

Ralpha — MCP for Unreal Engine

236 Command Handlers | 2,700+ Commands | Full Undo Support

Ralpha

2026

Contents

Ralpha — MCP for Unreal Engine	2
Getting Started	2
How It Connects	3
What Can You Do With It?	3
Built-In: Real-Time Lip Sync	3
Built-In: MuJoCo Physics Simulation	4
What's Possible: Live AI Characters in a Running Game	4
Advanced: Gemini Real-Time Streaming (gRPC)	4
AI Name Correction (Intelligence Layer)	5
Safety Clamps	5
Known Gotchas	5
How It Works (Under the Hood)	6
Editor vs Runtime	6
Command Categories	7
Technical Details	8
Command Format	8
Undo / Redo	8
Support	9
Full Command Reference	9
Quick Navigation	9
Core	9
Lighting & Sky	12
Post-Processing & Rendering	13
World Building	14
Characters & Animation	17
Gameplay	21
Assets & Import	24
Sequencer & Video	26
Audio	27
Geospatial	28
Level & Streaming	28
Scripting & Blueprint	29
Networking & Collaboration	30
Platform-Specific	30
AI & Governance	32
Other	33

Ralpa — MCP for Unreal Engine

236 registered C++ command handlers | 2,700+ commands | Full undo support | Editor + Runtime

Getting Started

Three steps. No Python, no Node.js, no builds, nothing to run separately.

1. Install the Plugin

Copy `RalpaPlugin/` into your UE5 project's `Plugins/` directory. Restart the editor. The MCP server starts automatically on port 30010 — you'll see "MCP Server listening" in the Output Log.

2. Connect Your AI

A pre-built bridge binary (`ralpha-mcp`) ships inside the plugin. It translates between your AI tool's MCP protocol and the engine. You just point your tool at it:

Claude Code — add to `.claude/settings.json` in your project:

```
{
  "mcpServers": {
    "ralpha": {
      "command": "YourProject/Plugins/RalpaPlugin/Bridge/ralpha-mcp",
      "args": []
    }
  }
}
```

Claude Desktop — add to your Claude Desktop config (Settings > Developer > Edit Config):

```
{
  "mcpServers": {
    "ralpha": {
      "command": "/path/to/YourProject/Plugins/RalpaPlugin/Bridge/ralpha-mcp",
      "args": []
    }
  }
}
```

Cursor / Codex / Windsurf — same pattern. Add the bridge binary as an MCP server in your IDE's MCP settings. Every tool that supports MCP works the same way.

3. Talk to the Engine

Open your AI tool and start talking:

“Set the sun to golden hour, add volumetric fog, and capture a screenshot”

That's it. The AI sends commands to the engine through the bridge. You don't write code, you don't manage connections, you just describe what you want.

Optional: Install Expert Skills

The plugin includes 90+ expert skills covering sky, sunset, water, cameras, materials, physics, MetaHumans, animation, and more. Copy them to your commands directory:

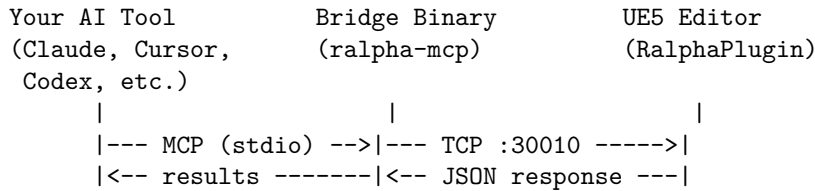
- **Claude Code:** copy `RalpaPlugin/Skills/` contents to `~/.claude/commands/`

- **Codex:** copy to your IDE’s command directory

Why skills matter: The plugin has 2,700+ commands. No AI model can hold all of that in context. Skills solve this — they’re loaded on demand. When you ask about sunsets, the AI automatically pulls in the sunset skill with the exact commands, parameter ranges, and best practices it needs. When you ask about water, it pulls in the water skill. Your AI always has expert knowledge without burning context on commands it doesn’t need right now.

You can also invoke skills manually as slash commands: `/expert-sunset`, `/expert-water`, `/expert-camera`, etc.

How It Connects



The bridge runs automatically when your AI tool starts. It connects to UE5 over localhost. No servers to manage, no ports to open, no configuration beyond the one JSON entry above.

What Can You Do With It?

From Your IDE

Claude Code, Cursor, Codex, Windsurf — any AI-enabled IDE that supports MCP can control the engine with natural language. Ask it to build scenes, adjust lighting, animate characters, or capture renders.

From Your Own Programs

Build automation pipelines, testing frameworks, or creative tools. Programs like **Autoresearch** and **Open-Claw** use Ralpha to automate Unreal Engine at scale — visual research, batch rendering, QA testing, and more.

From the Brain (Coming Soon)

Give it a reference image. It builds a matching 3D world — adjusting lighting, atmosphere, materials, camera, water, and props until the render converges.

Built-In: Real-Time Lip Sync

Unreal Engine’s MetaHuman system has real-time lip sync code, but Epic hasn’t exposed it yet — it’s likely coming in a future release. Ralpha hooks into that system today and gives you access now.

Our `LipSyncCommandHandler` runs NNE ONNX inference in-process: feed it a WAV file and it drives 82 face morph targets (lips, tongue, jaw, brow, cheeks, throat, neck) at 50fps on the MetaHuman CTRL rig. No external service, no latency — it runs inside the engine.

On top of lip sync, the `DialoguePerformanceCommandHandler` layers full character acting: gaze tracking, natural blinking, emotion curves, breathing, and conversational micro-motion.

Because everything runs in-game (not just in the editor), and because the gRPC layer supports real-time audio streaming, you can build **live NPC conversations** — a player talks, the audio streams to an LLM, the response streams back, and the character speaks and emotes in real-time. This is not a pre-baked cutscene. It’s real-time.

Built-In: MuJoCo Physics Simulation

The plugin includes a full C++ port of MuJoCo (DeepMind’s physics engine) built directly into the plugin. Five command handlers give you:

- **MJCF model loading** — load MuJoCo XML models into UE5
- **Dual physics** — run MuJoCo for accurate physical simulation alongside Chaos for visual effects
- **Actor binding** — MuJoCo bodies sync their transforms to UE5 actors in real-time
- **MJCF compilation** — generate MJCF models from UE5 actor hierarchies
- **RL training loops** — observation/action spaces for reinforcement learning

This means you can build **robot control systems** and **human locomotion** that are faithfully simulated using real physics, not prebaked animations. Walk cycles, grasping, balancing — driven by actual forces and constraints.

We haven’t tested every edge case, and this is early. But all the source code is included. If you’re building robotics simulation, character physics, or reinforcement learning in UE5, the infrastructure is here.

Combined with the lip sync system, you effectively get **two additional plugins for free** — real-time physics simulation and real-time character performance — on top of the 2,700+ MCP commands for scene control.

What’s Possible: Live AI Characters in a Running Game

The runtime capabilities of the plugin combine into something no other FAB plugin offers:

1. **gRPC** streams player audio/video to an LLM (Gemini) in real-time
2. The LLM decides what to do → emits MCP commands
3. **spawn_metahuman** — a new character appears in the running game
4. **start_lip_sync** — the character speaks, driven by LLM-generated audio, 82 face channels at 50fps
5. **DialoguePerformance** — gaze, emotion, blinking, breathing — the character acts
6. **MuJoCo** — the character moves with real physics, not prebaked animation

A player could be standing in your game, speak into the microphone, and watch a new MetaHuman appear and talk back — driven entirely by a live AI conversation. No cutscenes, no scripted dialogue trees, no prebaked animations.

Experimental: Each of these systems works individually and is shipping today. The full end-to-end chain (player speaks → LLM responds → character spawns and performs in real-time) is an area of active development and ongoing discovery. The plumbing and source code are all there. We use these systems daily in our own work. But this is frontier territory — expect to experiment, iterate, and push boundaries. That’s the point.

Advanced: Gemini Real-Time Streaming (gRPC)

Beyond the standard MCP bridge, the plugin supports a gRPC layer for real-time bidirectional streaming with Google Gemini:

- **Video frames** stream continuously from UE5 to Gemini — it “sees” the scene evolving
- **Audio** (microphone) streams to Gemini for voice-driven scene direction
- **MCP commands** stream back from Gemini in real-time
- **Voice responses** come back as audio for narration or commentary

This enables a live conversational loop: you talk, Gemini watches the viewport, and adjusts the scene in real-time. Port scheme: MCP port + 10000 (e.g., MCP 30010 → gRPC 40010).

AI Name Correction (Intelligence Layer)

AI models hallucinate command names. They'll say `set_sun` instead of `set_directional_light`, or `spawn_mesh` instead of `spawn_catalogue_item`, or add a `_parameters` suffix that doesn't exist.

The plugin handles this automatically. A built-in intelligence layer intercepts every command before execution and maps 70+ common hallucination patterns to the correct command name:

What the AI says	What the plugin runs
<code>set_sun</code>	<code>set_directional_light</code>
<code>spawn_mesh, place_actor, add_actor</code>	<code>spawn_catalogue_item</code>
<code>fog, set_fog</code>	<code>set_exponential_height_fog</code>
<code>screenshot, take_screenshot</code>	<code>capture_screenshot</code>
<code>set_directional_light_parameters</code>	<code>set_directional_light</code>
<code>move_camera, camera</code>	<code>set_camera</code>
<code>set_clouds</code>	<code>set_volumetric_cloud</code>

The response includes `_name_fixed_from` and `_name_fixed_to` fields so the AI learns the correct name for next time. You don't need to do anything — it just works.

