

VR-Forces GUI Command-Line Options

Table 1. vrfGui command-line options

Option	Description
(-- --ignore_rest)	Ignore all of the command-line options that are listed after this argument.
--antiAliasing <i>level</i>	Set the anti-aliasing level (0, 2, 4, 8, or 16). Default: 4.
--appCacheDir <i>directory</i>	Use --appCacheDir to specify a directory for the cache. This allows you to run other instances of VR-Forces from the same installation.
--appDataDir <i>directory</i>	Specifies the location of application data.
(-c --showConsole)	Display a console window.
(-C --autoConnect) { <i>filepath</i> <i>connector_name</i> }	Automatically connect to the network using the specified connector.
--dataDir <i>directory</i>	Specifies the location of the application's data directory.
--defaultSimulationModelSet <i>sms</i>	The simulation model set to use as the default when starting up the GUI.
--depthBits <i>bits</i>	Sets the depth of graphics to 24 bits or 32 bits. The default is 24,
--dis	Start in DIS mode, using DIS command-line arguments to specify connection parameters. DIS-specific arguments do not have to follow --dis; they can be in any order.
--disableDynamicTerrain	Disables the dynamic terrain engine.
--disableErrorDialog	Prevents error messages from displaying. Errors print to the console instead.
--disableIndirectEntities	Disables indirect rendering of entities.
--disableIndirectExternalRenderer	Disables the indirect external renderer, which minimizes state changes by default. When this is used, state changes are not minimized.

Table 1. vrfGui command-line options (continued)

Option	Description
<code>--disableModelSets "model-set-number"</code>	Disables one or more model sets. Model set numbers are: • 0 - 3D Model Set • 1 - Colorized Models Model Set • 4 - Minimap • 5 - 2D Icons Model Set To disable multiple model sets, separate them with commas. For example: <code>--disableModelSets "0, 1"</code> disables the 3D and XR model sets <code>--disableModelSets "0, 1, 5"</code> disables all model sets
<code>--disableNvidiaBindlessFix</code>	Do not use this option unless directed to do so by MAK technical support.
<code>--disableRemoteDiscovery</code>	Disable discovery of remote objects.
<code>(-z --disableReverseZBuffer)</code>	Disables use of reverse Z buffering, which is enabled by default. Leaving reverse Z buffering enabled can reduce Z-fighting when viewing the terrain from a distance.
<code>--disableTerrainObserverViews</code>	Disables the loading of terrain observer view files. Loading a terrain does not clear the observer views and the terrain's observer views do not load.
<code>--dispSetting filename</code>	Specifies the display engine configuration to load.
<code>--doNotCheckPluginVersions</code>	Do not check the version in a plug-in to make sure it can load in VR-Forces. A plug-in gets built against a particular version of VR-Forces. Ordinarily, when VR-Forces loads a plug-in, it checks to be sure it was created with that version of VR-Forces. This option prevents that check.
<code>--doNotLoadVrfPlugins</code>	Prevents loading of plug-ins in the <code>./plugins</code> directory.
<code>--enablePersistentShadowTechnique</code>	Use this command-line option to enable persistent shadows.

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Table 1. vrfGui command-line options (continued)

Option	Description
(-e --extraArgs) <i>string</i> " <i>string1 ... stringn</i> "	Allows you to send arbitrary strings to the initializer, which can be queried for by plugins. This option works around the restriction on adding new command-line arguments. It can take one argument or multiple arguments. Multiple arguments must be wrapped in double quotes.
(-E --entTypeMap) <i>filename</i>	Load the specified object type mapping file. The filename extension determines the type of mapping.
--enableDofConstraints	Enables the use of degree(s) of freedom constraints on simulation object models.
--enableLogFileTimestamps	Print a timestamp for each line in a log file.
--enableTracyProfiling	Enables the Tracy Client when you launch the application.
--enableVSync	Turns on VSync.
--entDispSetting <i>filename</i>	Specifies the entity display setting to load.
--entityDefsDir <i>directory</i>	Loads the <i>.hier</i> and <i>.leaf</i> files in the specified directory to the entity element definition manager.
--entityGridCellSize <i>x y z</i> --entityGridCellSize <i>x,y,z</i> --entityGridCellSize <i>integer</i>	Use this option for debugging, particularly looking for bottlenecks in the code. You can specify three values or one, for example: • 2000 2000 2000 • 2000 • -1 -1 -1 (one cell, infinite cell size) • -1 (one cell, infinite cell size)
--envSetting <i>filename</i>	Specifies the environment configuration file to load.
--factoryRootDir <i>directory</i>	Set the root directory used to restore settings to factory defaults.
--forceTextShaping	Force all text to use HarfBuzz shaping. Use this option if you need support for right-to-left languages. It may affect performance.

