

# RflySim Version Division Description

## 1. Version differentiation overview

Version Num	Version	Version Description	Pricing Range
RV=0	Free: RflySimToolchain	<p>CopterSim:</p> <ol style="list-style-type: none"><li>1. Online buttons are not supported, and messages cannot be sent to the LAN. Only single-computer simulation is supported. Distributed multi-computer networking to form large-scale cluster simulation is not supported.</li><li>2. A single computer supports up to 8 aircraft (hardware-in-the-loop simulation of 8 aircraft).</li><li>3. Hardware-in-the-loop simulation of vision board cards for 1 aircraft is supported. Note: When the CopterSim CopterID is 1, the LAN communication mode can be enabled to support hardware-in-the-loop simulation with virtual machines or NX board cards. When the CopterID is greater than 1, the online button cannot be selected.</li><li>4. Only 8 control channels are supported, up to 8 rotors. (The full version supports 16 channels.)</li><li>5. Advanced simulation modes such as HITL_NET are not supported, and hardware-in-the-loop simulation cannot be connected to Pixhawk (for example, 6x) with network ports in the LAN or third-party flight controllers.</li><li>6. The Redis communication protocol (used for large-scale distributed cluster simulation) is not supported.</li></ol> <p>DLL Model Interface:</p> <ol style="list-style-type: none"><li>1. Does not support inCtrlExt series of interfaces for inputting various types of information (for control, special effects, damage, etc.)</li><li>2. Does not support inFromUE interface, unable to obtain data from UE blueprints (for better scene response)</li><li>3. Does not support InitParamAPI interface, unable to dynamically modify aircraft parameters.</li><li>4. Includes DLL dynamic models such as helicopters, tiltrotor aircraft, and underwater submersibles, capable of mission-level hardware-in-the-loop simulation, but does not provide model source code.</li><li>5. Can use comprehensive models (controller and model in one DLL, capable of upper-layer control), but does not provide source code.</li></ol> <p>UE Scene:</p> <ol style="list-style-type: none"><li>1. Visual supports only 3 channels of RGB, grayscale, or depth images, supports laser point clouds, segmentation maps, etc., but does not support infrared, etc.</li><li>2. Visual sensors can only be bound to Aircraft 1.</li><li>3. Only RflySim3D of UE4.27 version is supported, RflySimUE5 of UE5.3 is not supported.</li><li>4. RflySim3D only supports receiving local data, does not support LAN data (unable to perform virtual-actual combined simulation, or multi-vehicle joint simulation).</li></ol>	Free

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		<p>5. Does not support Cesium global large-scale scene simulation (installation package does not include scene files, and does not support modification of latitude, longitude, and altitude coordinates).</p> <p>6. Supports creation of up to 20 entities including vehicles (including dynamic obstacles).</p> <p>Compiler and System Version Support</p> <p>1. The Cygwin compiler is not supported; only Windows 10/Windows 11 operating systems are supported (Windows 7 is not supported).</p> <p>2. Only firmware up to version 1.13.3 is supported; firmware versions 1.14, 1.15, and later are not supported.</p> <p>Example Libraries:</p> <p>1. Only interface routines, basic routines, and advanced routines are provided; customized routines are not supported.</p> <p>Others:</p> <p>1. CopterSim and RflySim3D do not support logo customization.</p>	
RV=6	FullVers: RflySimAdv3 Full	<p>CopterSim:</p> <p>1. Supports a network button to send data to the local area network, enabling multi-computer distributed networking to form large-scale cluster simulations.</p> <p>2. A single computer supports an unlimited number of aircraft (CopterSim startup quantity) (the maximum supported quantity depends on the computer performance).</p> <p>3. Supports in-loop simulation of visual cards for multiple aircraft. Multiple computers check the network button and connect to flight controllers and NX to build a distributed visual simulation environment.</p> <p>4. Only supports 16 control channels, supports sixteen-rotor, tilt-rotor drones, helicopters, and other special configuration aircraft.</p> <p>5. Supports advanced simulation modes such as HITL_NET, which can connect to Pixhawk (such as 6x) with network ports in the local area network or third-party flight controllers for hardware-in-the-loop simulation.</p> <p>6. Supports the baud rate modification function to facilitate connection to flight controllers on turntables via serial cables.</p> <p>7. Supports GPS coordinates for aircraft position initialization (suitable for global large-scale scene simulations).</p> <p>8. Does not support Redis communication protocol (used for large-scale distributed cluster simulation, limited to the enterprise version).</p> <p>DLL Model Interface:</p> <p>1. Supports inCtrlExt series interfaces for transmitting various types of information (for control, special effects, damage, etc.).</p>	<p>To: <a href="#">飞思实验室淘宝店</a>。</p> <p>It includes all routine packages of the Premium Edition + distributed cluster control routines + distributed multi-machine vision routines (UDP mode).</p> <p>For exclusive routines of the Ultimate Edition, see the</p>

