



VR-Vantage 1.1 Release Notes

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Systems Supported and System Requirements

This section describes platform support and system requirements for the VR-Vantage. For the most up-to-date information about systems supported, see the Product Versions page on the MÄK web site at: <http://www.mak.com/support/productversions.php>.

The VR-Vantage is available for the following operating systems:

Table 1: Platforms supported

Operating System	Compiler
Red Hat Enterprise Linux Workstation 4	gcc 3.4
Red Hat Enterprise Linux Workstation 5	gcc 5.1
Windows XP	Microsoft Visual C++ 7.1, 8.0
Windows Vista	Microsoft Visual C++ 7.1, 8.0

Third Party Library Support

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

- VR-Link 3.13.2
- Qt 4.5
- OpenSceneGraph 2.6.0.

VR-Vantage for Windows

VR-Vantage for Windows requires the following:

- A Pentium-class PC (or higher) with minimum 2 GHz processor
- An OpenGL 2.0-compliant graphics card with 256 MB or more of memory.
- Windows XP SP2 or Windows Vista.
- 2 GB of disk space.
- 1 GB of RAM; more is desirable depending on the size of the terrain database and the number of models to be loaded.

3D Video Boards Supported

In general, VR-Vantage 1.1 should support any board that claims to support OpenGL 2.0. VR-Vantage has been tested with current versions of NVidia graphics cards. There are known problems with ATI graphics cards (in particular, the ATI Radeon X1950 Pro).



You should always try to use the latest drivers available for your video board.

Compiler Compatibility on Windows

MÄK provides versions of product releases that have been compiled with Microsoft Visual C++ 7.1, 8.0, and 9.0 (some products are not available on all compilers). When you run MÄK products together, for example, the Logger and a VR-Vantage application, 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.

FLEXlm Support

VR-Vantage 1.1 uses FLEXlm 11.6.

Using Libraries and Binaries Built with Visual Studio 2005 and Later

All MÄK products built with Microsoft Visual Studio require the C Runtime Library to function. The C runtime libraries have always been available from Microsoft for download, they are also installed on a user's machine when a Microsoft compiler is installed. The C runtime libraries are not part of the normal Windows installation. For customers who plan to use MÄK products on machines that do not have a compiler installed, MÄK has historically distributed a copy of the C Runtime Libraries with MÄK products. These libraries were put in the *bin* directory used by the MÄK products. MÄK products would then use the libraries in the *bin* directory and customers would not have a problem if copies of the libraries were not already installed.

Unfortunately, with the release of the new C Runtime Libraries required by Microsoft Visual Studio 2005 (MSVC++8.0) and later, the libraries can no longer just be copied into the *bin* directory of an application. The libraries need to be installed correctly into Windows system folders. (The process is actually a little more complicated, a manifest file needs to be created to tell Windows where to find the libraries.)

To accommodate this change, MÄK is distributing the Windows installer for the C runtime libraries with all MÄK products released for MSVC++8.0 and later. The 32-bit installer is named *vc redistrib_x86.exe*; the 64-bit installer (if supported) is named *vc redistrib_x64.exe*. They are in the base directory of any installed MÄK product that requires them.

Running the installer requires Administrator privileges for the machine the installer is run on. MÄK has chosen to not integrate the MÄK installer and the Microsoft installer so as not to require users to have Administrator privileges to install MÄK products. Therefore, if you who do not have a compiler installed, or get error messages like "Software has not been installed correctly, please re-install", you must apply the patch.

For more information see this Microsoft URL:

<http://msdn2.microsoft.com/en-us/library/ms235299.aspx>



You must ensure that the preprocessor defines `_SECURE_SCL=0`, and `_HAS_ITERATOR_DEBUGGING=0` are set for MSVC++8.0 and MSVC++9.0 builds. If these are not set, random crashes and assertions may be encountered during runtime."

Patch Required for AMD Dual-processor Windows PCs

VR-Link-based products use a high resolution counter for time calculations on Windows PCs. Customers who are running Windows on PCs with multiple AMD Athlon 64-bit processors may notice clock jitter, which may cause time in MÄK products to run backwards. This occurs when the Windows scheduler changes the CPU the MÄK process is using. If the high resolution counters on each processor are not synchronized, the application may witness a decrease in the high resolution counter value stored in the processor causing an incorrect time calculation. To fix this problem customers, apply the AMD Dual-Core Optimizer patch provided by AMD. You can get the patch at:

http://www.amd.com/us-en/Processors/TechnicalResources/0,,30_182_871_9706,00.html



If you get an error when you try to access this URL, reload the page.

Network Compatibility

HLA only

VR-Vantage 1.1 is compliant with:

- ♦ RPR-FOM 0.5, 0.7, 0.8, 1.0, and a subset of 2.0 (draft 6, 14, and 17)
- ♦ MÄK RTI 2.x, 3.x
- ♦ Pitch RTI 1.3 C++ interface.

