

Nwiro Pro

Start Guide

Unreal Engine AI-Assistant

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Leartes Studios

Basic Workflow

This guide will walk you through the fundamental steps to get started with Nwiro Pro, your all-in-one AI assistant for Unreal Engine 5. It acts as an in-editor AI agent that can execute commands, write code, generate custom 3D models via extensions, build highly advanced biomes with Procedural Content Generation (PCG) framework, create 360° HDRI environments for your levels, and build real-world terrain from elevation data.

1. Open the Tool

- Launch your Unreal Engine project.
- **Navigate to:** Window → Assistant → Nwiro Pro
- The tool's interface will appear.

2. Authenticate & Setup

- Create a Nwiro Pro account or sign in using the web interface.
- New accounts receive 3 free prompts to try out the system.
- Ensure you have enough balance in your account to process new AI tasks.

3. Configure Your Chat

Before typing, you can use the chat UI dropdown menus to customize your session:

- **Extensions:** Toggle specific modules on or off for the current chat, such as the *File Editor*, *Biome Generator*, *HDRI*, or *Landscape*. If you have activated Meshy 3D or Tripo 3D in your settings, they will also be selectable here.
- **Model:** Choose the underlying AI model. You can use the "Default" recommendation for best results, or manually select top-tier models like Claude Opus 4.6 (most capable) to Llama 3.3 70B (open source).
- **Mode:** Control how the AI handles execution permissions. "Default" will prompt you for approval before running tools, "Accept Edits" auto-accepts file edit operations, "Plan Mode" outlines actions without executing them, "Don't Ask" won't prompt and denies if not allowed, and "Bypass Mode" skips all permission checks for uninterrupted workflows.

4. Write Your First Prompt

- Click "New Chat" in the sidebar. You can use the chat input box to instruct the AI on various tasks:
- **General Assistance & Tools:** Use the default chat to ask Unreal Engine questions, fix bugs, or manipulate your project using 209 native C++ tools across Blueprints, Materials, Sequencer, and more.

- **File Editing & Code:** Ensure the "File Editor" extension is active. Ask the AI to read, write, delete, or rename project files, and write code or edit any file directly within your workspace.
- **Advanced Biome Generation:** Ensure the "Biome Generator" extension is active. Describe a natural ecosystem. The advanced biome logic uses vertical layer assignment (scaling from tall canopy to ground cover), density calculations, and Auto-Collision Avoidance to map abstract ideas into complex spatial math.
- **3D Asset Generation Extensions:** Ensure the "Meshy 3D" or "Tripo 3D" extension is active. Request custom 3D assets from text or images. *(Note: Users must activate these extensions by providing their own respective API keys in Settings → Extensions.)*
- **HDRI Environment Generation:** Ensure the "HDRI" extension is active. Describe the environment you want or attach a reference image, and Nwiro generates a 360° panorama and previews it in the chat. You can also name a texture already in your Content Browser to apply it directly. Either way, click **"Apply to Scene"** to place it in your level as an HDRIBackdrop actor.
- **Landscape Generation:** Ensure the "Landscape" extension is active. Name a place, paste coordinates as *"lat, lon"*, upload a photo, or name a heightmap already in your Content Browser. Nwiro asks how to build the terrain and how large it should be, then fetches real elevation data and saves a heightmap you can place in your level.

5. Process the Request

1. Press the send button (or press Enter) to submit your prompt.
2. The chat interface will automatically update with a live preview as the AI processes your request.
3. **What the AI is doing:** For tools, it executes C++ functions according to your selected permission Mode. For biomes, it scans your local Content Browser, intelligently matches meshes based on your prompt, and calculates the spatial math for placement. For HDRIs, it generates a 360° panorama and shows it for review before anything is placed in your level. For Landscape generation, it resolves the place you named, fetches real elevation data for it, and saves a heightmap to your Content Browser before anything is placed.

