaLinux / Rocky Installation

```
# Download installer
curl -sL https://api.animafLOW.xyz/download/install_rhel.sh -o install.sh

# Run installer
sudo bash install.sh
```

TrueNAS Installation

```
# Download installer
curl -sL https://api.animaflow.xyz/download/install_truenas.sh -o install.sh

# Run installer (as root)
bash install.sh
```

Synology NAS Installation

```
# SSH into your Synology, then:
curl -sL https://api.animaflow.xyz/download/install_synology.sh -o install.sh

# Run installer
sudo bash install.sh
```

Synology Prerequisite

Install Python 3 from Synology Package Center before running the installer.

Windows Installation

Run PowerShell as Administrator:

```
# Download installer
Invoke-WebRequest -Uri "https://api.animaflow.xyz/download/install_windows.ps1"

# Run installer
.\install.ps1
```

Docker Installation

```
# Download docker-compose file
curl -sL https://api.animaflow.xyz/download/docker-compose.yml -o docker-compose.yml

# Edit the file with your STUDIO_ID and LICENSE_KEY
```

```
# Then start:  
docker-compose up -d
```

Installation Complete Message

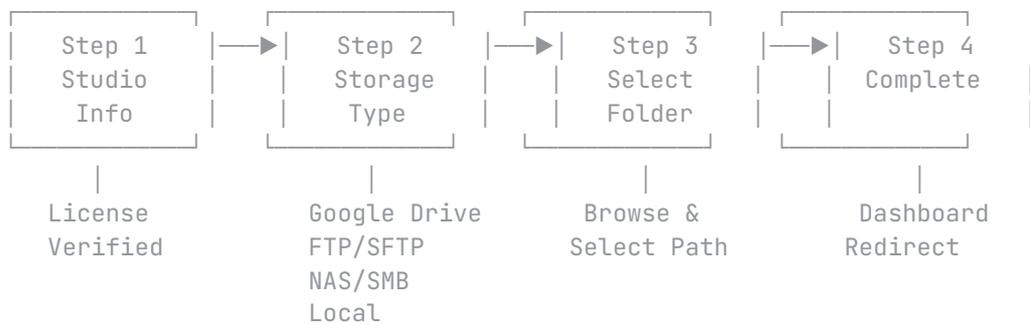
After successful installation, you'll see:

```
=====  
Installation Complete!  
=====  
  
NEXT STEP: Open browser and go to:  
http://192.168.1.xxx:8000/setup  
  
Complete the setup wizard to configure your studio.  
=====
```

5. Setup Wizard

After installation, open your browser and navigate to the setup URL shown in the terminal (e.g., <http://192.168.1.xxx:8000/setup>).

Setup Wizard Flow



Step 1: Studio Information

Field	Description	Example
Studio ID	Your registered studio ID	<code>studio-ranfa</code>
Studio Name	Display name	<code>RANFANIMATION</code>
Admin Email	Administrator email	<code>admin@studio.com</code>
License Key	From registration	<code>ANIMAFLOW-XXXX-XXXX</code>

When you click **Continue**, your license key is verified with the central server.

Step 2: Storage Type

Select where your Project Room is located:

Option	When to Use
Local Path	Project Room is on the server's local disk or mounted drive
FTP/SFTP	Project Room is on a remote FTP server
NAS/SMB	Project Room is on a Windows share or NAS
Google Drive	Project Room is stored in Google Drive

Step 3: Select Folder

Browse and select your Project Room folder. The wizard will show available folders based on your storage type selection.

Step 4: Complete

After completing setup:

- Configuration is saved to `animaflow_config.json`
- Sync service starts automatically
- You're redirected to the Dashboard

Enterprise: VPN (WireGuard) + SMB for Artists

If your artists must read/write files directly (Maya/Blender), use a dedicated VPN device (router/firewall or Raspberry Pi) and expose your NAS over SMB inside the VPN. The setup wizard can optionally store VPN/SMB access details in `animaflow_config.json` under `vpn` and `smb_access`.

Synology option (recommended): install **VPN Server** from Package Center, enable **OpenVPN**, export the `.ovpn` profile, and port-forward **UDP 1194** to the Synology LAN IP. After VPN is connected, artists mount your SMB share.

Cloudflared tunnel vs VPN: the Cloudflared tunnel exposes Studio Server web endpoints (Dashboard/API). The VPN is only for private network access so artists can mount SMB safely.

