



MÄK Stealth 4.0-ngc Release Notes

This document provides the following release-specific information for MÄK Stealth 4.0-ngc:

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Systems Supported and System Requirements

This section describes platform support and system requirements for the Stealth. For the most up-to-date information about system requirements, see the Product Versions page on the MÄK web site at: http://www.mak.com/product_version.htm.

Stealth for UNIX

Stealth 4.0-ngc runs on the SGI IRIX and Linux operating systems.

SGI IRIX

Stealth 4.0-ngc is available for systems running IRIX 6.5 or later, with OpenGL and Performer 2.2.

The Stealth for SGIs requires approximately 640 MB of disk space.

Stealth 4.0-ngc for SGIs was built under IRIX 6.2 against OpenGL Performer 2.2 using the N32 ABI. The Stealth executables are statically linked with Performer, so you don't need to have Performer installed on your system in order to run the Stealth.

The smaller, *Stealth.dynamic* executable, is dynamically linked with Performer, and with the OpenFlight Performer loader. If you are using *Stealth.dynamic*, you need `performer_eoe` version 2.2 or a compatible version installed. You must also have a version of the MultiGen-Paradigm loader DSO (*libpfflt_ogl.so*) that is compatible with the *pfflt.h* header file that comes with Performer 2.2.



The loader DSO that comes with Performer 2.2 is a version 14.2 loader. In order to load files of more recent OpenFlight versions using the dynamically linked Stealth, you need to obtain a later version of the loader DSO (*libpfflt_ogl.so*) from MultiGen-Paradigm's FTP site (<ftp.multigen.com/pub>), and install it in `/usr/lib32/libpfd`, or some other location contained in your `LD_LIBRARYN32_PATH` environment variable.

Linux

Stealth 4.0-ngc supports Linux. It is built with Performer 2.4. The Stealth is statically linked with Performer, so the `performer_eoe` is not needed. The Stealth for Linux required 580 MB of disk space.

Stealth for PCs

The Stealth for PCs requires the following:

- ♦ A Pentium-class PC (or higher) with a standard VGA or SVGA video board and CD-ROM drive.
- ♦ Windows NT 4.0 or Windows 95/98/2000.
- ♦ 580 MB of disk space. 540MB is for terrain databases and model files.
- ♦ 512 MB of RAM if you plan to use the complete dismounted infantry models.
- ♦ A 3D video card that has OpenGL, Direct3D, or Glide 3 drivers.
- ♦ A second monitor enhances ease-of-use with cards based on the Voodoo 1 and 2 chip sets and some Quantum 3D cards, and is highly recommended, but is not required.

3D Video Boards Supported

In general, Stealth 4.0-ngc should support any board that claims to support OpenGL, Direct3D (Windows 95/98 only), or Glide version 3. This version of the Stealth has been tested and is known to work with the following boards and configurations:



Due to Glide's current inability to support switching between 2-D desktop and 3D graphics view on a single monitor, this version of Stealth cannot support boards with the 3Dfx Voodoo3 chipset.

Recommended Boards and Configurations

Based on our testing, we recommend the following configurations:

- ♦ For Glide - Quantum3D Obsidian2-200SB
- ♦ For OpenGL - NVIDIA GeForce2 Ultra, GeForce3, or GeForce2 GTS
- ♦ For Direct3D - Dell Inspiron 8000 notebook.

Online Help Browser Requirements

The online help system included with this release of the Stealth is an HTML-based system. To view online help, you must have a web browser installed that supports Javascript and Java. Java and Javascript must be enabled.

Network Compatibility

HLA only

Stealth 4.0-ngc is built against VR-Link 3.6.1. This change makes the Stealth compatible with:

- ♦ RPR-FOM 0.5, 0.7, 0.8, and 1.0
- ♦ MÄK Real-time RTI 1.3.4-ngc
- ♦ DMSO RTI NG v1, v2, v3.0, v3.2.

Stealth 4.0-ngc is compatible with applications that use earlier versions of VR-Link if they support versions of the RPR FOM listed above.

DIS only

Stealth 4.0-ngc 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.