6. Biome Generator

- Once the AI finishes processing, a **"Place in Scene"** button will appear. Click it to automatically spawn a customizable Spline Blueprint directly into your active viewport.
- If you want to adjust the generated environment, you do not need to start a new chat or write a new prompt from scratch.
- Simply type a modification request in the same chat box (e.g., "Make the forest much denser" or "Remove the rocks").
- Press send. The AI intelligently modifies your existing settings, updating only the specific elements you requested while preserving your overall layout.

7. 3D Asset Generation (Meshy 3D & Tripo 3D)

- Once Meshy 3D or Tripo 3D is enabled in Settings → Extensions and your API key is entered, click the Meshy or Tripo icon in the activity bar on the right edge of the screen to open the generation panel.
- Choose your input mode at the top of the panel — Text to 3D to describe what you want, or Image to 3D to generate from an image URL. Enter your prompt and click Generate. The task will be queued and a progress bar will track the generation in real time.
- Once complete, a thumbnail preview will appear. Click View 3D to inspect the model in an interactive 3D viewer. From there, you can Download the model in your preferred format, or click Import to UE5 to bring it directly into your project. If you are using Meshy, you can also click Refine for a higher-quality version, or Texture to apply a new texture using a text description.

8. HDRI Environment Generation

- Toggle on the HDRI extension in the chat input, then describe the environment you want, for example *"a stormy coastline at dusk"* or *"a bright desert canyon at noon"*. You can also attach a reference image, or name a texture already in your Content Browser to apply it directly.
- When you attach an image, Nwiro offers two choices. Generate HDRI Image builds a proper 360° panorama from it, which is the recommended route. Use Directly skips image generation and applies your image as it is. If the image is a flat photograph rather than a 2:1 panorama, Nwiro warns you, because applying it directly stretches it across the sky.
- Nwiro generates a 360° equirectangular panorama at 3840×1920 and shows it in an HDRI Preview card in the chat.
- Before applying, you can adjust a generated panorama by typing the change in the same chat, such as *"more orange"*, *"winter version"*, or *"try another"*. Nwiro refines the panorama you already have and updates the same card, so you keep the composition you liked. Textures applied from your Content Browser, and images used directly, have nothing to refine.
- When you are happy with the result, click **"Apply to Scene"**. Nwiro imports the panorama, converts it to a cubemap, and places an HDRIBackdrop actor in your level. The card tracks progress through *Importing* and *Applying*, then shows the name of the placed actor.
- Each apply adds a new HDRIBackdrop actor rather than replacing the previous one, and generated assets are given unique names rather than overwriting earlier ones. If you apply several variations, delete the ones you no longer want from the World Outliner.
- If you name a texture rather than pasting its full /Game/ path, Nwiro searches your Content Browser and asks which one you meant when several match. It always confirms before applying, so a partial name cannot apply the wrong texture.

9. Landscape Generation

- The first time you turn on the **Landscape** extension, Nwiro asks you to agree to credit the elevation data sources in any project you distribute that uses generated terrain. You need to accept this once before the extension will enable.
- Landscape generation does not work in levels using **World Partition**. Nwiro tells you and stops before doing anything, so nothing is generated and nothing is charged. Open a non-World-Partition level and try again.
- Name the place you want, for example *"the cliffs near Big Sur"* or *"the terrain around Mount Rainier"*. You can also paste coordinates as *"lat, lon"* for an exact spot, upload a photo to build terrain that matches its look, or name a heightmap already in your Content Browser to reuse it.
- Nwiro asks how to build the terrain. *Real-scale landscape* creates a full terrain from real elevation data. *Pieces + masks* places a landform onto flat ground, keeping the landform around 2 km regardless of the base size.
- Nwiro then asks how large the footprint should be: 1, 2, 4, or 8 km square. If your level already has landscapes, it offers to reuse or update one of those instead of creating a new base.
- The heightmap is saved to your Content Browser, and Nwiro offers to create and place the landscape in your level or keep it in Content for later. Choosing to keep it places nothing.
- If the area is very flat, or the elevation data for it has gaps, Nwiro tells you so before you commit and suggests pasting exact coordinates to try a nearby spot.
- Every result carries a note naming the elevation source it used, linked to the full attribution terms.
- To try a different result, ask for *"another one"*. Nwiro does not rebuild the same place: it finds a different terrain of the same kind and gives it a generic name, so you get a genuine alternative rather than the same elevation data twice. You are asked the build method and size again, and terrain is rebuilt rather than adjusted, so there is no equivalent of asking for a small tweak.