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		<p>2. Supports inFromUE interface for obtaining data from UE blueprints (for better scene response).</p> <p>3. Supports InitParamAPI interface, which cannot dynamically modify aircraft parameters.</p> <p>4. Includes DLL dynamic models such as helicopters, tilt-rotor aircraft, underwater submersibles, capable of mission-level hardware and software in-loop simulation, but does not provide model source code.</p> <p>5. Can use comprehensive models (controller and model in one DLL, capable of upper-layer control), providing source code.</p> <p>Note: Comprehensive models can achieve formation control of hundreds of aircraft on a single computer.</p> <p>UE Scene:</p> <p>1. Supports RflySimUE5 engine of UE5, supports double-precision large-scale map simulation (Note: UE4 uses float single-precision to describe xy, only supports 6-7 digit precision, i.e., only supports scenes within 10 kilometers).</p> <p>2. RflySim3D/RflySimUE5 vision only supports multi-channel transmission of visible light, laser point clouds, segmentation maps, etc., but not infrared.</p> <p>3. Vision sensors are only supported to be bound to any designated aircraft (used for distributed visual hardware-in-the-loop simulation).</p> <p>4. RflySim3D supports receiving local area network data (can be used for virtual-real combination simulation or multi-machine networking simulation).</p> <p>5. Supports Cesium global large-scale scene simulation (installation package comes with scene files and supports modification of latitude, longitude, and altitude coordinates).</p> <p>6. Supports an unlimited number of created vehicles (including dynamic obstacles).</p> <p>7. Supports importing intelligent blueprint vehicles based on ChaosVehicle (for better terrain and collision interaction).</p> <p>Compiler and System Version Support</p> <p>1. Does not support Cygwin compiler, only supports Win10/Win11 operating systems (does not support Win7).</p> <p>2. Supports up to the latest 1.14.4, 1.15.0 firmware versions and will continue to update the latest PX4 firmware.</p> <p>Example Library:</p> <p>1. Provides interface examples, basic examples, and advanced examples, as well as customized examples.</p> <p>Others:</p> <p>1. CopterSim and RflySim3D do not support logo customization (limited to the enterprise version).</p>	3.CustExps directory in each folder.
RV=8	ProVers: RflySimAdv3	<p>On the basis of the full version, the following are added:</p> <p>1. CopterSim and RflySim3D support hiding or customizing LOGOs.</p>	Customized on demand (Detail

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	Pro	2. Support multi-computer distributed networking architecture for large-scale cluster simulation. 3. Support Redis communication protocol (used for large-scale distributed cluster simulation). 4. With customized large-scale advanced examples (such as helicopter, tiltrotor, multi-aircraft cluster experiments, etc.). 5. Support deployment on Windows high-performance computers or Linux servers (RflySimCloud cloud platform). 6. FPGA-based ultra-real-time hardware-in-the-loop simulation platform (supporting Ardupilot and other flight controllers).	To: RflySimAPIs\11. LargeScale)

Note: The paid version supports two activation methods: serial number and Ukey. Among them, serial number activation bound to the motherboard ID only supports single - computer binding activation. It can be upgraded when the system is replaced with a hard disk or graphics card, but it does not support replacing the motherboard. Ukey activation requires connecting a USB key for use and can be transferred to different computers.

Note: Users who activate with a serial number need to provide their name, mobile phone number, email address, hardware ID, and system information screenshot (mainly the processor and device ID) when purchasing. In the future, this information will be used to provide after - sales service (such as software installation failure, etc.).

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设备规格

复制

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设备名称

ROG16

处理器

12th Gen Intel(R) Core(TM) i9-12900H 2.50 GHz

机带 RAM

32.0 GB (31.7 GB 可用)

设备 ID

D8B844C8-D75E-4230-B898-3453F80E10F8

产品 ID

00331-20020-00000-AA337

系统类型

64 位操作系统, 基于 x64 的处理器

笔和触控

为 10 触摸点提供笔和触控支持

Note: Before purchasing, please install the RflySim free version to confirm that the platform meets the installation requirements.

Note: Taobao link <https://item.taobao.com/item.htm?ft=t&cid=855699599317&spm=a21dvs.23580594.0.0.47b32c1bY2CzMj>