Other RTIs that support the HLA 1.3 specification or the SISO DLC HLA API 1516 (SISO-STD-004.1-2004 version of the IEEE 1516 specification.)

DIS only

VR-Vantage 1.1 supports DIS 2.0.4, IEEE 1278.1, 2.1.4, and IEEE 1278.1a, and can therefore interoperate with DIS applications of any of these versions.

FOM Support

VR-Vantage 1.1 has built-in support for versions 0.5, 0.7, 0.8, 1.0, and 2.0, drafts 6, 14, and 17, of the RPR FOM. It also supports VR-Link's ability to support alternative FOMs through the FOM Mapper. By default, VR-Vantage 1.1 uses RPR FOM 1.0.

If you want to use VR-Vantage with VR-Forces 3.9 or later and RPR FOM version 2, draft 17, use the *VR-Link20017-1.fed* file.

Backwards Compatibility

VR-Vantage 1.1 applications and some files are not backwards 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 1.1 application cannot control a VR-Vantage 1.0 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.

New Features and Product Updates

VR-Vantage 1.1 has the following updates and new features:

- ♦ Support for the display of tactical graphics: VR-Vantage can now display point, line, and areal objects received over the network. (Please see [Section 8.14, "Showing and Hiding Tactical Graphics"](#), in *VR-Vantage Users Guide*.)
- ♦ Support for the display of shadows: VR-Vantage displays shadows for rotary -wing, fixed-wing, and DI-Guy entities. You can enable shadows for other entities. (Please see [Section 8.12, "Displaying and Configuring Shadows"](#), in *VR-Vantage Users Guide* and updates to shadow documentation in [Documentation Updates](#), on page 6.)
- ♦ Height-above-terrain lines: Height-above-terrain lines help clarify the relationship of an entity to the ground. (Please see [Section 8.14.3, "Displaying Height-Above-Terrain Lines for Vertices"](#), in *VR-Vantage Users Guide*.)
- ♦ Ability to flip DDS textures: The textures for some models or terrain patches may be coded so that they are upside down relative to the way VR-Vantage expects them to be. VR-Vantage lets you flip these textures to display correctly. (Please see [Section 4.9, "Displaying DDS Textures Correctly"](#), in *VR-Vantage Users Guide*.)
- ♦ Ability to disable terrain dragging: If you do not want to inadvertently drag the terrain, you can disable this feature. (Please see ["Disabling Terrain Dragging"](#), in Chapter 7, *Controlling the Observer*, in *VR-Vantage Users Guide*.)
- ♦ Ability to add and remove observers: Add and Remove buttons have been added to the Observer Selection Panel. They let you easily add and remove observers. (Please see [Section 5.2.1, "Adding and Removing Observers"](#), in *VR-Vantage Users Guide*.)

- ♦ Online help is available from the Help menu.
- ♦ Redesigned prop extraction: The Extract Props page now displays a list of external references in a terrain patch so that you can more easily decide what to extract. The regular expression option is on a separate tab to simplify the interface. (Please see [Section 4.7.1, "Extracting Props from a Terrain Patch"](#) in *VR-Vantage Users Guide*.)
- ♦ The menu structure has been reorganized. Menu commands that were on the Simulation menu in VR-Vantage 1.0 are now on the Connections menu and Visual Mappings menu. The other menus are the same, except that new features have been added where appropriate.

Documentation Updates

VR-Vantage Users Guide has been updated for release 1.1. Online help is now available from the Help menu. The following items update *VR-Vantage Users Guide*.

- ♦ The TrianGraphics database for Boston, Massachusetts, mentioned in [Section 1.3.5, "3D Models, Terrain and Graphical Content"](#), is not included in this release.
- ♦ Shadow documentation has the following updates:
 - Shadows are cast only on the terrain. They are not cast on buildings (props) or on other entities. Therefore, for example, entities on an aircraft carrier do not cast shadows on the deck.
 - [Section 8.12, "Displaying and Configuring Shadows"](#) explains that you can add a shadow to an entity that is not configured with one by default by editing its model definition. However, the updated model definition does not take effect immediately. To view shadows, you must save the model definition, shut down VR-Vantage, restart VR-Vantage, and connect to the simulation.
 - [Section 8.12.1, "Configuring Shadows"](#) describes how to change the quality of shadow rendering. To use this feature you must have high quality hardware. This section also states that changing the quality of shadows does not affect performance. This statement is incorrect.
 - There is a discrepancy between the text of some of the commands on the Settings menu and their descriptions in *VR-Vantage Users Guide* and online help. Settings that toggle a display state, such as enabling and disabling shadows or tactical graphics, do not have "Show" and "Hide" (or Enable and Disable) as part of the command name. They simply state the feature that can be toggled on and off. The display state is shown by the presence or absence of a black box around the command's icon.