Table 1. vrfGui command-line options (continued)

Option	Description
<code>--fowPerspective <i>force</i></code>	Shows the ground truth and spot reports perspective of the specified force, where <i>force</i> can be Friendly, Opposing, Neutral, or None. Default: None.
<code>--fullScreen</code>	Start with the window in full screen mode.
<code>(-G --locale) <i>language</i></code>	Specifies the locale (for localization).
<code>--gui <i>filename</i></code>	Specify a GUI configuration file. This file specifies the layout of menus, toolbars, and dialog box pages. A simple filename assumes <code>./appdata/settings/vrfGui</code> . A relative filename is from the <code>./bin64</code> directory. A full path is used as is.
<code>(-h --help)</code>	(Display command-line usage information.)
<code>--highestPriority</code>	Changes the priority of the application and the main render thread to the highest available priority. This command may starve other processes.
<code>--hla1516e</code>	Start in HLA Evolved mode, using HLA command-line arguments to specify connection parameters. HLA-specific arguments do not have to follow <code>--hla1516e</code> ; they can be in any order.
<code>(-K --disableKDTrees)</code>	Disable creation of KD trees for intersections.
<code>(-l --logFileName) <i>filename</i></code>	Specifies the log file name.
<code>--layoutSettingsFile <i>filename</i></code>	Specifies the GUI layout settings file to use. <i>filename</i> specifies the base filename. It is prefixed with <code>default_</code> and the extension <code>.uisx</code> is added. Default: <code>UILayoutSettings</code> .
 Use the texture limiting command-line options to limit and debug the memory usage and then observe the total GPU memory used.	
<code>--limitEarthSplattingTextures "width and height"</code>	Restricts the size of an earth file's splatting textures to the specified resolution. The width and height must be a power of 2, for example, "16". If you do not enter a power of 2, VR-Forces converts it to the next highest power of 2.

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Table 1. vrfGui command-line options (continued)

Option	Description
--limitEarthTerrainTextures <i>"width and height"</i>	Restricts the size of an earth file's terrain textures to the specified resolution. The width and height must be a power of 2, for example, "16". If you do not enter a power of 2, VR-Forces converts it to the next highest power of 2.
--limitEarthVegetationTextures <i>width and height</i>	Restricts the size of an earth file's vegetation textures to the specified resolution. The width and height must be a power of 2, for example, "16". If you do not enter a power of 2, VR-Forces converts it to the next highest power of 2.
--limitEntityTextures <i>"widthheight"</i>	Uses only mipmap levels at or below the resolution for entities. Use two integers for the maximum width and height of the texture mipmap to use, for example, "1024 1024" or "2k 2k". To turn off the texture limit function, use --limitEntityTextures "-1 -1".
--limitEntityTexturesExclusions <i>"texture"</i>	Excludes textures from texture reduction limits for indirect. Specify the texture(s) that you want to exclude, for example, --limitEntityTexturesExclusions "SurfaceCVN-75HarrySTruman, SurfaceCruiseShip, FixedWingF-16, FixedWingRQ-1Predator".
--limitTerrainTextures <i>"width height"</i>	Uses only mipmap levels at or below the resolution for terrain. Use two integers for the width and height, for example, "1024 1024" or "2k 2k".
--limitGpuMemoryPercentage <i>integer</i>	Set the cutoff percentage as a value between 0 and 100. (Typical values are between 85 and 100.) Beyond the specified percentage, VR-Forces does not make new textures or buffers as a percentage of the available video RAM.
--loadPlugin <i>plugin_filename</i>	Specifies a plug-in to load. Accepted multiple times.

Table 1. vrfGui command-line options (continued)

Option	Description
<code>--loadSimulationObjectGroup <i>group</i></code>	Creates a new scenario on the simulation object group editing terrain and creates an instance of the simulation object group on that terrain.
<code>--mainScreenNum <i>num</i></code>	Specifies the display that the main window should use. The screen number can be a number from 0 to the number of screens -1. This number matches the screen number used in the Display Engine Configuration Editor for a window.
<code>--mergeEntityTypeMap {<i>directory</i> <i>filename</i>}</code>	Merges all entity type mapping files (*.metx) in a directory or individual entity type mapping files. Can be used multiple times. See note below.
<code>--mergeHierarchyEntityDef {<i>directory</i> <i>filename</i>}</code>	Merges the .hier files in the specified directory or the individual .hier file into the default hierarchy. Merging is additive.
<code>--mergeHierarchySpotReportDef {<i>directory</i> <i>filename</i>}</code>	Merges the element definition .hier files in the specified directory or the individual .hier file into the hierarchy after ./SharedData/18/latest/ModelData/Configuration/Original/Definitions has been loaded. Can be used multiple times.
<code>--mergeHierarchyTacticalGraphicsDef {<i>directory</i> <i>filename</i>}</code>	Merges the specified .hier file(s) into the default hierarchy. Merging is additive only. No nodes in a previously loaded hierarchy are replaced. Can be used multiple times.
<code>--mergeHierarchyUnitDef {<i>directory</i> <i>filename</i>}</code>	Merges the specified .hier file(s) into the default hierarchy. Merging is additive only. No nodes in a previously loaded hierarchy are replaced. Can be used multiple times.
<code>--mergeLeafEntityDef {<i>directory</i> <i>filename</i>}</code>	Merges the leaf files in the specified directory or the individual leaf file into the default entity element definitions. Can be used multiple times.
<code>--mergeLeafSpotReportDef {<i>directory</i> <i>filename</i>}</code>	Merges the leaf files in the specified directory or the individual leaf file into the default spot report element definitions. This adds or replaces leaves. Can be used multiple times.