## 2. Version Differentiation Details

		RflySimToolchain (RV=0)	RflySimAdv3Full (RV=6)	RflySimAdv3Pro (RV=8)
Price		0	On-Demand Pricing	On-Demand Pricing
Activating Manner		Free	Serial Number /Ukey	Serial Number /Ukey
CopterSim	UAVs Number	8	不限	不限
	Number of Visual HIL Simulations	1	不限	不限
	Model Control Channel	8	16	16
	Multi-Rotor Custom Model Parameters	Support	Support	Support
	SimMode	PX4_HITL	Support	Support
		PX4_SITL	Support	Support
		PX4_SITL_RFLY	Support	Support
		Simulink&DLL_SIL	Support	Support
		PX4_HITL_NET	Support	Support
		EXT_HITL_COM	No Support	Support
		EXT_SIM_NET	No Support	Support
		APM_SITL_COM	No Support	Support
		PX4_SIH_COM	No Support	Support
		PX4_SIH_NET	No Support	Support
		PX4_SIH_SITL	No Support	Support
		PX4_SIH_FLY	No Support	Support
	CommunicationMod c	UDP_Full	Support	Support
		UDP_Simple	Support	Support
		Mavlink_Full	Support	Support
		Mavlink_Simple	Support	Support
		Mavlink_NoSend	Support	Support
		Mavlink_NoGPS	Support	Support
		Mavlink_Vision	Support	Support
		Redis_Full	No Support	Support
		Redis_Simple	No Support	Support

		RflySimToolchain (RV=0)	RflySimAdv3Full (RV=6)	RflySimAdv3Pro (RV=8)
	Customize the Baud Rate	No Support	Support	Support
	LAN Online Simulation	No Support	Support	Support
	Custom GPS Coordinates	No Support	Support	Support
	Custom Logo	No Support	Support	Support
	inCrtExt APIs	No Support	Support	Support
	inFromUE APIs	No Support	Support	Support
	InitParamAPI APIs	No Support	Support	Support
	MultipleRotors	DLL File+Simulink Model	DLL File+Simulink Model	DLL File+Simulink Model
	FixedWing	DLL File+Simulink Model	DLL File+Simulink Model	DLL File+Simulink Model
	DriverlessCar	DLL File+Simulink Model	DLL File+Simulink Model	DLL File+Simulink Model
	Flying Wing Layout Drone Model	DLL File+Simulink Model	DLL File+Simulink Model	DLL File+Simulink Model
	Unmanned Ship	DLL File	DLL File+Simulink Model	DLL File+Simulink Model
	Helicopter	DLL File	DLL File+Simulink Model	DLL File+Simulink Model
	Vertical Takeoff And Landing Drones	DLL File	DLL File+Simulink Model	DLL File+Simulink Model
	Underwater Vehicle	DLL File	DLL File+Simulink Model	DLL File+Simulink Model
	Trailer	DLL File	DLL File+Simulink Model	DLL File+Simulink Model
	NOPX4 Synthetic Model	No Support	Support	Support
QGroundControl	Ver Nums	v4.3.0	v4.3.0	v4.3.0
Python Env	Ver Nums	3.8.1	3.8.1	3.8.1
WinWSL SubSystem	Ver Nums	WSL 1	WSL 1	WSL 1
	Release Ver	Ubuntu 20.04	Ubuntu 20.04	Ubuntu 20.04
	VcXsrv Visualization	Support	Support	Support
	ROS/ROS2 Env	Noetic/Foxy	Noetic/Foxy	Noetic/Foxy
	MAVROS	Support	Support	Support
PX4 Software	Ver Nums	Support 1.13 And below	All Vers Support(latest 1.15.0)	All Vers Support(latest 1.15.0)
	PX4 Compiler	WinWSL	Cygwin/WinWSL(Recommended)	Cygwin/WinWSL(Recommended)
3D Display Engine	RflySim3D(Unreal Engine 4)	Support	Support	Support
	RflySimUE5(Unreal Engine 5)	No Support	Support	Support
	Cesium Global Scene	No Support	Support	Support

		RflySimToolchain (RV=0)	RflySimAdv3Full (RV=6)	RflySimAdv3Pro (RV=8)
	Vehicle Display Quantity	20	Unlimited	Unlimited
	ChaosVehicle Intelligent Blueprint Vehicle Import	No Support	Support	Support
	Custom Logo	No Support	Support	Support
	Number of Scenes	25	26	On-Demand Customization
	Number of Models	112	112	On-Demand Customization
	Number of Special Effects	5	6	On-Demand Customization
Supporting Resources	0.ApiExps	Yes	Yes	Yes
	1.BasicExps	Yes	Yes	Yes
	2.AdvExps	Yes	Yes	Yes
	3.CustExps	No	Yes	Yes
	Course Resource Package (4.HILApps Course)	No	On-Demand Configuration	On-Demand Configuration

### **3. Function description of the new and old versions**

RflySim tool chain (formerly known as RflySim platform) v3.0 version is divided into basic version (free), advanced experience version (free), advanced full version (paid) three versions, the new version of RflySim tool chain has been fully updated, many features have been open for free specific visible version differentiation overview. Among them, the functions of the basic version (free) and the advanced experience version (free) have been transferred to the RflySim free version (RflySimToolchain), you can use all the functions for free, in addition, All programs in the books "Multi-rotor Aircraft Design and Control", "Multi-rotor Aircraft Design and Control Practice", "Multi-rotor Aircraft Remote Control Practice", "Micro-Fixed-wing UAV Flight Control Practice" can be used based on RflySim free edition (RflySimToolchain).