Safety Clamps

The plugin is designed as a “dumb pipe” — it passes parameters through without opinion. But a small number of safety clamps prevent crashes:

Parameter	Clamp	Why
Water wavelength	Min 1.0	Prevents divide-by-zero
Crowd spawn count	Max 500	MetaHumans are expensive — OOM prevention
Mass entity count	Max 100,000	Memory allocation cap
Shadow quality enums	0–4	Invalid enum cast prevention
Audio volume	0–1	Engine API requirement

There are 16 registered clamps total, all crash-prevention only. No creative constraints — if you want intensity 100,000, the plugin passes it through.

Known Gotchas

Gotcha	What happens	Fix
Camera too low	Black screen or underwater	Set camera Z > 200 (UE5 uses centimeters)
Aperture too high	Black screen	Keep f-stop at 2.8, never above f/8

Gotcha	What happens	Fix
Color temperature set manually	Orange soup	Don't set temperature — use <code>atmosphere_sun: true</code> and let sun angle create the color
Fog density too high	Scene invisible	Keep density 0.0005–0.002 for outdoor scenes
Water without SkyLight capture	Flat, no reflections	Set <code>real_time_capture: true</code> on SkyLight
Two suns	Legacy BP_Sky_Sphere + SkyAtmosphere	Delete BP_Sky_Sphere, use <code>setup_scene</code>
Mesh import crash	Too many at once	Import one GLB at a time with 3s pauses

How It Works (Under the Hood)

You don't need to know any of this to use the plugin. But if you're curious:

1. The plugin starts a TCP server inside UE5 on port 30010
2. The bundled bridge binary translates between MCP (stdio) and TCP — this is what your IDE talks to
3. Commands are JSON: `{"type": "set_directional_light", "intensity": 8.0, "pitch": -15}`
4. Every command is wrapped in an undo transaction — Ctrl+Z works in the editor
5. The protocol is JSON-RPC 2.0 compatible
6. For Gemini real-time: a gRPC server on port 40010 handles streaming video/audio

Editor vs Runtime

93% of the plugin runs in packaged game builds. 221 of 236 handlers work at runtime — camera, lighting, materials, physics, MuJoCo, animation, MetaHumans, lip sync, audio, gameplay, vehicles, water, VFX, crowds, networking, undo. Your AI integration ships with the game.

Only 19 handlers are editor-only, and they're all editor workflow tools that have no meaning in a running game:

Editor-Only Handler	Why
Blueprint editing	CreateBlueprint, AddNode, ConnectPins, CompileBlueprint
Sequencer	CreateSequence, AddKeyframe, RenderMovie
Animation editing	Keyframe editing, blend space authoring
Movie Render Queue	Offline rendering

Editor-Only Handler	Why
Packaging & Build	<code>PackageProject</code> , <code>CookContent</code>
Selection & Groups	Editor selection, actor grouping
Viewport state	Editor viewport manipulation
Mesh/Thumbnail export	Asset export tools
Bookmarks & Locking	Editor workflow features

How the AI knows: The plugin has a built-in discovery system. When your AI connects, it calls `discover_capabilities` which returns only the commands that are actually registered in the current build. In a packaged game, the 19 editor-only handlers aren't compiled in — they simply don't exist, so the AI can't call them and won't try. No configuration needed.

Discovery commands: - `discover_capabilities` — what's available right now - `discover_domains` — list all command categories - `discover_domain` — list commands in a category with descriptions - `discover_command` — detailed parameter info for a specific command

Command Categories

Category	Handlers	Highlights
Camera & Lens	1	Position, rotation, DOF, focal length, camera rails, geo-coordinates, actor framing
Lighting & Sky	13	Directional, sky, point, spot, rect, atmosphere, volumetric clouds, weather
Post-Processing	2	60+ parameters — color grading, bloom, exposure, tone mapping, AO
Materials & Shaders	9	Parameter control, instance creation, Nanite, Substrate, toon, NPR
Actors & Transforms	19	Spawn, delete, move, rotate, scale, snap, visibility, tags
Physics & Destruction	8	Chaos destruction, soft body, ragdoll, cloth, constraints
Animation & IK	12	Skeletal, procedural, motion matching, retargeting, keyframes
Characters & MetaHumans	5	MetaHuman spawning, DNA editing, crowd generation, performance
Lip Sync & Performance	2	Real-time MetaHuman lip sync (82 channels, 50fps, NNE ONNX) + dialogue acting pipeline
MuJoCo Physics	5	Full C++ port — MJCF loading, dual physics, actor binding, RL training
Audio & Sound	9	Spatial audio, reverb, MetaSound, voice, audio-reactive
Gameplay & GAS	7	Combat, inventory, AI, abilities, behavior trees

Category	Handlers	Highlights
Blueprints	4	Create, edit, connect nodes, compile — all via MCP
Sequencer & Recording	2	Keyframes, movie render queue, takes
Niagara VFX	3	Particle spawning, parameter control, fluid simulation
Vehicles	5	Land, air, marine, rail, space
Water & Ocean	1	Ocean, rivers, lakes, Gerstner waves
Geospatial (Cesium)	1	Google 3D Tiles, geo-coordinates, world composition
World & PCG	2	Mass Entity crowds, procedural content generation
Networking & Build	5	Multiplayer, packaging, PAK mounting
Virtual Production	3	nDisplay, DMX stage lighting, Composure compositing
USD Pipeline	1	Import/export USD stages
Undo/Redo	1	Every MCP command is Ctrl+Z-able in the editor

Optional UE5 Plugin Detection

The plugin auto-detects 15+ optional UE5 plugins and exposes additional commands when they are enabled:

Cesium, Water, MetaHuman, DMX, nDisplay, USD, Composure, GAS, Mass Entity, PCG, LiveLink, Chaos, MuJoCo, and more.

Missing plugins degrade gracefully — those commands return a clear error message, everything else works normally.

Technical Details

- **Transport:** TCP, port 30010 (configurable)
- **Protocol:** JSON-RPC 2.0 compatible
- **Latency:** Sub-millisecond command execution
- **Modules:** `RalphaCore` (Runtime), `RalphaEditor` (Editor), `RalphaAutonomous` (Editor), `RalphaGameIntegration` (Runtime)
- **Undo:** Every command wrapped in `FScopedTransaction` — full Ctrl+Z support in editor
- **Runtime:** Works in packaged game builds (Runtime module)
- **Platforms:** Win64, Mac, Linux
- **Engine:** Unreal Engine 5.7
- **Source:** Full C++ source included

Command Format

```
{"type": "set_directional_light", "intensity": 8.0, "temperature": 3500, "pitch": -15, "yaw": 90}
```

Parameters go at the root level. Responses include success/failure and relevant data:

```
{"success": true, "message": "Directional light updated", "intensity": 8.0}
```

Undo / Redo

Every command is automatically undoable in the editor:

```
{"type": "undo"}
{"type": "undo", "count": 5}
{"type": "redo"}
```

Support

- Documentation: Included in plugin (Docs/ folder)
- Website: <https://alpha.io>
- Contact: hello@alpha.ai

ewpage

Full Command Reference

Auto-generated reference for all registered command handlers.

Send commands as: `{"type": "command_name", "param": "value"}\n`

For detailed parameter schemas, read the handler source file or invoke the relevant expert skill (e.g., `expert-water` for water commands, `expert-sky` for sky commands).

Quick Navigation

- [Core](#) (171 commands)
- [Lighting & Sky](#) (111 commands)
- [Post-Processing & Rendering](#) (66 commands)
- [World Building](#) (282 commands)
- [Characters & Animation](#) (298 commands)
- [Gameplay](#) (285 commands)
- [Assets & Import](#) (131 commands)
- [Sequencer & Video](#) (150 commands)
- [Audio](#) (39 commands)
- [Geospatial](#) (36 commands)
- [Level & Streaming](#) (114 commands)
- [Scripting & Blueprint](#) (39 commands)
- [Networking & Collaboration](#) (26 commands)
- [Platform-Specific](#) (162 commands)
- [AI & Governance](#) (79 commands)
- [Other](#) (22 commands)

Core

BookmarkCommandHandler

File: `Commands/BookmarkCommandHandler.cpp` | **Commands:** 9

`clear_bookmarks`, `delete_bookmark`, `export_bookmarks`, `get_bookmark`, `goto_bookmark`
`import_bookmarks`, `list_bookmarks`, `save_bookmark`, `update_bookmark`

CameraCommandHandler

File: `Commands/CameraCommandHandler.cpp` | **Commands:** 26

`analyze_composition`, `animate_camera`, `apply_composition`, `camera_crane`, `camera_cut`
`camera_dof`, `camera_follow`, `camera_look_at`, `camera_rail`, `camera_shake`, `capture_sequence`
`create_camera_path`, `delete_camera_path`, `delete_camera_rig`, `eject_camera`, `frame_landmark`

get_animation_status, get_composition_guides, get_framing_presets, list_camera_paths
list_camera_rigs, list_camera_states, pilot_camera, save_camera_state, set_camera_track
stop_animation

CombatSystemCommandHandler

File: Commands/CombatSystemCommandHandler.cpp | **Commands:** 18

apply_damage, configure_death, configure_grenade, configure_hitscan
configure_projectile_physics, configure_weapon_type, equip_weapon, fire_weapon
get_health, melee_attack, set_health, set_projectile_type, set_weapon_properties
setup_health_system, spawn_hit_effect, spawn_projectile, spawn_weapon_pickup
switch_weapon