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Table 1. vrfGui command-line options (continued)

Option	Description
<code>--mergeLeafTacticalGraphicsDef {directory filename}</code>	Merges the leaf files in the specified directory or the individual leaf file into the default tactical graphics element definitions. Can be used multiple times.
<code>--mergeLeafUnitDef {directory filename}</code>	Merges the leaf files in the directory or the specified individual leaf file into the default unit element definitions. Can be used multiple times.
<code>--mergeModelDefs {directory filename}</code>	Merges all model definition files (*.ommx) in the specified directory or individual model definition files. Can be used multiple times.
<code>--mergeTacticalGraphicsTypeMap {directory filename}</code>	Merges all tactical graphics type mapping files (*.mtgx) in a directory or individual tactical graphics type mapping files. Can be used multiple times. See note below.
<code>--mergeUnitTypeMap {directory filename}</code>	Merges all unit type mapping files (*.magx) in a directory or individual unit type mapping files. Can be used multiple times. See note below.
 The options for merging type maps (--mergeEntityTypeMap, --mergeTacticalGraphicsTypeMap, and --mergeUnitTypeMap) allow you to merge your type mapping with those that already exist. By default, that does not overwrite the existing mappings. Your merged mappings will exist alongside those that were already loaded. If you want to overwrite the existing ones, use the merge option alongside the --overwriteMappingsOnMerge command-line option.	
<code>(-n --notifyLevel) notification_level</code>	Specifies the notification level for application messages, where <i>notification_level</i> is a number from 0 through 4.
<code>--noAppDataEntityDefs</code>	Do not load the entity element definitions in <i>./SharedData/18/latest/ModelData/Configuration/Definitions</i> .
<code>--noAppDataEntityTypeMap</code>	Do not load entity type mappings in <i>./SharedData/18/latest/ModelData/Configuration/Definitions</i> .

Table 1. vrfGui command-line options (continued)

Option	Description
<code>--noAppDataModelDefs</code>	Do not load model definitions in <i>./SharedData/18/latest/ModelData/Configuration/Definitions</i> .
<code>--noAppDataSpotReportDefs</code>	Do not load the spot report definitions in <i>./SharedData/18/latest/ModelData/Configuration/Definitions</i> .
<code>--noAppDataTacticalGraphicsDefs</code>	Do not load the tactical graphics element definitions in <i>./SharedData/18/latest/ModelData/Configuration/Definitions</i> .
<code>--noAppDataTacticalGraphicsTypeMap</code>	Do not load tactical graphics type mappings in <i>./SharedData/18/latest/ModelData/Configuration/Definitions</i> .
<code>--noAppDataUnitDefs</code>	Do not load the unit element definitions in <i>./SharedData/18/latest/ModelData/Configuration/Definitions</i> .
<code>--noAppDataUnitTypeMap</code>	Do not load unit type mappings in <i>./SharedData/18/latest/ModelData/Configuration/Definitions</i> .
<code>--nonVrfObjectsUUIDScheme <i>scheme</i></code>	Sets the UUID scheme for non VR-Forces objects. Values are <i>entity-identifier</i> , <i>global-identifier</i> , <i>marking-text</i> .
<code>(-O --hasNTPSync)</code>	Enables the synchronization of all time-based features between different VR-Vantage applications, such as instances of VR-Vantage or the VR-Forces GUI. Note that system clocks must be synchronized.
<code>--overwriteMappingsOnMerge</code>	Any mapping merge specified on the command line overwrites mappings in the default files. Use in conjunction with the command-line options for type maps (above).
<code>--plugin <i>filename</i></code>	Load the specified plug-in. Can be used multiple times.
<code>--pseudoFullScreen</code>	Use pseudo full screen for full screen mode. This may improve performance when using dynamic ocean.
<code>(-S --suppressHatIntersectionOnAttach)</code>	Suppress the periodic HAT intersection when attached.
<code>--scenarioFile <i>filename</i></code>	Specifies a scenario to load.

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Table 1. vrfGui command-line options (continued)

Option	Description
<code>--sharedDataDir <i>directory path</i></code>	Use this to specify the location of the shared data directory.
<code>--sharedDataRoot <i>directory root</i></code>	Specifies the location of the shared data root.
<code>--sharedDataStem <i>directorystem</i></code>	Specifies the location of the shared data stem.
<code>--sharedSettingsDirectory <i>directory</i></code>	Specifies the directory where shared settings are stored. The default directory is <code>\$(APP_DIR)/settings</code> . If the <code>--useUserSettingsDirectory</code> flag is set, then the user settings directory is used to store the settings instead.
<code>(-s --siteId <i>ID</i>)</code>	Specifies the site ID.
<code>--stencilBits <i>bits</i></code>	Sets the number of stencil bits (0 or 8). Default: 0.
<code>--tacticalGraphicsDefsDir <i>filename</i></code>	Loads the <code>.hier</code> and <code>.leaf</code> files in the specified directory to the tactical graphics element definition manager.
<code><i>terrain_MTF_file</i></code>	Specifies a terrain (MTF) file to load. By default, VR-Forces looks in the expected data location for terrain files in either the default location, <code>C:\MAK\SharedData</code> , or the one specified by the environment variables <code>MAK_SHARED_DATA_ROOT</code> and <code>MAK_SHARED_DATA_STEM</code> . (If the file is in another location, the path must be a relative path from <code>./bin64</code> to the file, for example, <code>../myTerrains/MTF_file</code> .)
<code>--unitDefsDir <i>filename</i></code>	Loads the <code>.hier</code> and <code>.leaf</code> files in the specified directory to the unit element definition manager.
<code>--useFileCommChannel <i>channel</i></code>	The communication file to be used as a base for communicating text based commands from external applications.
<code>--useUserSettingsDirectory</code>	Indicates that the system should store settings in the user login settings directory, rather than the application settings directory. Use in conjunction with <code>--sharedSettingsDirectory</code> .
<code>--userDataDir <i>directory</i></code>	Specifies the location of user data directory.

