vortex studio

Vortex Studio Editor

Simulation Creation and Integration Desktop Application

overview /

The Editor is part of Vortex Studio, CM Lab's suite oreal-time simulation and visualisation platform for creating real-time virtual prototypes and simulation-based training applications. The Vortex Studio Editor includes all the tools needed to create, validate and deploy virtual interactive ground and maritime equipment in a single desktop application. It is designed to enable mechanical engineers and training simulation providers to rapidly create advanced simulations and visualisations.

benefits /

The Vortex Studio seamlessly takes you through the entire simulation creation process, from 3D asset optimisation to dynamics model building, scene configuration and visualisation preparation. It simplifies dynamics modelling while providing access to in-depth mechanical properties of moving parts and assemblies. It also provides the tools to efficiently integrate external hardware and software applications and build a complete system simulation.

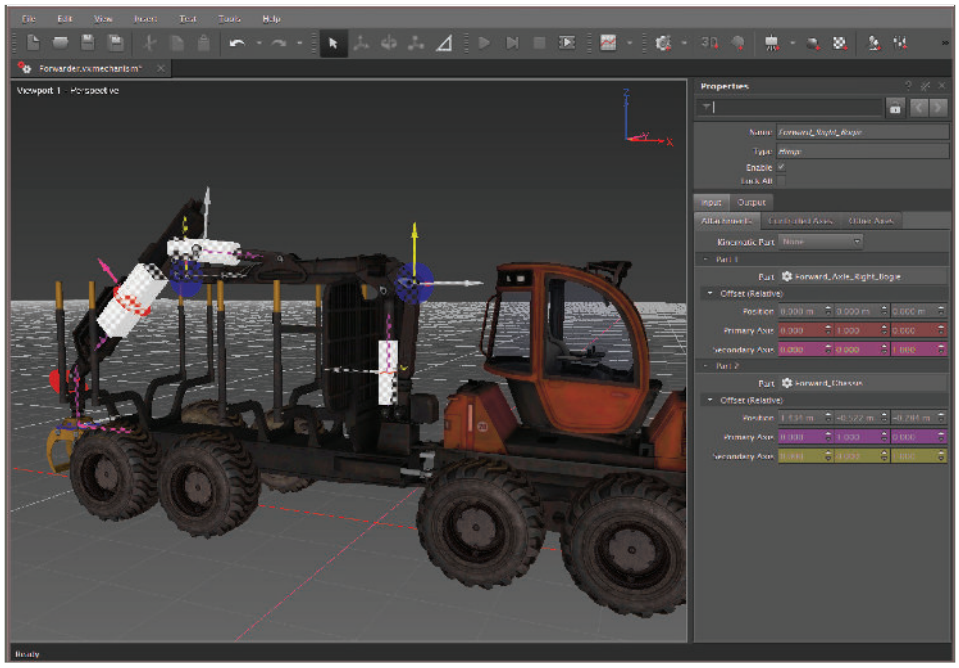
KEY FEATURES /

1. CAD, 3D model and terrain asset import
2. Mechanical dynamics modelling
3. Scene and mechanical system model creation
4. Simulation model play and validation
5. Embedded Python scripting for control
6. Built-in optimisation and debugging tools

Create interactive simulations faster.
The Editor lets you build and validate accurate virtual mechanisms and scenes without writing code, accelerating the simulation process and reducing the training required to get started.

Leverage a rich toolset. The Editor's off-the-shelf tools and desktop-based simulation environment let you focus on your mission, whether it is designing innovative machines or creating immersive training simulators.

Gain access to the latest features.
The Vortex Studio Editor is frequently updated with new capabilities, ensuring you are always on the cutting edge of real-time simulation.