DebugViewCommandHandler

File: Commands/DebugViewCommandHandler.cpp | **Commands:** 21

cycle_buffer_mode, cycle_view_mode, debug_bounds, debug_buffer, debug_collision
debug_lighting, debug_lod, debug_lumen, debug_nanite, debug_nav_mesh, debug_physics
debug_view_mode, debug_vsm, get_debug_view_state, get_show_flags, get_stat_overlays, lit
none, reset_debug_view, set_show_flags, set_stat_overlays

GroundTruthCommandHandler

File: Commands/GroundTruthCommandHandler.cpp | **Commands:** 4

get_build_and_streaming_health, get_mrqr_state, get_sequencer_state, get_sky_state

GroupCommandHandler

File: Commands/GroupCommandHandler.cpp | **Commands:** 10

add_to_group, get_actor_group, get_group_members, group_actors, list_groups, lock_group
remove_from_group, select_group, transform_group, ungroup_actors

LockingCommandHandler

File: Commands/LockingCommandHandler.cpp | **Commands:** 7

get_locked_actors, is_actor_locked, lock_actor, lock_by_tag, toggle_actor_lock
unlock_actor, unlock_all

MeasurementCommandHandler

File: Commands/MeasurementCommandHandler.cpp | **Commands:** 5

get_actor_bounds, get_scene_bounds, measure_angle, measure_area, measure_distance

PivotCommandHandler

File: Commands/PivotCommandHandler.cpp | **Commands:** 6

bake_pivot, center_pivot, get_pivot, reset_pivot, set_pivot, set_pivot_to_socket

PlacementCommandHandler

File: Commands/PlacementCommandHandler.cpp | **Commands:** 5

avoid_overlap, drop_to_floor, get_bounds, place_on, snap_to_surface

SceneInspectionCommandHandler

File: Commands/SceneInspectionCommandHandler.cpp | **Commands:** 8

enumerate_scene, get_actor_properties, get_atmosphere_settings, get_camera_settings
get_component_details, get_fog_settings, get_light_settings, get_post_process_settings

SearchCommandHandler

File: Commands/SearchCommandHandler.cpp | **Commands:** 5

get_categories, get_tags, list_searchable_types, search, search_by_type

SelectionCommandHandler

File: Commands/SelectionCommandHandler.cpp | **Commands:** 7

clear_selection, deselect_actor, get_selection, invert_selection, select_actor
select_all_by_class, select_all_by_tag

SystemCommandHandler

File: Commands/SystemCommandHandler.cpp | **Commands:** 3

get_version, list_commands, ping

TestProgressCommandHandler

File: Commands/TestProgressCommandHandler.cpp | **Commands:** 5

add_test_result, get_test_summary, hide_test_progress, show_test_progress
update_test_progress

TransformCommandHandler

File: Commands/TransformCommandHandler.cpp | **Commands:** 9

align_actors, distribute_actors, get_actor_transform, look_at_actor, move_actor
rotate_actor, scale_actor, set_actor_transform, snap_actor_to_ground

ValidationCommandHandler

File: Commands/ValidationCommandHandler.cpp | **Commands:** 10

capture_depth, capture_multi_angle, check_collision_issues, check_lighting_issues
check_performance_issues, find_missing_references, fix_common_issues
test_lighting_response, validate_actor, validate_assets

ViewportStateCommandHandler

File: Commands/ViewportStateCommandHandler.cpp | **Commands:** 3

get_exposure_state, get_renderer_state, get_viewport_state

VisibilityCommandHandler

File: Commands/VisibilityCommandHandler.cpp | **Commands:** 10

get_actor_render_state, get_hidden_actors, isolate_actor, list_layers, set_actor_visible
set_actors_visible_by_tag, set_actors_visible_by_type, set_layer_visible
toggle_actor_visibility, unisolate

Lighting & Sky

AtmosphericParticleCommandHandler

File: Commands/AtmosphericParticleCommandHandler.cpp | **Commands:** 6

delete_atmospheric_particles, dust, get_biome_presets, list_atmospheric_particles
set_atmospheric_particle_params, spawn_atmospheric_particles

CloudCommandHandler

File: Commands/CloudCommandHandler.cpp | **Commands:** 31

analyze_cloud_lighting, animate_cloud_coverage, apply_cloud_preset, blend_cloud_types
create_cloud_layer, delete_cloud_layer, delete_localized_cloud, estimate_cloud_altitude
get_cloud_state, list_cloud_layers, list_cloud_presets, list_cloud_types
paint_cloud_region, randomize_cloud_seed, reorder_cloud_layers
set_cloud_animation_speed, set_cloud_atmospheric_perspective, set_cloud_coverage
set_cloud_coverage_map, set_cloud_density_curve, set_cloud_layer_params
set_cloud_lighting, set_cloud_noise_params, set_cloud_preset, set_cloud_shadow_params
set_cloud_shape_modifiers, set_cloud_type, set_cloud_wind, set_volumetric_cloud
set_volumetric_clouds, spawn_localized_cloud

FogCommandHandler

File: Commands/FogCommandHandler.cpp | **Commands:** 26

add_fog_layer, clone_fog_card, create_fog_material, delete_fog_card
delete_fog_card_array, delete_ground_fog, delete_local_fog_volume, get_fog_state
list_fog_cards, list_fog_materials, remove_fog_layer, set_fog_animation
set_fog_card_array_params, set_fog_card_params, set_fog_card_transform
set_fog_layer_params, set_fog_material_params, set_fog_repeller_params
set_fog_wind_response, set_ground_fog_params, set_local_fog_volume_params
spawn_fog_card, spawn_fog_card_array, spawn_fog_repeller, spawn_ground_fog
spawn_local_fog_volume

HDRIBackdropCommandHandler

File: Commands/HDRIBackdropCommandHandler.cpp | **Commands:** 9

delete_hdri_backdrop, get_hdri_state, list_hdri_textures, set_hdri_intensity
set_hdri_projection, set_hdri_rotation, set_hdri_size, set_hdri_texture
spawn_hdri_backdrop

MegaLightsCommandHandler

File: Commands/MegaLightsCommandHandler.cpp | **Commands:** 5

get_megalights_info, list_megalights, schedule_megalights, set_light_priority
set_megalights_settings

ReflectionCaptureCommandHandler

File: Commands/ReflectionCaptureCommandHandler.cpp | **Commands:** 8

delete_reflection_capture, get_reflection_state, list_reflection_captures
set_capture_params, set_capture_resolution, spawn_reflection_capture

update_all_captures, update_capture

ShadowCommandHandler

File: Commands/ShadowCommandHandler.cpp | **Commands:** 12

get_shadow_state, set_cascade_shadows, set_contact_shadows, set_nanite_shadows
set_object_shadow, set_shadow_quality, set_vsm_contact_shadows, set_vsm_debug
set_vsm_distance, set_vsm_preset, set_vsm_quality, set_vsm_settings

SunsetMakerCommandHandler

File: Commands/SunsetMakerCommandHandler.cpp | **Commands:** 4

configure_sunset_maker, get_sunset_maker_state, remove_sunset_maker, spawn_sunset_maker

VolumetricCommandHandler

File: Commands/VolumetricCommandHandler.cpp | **Commands:** 10

create_local_fog_volume, enable_volumetric_fog, get_volumetric_state, import_vdb
list_volumetric_actors, set_cloud_material, set_fog_inscattering
set_volume_material_params, set_volumetric_cloud_params, spawn_heterogeneous_volume

Post-Processing & Rendering

InstancingCommandHandler

File: Commands/InstancingCommandHandler.cpp | **Commands:** 10

add_instance, auto_instance_scene, break_instances, convert_to_hism
convert_to_instances, get_instance_count, get_instance_transforms, list_instanced_actors
remove_instance, set_instance_transform

LODCommandHandler

File: Commands/LODCommandHandler.cpp | **Commands:** 8

force_lod, force_lod_by_tag, get_current_lod, get_lod_info, list_lod_actors
set_lod_bias, set_lod_screen_size, set_min_lod

LumenCommandHandler

File: Commands/LumenCommandHandler.cpp | **Commands:** 4

get_lumen_state, set_lumen_gi, set_lumen_reflections, set_lumen_settings

NaniteCommandHandler

File: Commands/NaniteCommandHandler.cpp | **Commands:** 4

enable_nanite_mesh, get_nanite_info, list_nanite_meshes, set_nanite_settings

NaniteFoliageCommandHandler

File: Commands/NaniteFoliageCommandHandler.cpp | **Commands:** 6

convert_foliage_to_nanite, enable_nanite_foliage, list_nanite_foliage, set_foliage_lod
set_nanite_foliage_settings, spawn_nanite_foliage

PathTracingCommandHandler

File: Commands/PathTracingCommandHandler.cpp | **Commands:** 5

enable_path_tracing, get_path_tracer_state, reset_accumulation, set_path_tracer_settings
set_reference_quality

ShaderCommandHandler

File: Commands/ShaderCommandHandler.cpp | **Commands:** 9

get_current_style, get_style_presets, set_color_bands, set_color_palette
set_halftone_params, set_kuwahara_params, set_outline_params, set_post_effect
set_render_style

StyleTransferCommandHandler

File: Commands/StyleTransferCommandHandler.cpp | **Commands:** 7

apply_style, apply_to_texture, clear_style, get_style_state, list_style_presets
set_style_image, set_style_strength

SubstrateCommandHandler

File: Commands/SubstrateCommandHandler.cpp | **Commands:** 7

substrate_blend, substrate_convert, substrate_create, substrate_info, substrate_preset
substrate_properties, substrate_slab

