

VR-Forces GUI Command-Line Options

Table 1. vrfGui command-line options

Option	Description
<code>--antiAliasing <i>level</i></code>	Set the anti-aliasing level (0, 2, 4, 8, or 16). Default: 4.
<code>--appCacheDir <i>directory</i></code>	Use <code>--appCacheDir</code> to specify a directory for the cache. This allows you to run other instances of VR-Forces from the same installation.
<code>--appDataDir <i>directory</i></code>	Specifies the location of application data.
<code>(--autoConnect -C) {<i>filepath</i> <i>connector_name</i>}</code>	Automatically connect to the network using the specified connector. Can be used multiple times.
<code>--dataDir <i>directory</i></code>	Specifies the location of the application's data directory.
<code>--defaultSimulationModelSet <i>sms</i></code>	The simulation model set to use as the default when starting up the GUI.
<code>--depthBits <i>bits</i></code>	Sets the depth of graphics to 24 bits or 32 bits. The default is 24,
<code>--dis</code>	Start in DIS mode, using DIS command-line arguments to specify connection parameters. DIS-specific arguments do not have to follow <code>--dis</code> ; they can be in any order.
<code>--disableDynamicTerrain</code>	Disables the dynamic terrain engine.
<code>--disableErrorDialog</code>	Prevents error messages from displaying. Errors print to the console instead.
<code>--disableGLBufferTracking</code>	Disable GL buffer tracking, which can improve performance in cases such as CDB terrains.
<code>--disableIndirectEntities</code>	Disables indirect rendering of entities.
<code>--disableIndirectExternalRender</code>	Disables the indirect external renderer, which minimizes state changes by default. When this is used, state changes are not minimized.
<code>(--disableKDTrees -K)</code>	Disable creation of KD trees for intersections.

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>(--disableReverseZBuffer -z)</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. Developers build plug-ins against a particular version of VR-Forces. Ordinarily, when VR-Forces loads a plug-in, it checks to be ensure whether 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>--enableDofConstraints</code>	Enables the use of degree(s) of freedom constraints on simulation object models.
<code>--enableLogFileTimestamps</code>	Print a timestamp for each line in a log file.
<code>--enablePersistentShadowTechnique</code>	Use this command-line option to enable persistent shadows.
<code>--enableTracyProfiling</code>	Enables the Tracy Client when you launch the application.

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Table 1. vrfGui command-line options (continued)

Option	Description
<code>--enableVSync</code>	Turns on VSync.
<code>--entDispSetting <i>filename</i></code>	Specifies the entity display setting to load.
<code>--entityDefsDir <i>directory</i></code>	Loads the <i>.hier</i> and <i>.leaf</i> files in the specified directory to the entity element definition manager.
(<code>--entityGridCellSize <i>x y z</i> </code> <code>--entityGridCellSize <i>x,y,z</i> </code> <code>--entityGridCellSize <i>integer</i></code>)	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)
(<code>--entTypeMap -E</code>) <i>filename</i>	Load the specified object type mapping file. The filename extension determines the type of mapping.
<code>--envSetting <i>filename</i></code>	Specifies the environment configuration file to load.
<code>--exConnConfigFile <i>filename</i></code>	Specifies the exercise connection configuration file to use. Use this to override settings in the VR-Link exercise connection configuration file, <i>MAK-ONE-YYYY-Config.xml</i> , which defines the default connections settings. For more information, refer to the <i>MAK ONE Interoperability Guide</i> .
(<code>--extraArgs -e</code>) <i>string</i> <i>"string1 ... stringn"</i>	Allows you to send arbitrary strings to the initializer, which can be queried for by plug-ins. 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.
<code>--factoryRootDir <i>directory</i></code>	Set the root directory used to restore settings to factory defaults.
<code>--forceTextShaping</code>	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
--fowPerspective <i>force</i>	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.
--fullScreen	Start with the window in full screen mode.
--gui <i>filename</i>	Specify a GUI configuration file. This file specifies the layout of menus, toolbars, and dialog box pages. A simple filename assumes <i>./appdata/settings/vrfGui</i> . A relative filename is from the <i>./bin64</i> directory. A full path is used as is.
(--hasNTPSync -O)	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.
--highestPriority	Changes the priority of the application and the main render thread to the highest available priority. This command may starve other processes.
--hla1516e	Start in HLA Evolved mode, using HLA command-line arguments to specify connection parameters. HLA-specific arguments do not have to follow --hla1516e; they can be in any order.
--hla4	Start in HLA 4 mode, using HLA command-line arguments to specify connection parameters. HLA-specific arguments do not have to follow --hla4; they can be in any order.
(--ignoreZoomForSpeedtreeLod -Z)	Disable zoom for SpeedTree LOD.
--layoutSettingsFile <i>filename</i>	Specifies the GUI layout settings file to use. <i>filename</i> specifies the base filename. It is prefixed with <i>default_</i> and the extension <i>.uisx</i> is added. Default: UILayoutSettings.