Quick Examples

Use General Editor Commands & Tools

- **Setup:** Leave extensions off and set Mode to "Default" or "Bypass Mode".
- **Input Field:** Leverage the native tools by entering prompts like "Create a master material for rusted metal," "Create an empty Actor Blueprint," or "List all meshes in my Content Browser".
- **Result:** The assistant uses its native C++ tools (which include specific modules for Blueprints, Materials, and File Operations) to automatically execute the commands and build the assets directly inside your project.

Generate a Custom 3D Asset

- **Setup:** Toggle on your Meshy 3D extension.
- **Input Field:** Enter "Generate me a vintage rocking chair".
- **Result:** The assistant queues the job via Meshy 3D, tracks it in the chat, and provides the production-ready 3D model for your project.

Generate & Iterate on a Biome

- **Setup:** Toggle on the Biome Generator extension.
- **Input Field:** Enter "Create a dense pine forest with scattered rocks and thick ground cover."
- **Result:** A completely new Spline Blueprint (BP_{ProjectName}) will be generated and placed in your level, populated with pine trees, rocks, and ground cover from your project's Content Browser.
- **Iteration Selection:** Remain in the active chat of an environment you just generated.
- **Iteration Input Field:** Enter "Make the forest denser and swap the pine trees for oak trees."
- **Iteration Result:** The AI will modify your existing settings. Clicking "**Place in Scene**" will dynamically refresh your current PCG graph in the viewport without generating a brand-new blueprint from scratch.

Generate an HDRI Environment

- **Setup:** Toggle on the HDRI extension.
- **Input Field:** Enter "A stormy coastline at dusk, heavy clouds, last light on the water".
- **Result:** A 360° panorama appears in an HDRI Preview card. Click **Apply to Scene** to set it as your level's backdrop. Nwiro places an HDRIBackdrop actor and saves the generated assets under /Game/HDRI/.
- **Iteration Input Field:** Before applying, enter "Make it warmer, closer to sunset".
- **Iteration Result:** Nwiro adjusts the existing panorama rather than generating an unrelated one, and updates the same preview card. Click **Apply to Scene** once you are happy with it.

Use a Panorama You Already Have

- **Setup:** Toggle on the HDRI extension.
- **Input Field:** Enter "Use T_Sky_Sunset as my HDRI", or paste the full /Game/ path to the texture.
- **Result:** Nwiro finds the texture in your Content Browser and shows a confirmation card. Click **Apply to Scene** and it is applied as your level's backdrop. No new image is generated, so your own texture is used exactly as it is.

Generate a Real-World Landscape

- **Setup:** Toggle on the Landscape extension and accept the data attribution prompt if it is your first time. Make sure your level does not use World Partition.
- **Input Field:** Enter "Build the terrain around Mount Rainier".
- **Result:** Nwiro asks how to build it and how large it should be. After you answer, it fetches real elevation data, saves a heightmap to /Game/NwiroLandscape/Heightmaps/, and offers to create and place the landscape in your level.
- **Iteration Input Field:** Enter "give me another one".
- **Iteration Result:** Nwiro finds a different terrain of the same kind rather than rebuilding the same place, so you get a genuine alternative. Terrain cannot be adjusted in place the way a biome or an HDRI panorama can.

Content Library & Asset Naming

Nwiro scans your project's Content Browser to find and place 3D meshes. The quality and accuracy of the generated environments depend directly on two factors: the variety of assets available in your project, and how well those assets are named.