ToonMaterialCommandHandler

File: Commands/ToonMaterialCommandHandler.cpp | **Commands:** 6

apply_anime_hair_material, apply_anime_skin_material, apply_toon_material
set_actor_npr_bypass, set_actor_outline, set_actor_stencil

World Building

BiomeCommandHandler

File: Commands/BiomeCommandHandler.cpp | **Commands:** 6

enable_biome_foliage, enable_day_night_cycle, get_biome_state, set_biome_blend_distance
set_world_biome, set_world_season

BlendSpaceCommandHandler

File: Commands/BlendSpaceCommandHandler.cpp | **Commands:** 19

add_blend_layer, add_blend_sample, configure_aim_offset, create_aim_offset
create_blend_space, get_active_slots, get_blend_layers, get_blend_space_info
list_blend_spaces, modify_blend_sample, play_slot_animation, remove_blend_layer
remove_blend_sample, set_aim_offset_target, set_blend_parameters, set_layer_blend_weight
set_layer_bone_mask, set_slot_blend_weight, stop_slot_animation

BrushifyCommandHandler

File: Commands/BrushifyCommandHandler.cpp | **Commands:** 8

delete_brushify_actor, list_brushify_actors, list_brushify_biomes
set_brushify_material_params, set_brushify_scatter_density, spawn_brushify_landscape
spawn_brushify_scatter, spawn_brushify_water

BuildingCommandHandler

File: Commands/BuildingCommandHandler.cpp | **Commands:** 5

generate_building, generate_city_block, list_building_styles, spawn_structure
spawn_wall

CityCommandHandler

File: Commands/CityCommandHandler.cpp | **Commands:** 9

clear_city, enable_traffic, generate_city_block, generate_neon_signs
generate_street_grid, get_city_stats, populate_street_furniture, set_city_height_map
spawn_pedestrians

DecalCommandHandler

File: Commands/DecalCommandHandler.cpp | **Commands:** 6

delete_decals, list_decals, list_decal_types, scatter_decals, set_decal_params
spawn_decals

DynamicWorldCommandHandler

File: Commands/DynamicWorldCommandHandler.cpp | **Commands:** 23

delete_dynamic_elements, get_dynamic_element_presets, get_wind, hiker, lighthouse
list_dynamic_elements, list_ferry_routes, set_dynamic_element_params, set_wind
small_plane, sparrow, spawn_aircraft, spawn_dynamic_elements_for_biome
spawn_event_effect, spawn_ferry_route, spawn_landmark_lighting, spawn_moored_boats
spawn_pedestrians, spawn_sailboat, spawn_seaplane, spawn_traffic_system
spawn_water_traffic, spawn_wildlife

FoliageCommandHandler

File: Commands/FoliageCommandHandler.cpp | **Commands:** 19

apply_seasonal_colors, batch_replace_trees, classify_tree_species, clear_foliage
configure_wind_response, detect_trees, get_foliage_presets, get_seasonal_config
get_tree_asset_library, hide_cesium_tree, list_foliage, set_biome, set_foliage_density
set_foliage_density_by_biome, set_season, spawn_foliage, spawn_grass_layer
spawn_matched_tree, spawn_pcg_foliage

InteriorCommandHandler

File: Commands/InteriorCommandHandler.cpp | **Commands:** 14

build_interior_navmesh, call_elevator, create_door_transition, generate_floor_plan
generate_room, list_room_presets, list_vertical_nav, populate_room, set_room_style
spawn_elevator, spawn_escalator, spawn_fixture, spawn_interior_npcs, spawn_stairs

LandscapeCommandHandler

File: Commands/LandscapeCommandHandler.cpp | **Commands:** 12

delete_landscape, generate_procedural_terrain, get_landscape_info, import_heightmap
landscape_auto_paint, landscape_erosion, landscape_from_heightmap, landscape_hole
landscape_paint, landscape_sculpt, list_landscapes, set_terrain_materials

MassCityCommandHandler

File: Commands/MassCityCommandHandler.cpp | **Commands:** 11

configure_mass_signals, configure_mass_zones, destroy_mass_entities, get_mass_stats
query_mass_entities, set_mass_lod, set_simulation_state, spawn_city_block
spawn_mass_crowd, spawn_mass_entities, spawn_mass_traffic

PCGCommandHandler

File: Commands/PCGCommandHandler.cpp | **Commands:** 45

add_actor_spawner, add_attribute_operation, add_bounds_filter, add_copy_points
add_density_filter, add_difference, add_distance_to_point, add_get_actor_data
add_instanced_mesh_spawner, add_intersection, add_merge_points, add_point_filter
add_spline_sampler, add_static_mesh_spawner, add_surface_sampler, add_transform_points
add_union, add_volume_sampler, clear_pcg_exclusion_zones, clear_pcg_output
connect_pcg_nodes, create_pcg_graph, delete_pcg_graph, disconnect_pcg_nodes
duplicate_pcg_graph, execute_pcg_graph, get_pcg_config, get_pcg_connections
get_pcg_graph_info, get_pcg_nodes, get_pcg_parameter, get_pcg_state, list_pcg_graphs
list_pcg_presets, pcg_biome, pcg_buildings, pcg_props, pcg_scatter, remove_pcg_node
set_pcg_density, set_pcg_exclusion_zone, set_pcg_lod, set_pcg_parameter, set_pcg_params
spawn_pcg_volume

SpaceCommandHandler

File: Commands/SpaceCommandHandler.cpp | **Commands:** 7

create_orbital_camera, set_actor_zero_gravity, set_character_zero_gravity
set_space_environment, set_star_effects, spawn_asteroid_field, spawn_celestial_body

SplineCommandHandler

File: Commands/SplineCommandHandler.cpp | **Commands:** 9

add_spline_point, create_spline, delete_spline, list_splines, set_spline_mesh
spline_intersection, spline_landscape, spline_preset, spline_scatter

TerrainCommandHandler

File: Commands/TerrainCommandHandler.cpp | **Commands:** 9

apply_heightmap, create_landscape, create_material_instance, get_terrain_slope
paint_landscape_layer, query_elevation, query_elevation_grid, spawn_foliage
spawn_foliage_type

UnderwaterCommandHandler

File: Commands/UnderwaterCommandHandler.cpp | **Commands:** 10

disable_underwater_mode, enable_underwater_mode, get_underwater_state
remove_underwater_particles, set_depth_atmosphere, set_underwater_caustics
set_underwater_fog, set_underwater_godrays, set_water_surface_underside
spawn_underwater_particles

WaterCommandHandler

File: Commands/WaterCommandHandler.cpp | **Commands:** 51

add_river_spline_point, apply_shoreline_preset, create_water_body_custom
create_water_body_lake, create_water_body_ocean, create_water_body_river
create_water_wake, delete_river_boat, delete_water_body, enable_buoyancy, get_boat_types
get_buoyancy_state, get_shoreline_blend_state, get_shoreline_presets
get_water_body_info, get_water_info_at_location, get_water_mask_state, get_water_state
get_water_surface_height, get_waterfall_audio_state, list_river_boats, list_water_bodies
list_water_masks, set_boat_position, set_buoyancy_params, set_caustics, set_foam
set_gerstner_wave, set_global_water_mask, set_ocean_extent, set_ocean_params
set_ocean_waves, set_reflections, set_river_depth, set_river_flow, set_river_spline
set_river_width, set_shoreline_blend, set_water_color, set_water_mask, set_water_params
set_water_transparency, set_waterfall_audio, set_wave_direction, spawn_river_boat
spawn_water_body, spawn_water_ripple, spawn_water_splash, spawn_waterfall
start_boat_movement, stop_boat_movement

WeatherCommandHandler

File: Commands/WeatherCommandHandler.cpp | **Commands:** 7

get_storm_state, get_weather_state, set_storm_intensity, set_time_of_day
set_weather_preset, set_wind, trigger_lightning

WindowViewCommandHandler

File: Commands/WindowViewCommandHandler.cpp | **Commands:** 8

create_interior_window, destroy_window, get_window_info, list_windows
set_window_properties, set_window_view_lod, update_all_window_views, update_window_view

WorldBuildingCommandHandler

File: Commands/WorldBuildingCommandHandler.cpp | **Commands:** 4

place_asset, scatter_assets, search_assets, suggest_placement

Characters & Animation

AnimBlueprintCommandHandler

File: Commands/AnimBlueprintCommandHandler.cpp | **Commands:** 14

add_anim_node, add_state, add_transition, compile_anim_blueprint, connect_anim_pins
create_anim_blueprint, create_state_machine, delete_anim_node, get_anim_blueprint_info
list_anim_node_types, modify_metahuman_face_rig, open_anim_blueprint
set_anim_node_property, set_transition_rules

AnimationModeCommandHandler

File: Commands/AnimationModeCommandHandler.cpp | **Commands:** 8

add_animation_notify, blend_animations, export_animation_data, get_animation_mode
import_animation_data, set_animation_curve, set_animation_mode, set_animation_preview

BPRuntimeCommandHandler

File: Commands/BPRuntimeCommandHandler.cpp | **Commands:** 9

batch_set_variables, call_actor_function, find_bp_actors, get_actor_blueprint
get_actor_variable, list_actor_functions, list_actor_variables, set_actor_variable
trigger_custom_event

CharacterCommandHandler

File: Commands/CharacterCommandHandler.cpp | **Commands:** 5

delete_character, set_character_pose, set_facial_expression, spawn_crowd
spawn_metahuman