Table 1. vrfGui command-line options (continued)

Option	Description
--userScenarioDirectory <i>directory</i>	Specifies the user scenario directory to consider the "home".
--userTerrainDirectory <i>directory</i>	Specifies the user terrain directory. If you do not define a different directory, the application uses the default: \$(SHARED_DATA_DIR)/Terrain/TerrainConfiguration.
(-v --version)	Displays version information.
(-Z --ignoreZoomForSpeedtreeLod)	Disable zoom for SpeedTree LOD.
HLA Only	These options are available if you specify --hla1516e.
(-a --appNumber) <i>number</i>	Application number.
--disableRequestUpdates	Disable request updates for state objects.
(-f --fomMapperLib <i>libname</i>) <i>libname</i>	FOM Mapper library name.
(-F --fedFileName) <i>fedfile_name</i>	FED file name.
--fileTransporterReceivePort <i>port</i>	Port for the file transporter. This is the port used to receive order of battle and plan files.
(--fomMapperInitData <i>data</i>)	FOM Mapper initialization data.
--fomModules <i>module</i>	Specifies an HLA Evolved FOM module. Can be used multiple times.
(-i --sessionId) <i>ID</i>	Specifies the session ID for this instance of the front-end.
--ignoreAdvisories	Enables or disables HLA advisory messages. Default: true.
(-S --localSettingsDesignator <i>designator</i>)	Specifies a string that is passed to the RTI during federate connect when using HLA Evolved. It is usually used to provide additional RTI configuration, but every RTI uses it differently. Please consult your RTI documentation for proper usage.
(-N --federateName) <i>federate_name</i>	Specifies a unique name that can be assigned to the federate. Default: VR-Forces. (HLA Evolved only)
--numberOfremoteNetworkThreads <i>thread_count</i>	For remote object discovery, the number of worker threads to use to help discover remote objects for data usage.

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Table 1. vrfGui command-line options (continued)

Option	Description
(-p --federateType) <i>type</i>	Federate Type can be used to distinguish different categories of federates, and its only practical use is in save-and-restore.
--requestWhenInitialized	Request attribute updates only when a state object is initialized.
--rprFomRevision <i>revision_number</i>	RPR FOM revision for RPR FOM 2.0, draft 17.
--rprFomVersion <i>version_number</i>	RPR FOM version. (0.5, 0.7, 0.8, 1.0, 2.0006, 2.0014, 2.0017, or 2.0)
--useGeographicDdm	Specifies use of geographic DDM if you are using the MAK RTI. Default: false.
(-x --execName) <i>exec_name</i>	Execution name. Default: MAK-RPR-2.0.
DIS Only	These options are available if you specify --dis.
--enablePduProfiling <i>string</i>	Enables the entity PDU flood check of a given time or a number of packets over that time.
(-H --hostAddressString) <i>address</i>	Specifies the host address. This is usually the same as the device address.
--reportedHostAddressString <i>address</i>	Specifies how VR-Forces reports its IP address to another VR-Forces application for the purpose of file transfers. It is only important when you have a GUI or remote controller on one side of a router and a simulation engine on the other, and there is some kind of network address translation occurring whereby they have to connect to one another using an IP address other than the one they recognize themselves at locally.

VR-Forces Sim. Engine Command-Line Options

Table 2. vrfSim command-line options

Option	Description
-- --ignore_rest	Ignore all of the command-line options that are listed after this argument.
(-a --appNumber) <i>number</i>	Specifies the application number.

Table 2. vrfSim command-line options (continued)

Option	Description
<code>--additionalSystemScriptsDirectory</code> <i>directory</i>	Specifies a directory where VR-Forces will look for system scripts when it populates the Scripted Task dialog box script list.
<code>--appIdRangeMax</code> <i>max</i>	Specifies a range maximum to roll the application number to the next ID in the range. When the upper limit of the entity number is reached, the application number for the next object created will be increased and the entity number restarted at 0. If the application number range <i>max</i> is reached no more objects will be created on the back-end until some are deleted.
<code>(-B --batchScenarioFileName)</code> <i>batch_file</i>	Runs the specified batch file (for use with one back-end only).
<code>(-c --frontEndPID)</code> <i>PID</i>	The process ID for the front-end when running in combined mode.
<code>--clockMode</code> <i>mode</i>	For Windows only, specifies whether to use the performance counter or the system clock for absolute time stamping. This only applies when Use Absolute Time Stamps is enabled. 0 - Performance counter (default), highly accurate internal timer 1 - Continual synchronization with system clock
<code>--connectionless</code>	Run VR-Forces without a connection.
<code>--countryCodesMappingFile</code> <i>file_name</i>	Specifies an alternative file that maps country codes to country names and DIS enumeration values.
<code>(-d --settingsFile)</code> <i>file_name</i>	Specifies a configuration file to load instead of <i>vrfSimSettings.xml</i> .
<code>--daemon</code>	(Linux only) Starts the back-end as a daemon process . If you start <i>vrfSim</i> as a daemon, it does not try to read characters from the console. It forks a background process at startup. It will exit cleanly if it receives a SITGTERM, SIGQUIT, or SIGINT signal.