Use the following texture limiting command-line options to limit and debug the memory usage and then observe the total GPU memory used.

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Table 1. vrfGui command-line options (continued)

Option	Description
--limitEarthSplattingTextures <i>"width and height"</i>	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.
--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>"width height"</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.

Table 1. vrfGui command-line options (continued)

Option	Description
<code>--loadPlugin <i>plugin_filename</i></code>	Specifies a plug-in to load. Accepted multiple times.
<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>(--locale -G) <i>language</i></code>	Specifies the locale (for localization).
<code>(--logFileName -l) <i>filename</i></code>	Specifies the log file name.
<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/19/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.

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Table 1. vrfGui command-line options (continued)

Option	Description
<code>--mergeLeafSpotReportDef {directory filename}</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.
<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.
i The options for merging type maps (<code>--mergeEntityTypeMap</code>, <code>--mergeTacticalGraphicsTypeMap</code>, and <code>--mergeUnitTypeMap</code>) 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 <code>--overwriteMappingsOnMerge</code> command-line option.	
<code>--noAppDataEntityDefs</code>	Do not load the entity element definitions in <code>./SharedData/19/latest/ModelData/Configuration/Definitions</code> .
<code>--noAppDataEntityTypeMap</code>	Do not load entity type mappings in <code>./SharedData/19/latest/ModelData/Configuration/Definitions</code> .

Table 1. vrfGui command-line options (continued)

Option	Description
<code>--noAppDataModelDefs</code>	Do not load model definitions in <i>./SharedData/19/latest/ModelData/Configuration/Definitions</i> .
<code>--noAppDataSpotReportDefs</code>	Do not load the spot report definitions in <i>./SharedData/19/latest/ModelData/Configuration/Definitions</i> .
<code>--noAppDataTacticalGraphicsDefs</code>	Do not load the tactical graphics element definitions in <i>./SharedData/19/latest/ModelData/Configuration/Definitions</i> .
<code>--noAppDataTacticalGraphicsTypeMap</code>	Do not load tactical graphics type mappings in <i>./SharedData/19/latest/ModelData/Configuration/Definitions</i> .
<code>--noAppDataUnitDefs</code>	Do not load the unit element definitions in <i>./SharedData/19/latest/ModelData/Configuration/Definitions</i> .
<code>--noAppDataUnitTypeMap</code>	Do not load unit type mappings in <i>./SharedData/19/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>(--notifyLevel -n) <i>notification_level</i></code>	Specifies the notification level for application messages, where <i>notification_level</i> is a number from 0 through 4.
<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 GUI 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>--scenarioFile <i>filename</i></code>	Specifies a scenario to load.
<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>directory_stem</i></code>	Specifies the location of the shared data stem.

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Table 1. vrfGui command-line options (continued)

Option	Description
<code>--sharedSettingsDirectory</code> <i>directory</i>	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>(--showConsole -c)</code>	Display the console window.
<code>--stencilBits</code> <i>bits</i>	Sets the number of stencil bits (0 or 8). Default: 0.
<code>(--suppressHatIntersectOnAttach -S)</code>	Suppress the periodic HAT intersection when attached.
<code>--tacticalGraphicsDefsDir</code> <i>filename</i>	Loads the <i>.hier</i> and <i>.leaf</i> files in the specified directory to the tactical graphics element definition manager.
<i>terrain_MTF_file</i>	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</code> <i>filename</i>	Loads the <i>.hier</i> and <i>.leaf</i> files in the specified directory to the unit element definition manager.
<code>--useFileCommChannel</code> <i>channel</i>	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</code> <i>directory</i>	Specifies the location of user data directory.
<code>--userScenarioDirectory</code> <i>directory</i>	Specifies the user scenario directory to consider the "home".