ClothHairCommandHandler

File: Commands/ClothHairCommandHandler.cpp | **Commands:** 19

apply_wind_to_cloth, disable_cloth_sim, disable_groom, enable_cloth_sim, enable_groom
get_cloth_params, get_hair_params, get_wind_params, import_cloth, import_groom
list_cloth_actors, list_cloth_presets, list_groom_actors, list_hair_presets
set_cloth_params, set_cloth_preset, set_hair_params, set_hair_preset, set_wind_params

ClothingGenerationCommandHandler

File: Commands/ClothingGenerationCommandHandler.cpp | **Commands:** 11

adjust_fit, apply_clothing, generate_clothing, get_body_measurements
get_clothing_status, import_marvelous_garment, import_metahuman_clothing, list_clothing
remove_clothing, set_wind, setup_cloth_simulation

ConstraintCommandHandler

File: Commands/ConstraintCommandHandler.cpp | **Commands:** 20

add_bone_constraint, add_fbik_effector, add_physics_constraint, break_constraint
configure_constraint_limits, get_chain_state, get_constraint_info, get_fbik_state
list_constraints, remove_bone_constraint, remove_fbik_effector, set_chain_pole
set_chain_target, set_constraint_motor, set_constraint_target, set_constraint_weight
set_effector_target, setup_fbik, setup_ik_chain, solve_fbik

CrowdCommandHandler

File: Commands/CrowdCommandHandler.cpp | **Commands:** 12

crowd_behavior, crowd_clear, crowd_density, crowd_flow, crowd_lod, crowd_spawn
crowd_stats, promote_crowd_member, set_crowd_demographics, set_crowd_formation
spawn_seated_crowd, trigger_crowd_reaction

DialoguePerformanceCommandHandler

File: Commands/DialoguePerformanceCommandHandler.cpp | **Commands:** 6

enable_conversational_motion, set_blink_pattern, set_breath_sync, set_emotion_curve
set_gaze_target, set_lipsync_audio

EyeFaceCommandHandler

File: Commands/EyeFaceCommandHandler.cpp | **Commands:** 15

apply_eye_preset, apply_skin_preset, get_eye_params, get_skin_params, list_eye_presets
list_skin_presets, set_eye_params, set_eye_wetness, set_iris_params, set_pupil_params
set_sclera_params, set_skin_detail, set_skin_makeup, set_skin_params, set_skin_sss

FacialAnimationCommandHandler

File: Commands/FacialAnimationCommandHandler.cpp | **Commands:** 37

blend_emotions, blend_face_expressions, blend_to_facial_animation, calibrate_live_link
capture_face_pose, configure_lipsync, connect_audio2face, connect_live_link_face
disable_lipsync, disconnect_audio2face, disconnect_live_link, enable_audio_lipsync
get_audio2face_status, get_face_pose, get_facial_animation_state, get_live_link_status
list_face_controls, pause_facial_animation, play_audio_with_lipsync
play_facial_animation, reset_face_pose, resume_facial_animation
send_audio_to_audio2face, set_emotion, set_emotion_intensity, set_eye_blink_rate
set_eye_gaze, set_eye_target, set_face_expression, set_face_pose
set_facial_animation_rate, set_micro_expression, set_pupil_dilation, set_viseme
set_viseme_blend, stop_facial_animation, trigger_eye_blink

IKCommandHandler

File: Commands/IKCommandHandler.cpp | **Commands:** 5

control_rig_blend, control_rig_pose, ik_foot_placement, ik_hand_target, ik_look_at

LipSyncCommandHandler

File: Commands/LipSyncCommandHandler.cpp | **Commands:** 5

configure_lip_sync, init_lip_sync, set_lip_sync_mood, start_lip_sync, stop_lip_sync

LiveMoCapCommandHandler

File: Commands/LiveMoCapCommandHandler.cpp | **Commands:** 8

calibrate_mocap, get_mocap_latency, get_mocap_state, set_mocap_smoothing
set_mocap_source, start_mocap_stream, stop_mocap_stream, stream_pose_frame

MetaHumanCommandHandler

File: Commands/MetaHumanCommandHandler.cpp | **Commands:** 13

get_metahuman, list_animations, list_clothing, list_expressions, list_metahumans
play_animation, remove_metahuman, scan_metahumans, set_clothing, set_expression
set_pose, spawn_metahuman, stop_animation

MetaHumanCrowdCommandHandler

File: Commands/MetaHumanCrowdCommandHandler.cpp | **Commands:** 26

create_social_group, dissolve_social_group, enable_player_interaction
get_animation_categories, get_animations_for_activity, get_crowd_info
get_interior_crowd_config, get_npc_interaction_state, get_player_interaction_state
list_accessories, list_accessory_sets, list_animation_sets, list_animations
list_demographic_profiles, list_interior_crowd_configs, list_regional_clothing
list_social_group_templates, set_crowd_accessories, set_crowd_activity
set_crowd_clothing, set_crowd_demographics, set_npc_animation
set_player_interaction_config, spawn_metahuman_crowd, trigger_npc_reaction
update_player_interaction

MetaLearningConstraintHandler

File: Commands/MetaLearningConstraintHandler.cpp | **Commands:** 6

alignment_preserve, core_lock, learning_bound, meta_constraint, modification_audit
rollback_self

MoCapCommandHandler

File: Commands/MoCapCommandHandler.cpp | **Commands:** 7

blend_mocap, get_bone_hierarchy, import_mocap, list_animations, record_performance
retarget_animation, set_ik_target

MontageCommandHandler

File: Commands/MontageCommandHandler.cpp | **Commands:** 16

add_montage_notify, add_montage_section, create_montage, get_current_section
get_montage_info, get_montage_state, jump_to_section, list_montages, pause_montage
play_montage, resume_montage, set_montage_play_rate, set_montage_position
set_next_section, set_section_link, stop_montage

MotionLibraryCommandHandler

File: Commands/MotionLibraryCommandHandler.cpp | **Commands:** 8

blend_motions, enable_motion_matching, list_motions, move_character_to, play_animation
play_paired_animation, retarget_motion, search_motions

MoverCommandHandler

File: Commands/MoverCommandHandler.cpp | **Commands:** 10

add_mover_impulse, apply_mover_input, configure_network_smoothing
create_custom_mover_mode, enable_mover, get_mover_state, list_mover_actors
set_mover_mode, set_mover_params, set_mover_velocity

PhysicsMotionCorrectionCommandHandler

File: Commands/PhysicsMotionCorrectionCommandHandler.cpp | **Commands:** 10

apply_compression, apply_foot_ik, apply_weight_shift, configure_motion_correction
detect_contact_timing, detect_ground_contacts, disable_motion_correction
enable_motion_correction, get_motion_state, infer_ground_plane

SceneDirectionCommandHandler

File: Commands/SceneDirectionCommandHandler.cpp | **Commands:** 9

character_enter, character_exit, create_action_sequence, face_character_toward
play_action_sequence, set_ambient_behavior, set_character_mark, set_scene_blocking
stop_action_sequence

SkeletalEditorCommandHandler

File: Commands/SkeletalEditorCommandHandler.cpp | **Commands:** 9

add_virtual_bone, copy_bone_transforms, create_bone_chain, get_bone_transform
get_skeleton_info, list_bones, remove_virtual_bone, set_bone_transform
set_bone_visibility

VoiceCommandHandler

File: Commands/VoiceCommandHandler.cpp | **Commands:** 10

disable_voice_stream, enable_voice_stream, get_voice_latency, get_voice_state
list_voice_presets, set_voice_effects, set_voice_formant, set_voice_output
set_voice_pitch, set_voice_preset

Gameplay

AICCommandHandler

File: Commands/AICCommandHandler.cpp | **Commands:** 23

add_blackboard_key, add_bt_decorator, add_bt_selector, add_bt_sequence, add_bt_service
add_bt_task, add_eqs_generator, add_eqs_test, connect_bt_nodes, create_behavior_tree
create_blackboard, create_env_query, get_ai_state, get_blackboard_value
list_eqs_generators, list_eqs_tests, move_to_actor, move_to_location, run_behavior_tree
run_env_query, set_blackboard_value, spawn_ai_controller, stop_behavior_tree

BehaviorTreeCommandHandler

File: Commands/BehaviorTreeCommandHandler.cpp | **Commands:** 32

add_blackboard_key, add_bt_custom_task, add_bt_decorator, add_bt_move_to_task
add_bt_parallel, add_bt_selector, add_bt_sequence, add_bt_service
add_bt_simple_parallel, add_bt_task, add_bt_wait_task, connect_bt_nodes
create_behavior_tree, create_blackboard, delete_behavior_tree, get_behavior_tree_info
get_blackboard_value, get_bt_node_info, list_behavior_trees, list_bt_decorators
list_bt_services, load_behavior_tree, remove_bt_decorator, remove_bt_node
remove_bt_service, run_behavior_tree, save_behavior_tree, set_blackboard_value
set_bt_decorator_properties, set_bt_node_properties, set_bt_service_properties
stop_behavior_tree

ChaosCommandHandler

File: Commands/ChaosCommandHandler.cpp | **Commands:** 32

apply_chaos_field, apply_damage, apply_impulse_to_collection, apply_point_damage
apply_radial_damage, apply_strain_field, apply_torque_field, auto_cluster_fracture
break_all_clusters, break_cluster, configure_debris_cluster, create_anchor_field
create_disable_field, create_geometry_collection, create_noise_field

create_sleeping_field, enable_geometry_simulation, fracture_mesh
generate_proximity_breaks, get_chaos_state, get_fragment_info, list_active_fragments
list_fields, remove_field, reset_geometry_collection, set_clustering
set_collision_filter, set_crumble_settings, set_debris_lifetime, set_fracture_pattern
set_size_culling, trigger_destruction