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Table 2. vrfSim command-line options (continued)

Option	Description
--dataDir <i>directory</i>	Specifies the data directory for the back-end.
--defaultObjectTimeout <i>timeout</i>	Specifies the timeout interval for objects.
--dis5Timestamps	In DIS 7, there is a discrepancy in timestamps that can lead to some of them appearing to take place in the future. Use this option to enable the time management method from DIS 5.
--diGuyAnimationsFile <i>file_name</i>	Specifies an additional configuration file for DI-Guy animations.
--diGuyCharacterDataFile <i>file_name</i>	Specifies an additional configuration file for DI-Guy character data.
--disableParallelTick	Execute all tick code serially.
--disableParallelPublisherTick	Turn off ticking of publishers in parallel.
--disableRemoteDiscovery	Disable discovery of remote objects.
--doNotLoadVrfPlugins	Do not load any VR-Forces plug-ins from the <i>./plugins</i> directory.
--enableChannel <i>channel</i>	Enables a specific channel for the channel-specific output, even if it is disabled in <i>channelSettings.mtl</i> .
--enablePduProfiling <i>string</i>	Enables the entity PDU flood check of a given time or a number of packets over that time.
--exitOnTestResultCommand	If a plan in the simulation includes the Test Result statement, and the sim was started with this command, then the simulation sends the message to all back-ends to close after the Test Result statement.
--fileNotifyLevel <i>level</i>	Notify level in log file to use.
--fullyLoadTerrain	For paged terrains, load all pages.
-h --help	Display command-line usage information.
--hostAddressString <i>address</i>	The IP address of the host computer. Called Device Address in the Launcher.
(-i --sessionId) <i>session_ID</i>	Specifies a session ID.

Table 2. vrfSim command-line options (continued)

Option	Description
(-L --scenarioFileName) <i>"scenario_pathname"</i>	Loads the specified scenario. The pathname can be absolute or relative from the <i>./bin</i> directory. Mutually exclusive with the -T option
--loadPlugin <i>plugin_filename</i>	Specifies a plug-in to load. Accepted multiple times.
--logFrameRateStatistics	Starts the Tracy Client connection to capture performance statistics for back-end.
--msdSIDCMappingFile <i>file_name</i>	Specifies an alternative file for mapping SIDC codes to DIS enumerations.
(-n --notifyLevel) <i>notification_level</i>	Specifies the notification level for messages written to the console or the VR-Forces log file (<i>vrf.log</i>)
--nonVrfObjectsUUIDScheme <i>scheme</i>	Sets the UUID scheme for non VR-Forces objects. Values are <i>entity-identifier</i> , <i>global-identifier</i> , <i>marking-text</i> .
--numCallbackThreads <i>threads</i>	Number of threads in the callback queue.
--numNetworkCallbackThreads <i>threads</i>	Number of network threads in the callback queue. Zero means run network in a thread serially (unless it is turned off). If publishing is in the tick thread, this will be shared with publishers.
--outputInterval <i>interval</i>	Interval for output.
--outputLogFile <i>file_name</i>	The file to use to write out application output.
(-q --doNotUseConsole)	Specifies that all <i>vrfSim</i> output go to the log file.
(-r --startInRunMode)	Starts the back-end in run mode. If you start the back-end without specifying a scenario (with -L) or a terrain database (with -T), the back-end starts in pause mode.
-s --siteId <i>ID</i>	Specifies the site ID.
--selfReflect	Reflects all network traffic back to this back-end.

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Table 2. vrfSim command-line options (continued)

Option	Description
<code>--setMainThreadToHighPriority</code>	Sets the VR-Forces main thread to high priority. When enabled, other threads may be starved if there are insufficient processors available. If running on hardware with limited processor time, this may decrease overall system performance. (Windows only)
<code>--sharedDataDir <i>directory path</i></code>	Defines the location of the shared data directory if you installed it somewhere other than the default.
<code>--sharedDataRoot <i>directory root</i></code>	Defines the location of the shared data root.
<code>--sharedDataStem <i>directory stem</i></code>	Defines the location of the shared data stem.
<code>--sharedSettingsDirectory <i>directory</i></code>	Specifies the directory where shared settings are stored. The default directory is <code>\$(APP_DIR)/settings</code> . If the <code>--useUserSettingsDirectory</code> flag is set, then the user settings directory is used to store the settings instead. If not, the application's configuration location (system-dependent) is used.
<code>--simulationModelSet <i>sms</i></code>	Specifies the simulation model set. It must be declared separately for front-end and back-end even in combined mode.
<code>--startMinimized</code>	Minimizes the vrfSim console at startup.
<code>--suppressDataAvailableException</code>	Do not throw an exception when <code>dataAvailable</code> is not checked in non-blocking terrain calls.
<code>(-T --terrainDatabase) <i>terrain_database</i></code>	Specifies a terrain database to load in the back-end. Mutually exclusive with the <code>-L</code> option.
<code>--targetFrameRate <i>rate</i></code>	Specifies the frame rate above which vrfSim will yield CPU time to other processes.
<code>--testOutputFilename <i>filename</i></code>	The name of the file to which you want to log scenario autotest outputs.
<code>--tickPublishersDuringEntityTick</code>	Tick publishers during the entities' ticks.

