



VR-Vantage 3.0.1 Release Notes

This release note contains the following release-specific information for VR-Vantage 3.0.1.

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Systems Supported and System Requirements

This section describes platform support and system requirements for VR-Vantage. To take full advantage of VR-Vantage's visualization capabilities and optimize performance, you must use a modern game computer with a high quality NVIDIA graphics card.

For the most up-to-date information about systems supported, see the Product Versions page on the MAK web site at: <https://www.mak.com/support/product-versions>. For hardware requirements, see <https://www.mak.com/support/hardware-recommendations>.

VR-Vantage 3.0.1 is available for the platforms listed in Table 1. For toolkit users, application code must be built with the indicated compilers in order to link to VR-Vantage libraries.

Table 1. Platforms supported

Operating System	Compiler
Windows 10	Microsoft Visual C++ 15.0 (64-bit)
Red Hat Enterprise Linux 8.0 (64-bit libraries)	default compiler
CentOS – versions that are equivalent to supported versions of Red Hat Linux.	default compiler

3D Video Cards Supported

VR-Vantage 3.0.1 supports NVIDIA graphics cards that support OpenGL 4.5 or above. While we support NVIDIA Quadro cards, we strongly recommend GeForce cards. If you use a Kepler Series Quadro card, read the instructions in "Using Kepler Series Quadro Cards" on the facing page. VR-Vantage does not support AMD (formerly ATI) graphics hardware.



VR-Vantage strives to provide the best 3D scene quality possible and cutting edge visualization effects. To provide this functionality, VR-Vantage takes advantage of OpenGL features that may not be supported on older video cards. When this is the case, you can disable these features, allowing VR-Vantage to run in 3D modes.

OpenGL 4.5 is the minimum requirement for rendering a 3D scene in VR-Vantage. For the best visual quality and highest performance, you should use the most recent NVIDIA GeForce card. The minimum recommended card is 2070 or better.

Some laptops have an NVIDIA graphics card and an Intel graphics card. You must configure your computer to use the NVIDIA card. To do so:

1. Open the NVIDIA Control Panel (in the System Tray).
2. Select Manage 3D Settings.

3. Select Global Settings.
4. Select Preferred Graphics Processor.
5. Select High-performance NVIDIA Processor.

 You should always try to use the latest drivers available for your video card. For video streaming on Windows, you must use driver 397.44 or later. For video streaming on Linux, you must use driver 387.26 or later.

 If you use an external monitor with your laptop and your laptop is not using the NVIDIA graphics card when running VR-Vantage, try setting the main display to be the laptop's built-in monitor instead of an external monitor.

Using Kepler Series Quadro Cards

There is a known issue with the Quadro drivers on Kepler series Quadro cards. NVIDIA says it's related to the fact that the default profile optimizes for a fixed eyepoint (for applications like CAD). To run on these cards, you must change the global profile for the driver, as follows:

1. Open the NVIDIA Control Panel.
2. Select the Manage 3D Settings page.
3. Select the Global Settings tab.
4. In the list of driver profiles, select Workstation App - Dynamic Streaming.

We are working with NVIDIA to have their drivers recognize our applications and apply this profile automatically. In the meantime, for Kepler series Quadro you must make this change manually.

Disk Space Requirements

A full installation of VR-Vantage requires approximately 6.3 GB of disk space and an additional 47 GB for the complete MAK data package.

Compiler Compatibility on Windows

MAK provides versions of product releases that have been compiled with different versions of Microsoft Visual C++ (for example, 12.0 and 15.0). When you run MAK products together on the same computer, for example, VR-Vantage, we strongly recommend that you run versions compiled with the same compiler. Mixing products compiled with different versions of the compiler can result in program instability. The exception to this is that products built with VC 14 and VC 15 are binary compatible.

Required Software for Toolkit Users

If you plan to build VR-Vantage applications using the VR-Vantage Toolkit, you must download and install VR-Link 5.8.

If you plan to build the VR-Vantage GUI, you must download and install Qt 5.15.2 (Windows VC 15 and Linux Red Hat 8). You can download it at: <http://www.mak.com/support/bonus-material>.

Qt is also available as a free download under the LGPL version 2.1 license at <https://www.qt.io>. This version should be satisfactory for most VR-Vantage customers. If you need a Qt commercial license, you must purchase the license from Qt.

License Manager

VR-Vantage 3.0.1 uses FLEXlm 11.17.1. You must install the license management software to run VR-Vantage. If you are upgrading from a version of VR-Vantage that used an older version of FLEXlm, you must upgrade your license management files. You do not need a new license. Licenses are forward compatible.

The License Manager files are not part of the VR-Vantage installer. You can download them at:

- Windows: <http://ftp.mak.com/out/MAKLicenseManager-win64-setup.exe>
- Linux: <http://ftp.mak.com/out/MAKLicenseManager-linux64-setup.tar.gz>

A license manager FAQ is available at <https://www.mak.com/support/license-support>.