CollisionCommandHandler

File: Commands/CollisionCommandHandler.cpp | **Commands:** 7

generate_collision, get_collision_info, set_collision_channel, set_collision_enabled
set_collision_object_type, set_collision_preset, test_collision

EnhancedInputCommandHandler

File: Commands/EnhancedInputCommandHandler.cpp | **Commands:** 14

add_action_mapping, add_context_to_player, create_input_action, create_input_context
create_input_modifier, create_input_trigger, get_bound_keys, list_common_keys
list_input_actions, list_input_contexts, remove_action_mapping
remove_context_from_player, set_context_priority, simulate_input

GASCommandHandler

File: Commands/GASCommandHandler.cpp | **Commands:** 18

activate_ability, add_gameplay_tag, apply_gameplay_effect, cancel_ability
create_ability_blueprint, create_effect_blueprint, get_ability_system_info
get_attribute, grant_ability, has_gameplay_tag, list_common_attributes, list_common_tags
list_granted_abilities, remove_gameplay_effect, remove_gameplay_tag, revoke_ability
set_attribute, setup_ability_system

GameStateCommandHandler

File: Commands/GameStateCommandHandler.cpp | **Commands:** 11

add_checkpoint, configure_score_event, configure_waves, get_game_state, get_score
set_difficulty, set_round_timer, set_score, set_win_condition, setup_game_mode
trigger_game_over

GameplayCommandHandler

File: Commands/GameplayCommandHandler.cpp | **Commands:** 6

add_trigger, build_navigation, configure_collision, get_playability_stats
place_player_start, validate_playability

HUDCommandHandler

File: Commands/HUDCommandHandler.cpp | **Commands:** 15

add_hud_ammo, add_hud_crosshair, add_hud_damage_indicator, add_hud_healthbar
add_hud_interact_prompt, add_hud_minimap, add_hud_objective, add_hud_score
add_hud_timer, create_hud, list_hud_elements, remove_all_hud, remove_hud_element
set_hud_style, set_hud_visible

InventoryCommandHandler

File: Commands/InventoryCommandHandler.cpp | **Commands:** 10

add_item, define_item, drop_item, equip_item, get_inventory, remove_item
set_auto_pickup, set_inventory_capacity, setup_inventory, spawn_pickup

MegascansCommandHandler

File: Commands/MegascansCommandHandler.cpp | **Commands:** 8

megascans_browse, megascans_delete, megascans_import, megascans_list, megascans_material
megascans_refresh, megascans_scatter, megascans_search

NavigationCommandHandler

File: Commands/NavigationCommandHandler.cpp | **Commands:** 31

build_navmesh, check_area_accessibility, configure_crowd_manager, create_nav_agent_class
create_nav_bounds, create_nav_link, create_nav_modifier, enable_crowd_simulation
export_navmesh, find_path, find_path_async, find_random_point
find_random_point_in_radius, get_movement_status, get_nav_agent_properties
get_navmesh_info, invoke_nav_data_rebuild, list_nav_agent_classes, list_nav_area_classes
list_player_starts, move_to_actor_nav, move_to_location_nav, pause_movement
place_player_start, project_to_navigation, set_nav_agent_properties, set_nav_area_class
set_navmesh_properties, stop_movement, test_path_exists, validate_spawn_point

PhysicsCommandHandler

File: Commands/PhysicsCommandHandler.cpp | **Commands:** 10

apply_force, create_ragdoll, enable_physics, generate_debris, simulate_explosion
spawn_destructible, spawn_explosion, spawn_fire, spawn_projectile_trail
trigger_destruction

PhysicsSimCommandHandler

File: Commands/PhysicsSimCommandHandler.cpp | **Commands:** 7

enable_actor_physics, get_simulation_status, record_simulation, reset_simulation
settle_physics, simulate_physics, stop_simulation

PossessionCommandHandler

File: Commands/PossessionCommandHandler.cpp | **Commands:** 8

get_posessed_actor, get_possession_state, inject_input, list_possessable
possess_character, set_blend_weight, set_control_mode, unpossess_character

SaveGameCommandHandler

File: Commands/SaveGameCommandHandler.cpp | **Commands:** 15

create_save_game, delete_save_slot, does_save_exist, export_save_json, get_save_metadata
get_save_value, import_save_json, list_save_slots, load_actor_transform, load_from_slot
load_level_state, save_actor_transform, save_level_state, save_to_slot, set_save_value

SmartObjectCommandHandler

File: Commands/SmartObjectCommandHandler.cpp | **Commands:** 21

add_smart_object_slot, annotate_smart_object, claim_smart_object_slot
configure_smart_object_slot, create_smart_object_definition
delete_smart_object_definition, enable_smart_object, find_smart_objects
get_slot_claim_status, get_smart_object_annotations, get_smart_object_behavior
list_smart_object_definitions, list_smart_object_slots, modify_smart_object_definition
query_smart_object_slots, release_smart_object_slot, remove_smart_object_slot
set_smart_object_behavior, set_smart_object_priority, spawn_smart_object
spawn_smart_object_collection

VehicleCommandHandler

File: Commands/VehicleCommandHandler.cpp | **Commands:** 17

create_spline_path, drive_boat_on_path, drive_vehicle_on_path, enter_vehicle
exit_vehicle, fly_vehicle_on_path, list_prop_types, list_vehicle_types
set_path_speed_curve, set_vehicle_physics, set_vehicle_state, spawn_prop
spawn_traffic_vehicle, spawn_vehicle, stop_vehicle, toggle_vehicle_feature
trigger_vehicle_boost

Assets & Import

AssetImportCommandHandler

File: Commands/AssetImportCommandHandler.cpp | **Commands:** 7

batch_import, get_import_options, import_audio, import_fbx, import_from_url
import_texture, list_imported_assets

CatalogueCommandHandler

File: Commands/CatalogueCommandHandler.cpp | **Commands:** 10

annotate_asset, auto_register_imports, get_asset, list_categories, list_imported_assets
register_asset, reload_catalogue, search_catalogue, spawn_catalogue_item, update_asset

DataTableCommandHandler

File: Commands/DataTableCommandHandler.cpp | **Commands:** 17

add_data_row, create_data_asset, create_data_table, export_csv, export_json, find_rows
get_all_rows, get_data_asset, get_data_row, get_row_struct, import_csv, import_json
list_data_assets, list_data_tables, remove_data_row, set_data_asset_property
update_data_row

MaterialBlueprintCommandHandler

File: Commands/MaterialBlueprintCommandHandler.cpp | **Commands:** 9

add_material_node, compile_material, connect_material_pins, create_material
delete_material_node, get_material_info, list_material_node_types, set_material_domain
set_node_parameter

MaterialCommandHandler

File: Commands/MaterialCommandHandler.cpp | **Commands:** 7

create_material_instance, get_ground_material_presets, get_material_info
set_ground_material, set_landscape_layer_blend, set_material_params
set_material_texture

MeshExportCommandHandler

File: Commands/MeshExportCommandHandler.cpp | **Commands:** 5

export_actor_fbx, export_actor_gltf, export_scene_fbx, export_scene_gltf
list_export_formats

MeshImportCommandHandler

File: Commands/MeshImportCommandHandler.cpp | **Commands:** 5

delete_imported_mesh, import_from_url, import_mesh, list_imported_meshes, split_mesh

PakManagerCommandHandler

File: Commands/PakManagerCommandHandler.cpp | **Commands:** 8

analyze_pak_size, compress_pak, create_pak, extract_pak, list_pak_contents, mount_pak
unmount_pak, verify_pak

ProceduralMeshCommandHandler

File: Commands/ProceduralMeshCommandHandler.cpp | **Commands:** 17

create_procedural_mesh, delete_procedural_mesh, generate_box, generate_cone
generate_cylinder, generate_from_points, generate_grid, generate_sphere, generate_torus
list_procedural_meshes, mesh_boolean, mesh_from_heightmap, mesh_from_svg, mirror_mesh
modify_mesh, set_mesh_collision, set_mesh_material

QuixelMixerCommandHandler

File: Commands/QuixelMixerCommandHandler.cpp | **Commands:** 10

mixer_adjust, mixer_blend, mixer_create, mixer_export, mixer_get_info
mixer_list_presets, mixer_mask, mixer_preset, mixer_tiling, mixer_weathering

RecipeCommandHandler

File: Commands/RecipeCommandHandler.cpp | **Commands:** 6

clear_recipe, get_recipe, list_recipes, reload_recipes, spawn_recipe, validate_recipe

TemplateCommandHandler

File: Commands/TemplateCommandHandler.cpp | **Commands:** 6

apply_lighting_preset, apply_post_preset, apply_scene_preset, list_scene_presets
list_templates, load_template

USDCommandHandler

File: Commands/USDCommandHandler.cpp | **Commands:** 24

usd_batch_import, usd_export, usd_export_selected, usd_import, usd_layer_create
usd_layer_list, usd_layer_set_edit_target, usd_live_sync, usd_payload_add
usd_payload_remove, usd_pipeline_configure, usd_reference_add, usd_reference_list
usd_reference_remove, usd_stage_close, usd_stage_create, usd_stage_info, usd_stage_list
usd_stage_open, usd_stage_save, usd_variant_add, usd_variant_create, usd_variant_list
usd_variant_select