Table 2. vrfSim command-line options (continued)

Option	Description
<code>--tracyPort <i>integer</i></code>	Allows you to specify a back-end port to profile with the Tracy Client. You can then profile a different back-end port than the default, and also profile back-ends separately from front-ends. Be sure to include the colon before the port number. The default port is :10101 .
<code>--useAbsoluteTimestamps</code>	Enables use of absolute timestamps. Otherwise uses relative timestamps.
<code>--userDataDir <i>directory</i></code>	Specifies the user data directory for the back-end.
<code>--useUserSettingsDirectory</code>	Indicates that the system should store settings in the user login settings directory, rather than the application settings directory. Use in conjunction with <code>--sharedSettingsDirectory</code> .
<code>-v --version</code>	Displays version information.
<code>--waitQueue</code>	Turn off main thread participation in parallel algorithms.
HLA Only	
<code>--enableMetoc</code>	Enables the METOC weather publishers. (Applies only to HLA 1516 Evolved.)
<code>-f --fomMapperLib <i>libname</i></code>	FOM Mapper library name.
<code>(-F --fedFileName) <i>fedfile_name</i></code>	FED file name.
<code>--fomMapperInitData <i>data</i></code>	FOM Mapper initialization data.
<code>--fomModules <i>module</i></code>	Specifies an HLA Evolved FOM module. Can be used multiple times.
<code>--ignoreAdvisories</code>	Enables or disables HLA advisory messages. Default: true.
<code>--mimModule <i>HLAE_MIM</i></code>	Specifies an HLA Evolved MIM module.
<code>(-N --federateName) <i>federate_name</i></code>	Specifies a unique name that can be assigned to the federate. Default: VR-Forces. (HLA Evolved only)
<code>--netnFomRevision <i>revision_number</i></code>	Specifies the internal revision of the implementation of the NETN FOM version as an integer. The default (and currently the only supported revision) is 1.

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Table 2. vrfSim command-line options (continued)

Option	Description
--netnFomVersion <i>version_number</i>	Specifies the NETN FOM version as a double. The default (and currently the only supported version) is 3.0.
--noRtiCompilerCheck	Disable RTI Compiler version check.
(-p --federateType) <i>type</i>	Federate Type can be used to distinguish different categories of federates, and its only practical use is in save-and-restore.
--rprFomRevision <i>revision_number</i>	RPR FOM revision for RPR FOM 2.0, draft 17.
--rprFomVersion <i>version_number</i>	RPR FOM version. (0.5, 0.7, 0.8, 1.0, 2.0006, 2.0014, 2.0017, or 2.0)
(-s --localSettingsDesignator <i>designator</i>)	Specifies a string that is passed to the RTI during federate connect when using HLA Evolved. It is usually used to provide additional RTI configuration, but every RTI uses it differently. Please consult your RTI documentation for proper usage.
--timeManagement	Enables time management for the back-end.
(-x --execName) <i>exec_name</i>	Execution name. Default: VR-Link.
DIS Only	
(-A --destAddrString) <i>address</i>	the destination address
--appDataDir <i>directory</i>	Specifies the location of application data.
--appIdRange <i>lower-upper</i>	Specifies a range of application IDs that represent objects generated by VR-Forces.
--attributePduStrategy	This flag controls how VR-Forces sends DIS attribute PDUs.
--deviceAddress <i>address</i>	Specifies the address of the network card to use for UDP traffic.
--disVersion <i>version</i>	The DIS version. Default: 7.
--mcastTtl	Specifies the multicast time-to-live. Default: -1.
--multicastAddresses <i>address1 ... addressn</i>	Specifies one or more multicast addresses.

Table 2. vrfSim command-line options (continued)

Option	Description
(-P --disPort) <i>port</i>	DIS port.
--recvBufferSize <i>size</i>	Receive buffer size.
--sendBufferSize <i>size</i>	Send buffer size. Default: -1.
--subnetMask <i>mask</i>	Specifies a subnet mask.
--suppressSelfReflect	Represses self reflection of the DIS exercise connection.
--useAsyncIO	Use asynchronous I/O. Default: False.
--useIpv6	Specifies that the DIS exercise connection use the IPV6 protocol, if available.
(-x --exerciseId) <i>ID</i>	Exercise ID.