RTI Support

The MÄK Real-time RTI is included on all MÄK product CDs. It is link-compatible with the DMSO RTI NG. Stealth 4.0-ngc has been tested with DMSO RTI NG v1, v2, v3.0, and v3.2.

If you use the MÄK Real-time RTI, be sure that the Stealth can find your FED file, and optional *rid.mtl* file, by putting them in the directory from which you are running, or by setting the environment variable `RTI_CONFIG` to the directory that contains them.

RTI Library Names

Stealth 4.0-ngc expects library names that match those of DMSO RTI NG v3.2. If you run Stealth 4.0-ngc with DMSO RTI NG v3.2, both the UNIX and PC versions work without any modification. If you want to run Stealth 4.0-ngc with DMSO RTI NG v1 or v2, you must make the following changes:

- ♦ For UNIX, you must use the libraries *libRTI-NGv2.so* or *libRTI-NGv1.so*, which are supplied by MÄK in the *.lib* directory. These libraries correspond to DMSO RTI NG v1 and v2. To use Stealth 4.0-ngc with RTI NG v1 or v2, copy the appropriate library to the DMSO RTI NG *lib* directory and rename it *libRTI-NG.so*. (You might want to rename the *v3.x libRTI-NG.so* library first.)
- ♦ For PCs, rename the libraries that come with RTI NG v1 or v2 to the names used by the RTI NG v3.2 libraries (*libRTI-NG.lib* and *libfedtime.lib*).

FOM Support

Stealth 4.0-ngc has built-in support for versions 0.5, 0.7, 0.8, and 1.0 of the RPR FOM. It also supports VR-Link's ability to support alternative FOMs through the FOM Mapper. By default, Stealth 4.0-ngc uses RPR FOM 1.0.

For information about FOM mapping and specifying the FOM version to use, see section 8.2.2, “Specifying the FOM Version”.

New Features and Product Changes

This release of the MÄK Stealth has the following new features:

- ♦ Support for sound on the Stealth for PCs.
- ♦ Support for trailing effects (vapor trails, dust trails, wakes, and so on) and trajectory histories.
- ♦ Support for terrain paging on PCs.
- ♦ Support for dismounted infantry models.
- ♦ Support for monitors in parallel alignment on SGI IRIX.
- ♦ Display of entity labels in the Stealth view.
- ♦ Ability to change the terrain database in the GUI.
- ♦ Forest, desert, and winter camouflage models for entities.
- ♦ The Stealth Options dialog box has been reorganized and includes controls for PC sound, trailing effects, and entity labels.
- ♦ The default database loaded on PCs is now the Berkeley database.
- ♦ The Stealth no longer supports Glide 2.
- ♦ Updated *MÄK Stealth User's Guide* (online version only).

The new features are summarized in this section and fully described in the online help and the online (PDF) version of *MÄK Stealth User's Guide*.

Sound on Stealth for PCs

The Stealth for PCs supports sound as part of the basic application. You can configure entity sounds, fire sounds, and munition sounds. You can toggle use of sound off and on during runtime.

Trailing Effects

The Stealth displays trailing effects such as vapor trails, wakes, dust clouds, tire tracks, and foot prints. MÄK provides models for these effects and you can add additional models.

Trajectory Histories

Trajectory histories allow you to track the paths of entities during an exercise, including the path of munitions as they travel from the shooter to the target. When trajectory histories are enabled, each entity leaves a trail of bright arrows. The arrows are colored based on the entity's force.

Terrain Paging

The Stealth for PCs supports terrain paging using Terrapage format. Terrain paging allows you to use very large terrain databases because only a portion of the database is in memory at any given time.

Dismounted Infantry

The Stealth includes models for dismounted infantry and civilians. The models support a variety of poses, weapon positions, and camouflage. The dismounted infantry models are quite large. Therefore, we load simple models by default. If you plan to use the full models, you should install at least 512 MB of RAM on PCs and a comparable amount on UNIX machines.

Display of Entity Labels

The Heads-up display now includes identification of individual entities. You can toggle the display of entity labels on and off.