Table 1. vrfGui command-line options (continued)

Option	Description
<code>--userTerrainDirectory</code> <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.
<code>(--ignore_rest --)</code>	Ignores all command-line options that are listed after this argument.
<code>(--version -v)</code>	Displays version information.
<code>(--help -h)</code>	(Displays command-line usage information.)
HLA Only	These options are available when you specify <code>--hla1516e</code> or <code>--hla4</code>.
<code>(--appNumber -a) number</code>	Specifies the application number.
<code>--disableRequestUpdates</code>	Disable request updates for state objects.
<code>--disableRemoteDiscovery</code>	Disable discovery of remote objects.
<code>(--execName -x) exec_name</code>	Specifies the name of the federation execution. Default: MAK-RPR-2.0.
<code>(--federateName -N) federate_name</code>	Specifies a unique name that can be assigned to the federate. Default: VR-Forces. (HLA Evolved only)
<code>(--federateType -p) type</code>	Federate Type can be used to distinguish different categories of federates, and its only practical use is in save-and-restore.
<code>(--fedFileName -F) fedfile_name</code>	FED file name.
<code>--fileTransporterReceivePort</code> <i>port</i>	Port for the file transporter. This is the port used to receive order of battle and plan files.
<code>--fomMapperInitData data</code>	FOM Mapper initialization data.
<code>(--fomMapperLib -f) libname</code>	FOM Mapper library name.
<code>--fomModules module</code>	Specifies an HLA Evolved or HLA 4 FOM module. Can be used multiple times.
<code>(--hostAddressString -H)</code> <i>address</i>	Specifies the host address. This is usually the same as the device address.
<code>--ignoreAdvisories</code>	Enables or disables HLA advisory messages. Default: true.

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Table 1. vrfGui command-line options (continued)

Option	Description
(--localSettingsDesignator -s) <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.
--numberOfremoteNetworkThreads <i>thread_count</i>	For remote object discovery, the number of worker threads to use to help discover remote objects for data usage.
--processStateDataUponDiscovery	Processes state data when entities are discovered rather than waiting for a specific length of time between discovery.
--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.
--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)
(--sessionId -i) <i>ID</i>	Specifies the session ID for this instance of the GUI.
(--siteId -s) <i>ID</i>	Specifies the site ID.
--useAbsoluteTimestamps	Enables use of absolute timestamps. Otherwise uses relative timestamps.
DIS Only	These options are available when you specify --dis.
(--appNumber -a) <i>number</i>	Specifies the application number.
--appIdRange <i>range</i>	The application ID range for VR-Forces sim engines.

Table 1. vrfGui command-line options (continued)

Option	Description
<code>--defaultObjectTimeout <i>timeout</i></code>	Specifies the timeout interval for objects.
<code>(--destAddrString -A) <i>address</i></code>	Specifies the destination address.
<code>--deviceAddress <i>address</i></code>	Specifies the address of the network card to use for UDP traffic.
<code>--disableRemoteDiscovery</code>	Disables discover of remote simulation objects.
<code>(--disPort -P) <i>port</i></code>	DIS port.
<code>--disVersion <i>version</i></code>	The DIS version. Default: 7.
<code>(--exerciseId -x) <i>ID</i></code>	Exercise ID.
<code>--fileTransporterReceivePort <i>port</i></code>	Port for the file transporter. This is the port used to receive order of battle and plan files.
<code>(--hostAddressString -H) <i>address</i></code>	Specifies the host address. This is usually the same as the device address.
<code>--mcastTtl <i>time</i></code>	Specifies the multicast time-to-live. Default: -1.
<code>(--multicastAddresses -S) <i>address1 ... addressn</i></code>	Specifies one or more multicast addresses.
<code>--numberOfRemoteNetworkThreads <i>threads</i></code>	When discovering remote objects, specifies the number of worker threads to use to help discover remote objects for data usage.
<code>--recvBufferSize <i>size</i></code>	Receive buffer size.
<code>--reportedHostAddressString <i>address</i></code>	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.
<code>--sendBufferSize <i>size</i></code>	Send buffer size. Default: -1.
<code>(--sessionId -i) <i>ID</i></code>	Specifies the session ID for this instance of the GUI.
<code>(--siteId -s) <i>ID</i></code>	Specifies the site ID.
<code>--useAbsoluteTimestamps</code>	Enables use of absolute timestamps. Otherwise uses relative timestamps.
<code>--subnetMask <i>mask</i></code>	Specifies a subnet mask.