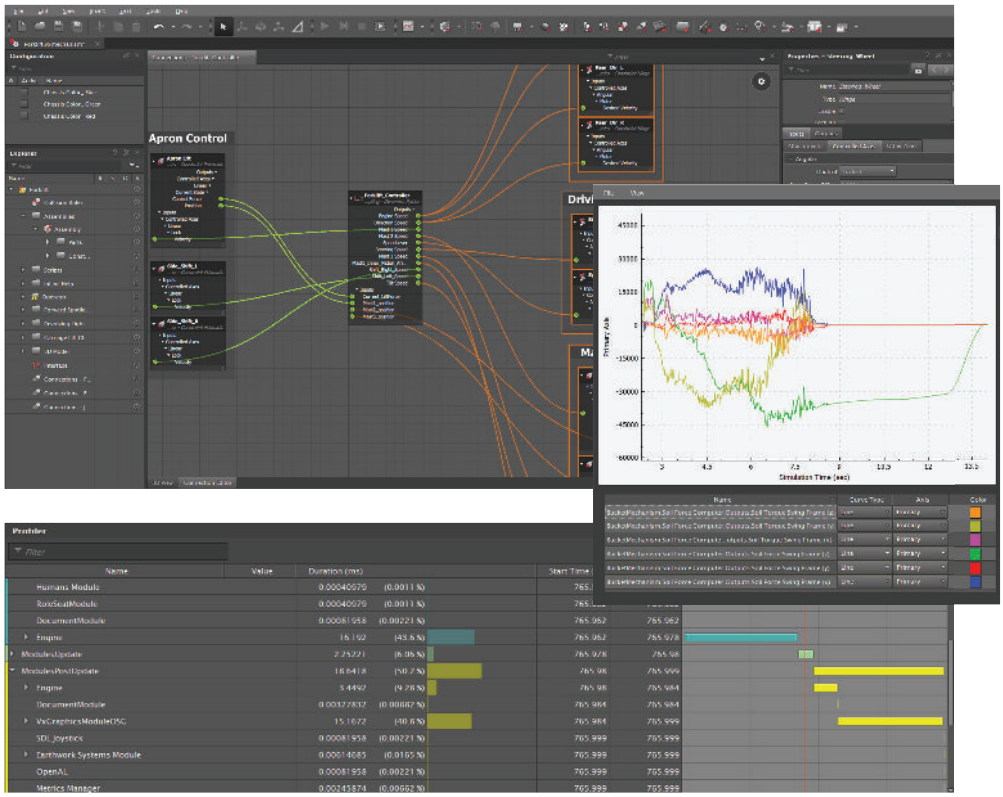


Key Features

Build Interactive Systems

The Vortex Studio Editor makes it easy to model and visualise complex mechanical systems, from military vehicles and construction machinery to surface and underwater equipment.

- Import assets from leading CAD and 3D modeling software
- Define mechanical properties of parts and assemblies
- Select from a wide range of standard and custom kinematic constraints
- Extend capabilities with cable, earthworks, marine and vehicle simulation and visualisation modules
- Customise simulations with embedded Python scripting and plug-in extensions
- Integrate third-party engineering modeling tools such as MathWorks Simulink™ and Siemens Amesim™



Create Realistic Environments

Whether your equipment operates in a subsea oilfield, a farm field or on the battlefield, the Vortex Studio Editor makes it easy to accurately recreate operating conditions in virtually any environment.

- Import 3D terrain models
- Position interactive equipment and objects in scenes
- Reproduce realistic sky conditions with built-in time-of-day and weather effects
- Enhance scenes with over 35 bundled vegetation assets
- Enable ocean surface visualisation with advanced wave models and subsea effects
- Populate scenes with animated human characters

Build an Immersive Experience

The Editor lets you prepare your simulation for visualisation, motion and sound, whether it is in a desktop environment or in a custom multi-channel simulator.

- Control the appearance of your models with graphic materials combining up to 16 texture layers and masks
- Create and assign viewports and display channels to user roles to create multi-channel and multi-role simulations
- Connect hardware and software I/O, such as joysticks and touchscreen interfaces, to control logic using a drag-and-drop interface
- Prepare your simulation for distribution over your network, and configure multi-channel display environments

Validate Model Performance

Verify simulation performance and accuracy directly within the Vortex Studio Editor. Rapidly troubleshoot and correct issues in the same application.

- Track individual module performance, model and extension CPU and GPU usage with the profiler panel
- Debug and optimise simulation with built-in inspection tools in order to prepare for real-time
- Measure and chart dynamics and model parameters throughout the simulation
- Update mechanisms and scenes without changing applications
- Utilise Python scripting to create automated test sequences

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