Parallel Monitor Alignment on SGI IRIX

Previous releases of the Stealth for SGIs used multichannel technology to support multiple monitors in an offset (cockpit view) alignment. This release adds support for multiple monitors aligned in parallel.

Dynamic Database Loading

In previous releases of the Stealth, you had to specify the terrain database in an MTL file. In release 4.0-ngc, you can load a database from the GUI.

New Camouflage Models

The *.config* directory contains model mapping files that allow you to switch between forest, desert, and winter camouflage models for entities. These files are identical to the *ModelMap.mtl* file except for the differences in camouflage. *ModelMap.mtl* uses forest camouflage.

Documentation Updates

The online help and the online (PDF) version of *MÄK Stealth User's Guide* have been revised and updated to document the new features in this release. An updated printed version of the manual will be issued with the next release of the Stealth.

Known Problems and Product Restrictions

- The Berkeley database is large and may load slowly on PCs if you have a lot of models. On UNIX, the Stealth may have difficulty loading the Berkeley database if you have a lot of models. Increasing swap space should resolve this problem.
- The stealthCtrl utility is not included in this release. If you need a current version of this utility, please contact MÄK Technologies at support@mak.com.
- Some DirectInput joysticks do not work correctly with the Stealth for PCs.
- Some sound cards on Windows NT are incompatible with the sound effects feature. If the Stealth hangs when you start it, disable sound by changing the `startWithSoundOn` parameter in *params.mtl* to 0.
- On UNIX, trailing effects do not work properly when dynamic scene origin is enabled. If you want to use dynamic scene origin, disable trailing effects. (Set `dynamicSceneOrigin` to 1 in *params.mtl* and `enableEntityTrailingEffects` to 0 in *TrailMap.mtl*.) (Dynamic scene origin is no longer used on PCs.)
- If the frame rate is unacceptably low, try disabling trailing effects.
- The sky setting does not work with asymmetric frusta. If you use asymmetric frusta, set the `ViewState->earthSkyMode` parameter to zero.
- The Voodoo3 chip set is not supported (see “3D Video Boards Supported” on page 3)
- The following diagnostic message is sent to the output file *Stealth.txt*:

```
'DtDcmDcmRotAxis warning: sign indicator near zero: 0.000000e+000'
```

This message may be repeated many times. This is a harmless message and can be ignored.
- In dual monitor mode, the OpenGL Stealth graphics output appears on the secondary display and is positioned in the lower left corner of the display. The Stealth viewport is the same size as the original OpenGL window (measured in pixels). However, it will usually be larger or smaller than the original unless the two display resolutions are made to be the same. You will need to resize the OpenGL 2D window if this is the case.
- In Windows 95/98, the 2-D OpenGL window prevents the graphics view from being enabled. You must press Ctrl-F9 to switch to the graphics view, even in dual monitor mode.
- In Windows NT, when you use the spaceball to move the eyepoint, there is a 'stuttering' phenomenon under certain conditions. The graphics view will stop getting updates for a noticeable period of time (< 1 second), then resume. This is a thread priority issue and the Windows function to remedy this does not work. However, you can solve the problem as follows:
 1. Open the Control Panel.
 2. Open the System applet.
 3. Select the Performance tab.

4. Move the slider for Application Performance all the way to the left (do not boost the performance of the foreground application).
- ♦ If you use Creative Technology's '3D Blaster', which uses NVIDIA's RIVA TNT2 Ultra processor, clouds have a tendency to change color spontaneously.
 - ♦ If you run the Stealth with a Direct 3D board, you must use the version of *q3dsgld3.dll* that we ship with the Stealth (4.2.Q3D_VERINFO_PATH.0122-122 as reported in the Properties dialog box.)
 - ♦ The ability to draw into the scene using the Stealth plug-in API has not been thoroughly tested for all systems (most notably Glide and Direct3D).
 - ♦ On some systems, when you activate the on-line help, if you already have a web browser open, the online help does not open up. If this occurs, close your open browser, then activate online help again. It should open up the default browser and display the help file.