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Table 1. vrfGui command-line options (continued)

Option	Description
--useAsyncIO	Use asynchronous I/O. Default: False.
--useIpv6	Specifies that the DIS exercise connection use the IPV6 protocol, if available.

VR-Forces Sim Engine Command-Line Options

Table 2. vrfSim command-line options

Option	Description
--additionalSystemScriptsDirectory <i>directory</i>	Specifies a directory where VR-Forces will look for system scripts when it populates the Scripted Task dialog box script list.
--appDataDir <i>directory</i>	Specifies the location of application data.
--appIdRangeMax <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 max is reached no more objects will be created on the sim engine until some are deleted.
(--appNumber -a) <i>number</i>	Specifies the application number.
--attributePduStrategy	This flag controls how VR-Forces sends DIS attribute PDUs.
(--batchScenarioFileName -B) <i>batch_file</i>	Runs the specified batch file (for use with one sim engine only).
--clockMode <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
--connectionless	Run VR-Forces without a connection.

Table 2. vrfSim command-line options (continued)

Option	Description
<code>--countryCodesMappingFile <i>file_name</i></code>	Specifies an alternative file that maps country codes to country names and DIS enumeration values.
<code>--daemon</code>	(Linux only) Starts the sim engine 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.
<code>--dataDir <i>directory</i></code>	Specifies the location of the application's data directory.
<code>(--destAddrString -A) <i>address</i></code>	Specifies the destination address.
<code>--deviceAddress <i>address</i></code>	Specifies the address of the network card to use for UDP traffic.
<code>--dis5Timestamps</code>	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.
<code>--diGuyAnimationsFile <i>file_name</i></code>	Specifies an additional configuration file for DI-Guy animations.
<code>--diGuyCharacterDataFile <i>file_name</i></code>	Specifies an additional configuration file for DI-Guy character data.
<code>--disableParallelPublisherTick</code>	Turn off ticking of publishers in parallel.
<code>--disableParallelTick</code>	Execute all tick code serially.
<code>--disableRemoteDiscovery</code>	Disable discovery of remote objects.
<code>--doNotLoadVrfPlugins</code>	Prevents loading of plug-ins in the <i>./plugins</i> directory.
<code>(--doNotUseConsole -q)</code>	Specifies that all <i>vrfSim</i> output go to the log file. For more details about log files, see "The VR-Forces Log Files".
<code>--enableChannel <i>channel</i></code>	Enables a specific channel for the channel-specific output, even if it is disabled in <i>channelSettings.mtl</i> .
<code>--enablePduProfiling <i>string</i></code>	Enables the entity PDU flood check of a given time or a number of packets over that time.

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Table 2. vrfSim command-line options (continued)

Option	Description
<code>--exConnConfigFile filename</code>	Specifies the exercise connection configuration file to use. Use this to override settings in the VR-Link exercise connection configuration file, <i>MAK-ONE-YYYY-Config.xml</i> , which defines the default connections settings. For more information, refer to the <i>MAK ONE Interoperability Guide</i> .
<code>--exitOnTestResultCommand</code>	If a plan in the simulation includes the Test Result statement, and the simulation engine was started with this command, then the simulation sends the message to all sim engines to close after the Test Result statement.
<code>--fileNotifyLevel level</code>	Notify level in to use in the log file.
<code>--frontEndPID PID</code>	The process ID for the GUI when running in combined mode.
<code>--fullyLoadTerrain</code>	For paged terrains, load all pages.
<code>--hostAddressString address</code>	Specifies the host address. This is usually the same as the device address. Called Device Address in the Launcher.
<code>--loadPlugin plugin_filename</code>	Specifies a plug-in to load. Accepted multiple times.
<code>--logFileName filename</code>	Specifies the log file name.
<code>--logFrameRateStatistics</code>	Starts the Tracy Client connection to capture performance statistics for the sim engine.
<code>--mcastTtl time</code>	Specifies the multicast time-to-live. Default: -1.
<code>--msdSIDCMappingFile file_name</code>	Specifies an alternative file for mapping SIDC codes to DIS enumerations.
<code>(--notifyLevel -n) notification_level</code>	Specifies the notification level for messages written to the console or the VR-Forces log file (<i>vrf.log</i>)
<code>--nonVrfObjectsUUIDScheme scheme</code>	Sets the UUID scheme for non VR-Forces objects. Values are <i>entity-identifier</i> , <i>global-identifier</i> , <i>marking-text</i> .