The following sections supplement *VR-Vantage Developers Guide*:

Starting the Distributed Code Generator

VR-Vantage Developers Guide explains how to start the Distributed Code Generator from the command line. On Windows, you can also start it from the Start menu, as follows:

- ▶ Choose **Programs** → **MÄK Technologies** → **VR-Vantage x.x** → **Tools** → **VR-Vantage Distributed Code Generator**.

Building VR-Vantage Applications and Examples on Linux

Section 9.5.2 in *VR-Vantage Developers Guide* has a brief description of how to build VR-Vantage applications on Linux. This section provides additional information.

VR-Vantage includes makefiles for building Vantage IG and Stealth. They are in *.appsrc/userIG* and *.appsrc/userStealth*. All of the examples build and run using makefiles. To build the examples and applications, you need to:

- ♦ Install VR-Link
- ♦ Set the MAK_VRLDIR environment variable to the VR-Link path
- ♦ Install Qt 4.5 (required for examples that use Qt (exampleDialogPage and exampleEmbedded))
- ♦ Set the QTDIR environment variable to the Qt 4.5 path (if you are using Qt).

The makefiles each have an “all” target that builds the application, an “install” target that copies the output to *../bin* for standalone executables or to *./plugins/release* for plug-ins, and a “clean” target that deletes all generated files. By default, the examples build with no debug symbols and optimization on (`-O3 -DNDEBUG`). To build with debug symbols and so on, set the DEBUG environment variable or pass it through the make command line (for example, `make DEBUG=' -g '`).

You can run standalone executables from the *./bin*. Plug-ins must be explicitly included and run using either Vantage IG or Stealth. To do this, do one of the following:

- ♦ Copy the plug-in from *./examples/plugins/release* to *./plugins/release*
- ♦ Symlink the plug-in from *./plugins/release* to *./examples/plugins/release*
- ♦ Include it on the command line, for example:

```
./bin/stealth --plugins
  ./examples/plugins/release/exampleDialogPagePlugin.so
```

If you are writing your own plug-in and it requires use of *dcgen* outside of the *./bin* directory, you must add *VRVDIR/lib* to the LD_LIBRARY_PATH environment variable (where *VRVDIR* is wherever the VR-Vantage installation was unpacked to).

In a bash shell, you can do the following:

```
export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:VRVDIR/lib
```

Fixed Bugs

The following problems present in previous releases have been fixed:

- ♦ DI-Guy models load more quickly.
- ♦ SpeedTree performance has improved.
- ♦ On geocentric terrains, DI-Guy models walked backwards and jittered.
- ♦ It was not possible to import point features into a geocentric terrain.
- ♦ VR-Vantage did not respond to remote control PDUs to move the observer.
- ♦ Manipulating large numbers of props was very slow.
- ♦ The fields for specifying the Site ID and Application ID for DIS did not accept values over 255.
- ♦ If you cleared the Publish Observers check box before you connected to an exercise, observers were still published.
- ♦ VR-Vantage can now detect changes in window focus. This eliminates the navigation problems that resulted from losing focus.

Known Problems and Product Restrictions

VR-Vantage has the following known problems:

- ♦ When you load a geocentric terrain, clouds are displayed in the center of the earth.
- ♦ Detonation icons are not displayed.
- ♦ SpeedTrees do not align correctly on geocentric terrains.
- ♦ DI-Guy characters may have missing body parts if you run more than one display engine on the same computer. (This could be a master display engine and an external display engine or any other configuration of two display engines.)
- ♦ If a graphics card does not support shaders, you may receive the following error message when you load a terrain that uses them:

```
Shader [Branches] validation failed
```

To work around this problem, set the SpeedTree Performance Profile to Disabled, as follows:

- a. Choose **Settings** → **SpeedTree Settings**. The Application Settings dialog box opens to the SpeedTree Settings page.
 - b. In the Performance Profile drop-down list, select Disabled.
- ♦ VR-Vantage applications may freeze for a period of time if you close a terrain while you are connected to a simulation and there are DI-Guy characters in the scene. The application will eventually unfreeze after a variable period of time. The work-around is to disconnect from the simulation before closing the terrain.
 - ♦ On external display engines, particle effects, such as smoke and trailing effects, sometimes restart spontaneously.
 - ♦ When you enter coordinate values into the Add Terrain Patch dialog box, it does not convert lower case letter to uppercase. The result is that VR-Vantage incorrectly interprets the coordinate values.
 - ♦ On Linux, when an application linked with Qt 4 such as the embeddedExample loads the DI-Guy plug-in, it crashes. The DI-Guy plug-in has a dependency on Qt 3. The crash is due to Qt 3 initialization calling functions that are defined by Qt 4 in the main application.

To work around this problem, do not use Qt 4 in the main application. If necessary write the Qt 4 user interface in a separate plug-in, or disable loading the DI-Guy plug-in (by explicitly adding it to the excluded plug-in files in the *DtVrvApplicationConfiguration*, or by removing the file from the *./plugins/release* directory).