VR-Forces Launcher Command-Line Options

Table 3. vrfLauncher command-line options

Option	Description
(-B --backend)	Start vrfLauncher for the back-end only.
(-C --config)	Open the Simulation Connections Configuration tool.
(-F --frontend)	Start vrfLauncher for the front-end only.
(-G --locale) <i>locale</i>	Specifies the language to use.
--guiArgs	Arguments after --guiArgs are passed only to the front-end.
(-h --help)	Displays help information in a console window.
(-R --makRadio)	Launches the standalone MAK Radio application.
--simArgs	Arguments after --simArgs are passed only to the back-end.
--usePredefinedConnection <i>connection</i>	Specify an already defined connection name, such as DIS localhost, so that the vrfLauncher can launch without needing to display the Simulation Connections dialog box.
(-v --version)	Displays version information.
--	Pass all arguments after this to vrfGui and vrfSim, except as modified by F-- or B--.
Special Commands for Arguments that Come After --	
F--	Arguments after F-- are passed only to the front-end.
B--	Arguments after B-- are passed only to the back-end.

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Mouse Button Mappings

Table 4. Mouse Button Mappings

Navigation Action	Mouse Action	Context
Attach to entity.	Shift +left-click	Entity.
Attach to prop.	Ctrl + Shift +left-click	Prop.
Deselect all.	Left-click	Terrain or sky.
Drag terrain.	Left-click+drag	Terrain or prop.
Object selected, others unselected.	Left-click	Selected entity or prop.
Select entity or prop.	Ctrl +left-click	Unselected entity or prop.
Select object and unselect all others	Left-click	Unselected entity or prop
Teleport to location	Shift +left-click	Terrain
Teleport to prop	Shift +left-click	Prop
Teleport to entity	Ctrl + Shift +left-click	Entity
Unselect	Ctrl +left-click	Selected entity or prop
Display context-sensitive menu	Right-click	Entity or prop
3D Only		
Drag the view	Middle mouse button drag	All
Drag heading and pitch (mouse look)	Right Drag	All
Orbit drag	Ctrl +left-click+drag	Terrain or prop
Zoom in (magnification)	Ctrl + mouse wheel forward	All
Zoom out (magnification)	Ctrl + mouse wheel backward	All
Reset magnification	Middle mouse button	All
Move observer forward	Mouse wheel forward	All
Move observer back	Mouse wheel back	All
Move observer level observer forward	Shift +mouse wheel forward.	All
Move observer level observer backward	Shift +mouse wheel backward.	All
Move flashlight beam	Right mouse button drag	All

Table 4. Mouse Button Mappings (continued)

Navigation Action	Mouse Action	Context
Expand flashlight beam	Alt +mouse wheel forward.	All
Contract flashlight beam	Alt +mouse wheel backward.	All
2D Only		
Rotate terrain	Right-click + drag	All. Orient North disabled.
2D Zoom in	Mouse wheel forward; Middle button + drag	All
2D Zoom out	Mouse wheel backward; Middle button + drag	All

Keyboard Mappings

In keyboard mappings, K = numeric keypad (K8 means press Keypad 8). To use the numeric keypad for navigation, NumLock must be on.

Table 5. Observer Keyboard Mappings

Observer Movement	Observer	Level Observer	Laptop	2D Level Observer
Move forward	W	unmapped	W	unmapped
Move back	S	unmapped	S	unmapped
Move left	A	unmapped	A	unmapped
Move right	D	unmapped	D	unmapped
Move up	Q, Ctrl+Q	unmapped	Q, Ctrl+Q	unmapped
Move down	E, Ctrl+E	unmapped	E, Ctrl+E	unmapped
Move forward level observer	unmapped	W	unmapped	W
Move back level observer	unmapped	S	unmapped	S
Move left level observer	unmapped	A	unmapped	A
Move right level observer	unmapped	D	unmapped	D
Move up level observer	unmapped	Q, Ctrl+Q	unmapped	unmapped
Move down level observer	unmapped	E, Ctrl+E	unmapped	unmapped
Move attached context forward	Shift+W	Shift+W	Shift+W	Shift+W
Move attached context back	Shift+S	Shift+S	Shift+S	Shift+S
Move attached context left	Shift+A	Shift+A	Shift+A	Shift+A
Move attached context right	Shift+D	Shift+D	Shift+D	Shift+D
Move attached context up	Shift+Q	Shift+Q	Shift+Q	unmapped
Move attached context down	Shift+E	Shift+E	Shift+E	unmapped

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Table 5. Observer Keyboard Mappings (continued)