Sequencer & Video

AudioIntegrationCommandHandler

File: Commands/AudioIntegrationCommandHandler.cpp | **Commands:** 6

analyze_audio_beats, import_audio_track, render_with_audio, set_ambient_audio
set_audio_reactive_lights, trigger_sound_effect

ComposureCommandHandler

File: Commands/ComposureCommandHandler.cpp | **Commands:** 8

capture_composite, create_composite_layer, import_video_plate, set_chroma_key
set_composite_blend, set_depth_composite, spawn_reflection_catcher, spawn_shadow_catcher

MovieRenderQueueCommandHandler

File: Commands/MovieRenderQueueCommandHandler.cpp | **Commands:** 37

add_batch_job, add_burn_in, add_render_pass, add_video_output, apply_render_preset
cancel_render, clear_queue, clear_render_passes, configure_burn_in, configure_render_job
create_batch_render, create_render_job, create_render_preset, delete_render_preset
enable_path_tracing, get_render_config, get_render_progress, list_available_passes
list_queue_jobs, list_render_presets, queue_render_job, remove_batch_job, remove_burn_in
remove_queue_job, remove_render_pass, set_antialiasing, set_console_variables
set_denoiser, set_filename_format, set_high_quality_settings, set_output_directory
set_output_format, set_warmup_frames, start_batch_render, start_render
start_render_queue, validate_render_job

ReplayCommandHandler

File: Commands/ReplayCommandHandler.cpp | **Commands:** 18

add_replay_event, delete_replay, export_replay_data, get_replay_events, get_replay_info
get_replay_time, goto_replay_event, is_recording, list_replays, pause_replay
play_replay, rename_replay, resume_replay, seek_replay, set_replay_speed
start_recording, stop_recording, stop_replay

SequencerCommandHandler

File: Commands/SequencerCommandHandler.cpp | **Commands:** 13

add_actor_binding, add_camera_cut, add_float_key, add_transform_key, create_sequence
delete_sequence, get_render_status, get_sequence_info, list_sequences, play_sequence
render_sequence, seek_sequence, stop_sequence

SimulationCommandHandler

File: Commands/SimulationCommandHandler.cpp | **Commands:** 7

chaos_cache_playback, chaos_cache_record, sim_fixed_timestep, sim_replay, sim_restore
sim_snapshot, time_dilation_set

TakeRecorderCommandHandler

File: Commands/TakeRecorderCommandHandler.cpp | **Commands:** 33

add_live_link_source, add_take_source, clear_recording_sources, configure_actor_source
connect_live_link_source, create_sequence_from_take, create_take_recorder, delete_take
disconnect_live_link_source, duplicate_take, export_take, get_live_link_status
get_take_info, get_take_metadata, get_take_recorder_status, get_timecode
list_live_link_subjects, list_recording_sources, list_takes, mark_take_circle
mark_take_good, pause_take_recording, play_take, remove_take_source, rename_take
resume_take_recording, set_take_metadata, set_take_settings, set_timecode_source
start_take_recording, stop_take_playback, stop_take_recording, sync_timecode

TextOverlayCommandHandler

File: Commands/TextOverlayCommandHandler.cpp | **Commands:** 9

add_lower_third, add_subtitle, add_text_overlay, add_title_card, add_watermark
list_overlays, remove_all_overlays, remove_overlay, set_overlay_animation

VideoSequenceCommandHandler

File: Commands/VideoSequenceCommandHandler.cpp | **Commands:** 8

create_multi_shot_sequence, get_video_render_status, render_sequence_to_video
render_vertical_video, set_aspect_ratioBars, set_render_framerate, set_shot_transition
set_time_dilation

VideoTestCommandHandler

File: Commands/VideoTestCommandHandler.cpp | **Commands:** 11

compare_to_reference, configure_video_test, get_video_test_status
list_video_test_presets, load_camera_path, run_australia_test, run_gymnast_test
run_reconstruction_test, run_spaghetti_test, start_video_test, stop_video_test

Audio

AudioAnalysisCommandHandler

File: Commands/AudioAnalysisCommandHandler.cpp | **Commands:** 6

audio_classify, audio_scene_analyze, audio_semantic_extract, audio_to_environment
occlusion_infer, reverb_auto_place

AudioCommandHandler

File: Commands/AudioCommandHandler.cpp | **Commands:** 11

get_wind_audio_state, list_audio_presets, play_sound, set_ambient, set_audio_attenuation
set_audio_volume, set_music, set_wind_audio, spawn_ambient_audio, spawn_audio_source
stop_all_audio

AudioPreviewCommandHandler

File: Commands/AudioPreviewCommandHandler.cpp | **Commands:** 7

get_sound_info, list_audio_assets, play_sound_at_actor, preview_audio_component
preview_play_sound, preview_stop_sound, set_audio_volume

MetasoundCommandHandler

File: Commands/MetasoundCommandHandler.cpp | **Commands:** 15

add_metasound_node, connect_metasound_nodes, create_metasound, create_metasound_patch
get_metasound_parameters, list_metasound_node_types, list_metasound_sources
play_metasound, set_metasound_bool, set_metasound_float, set_metasound_int
set_metasound_output, set_metasound_trigger, spawn_metasound_actor, stop_metasound

Geospatial

CesiumCommandHandler

File: Commands/CesiumCommandHandler.cpp | **Commands:** 27

build_navmesh, create_navmesh_bounds, delete_cesium_tileset, engine_to_geo
generate_collision_proxy, geo_to_engine, get_cesium_collision_status, get_cesium_status
get_cesium_tile_state, get_cesium_token, get_loading_progress, get_optimization_state
get_terrain_at_camera, list_cesium_tilesets, sample_cesium_terrain, set_camera_geo
set_cesium_collision, set_cesium_georeference, set_cesium_token, set_lod_distances
set_texture_quality, set_tile_streaming_budget, spawn_cesium_tileset, spawn_cesium_world
spawn_planetary_world, sync_cesium_sun, wait_for_cesium_tiles

LocationCommandHandler

File: Commands/LocationCommandHandler.cpp | **Commands:** 9

get_active_location, get_location_info, get_locations_by_domain, list_locations
load_location, open_location_level, set_active_location, teleport_to_location
unload_location

Level & Streaming

DataLayerCommandHandler

File: Commands/DataLayerCommandHandler.cpp | **Commands:** 11

activate_multiple_layers, add_actor_to_layer, deactivate_multiple_layers
get_data_layer_info, get_layer_hierarchy, get_layer_statistics, list_actors_in_layer
move_actor_to_layer, remove_actor_from_layer, set_data_layer_color
set_layer_initial_state

LevelCommandHandler

File: Commands/LevelCommandHandler.cpp | **Commands:** 4

get_current_level, list_levels, load_level, save_level

LevelSnapshotsCommandHandler

File: Commands/LevelSnapshotsCommandHandler.cpp | **Commands:** 26

apply_level_snapshot, capture_level_snapshot, cleanup_old_snapshots, compare_snapshots
create_snapshot_branch, delete_snapshot, disable_auto_snapshot, enable_auto_snapshot
export_snapshot, filter_snapshot, get_actor_history, get_snapshot_actors
get_snapshot_changes, get_snapshot_info, get_snapshot_metadata, get_snapshot_size
import_snapshot, list_snapshots, merge_snapshots, preview_snapshot_diff, rename_snapshot
restore_actor_properties, restore_actor_transform, revert_to_snapshot
set_snapshot_description, tag_snapshot

LevelStreamingCommandHandler

File: Commands/LevelStreamingCommandHandler.cpp | **Commands:** 21

create_level_instance, create_streaming_volume, debug_show_cell_bounds
debug_show_hlod_transitions, debug_show_loaded_regions, debug_show_streaming_state
debug_streaming_stats, delete_streaming_volume, destroy_level_instance
get_level_streaming_state, get_streaming_level_status, list_level_instances
list_streaming_levels, list_streaming_volumes, load_streaming_level
modify_streaming_volume, move_level_instance, set_level_visible
set_streaming_level_priority, set_volume_levels, unload_streaming_level

StreamingCommandHandler

File: Commands/StreamingCommandHandler.cpp | **Commands:** 30

streaming_add_image_overlay, streaming_add_source, streaming_add_text_overlay
streaming_connect_obs, streaming_connect_twitch, streaming_create_scene
streaming_disconnect_obs, streaming_get_chat_messages, streaming_get_obs_status
streaming_list_audio_sources, streaming_list_scenes, streaming_list_sources
streaming_mute_audio, streaming_pause_recording, streaming_remove_source
streaming_save_replay, streaming_send_chat_message, streaming_set_audio_monitor
streaming_set_audio_volume, streaming_set_scene, streaming_set_source_transform
streaming_set_source_visibility, streaming_set_stream_title, streaming_start_recording
streaming_start_replay_buffer, streaming_start_stream, streaming_stop_recording
streaming_stop_replay_buffer, streaming_stop_stream, streaming_update_text_overlay

WorldPartitionCommandHandler

File: Commands/WorldPartitionCommandHandler.cpp | **Commands:** 22

activate_variant, add_streaming_source, disable_data_layer, enable_data_layer
get_hlod_status, get_loaded_cells, get_partition_info, get_streaming_source_info
hlod_control, hlod_generate, list_data_layers, list_streaming_cells, list_variants
load_cell, load_cell_by_location, remove_streaming_source, set_cell_priority
set_partition_grid_size, set_streaming_distance, unload_cell, world_layer_create
world_variant_branch

