



VR-Link 3.11.1 Release Notes

This release note provides the following release-specific information for VR-Link Release 3.11.1:

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Systems Supported

Table 1 lists the platforms currently supported by MÄK VR-Link 3.11.1. Please contact MÄK if you are interested in purchasing VR-Link for other platforms. Application code must be built with the indicated compilers in order to link to VR-Link libraries.

Table 1: Platforms supported for HLA and DIS

Platform	Compiler
SGI IRIX 6.5	MipsPro7.3 C++ compiler (available from SGI)
Sun Sparcstation with Solaris 2.8 or later	SPARCompiler C++ version 5.2 (available from Sun)
Red Hat Enterprise Linux Workstation 3.0	default compiler
Red Hat Fedora Core 3	default compiler
Red Hat Enterprise Linux Workstation 4.0	default compiler
PC with Windows 2000/XP	Microsoft Visual C++ 7.1 Microsoft Visual C++ 8.0

Table 2: Platforms supported for TENA

Platform	Compiler
Red Hat Fedora Core 3	default compiler
Red Hat Enterprise Linux Workstation 4.0	default compiler
PC with Windows 2000/XP	Microsoft Visual C++ 7.1 Microsoft Visual C++ 8.0

Disk Space Requirements

On SGI IRIX, you need approximately 348 MB for VR-Link files and 120 MB for all documentation files. Other UNIX installations require approximately 80 MB for VR-Link files and an additional 120 MB for documentation files.

On PCs, you need 320 MB for VR-Link files and 120 MB for all documentation files.

Building VR-Link on UNIX

VR-Link does not require you to use the MÄK build system, but if you choose to, you must use gmake 3.81 or later. You can download it from the following URL:

<http://savannah.gnu.org/projects/make/>

Compiler Compatibility on Windows

MÄK provides versions of product releases that have been compiled with Microsoft Visual C++ 7.1 and 8.0. When you run MÄK products together, for example, the Logger and the Stealth, 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.

TENA Compatibility

VR-Link 3.11.1 was built against TENA 5.2.1. The MÄK LROM version is 2.1.

FLEXlm Support

VR-Link 3.11.1 uses FLEXlm 11.4 for Windows, Solaris, and Linux versions. The IRIX version continues to use FLEXlm 9.2.

Libraries and Binaries Built with Visual Studio 2005

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), 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. The installer is named *vcredist_x86.exe* and is in the base directory of any installed MÄK product.

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>

Backward Compatibility

Though MÄK tries to maintain a high degree of source compatibility between VR-Link releases, changes to both header files and library names in VR-Link 3.10 mean that VR-Link customers upgrading to VR-Link 3.11.1 from release 3.9.6 or earlier may need to modify project files on Windows and makefiles in UNIX.

Network Compatibility

HLA only

VR-Link 3.11.1 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

This release 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.

RPR FOM Versions Supported

VR-Link 3.11.1 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. By default, VR-Link 3.11.1 uses RPR FOM 1.0.

If you want to use a version of the RPR FOM other than 1.0, pass the version number (0.5, 0.7, 0.8, 2.0006, 2.0014, or 2.0017) to the *DtRprFomMapper* constructor and pass the resulting object to the *DtExerciseConn* constructor. Also, make sure you are using a federation execution name that corresponds to the right FED file. For example:

```
DtExerciseConn conn("VR-Link20017", "MyApp", new DtRprFomMapper(2.0017));
```

VR-Link examples like *f18* and *hlaNetdump* have a command line option, `--rprFomVersion`, that you can use to choose a RPR FOM version, using one of the version numbers listed in the previous paragraph.

RTI Support

VR-Link 3.11.1 has been tested with the Pitch RTI 1.3 and MÄK RTI 3.1.1.



VR-Link 3.11.1 for Sun Solaris is not compatible with versions of the MÄK RTI prior to version 2.4.

If you use the MÄK RTI, remember to make sure that VR-Link can find your FED file or FDD file, and optional *rid.mtl*. Put the FED file or FDD file in the directory from which you are running, or set the environment variable `RTI_CONFIG` to the directory that contains it. See *MÄK RTI Reference Manual* for a list of the options for specifying the location of the *rid.mtl* file.

New Features and Changes

VR-Link 3.11.1 is a maintenance release. It has no new features.

Bug Fixes

VR-Link 3.11.1 fixes the following bugs:

- ♦ Problems with advanced license management features.
- ♦ `DtFilename::extension()` returned the file portion of the filename if no extension existed. It now returns an empty string if there is no extension.
- ♦ Duplicate enumerations in the *VR-Link.xml* and *VR-Link20017-1.xml* files have been removed.
- ♦ A problem generating code for string attributes in the VR-Link Code Generator.
- ♦ A problem generating code for attributes and parameters with a fixed cardinality greater than 1.

Known Problems

This release of VR-Link has the following known problems:

- VR-Link correctly encodes and decodes `EnvironmentalProcess` objects for RPR FOM 2, Draft 14. However, the RPR FOM specifies a way of encoding which prevents VR-Link from correctly decoding modified or custom `EnvironmentalRecords`. Unfortunately, many MÄK products built with VR-Link use customized `EnvironmentalRecords`. If you use these products or if you use customized records in your applications, please do not use the RPR FOM 2 Draft 14 FOM Mapper. This is not a problem in other FOM versions, and it has been resolved in future versions of the FOM.
- The RTI 1516 API specifies that all strings passed to and from the RTI are handled as wide strings. VR-Link (and the MÄK RTI) store strings internally as narrow strings. This means that true multibyte wide strings used by RTI Federates may not be handled correctly when received by VR-Link. VR-Link handles name reservation wide strings correctly, however, as this is a 1516-only function. VR-Link provides conversion functions from Wide To Narrow/Narrow to Wide string conversion in *vlStringUtil.h*.
- On non-windows platforms, the classes *DtSharedMemoryPoolManager* and *DtSharedMemoryPoolClient* (*vlShmPool.h*) sometimes have difficulty creating a large memory pool (greater than 1 MB) if the pool name is longer than two or three characters. The classes refuse to create the memory pool even if the requested pool is smaller than the system resource SHMMAX. Setting the pool name to fewer than three characters will work around this problem.
- Section 6.10 in *VR-Link Developer's Guide* describes interoperability issues that arise when you try to run an HLA 1.3 federate with an IEEE 1516 federate. In particular it describes the requirement to use an identical FED or FDD file for all federates. In future releases, we intend to rectify this situation, and allow run-time interoperability between federates that have loaded a 1.3-style FED file and federates that have loaded a 1516-style XML file that otherwise includes the same set of classes, attributes and parameters.