Observer Movement	Observer	Level Observer	Laptop	2D Level Observer
Level yaw left	K 4	K 4	Left arrow	Left arrow
Level yaw right	K 6	K 6	Right arrow	Right arrow
Level pitch up	Shift+J	Shift+J	Shift+J	unmapped
Level pitch down	Shift+K	Shift+K	Shift+K	unmapped
Level roll right	Shift+I	Shift+I	Shift+I	unmapped
Level roll left	Shift+M	Shift+M	Shift+M	unmapped
Yaw left	Shift+H	Shift+H	Shift+H	Shift+H
Yaw right	Shift+L	Shift+L	Shift+L	Shift+L
Pitch up	K 8	K 8		unmapped
Pitch down	K 2	K 2	-	unmapped
Roll right	K 9	K 9	K 9	unmapped
Roll left	K 3	K 3	K 3	unmapped
Orbit right	right arrow key	left arrow key	left arrow key	unmapped
Orbit left	left arrow key	left arrow key	left arrow key	unmapped
Orbit up	up arrow key	up arrow key	up arrow key	unmapped
Orbit down	down arrow key	down arrow key	down arrow key	unmapped
Look up	Ctrl+K 8	Ctrl+K 8	Ctrl+K 8	Ctrl+K 8
Look down	Ctrl+K 2	Ctrl+K 2	Ctrl+K 2	Ctrl+K 2
Look left	Ctrl+K 4	Ctrl+K 4	Ctrl+K 4	Ctrl+K 4
Look right	Ctrl+K 6	Ctrl+K 6	Ctrl+K 6	Ctrl+K 6
Look tilt left	Ctrl+K 3	Ctrl+K 3	Ctrl+K 3	Ctrl+K 3
Look tilt right	Ctrl+K 9	Ctrl+K 9	Ctrl+K 9	Ctrl+K 9
Zoom in	unmapped	unmapped	unmapped	Ctrl + E
Zoom out	unmapped	unmapped	unmapped	Ctrl + Q
Suppress constrain to terrain	X	X	X	X
Water impact	unmapped	unmapped	unmapped	unmapped

Table 5. Observer Keyboard Mappings (continued)

Observer Movement	Observer	Level Observer	Laptop	2D Level Observer
Reset observer: In absolute mode, go to the center of the scene. If attached, reset the attach position and orientation. In absolute mode, go to the center of the scene. If attached, reset the attach position and orientation.	Space	Space	Space	Space
Toggle speed scaling mode (MSL or AGL)	unmapped	unmapped	unmapped	unmapped
Level observer	K 5	K 5	Shift +Space+⁻	K 5
Toggle force north orientation	unmapped	unmapped	unmapped	unmapped
Toggle orient to target constraint	unmapped	unmapped	unmapped	unmapped
Toggle flashlight	F	F	F	F
Reset the camera	K 0	K 0		K 0
Increase view magnification	=	=	=	unmapped
Decrease view magnification	-	-	-	unmapped
Reset view magnification	0	0	0	unmapped
Increase view resolution	unmapped	unmapped	unmapped	=
Decrease view resolution	unmapped	unmapped	unmapped	-
Detach	z	z	z	z
Toggle hide model on attach	unmapped	unmapped	unmapped	unmapped
Attach to the next entity allowed by the attachment filter	Period (.)	Period (.)	Period (.)	Period (.)
Attach to next entity or prop	>	>	>	>
Attach to the previous entity allowed by the attachment filter	Comma (,)	Comma (,)	Comma (,)	Comma (,)
Attach to previous entity or prop	<	<	<	<
Set mimic attach type	unmapped	unmapped	unmapped	unmapped
Set tether attach type	unmapped	unmapped	unmapped	unmapped
Next attach mode	Shift+Z	Shift+Z	Shift+Z	Shift+Z
Increase linear speed	K 7	K 7	K 7	K 7

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Table 5. Observer Keyboard Mappings (continued)

Observer Movement	Observer	Level Observer	Laptop	2D Level Observer
Decrease linear speed	K 1	K 1	K 1	K 1
Increase orbit speed	K +	K +	K +	K +
Decrease orbit speed	K -	K -	K -	K -
Increment rotation speed gain	unmapped	unmapped	unmapped	unmapped
Decrement rotation speed gain	unmapped	unmapped	unmapped	unmapped
Toggle speed scaling on or off	K *	K *	K *	K *
Toggle prop transparency	T	T	T	T
Toggle track histories	unmapped	unmapped	unmapped	unmapped
Toggle entity labels	L	L	L	L
Toggle rotate entity symbols	unmapped	unmapped	unmapped	unmapped
Toggle tactical graphics	Shift+G	Shift+G	Shift+G	Shift+G
Toggle entity height above terrain lines	unmapped	unmapped	unmapped	unmapped
Toggle tactical graphics HAT lines	unmapped	unmapped	unmapped	unmapped
Toggle entity height above terrain mode	unmapped	unmapped	unmapped	unmapped
Toggle tactical graphics height above terrain mode	unmapped	unmapped	unmapped	unmapped
Toggle constrain to terrain on or off	/	/	/	/
Toggle constrain to center	U	unmapped	unmapped	unmapped
Clear the current movement mode. This key is an escape mechanism if keys are not behaving as you expect. This is typically due to a loss of the window context.	C	C	C	C
Next observer mode	]	]	]	]
Previous observer mode	[	[	[	[
Toggle view controls on or off	Shift+C	Shift+C		Shift+C
Clear all trajectory histories	unmapped	unmapped	unmapped	unmapped
Toggle framerate statistics	F2	F2	F2	F2

Tactical Graphic Creation

There are keyboard shortcuts for creating the most used basic tactical graphics. The force is that of the most recently tactical graphic you created from the Create Object Palette. The default is neutral if you have not created any graphics of another force during the session.

Table 6.
Tactical Graphic Keyboard Mappings

Tactical Graphic	Keyboard Mapping
Area	Ctrl+A
Route	Ctrl+R
Waypoint	Ctrl+W