Third-Party Libraries Supported

VR-Vantage 3.0.1 uses the indicated versions of the following libraries:

- VR-Link 5.8
- Qt 5.15.2 (VC 15 and Red Hat 8)
- OpenSceneGraph 3.6.4
- Boost 1.63.0
- FreeGlut 2.4.0 (Windows), 2.6.0 (Linux)
- GL-Studio 7.0 (VC 15)
- DI-Guy 13.6 (development version)
- Triton 4.43
- Silverlining 6.20
- SpeedTree 6.3.2
- CDB API 2.2 (Windows), 2.1 (Linux)
- osgEarth 3.2
- CUDA 9.2 (Windows), 10.2 (Linux)
- CIGI - CCL 4.0.4

Using MAK Products on Virtual Machines

You can run MAK products on virtual machines. For more information, see the Cloud & Virtualization page on our website at <https://www.mak.com/learn/cloud-virtualization>.

The makData Package

As of this release, the data installation is separate from the product installation. MAK applications can share the same data package, so you no longer need to install it separately for each product. For instructions on installing the data, see [""Installing the makData Package"](#) in the *VR-Vantage Users Guide*.

Network Compatibility

VR-Vantage 3.0.1 is compliant with RPR FOM 1.0 and RPR FOM 2.0 and includes FOM mappers for many draft versions of the RPR FOM. It is compliant with RTIs that support the HLA 1.3 specification, the SISO DLC HLA API 1516 version of the IEEE 1516 specification (SISO-STD-004.1-2004), or HLA Evolved. MAK recommends HLA Evolved.

To use an RTI with VR-Vantage, it must use the same operating system and be built with the same compiler.

VR-Vantage 3.0.1 supports DIS 4, 5, 6, and 7, and can therefore interoperate with DIS applications of any of these versions. MAK recommends DIS 7.

Backward Compatibility

VR-Vantage 3.0.1 applications and some files are not backward compatible. Specific incompatibilities are as follows:

- Applications from a given release cannot control display engines from a different release. (In other words, a VR-Vantage 3.0.1 application cannot control a VR-Vantage 2.4 display engine.)
- Plug-ins built against one version cannot be used with the other.
- Model files (MEDF and MEIF) built with one version do not work with the other.

Support for MAK Data Logger Recordings

While VR-Vantage 3.0.1 works with all recent versions of the MAK Data Logger, please know:

- Versions of the MAK Data older than 5.5.1 (released in May 2018) have known problems with the encoding of DIS 7 Attributes, which can cause crashes in MAK products.
- Most new versions of MAK products contain FOM updates. To successfully play logger tapes that were recorded with earlier FOM versions, the matching (earlier) FOM version must be properly configured in each federate. This mean, for example, that HLA Logger recordings in MAK Logger 5.9 require VR-Vantage 3.0.1 to use the FOM modules that were used to record these files, not the default FOM configuration in VR-Vantage 3.0.1. The MAK Data Logger is forward compatible, however, so older MAK Data Logger versions can be configured to record and work with VR-Forces 5.0 and VR-Vantage 3.0.1 FOM. You simply need to copy the FOM files to the older MAK Data Logger installation and configure them correctly. Refer to the *MAK Data Logger Users Guide* for details.

New Features and Updates

VR-Vantage 3.0.1 has the following new feature.

- Channels have a new setting: mirror mode. This setting allows you to flip channels horizontally, which allows VR-Vantage to visualize mirrors by rendering a mirror image of the scene. See "[Configuring a Mirror Channel](#)" in the *VR-Vantage Users Guide*.

For the features included in the 3.0 release, see the [VR-Vantage 3.0 Release Notes](#) ([./doc/VRVantage3.0ReleaseNotes.pdf](#)).

Documentation Updates

Documentation has been updated for this release. The guides are provided as PDF files in the `./doc` directory. Online help is available from the VR-Vantage Help menu. You can also find the most current PDFs at <https://www.mak.com/support/product-user-guides>. (You must be able to log in to the web site.)

Fixed Bugs

Problems identified in previous releases have been fixed. For a summary, please see the [./doc/FixedDefectsVRV.csv](#) file.

Known Problems

VR-Vantage has the following known problem:

- If you use the settings covered in "[Installing the makData Package](#)" in the *VR-Vantage Users Guide* for the shared data, SensorFX works correctly. If you launch VR-Vantage with SensorFX and see an error about data, however, you can resolve it by setting the `JRM_DATA_DIR` environment variable to indicate the location where you installed the data. Enter the path to the SensorFX directory in the format `mydata\location\ModelData\sensorFX` where `mydata\location` is the full path to the `./SharedData/16/latest` directory. An example of the full entry is: `E:/SharedData/16/latest/ModelData/sensorFX`.

For information on other issues that you might encounter while using VR-Vantage, see the [Troubleshooting](#) appendix in the *VR-Vantage Users Guide*.