Scripting & Blueprint

BlueprintCommandHandler

File: Commands/BlueprintCommandHandler.cpp | **Commands:** 15

add_blueprint_node, add_comment, add_event_dispatcher, add_function, add_interface
add_variable, compile_blueprint, connect_blueprint_pins, create_blueprint
delete_blueprint_node, get_blueprint_info, list_blueprint_node_types, open_blueprint
set_node_property, set_variable_default

BuildAutomationCommandHandler

File: Commands/BuildAutomationCommandHandler.cpp | **Commands:** 8

cancel_build, create_automation_script, get_build_history, get_build_status
list_automation_scripts, run_automation, schedule_build, validate_build

CompilerCommandHandler

File: Commands/CompilerCommandHandler.cpp | **Commands:** 8

ir_generate, ir_get, ir_lower, pass_analyze, pass_define, pass_list, pass_run
pass_schedule

PackagingCommandHandler

File: Commands/PackagingCommandHandler.cpp | **Commands:** 8

configure_platform, cook_content, create_dlc, get_cooking_status, get_platform_config
list_platforms, package_project, validate_content

Networking & Collaboration

MultiUserCommandHandler

File: Commands/MultiUserCommandHandler.cpp | **Commands:** 12

actor_lock, actor_unlock, authority_set, conflict_resolve, cursor_broadcast
cursor_get_all, list_locks, multiuser_join, multiuser_leave
multiuser_list_collaborators, multiuser_session_create, session_diff

NetworkingCommandHandler

File: Commands/NetworkingCommandHandler.cpp | **Commands:** 14

call_client_rpc, call_multicast_rpc, call_server_rpc, create_session, get_net_stats
get_session_info, join_session, leave_session, list_players, list_sessions
replicate_actor, set_net_owner, sync_transform, unreplicate_actor

Platform-Specific

DMXCommandHandler

File: Commands/DMXCommandHandler.cpp | **Commands:** 24

dmx_add_artnet_port, dmx_add_sacn_port, dmx_create_group, dmx_delete_fixture
dmx_get_fixture_type, dmx_import_gdtf, dmx_import_mvr, dmx_list_fixture_library
dmx_list_fixtures, dmx_list_ports, dmx_patch_fixture, dmx_recall_preset, dmx_remove_port
dmx_run_effect, dmx_save_preset, dmx_set_fixture_beam, dmx_set_fixture_color
dmx_set_fixture_gobo, dmx_set_fixture_intensity, dmx_set_fixture_position, dmx_set_group
dmx_set_port_enabled, dmx_spawn_fixture, dmx_unpatch_fixture

MediaFrameworkCommandHandler

File: Commands/MediaFrameworkCommandHandler.cpp | **Commands:** 46

add_to_playlist, apply_media_to_actor, bind_media_texture, capture_media_frame
close_media_player, create_file_media_source, create_img_media_source
create_media_material, create_media_player, create_media_playlist, create_media_texture
create_ndi_output, create_ndi_source, create_platform_media_source
create_stream_media_source, delete_media_source, enable_media_captions
get_media_audio_tracks, get_media_captions, get_media_player_state
get_media_source_info, get_media_texture_info, get_media_video_info
get_media_video_tracks, get_playlist_info, list_media_players, list_media_sources
list_ndi_sources, mute_media_audio, next_in_playlist, open_media_source, pause_media
play_media, play_playlist, previous_in_playlist, remove_from_playlist, seek_media
set_media_audio_track, set_media_audio_volume, set_media_caption_track
set_media_looping, set_media_rate, set_media_video_track, set_playlist_index
shuffle_playlist, stop_media

VRCommandHandler

File: Commands/VRCommandHandler.cpp | **Commands:** 27

vr_destroy_widget, vr_get_controller_state, vr_get_eye_tracking
vr_get_foveated_rendering, vr_get_grabbed_actors, vr_get_guardian_bounds
vr_get_hmd_state, vr_get_passthrough_state, vr_grab_actor, vr_play_haptic
vr_release_actor, vr_reset_hmd_orientation, vr_set_controller_tracking
vr_set_eye_tracking, vr_set_foveated_rendering, vr_set_grabbable
vr_set_guardian_visibility, vr_set_hmd_settings, vr_set_hmd_tracking, vr_set_locomotion
vr_set_passthrough, vr_set_pawn_location, vr_set_widget_transform, vr_spawn_pawn
vr_spawn_widget, vr_stop_haptic, vr_teleport

WebBrowserCommandHandler

File: Commands/WebBrowserCommandHandler.cpp | **Commands:** 37

capture_web_screenshot, clear_browser_cache, create_web_browser, create_web_texture
destroy_web_browser, destroy_web_panel, destroy_web_texture, execute_javascript
execute_javascript_with_result, focus_browser, get_current_url, get_navigation_history
get_page_title, get_web_browser_info, go_back, go_forward, list_web_browsers
list_web_panels, load_html_string, manage_cookies, navigate_to_url, reload_page
send_browser_key, send_browser_mouse_click, send_browser_mouse_move
send_browser_mouse_wheel, send_browser_text, set_browser_audio_muted, set_browser_size
set_browser_visibility, set_browser_zoom, set_texture_resolution, set_web_panel_size
set_web_panel_transform, spawn_web_panel, stop_loading, update_web_texture

nDisplayCommandHandler

File: Commands/nDisplayCommandHandler.cpp | **Commands:** 28

ndisplay_add_cluster_node, ndisplay_apply_color_calibration, ndisplay_calibrate_tracking
ndisplay_configure_cluster_sync, ndisplay_configure_icvfx_camera
ndisplay_configure_light_card, ndisplay_configure_screen, ndisplay_configure_viewport
ndisplay_create_cluster_config, ndisplay_create_color_calibration
ndisplay_create_light_card, ndisplay_create_screen, ndisplay_create_viewport
ndisplay_delete_light_card, ndisplay_delete_viewport, ndisplay_export_mvr
ndisplay_get_cluster_sync_status, ndisplay_get_icvfx_status, ndisplay_import_mvr
ndisplay_list_cluster_nodes, ndisplay_list_light_cards, ndisplay_list_screens

ndisplay_list_viewports, ndisplay_remove_cluster_node, ndisplay_set_camera_tracking
ndisplay_set_icvfx_chromakey, ndisplay_set_primary_node, ndisplay_setup_icvfx

AI & Governance

CenOrchestratorCommandHandler

File: Commands/CenOrchestratorCommandHandler.cpp | **Commands:** 10

apply_cen_preset, calibrate_cen, get_cen_metrics, get_cen_status, list_cen_sessions
pause_cen_session, resume_cen_session, set_cen_config, start_cen_session
stop_cen_session

EconomicOptimizationCommandHandler

File: Commands/EconomicOptimizationCommandHandler.cpp | **Commands:** 9

budget_optimize, cloud_forecast, cost_model, cost_predict, get_economic_statistics
marginal_curve, record_execution, roi_analyze, set_budget

EmergenceMonitoringCommandHandler

File: Commands/EmergenceMonitoringCommandHandler.cpp | **Commands:** 11

anomaly_detect, behavior_baseline, emergence_classify, get_emergence_state, phase_detect
record_entity_sample, regime_alert, run_crowd_sim_test, start_emergence_monitoring
stop_emergence_monitoring, trajectory_analyze

EthicalNarrativeCommandHandler

File: Commands/EthicalNarrativeCommandHandler.cpp | **Commands:** 6

bias_detect, cultural_validate, ethical_flag, implication_analyze, intent_align
narrative_check

FormalVerificationCommandHandler

File: Commands/FormalVerificationCommandHandler.cpp | **Commands:** 13

export_smtlib, invariant_check, invariant_define, invariant_list, invariant_prove
invariant_remove, invariant_set_enabled, proof_attach, proof_verify, regression_prove
safety_prove, safety_region_define, verify_edit

GovernanceCommandHandler

File: Commands/GovernanceCommandHandler.cpp | **Commands:** 6

accountability_query, audit_trail, authority_chain, blame_assign, decision_log
postmortem_generate

InterviewSetCommandHandler

File: Commands/InterviewSetCommandHandler.cpp | **Commands:** 6

create_interview_set, get_interview_set_info, get_interview_set_presets
modify_interview_set, remove_interview_set, set_interview_cameras

NarrationCommandHandler

File: Commands/NarrationCommandHandler.cpp | **Commands:** 10

action_explain, change_narrate, create_plan, create_snapshot, get_narration_state
history_summarize, plan_edit, record_action, scene_describe, set_narration_style

RuntimeAdaptationCommandHandler

File: Commands/RuntimeAdaptationCommandHandler.cpp | **Commands:** 8

anomaly_correct, clear_adaptation_data, constraint_hot_reload, drift_detect
get_adaptation_status, online_learn, player_learn, runtime_adapt

Other

NiagaraCommandHandler

File: Commands/NiagaraCommandHandler.cpp | **Commands:** 5

delete_niagara, get_niagara_presets, list_niagara, set_niagara_params, spawn_niagara

VirtualProductionCommandHandler

File: Commands/VirtualProductionCommandHandler.cpp | **Commands:** 17

add_dmx_fixture, calibrate_ndisplay, configure_ndisplay_viewport
create_dmx_fixture_type, get_dmx_universe, list_dmx_fixtures, list_ndisplay_nodes
list_ndisplay_viewports, map_dmx_to_light, send_dmx_frame, set_dmx_channel
set_dmx_fixture_function, set_inner_frustum, set_ndisplay_camera, set_outer_frustum
setup_dmx_library, setup_ndisplay