Security (required): the `.ovpn` profile may be stored on the Studio Server, but it must never be published as a public/static file. It must be distributed via an authenticated per-user download so a single artist can be revoked without impacting others.

End-to-end flow (diagram):

```
Internet --(Cloudflared tunnel)→ Studio Server (ANIMAFLOW API)
                                | stores animaflow_config.json
                                | authenticated per-user .ovpn download

Artist PC --(OpenVPN)→ VPN into studio LAN → SMB on NAS (QNAP/TrueNAS)
                                \\HOST\SHARE (read/write)
```



Security controls reference (ISO/IEC 27001-style): access control (per-user profiles), cryptography (VPN in transit), operations security (no public SMB), logging/auditing (profile downloads/admin actions), identity lifecycle (issue/revoke).

Setup Only Once

The setup wizard is only accessible when the server is not configured. After setup, accessing `/setup` redirects to the dashboard.

6. Storage Configuration

Project Room Structure

Your Project Room is created automatically by ANIMAFLOW Desktop. **Do not create this structure manually.**

Project Room Structure (Auto-generated)

```

/mnt/projects/                                     ← Your Project Room path
├── PROJECT_A/
│   ├── _SHOTS/
│   │   ├── _SHOT{SEQ_SH}/
│   │   │   ├── _3D/_ANIMATION/BLOCKING/SPLINE/POLISH/
│   │   │   ├── _3D/_LAYOUT/
│   │   │   ├── _3D/_LGT/
│   │   │   ├── _AUDIO/
│   │   │   ├── _PREVIEWS/
│   │   │   ├── _RENDERS/
│   │   │   └── shot_status.json
│   ├── _ASSETS/
│   │   ├── _RIGS/{ASSET_NAME}/WIP/PUBLISH/_BACKUP/
│   │   ├── _PROPS/
│   │   └── _ENVS/
│   ├── shots_database.json                       ← Synced
│   ├── assets_database.json                      ← Synced
│   ├── artists.json                             ← Synced
│   ├── asset_casting.json
│   └── bids.json
└── PROJECT_B/
    └── ...

```

Local Storage

For local storage, simply enter the full path to your Project Room:

```

/mnt/projects
/srv/projects

```

/volume1/projects
C:\Projects

FTP/SFTP Configuration

Field	Description
Protocol	FTP or SFTP (SSH File Transfer)
Host	Server hostname or IP
Port	21 for FTP, 22 for SFTP
Username	FTP/SSH username
Password	FTP/SSH password
Path	Path to Project Room on server

NAS/SMB Configuration

Field	Description
Host	NAS hostname or IP
Share	Share name (e.g., <code>projects</code>)
Username	SMB username
Password	SMB password
Path	Subfolder path within share

Google Drive Configuration

1 Create Google Cloud Project

Go to console.cloud.google.com and create a new project.

2 Enable Google Drive API

In APIs & Services, enable the Google Drive API.

3 Create Service Account

In IAM & Admin > Service Accounts, create a new service account and download the JSON key file.

4 Share Folder with Service Account

In Google Drive, share your Project Room folder with the service account email (found in the JSON file).

5 Get Folder ID

The Folder ID is in the Drive URL:

`https://drive.google.com/drive/folders/1ABC123xyz`

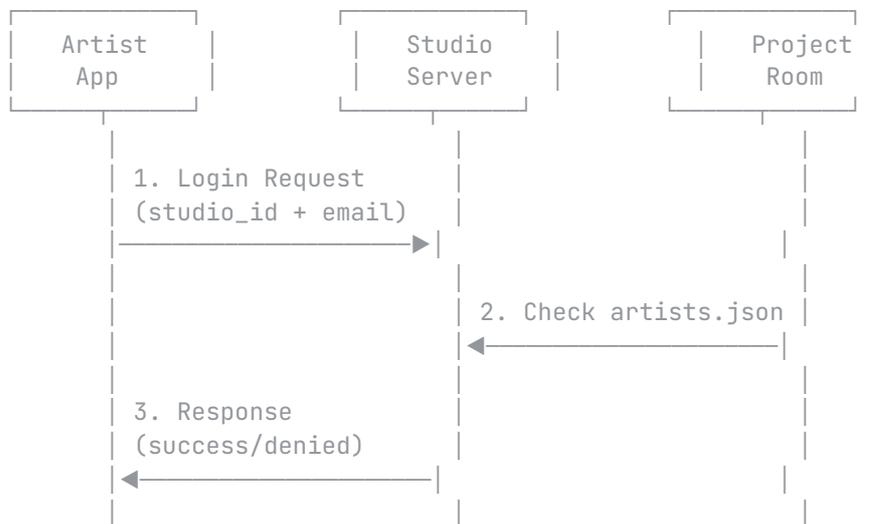
`_____`

This is the Folder ID

7. Artist Management

How Artist Authentication Works

Artist Login Flow



artists.json Structure

Each project has an `artists.json` file that defines which artists can access it:

```

{
  "ANIMATION": [
    {"email": "animator1@studio.com", "first_name": "John", "last_name": "Doe"},
    {"email": "animator2@studio.com", "first_name": "Jane", "last_name": "Smith"}
  ],
  "LIGHTING": [
    {"email": "lighter@studio.com", "first_name": "Bob", "last_name": "Wilson"}
  ],
  "LAYOUT": [
    {"email": "layout@studio.com", "first_name": "Alice", "last_name": "Brown"}
  ]
}
  
```

```
]
}
```

Adding Artists

Option 1: Via ANIMAFLOW Desktop

1. Open ANIMAFLOW Desktop as project admin
2. Go to Project Settings > Artists
3. Add artist email and assign department

Option 2: Manual Edit

Edit the `artists.json` file directly in your Project Room.

Artist Login

Artists connect using only two pieces of information:

Field	Description
Studio ID	The studio's unique identifier
Email	Their registered email address

No Password Required

Artists don't need passwords. If their email is in any project's `artists.json`, they get access. Simple and secure.

8. Troubleshooting

API Not Starting

```
# Check status (Linux)
sudo systemctl status animaflow

# View logs
sudo journalctl -u animaflow -f

# Restart service
sudo systemctl restart animaflow
```

License Verification Failed

- Verify your Studio ID is correct (lowercase)
- Check the license key for typos
- Ensure the server can reach api.animaflow.xyz
- Check if your license is active (not expired or revoked)

Sync Not Working

```
# Check sync logs
tail -50 /var/log/animaflow_sync.log

# Force manual sync (rclone)
/bin/sh /root/rclone_sync.sh

# Verify cache has data
ls -la /root/sync_cache/

# Check cron is running
tail -3 /etc/crontab | grep rclone
```

rclone Sync Errors

Error	Solution
530 Login incorrect	Wrong FTP username/password in animaflow_config.json
530 Maximum clients	FTP server limit reached. Reduce --transfers in rclone_sync.sh
Connection refused	Wrong port or host in config. Check storage.port
Syntax error	Script has Windows line endings. Run: <code>sed -i '' 's/\r\$//' /root/rclone_sync.sh</code>

Artists Can't Connect

1. Verify their email is in `artists.json`
2. Check the Cloudflare tunnel is running
3. Test API accessibility: `curl https://studio-id.animaflow.xyz/`

Port Already in Use

```
# Find process using port 8000
lsof -i :8000

# Or on FreeBSD/TrueNAS
sockstat -4 -l | grep 8000

# Kill the process if needed
kill -9 <PID>
```

Common Error Messages

Error	Solution
Invalid license key	Verify license key and studio ID match
Connection refused	API not running, start it with systemctl

Endpoint function overwriting

Duplicate route in api.py, contact support

Google credentials not
configured

Set GOOGLE_APPLICATION_CREDENTIALS env
var

9. Administration Commands

Central Server (api.animaflow.xyz)

Create a License Manually

```
ssh root@192.168.1.221

# Create license script
cat > /tmp/lic.py << 'EOF'
import sqlite3
from datetime import datetime
db = sqlite3.connect('/root/animaflow.db')
db.execute("""INSERT OR REPLACE INTO licenses
(studio_id, studio_name, admin_email, license_key, server_type,
 studio_size, coupon, is_free, status, created_at)
VALUES (?, ?, ?, ?, ?, ?, ?, ?, ?, ?)""",
('STUDIO-ID', 'Studio Name', 'admin@email.com',
 'ANIMAFLOW-XXXX-XXXX', 'server', 'small', '', 0,
 'active', datetime.now().isoformat()))
db.commit()
print('License created!')
EOF

python3.11 /tmp/lic.py
```