Why Asset Variety Matters

The more diverse your asset library, the richer and more natural the generated environments will be. When Nwiro receives a prompt like "dense forest with varied ground cover," it searches your Content Browser for meshes that match the described elements. If your project contains only a few tree meshes and no ground vegetation, the system cannot create a layered, realistic ecosystem.

TIP: For the best results, include assets across multiple categories: tall trees, small trees and saplings, bushes and ferns, grass and flowers, debris and rocks. The more variety you have, the more complete the generated environments will be.

Why Naming Conventions Matter

Nwiro matches your prompt keywords to actual meshes by analyzing asset names in your Content Browser. Clear, descriptive names allow the system to make accurate selections. Vague or generic names will be difficult for the system to match correctly.

Recommended Naming Patterns

The following table shows naming conventions that work well with Nwiro:

Category	Good Naming Examples
Trees	SM_Pine_01, SM_Pine_Dead_03, SM_Oak_02
Tree Species	SM_BlackAlder_Forest_01, SM_EuropeanBeech_Field_02
Saplings / Seedlings	SM_BlackAlder_Sapling_02, SM_Hemlock_Seedling_01
Bushes	SM_ForestBush_01, SM_Bush_Summer, SM_DesertBush_02
Ground Cover	SM_GroundCover_02, SM_MattedPratia_05, SM_ScotchMoss_A
Grass	SM_ThatchingGrass00_V2, SM_Grass_03, SM_Ryegrass_A
Flowers	SM_Flower_Pink_01, SM_Crownbeard_02, SM_WhiteEverlasting_03
Ferns	SM_Fern_01, SM_FernB_03
Ivy / Vines	SM_CreeperIvy_04, SM_EnglishIvy_07
Rocks	SM_ForestRock_Snow_01, SM_Rock_05, SM_MossyRock
Fallen Logs	SM_FallenLog_02, SM_MossyLog, SM_FallenPineTree

Debris	SM_DeadBranches_03, SM_Needle_Pile_01, SM_LeafScatter_02
Water Plants	SM_CatTail_A, SM_WhiteWaterLily_B, SM_Papyrus01

Naming Best Practices

GOOD NAMING	BAD NAMING
SM_Pine_01	Mesh_001
SM_OakTree_03	Tree_Final_v2
SM_BlackAlder_Sapling_02	Small_Asset_New
SM_ThatchingGrass00_V6	Grass
SM_ForestRock_Snow_03	Rock_v3_FINAL_USE_THIS
SM_FallenFirTree	Log_Thing_02b

Key Naming Principles

4. **Include the asset type:** Start with what the object is (Pine, Oak, Rock, Grass, Fern, etc.).
5. **Specify variants:** Use numerical suffixes (_01, _02, _03) to distinguish variants of the same type.
6. **Indicate state or size:** Include descriptors like Dead, Snow, Small, Sapling, Seedling, Fallen, Mossy when applicable.
7. **Include biome context:** For biome-specific assets, include the biome name (Desert_Bush, Forest_Rock, Snow_Pine).
8. **Use consistent prefixes:** SM_ (Static Mesh) prefix follows Unreal Engine conventions and helps organize your content.

IMPORTANT: Nwiro relies entirely on asset names to match prompts with meshes. Assets named generically (e.g., "Mesh_001") cannot be matched to any prompt keyword and will not be selected. Investing time in proper naming directly improves generation quality.

Asset Variety Checklist

Before generating environments, verify your project has sufficient asset coverage:

Category	Min. Recommended	Asset Types
Large Trees	2-4 variants	Different species or sizes of tall trees
Small Trees / Saplings	2-3 variants	Younger trees, saplings, seedlings
Bushes & Ferns	3-5 variants	Shrubs, ferns, medium-height plants
Ground Vegetation	4-8 variants	Grass, flowers, ground cover, moss, low plants
Accent & Debris	2-4 variants	Fallen logs, stumps, large rocks, dead branches

Disclaimer & Limitations

Nwiro uses artificial intelligence to generate procedural content, 360° environment imagery, and terrain built from real-world elevation data. While the system is designed to produce high-quality, natural-looking environments, users should be aware of the following:

AI-Generated Output

The environments generated by Nwiro are created through AI-driven analysis and decision-making. As with all AI systems, the output may not always perfectly match user expectations. Results can vary depending on the prompt phrasing, available assets, and the complexity of the requested environment. The AI may occasionally select unexpected meshes, produce uneven density distributions, or interpret prompt keywords differently than intended.

AI-Generated HDRI Environments

HDRI panoramas are produced by an AI image model from your description or reference image. As with all AI output, the result may not match your intent exactly. Nwiro asks the model for a seamless 2:1 panorama with the horizon at the vertical centre, but a visible seam where the left and right edges meet cannot be guaranteed on every generation. Stretching at the top and bottom poles is inherent to equirectangular projection and is expected. Review a panorama in the preview and refine it before applying, and check the applied backdrop in your level before relying on it in production.

AI-Generated Terrain

Landscape generation builds terrain from open elevation datasets. The level of detail you get depends on the data available for that area, and coverage and resolution vary by region. Some areas are genuinely flat, and some elevation data contains gaps; Nwiro tells you when it detects either, and you can paste exact coordinates to try a nearby spot. When you describe a place rather than naming one exactly, or ask for another result, Nwiro may build a landscape that resembles your request rather than that exact location, and it says so when it does. Generated terrain is a starting point for your own sculpting and dressing, not a survey-accurate reproduction of a real place.

Elevation Data and Attribution

Terrain is built from open elevation data that requires credit. Before the Landscape extension can be enabled, Nwiro asks you to agree to credit these sources in any project you distribute that uses generated terrain. Every generated terrain includes a note naming the source it used, linked to the full terms. You are responsible for reproducing the required credits in your own project. The current list of sources and their required wording is maintained at <https://nwiro.ai/attribution>.

Asset Dependency

Nwiro does not include 3D assets. The system generates PCG graphs that reference meshes already present in your Unreal Engine project. The quality, variety, and naming conventions of your existing assets directly affect the output quality. Nwiro cannot generate, modify, or improve the visual quality of the underlying 3D models.

Iterative Workflow

Environment generation is inherently an iterative process. Users should expect to refine and adjust generated environments through multiple iteration prompts to achieve optimal results. Initial generations serve as a starting point that can be progressively improved.

For HDRI environments, refine the panorama while it is still in the preview. Only generated panoramas can be refined: a texture applied from your Content Browser, or an image used directly, has no generated source to adjust.

Terrain works differently. Asking for another result does not adjust the landscape you have; Nwiro builds a different one of the same kind. Refine a terrain by regenerating until you are happy with the starting point, then sculpt it with Unreal's own landscape tools.

No Guarantee of Accuracy

Leartes Studios provides Nwiro on an "as-is" basis. While we continuously improve the system and work to deliver the best possible results, we do not guarantee that generated environments will be free of errors, inaccuracies, or unexpected behaviors. Users are responsible for reviewing and validating generated content before incorporating it into production projects.

Performance Considerations

Generated PCG graphs with high mesh density may impact editor and runtime performance. Users should monitor polygon counts, draw calls, and memory usage, particularly on scenes with dense vegetation or large numbers of unique mesh variants. Optimization and LOD configuration remain the responsibility of the developer.

Each generated HDRI adds a source texture and a cubemap to your project, and every apply adds another set rather than replacing the previous one. Delete environments you are no longer using to keep project size and memory under control.

Landscape footprints of 4 km and above produce substantially larger terrain than smaller ones. Consider the footprint you actually need, and keep generated heightmaps you are no longer using out of your packaged project.

Continuous Improvement

Nwiro is under active development. The system's generation quality is continuously being improved based on user feedback and testing. We encourage users to report unexpected behavior or suggestions through our support channels to help us improve the product.

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