List All Licenses

```
python3.11 -c "import sqlite3; db=sqlite3.connect('/root/animaflow.db'); \
[print(r) for r in db.execute('SELECT studio_id, license_key, status FROM licens
```



Revoke a License

```
python3.11 -c "import sqlite3; db=sqlite3.connect('/root/animaflow.db'); \
db.execute(\"UPDATE licenses SET status='revoked' WHERE studio_id='STUDIO-ID'\"); \
db.commit(); print('Revoked')"
```



Studio Server Administration

Reset Setup (to redo wizard)

```
rm /root/animaflow_config.json  
# Restart API, then visit /setup
```

Force Sync

```
curl -X POST http://localhost:8000/api/v1/sync/force
```

View Logs

```
curl http://localhost:8000/api/v1/logs
```

Check Setup Status

```
curl http://localhost:8000/api/v1/setup/status
```

File Locations

File	Purpose
<code>/root/api.py</code>	Main API code
<code>/root/setup.html</code>	Setup wizard page
<code>/root/animaflow.db</code>	SQLite database
<code>/root/animaflow_config.json</code>	Studio configuration

10. API Reference

Public Endpoints

Endpoint	Method	Description
<code>/setup</code>	GET	Setup wizard page
<code>/dashboard</code>	GET	Studio dashboard
<code>/api/v1/setup/status</code>	GET	Check if setup is complete
<code>/api/v1/license/verify</code>	POST	Verify license key
<code>/api/v1/artist/login</code>	POST	Artist authentication

Sync Endpoints

Endpoint	Method	Description
<code>/api/v1/sync/{studio}/projects</code>	GET	List synced projects
<code>/api/v1/sync/{studio}/project/{name}</code>	GET	Get project data
<code>/api/v1/sync/force</code>	POST	Force immediate sync
<code>/api/v1/logs</code>	GET	View sync logs

Example: Verify License

```
curl -X POST https://api.animaflow.xyz/api/v1/license/verify \  
  -H "Content-Type: application/json" \  
  -d '{
```

```
"studio_id": "studio-ranfa",
"license_key": "ANIMAFLOW-RANFA-2026-PERPETUAL-BAIOCCHI"
}'
```

Response:

```
{
  "valid": true,
  "studio_id": "studio-ranfa",
  "studio_name": "RANFANIMATION",
  "status": "active"
}
```

Example: Artist Login

```
curl -X POST https://studio-ranfa.animaflow.xyz/api/v1/artist/login \
-H "Content-Type: application/json" \
-d '{
  "studio_id": "studio-ranfa",
  "email": "animator@studio.com"
}'
```

Response (success):

```
{
  "success": true,
  "artist": {
    "email": "animator@studio.com",
    "name": "John Doe",
    "department": "ANIMATION"
  },
  "projects": ["ProjectA", "ProjectB"]
}
```

Response (denied):

```
{
  "success": false,
  "error": "Email not found in any project"
}
```

Appendix: Documentation Roadmap

This manual covers the **Studio Server Setup**. The following additional manuals are planned:

TODO: Future Manuals

Manual	Audience	Content	Status
ANIMAFLOW Desktop Manual	Artists, Supervisors	<ul style="list-style-type: none"> • Installation & Login • Project Room creation • Shot & Asset management • Send for Review workflow • Publish WIP/Final • Version control 	 Pending
ANIMAFLOW Mobile Manual	Artists, Supervisors	<ul style="list-style-type: none"> • iOS/Android installation • Login with Studio ID • Viewing shots & assets • Review & approval • Chat & notifications • Offline mode 	 Pending
Pipeline Bible	Technical Directors	<ul style="list-style-type: none"> • Folder structure explained • JSON schemas • Naming conventions • Maya/Blender integration • Custom tools development 	 Pending

Supervisor Guide	Production, Leads	<ul style="list-style-type: none">• Dashboard overview• Shot tracking• Artist assignment• Bidding & scheduling• Reports & analytics	 Pending
THOR AI Manual	All users	<ul style="list-style-type: none">• AI assistant features• Chat commands• Asset analysis• Automated tasks	 Pending

Documentation Updates

All manuals will be available at docs.animaflow.xyz once completed. Check back regularly for updates.

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Version 2.5 | January 2026

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