Table 2. vrfSim command-line options (continued)

Option	Description
<code>--numCallbackThreads <i>threads</i></code>	Number of threads in the callback queue.
<code>--numNetworkCallbackThreads <i>threads</i></code>	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.
<code>--outputInterval <i>interval</i></code>	Interval for output.
<code>--outputLogFile <i>file_name</i></code>	The file to use to write out application output.
<code>--performanceOutput <i>string</i></code>	This specifies where you want to save some output to disk. It's for internal use in nightly autotests and performance tests. I've got it here for when we check the command-line options lists.
<code>--recvBufferSize <i>size</i></code>	Receive buffer size.
<code>(--scenarioFileName -L) "<i>scenario_pathname</i>"</code>	Loads the specified scenario. The pathname can be absolute or relative from the <code>./bin</code> directory. Mutually exclusive with the <code>-T</code> option
<code>--scenarioPerformanceConfig</code>	Specifies a config file that is written in MTL. It's for internal use in nightly autotests and performance tests. It's here for when we check the command-line options lists.
<code>--sendBufferSize <i>size</i></code>	Send buffer size. Default: -1.
<code>(--sessionId -i) <i>ID</i></code>	Specifies the session ID for this instance of the GUI.
<code>(--settingsFile -d) <i>file_name</i></code>	Specifies a configuration file to load instead of <code>vrfSimSettings.xml</code> .
<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>	Use this to specify the location of the shared data directory.

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Table 2. vrfSim command-line options (continued)

Option	Description
<code>--sharedDataRoot</code> <i>directory_root</i>	Specifies the location of the shared data root.
<code>--sharedDataStem</code> <i>directory_stem</i>	Specifies the location of the shared data stem.
<code>--sharedSettingsDirectory</code> <i>directory</i>	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</code> <i>sms</i>	Specifies the simulation model set. It must be declared separately for GUI and sim engine, even in combined mode.
<code>(--siteId -s)</code> <i>ID</i>	Specifies the site ID.
<code>(--startInRunMode -r)</code>	Starts the sim engine in run mode. If you start the sim engine without specifying a scenario (with <code>-L</code>) or a terrain database (with <code>-T</code>), the sim engine starts in pause mode.
<code>--startMinimized</code>	Minimizes the vrfSim console at startup.
<code>--subnetMask</code> <i>mask</i>	Specifies a subnet mask.
<code>--suppressDataAvailableException</code>	Do not throw an exception when <code>dataAvailable</code> is not checked in non-blocking terrain calls.
<code>--targetFrameRate</code> <i>rate</i>	Specifies the frame rate above which vrfSim will yield CPU time to other processes.
<code>(--terrainDatabase -T)</code> <i>terrain_database</i>	Specifies a terrain database to load in the sim engine. Mutually exclusive with the <code>-L</code> option.
<code>--testOutputFilename</code> <i>filename</i>	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 sim engine port to profile with the Tracy Client. You can then profile a different sim engine port than the default, and also profile sim engines separately from GUIs. 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>--useAsyncIO</code>	Use asynchronous I/O. Default: False.
<code>--useIpv6</code>	Specifies that the DIS exercise connection use the IPV6 protocol, if available.
<code>--userDataDir <i>directory</i></code>	Specifies the location of the user data directory for the sim engine.
<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>--waitQueue</code>	Turn off main thread participation in parallel algorithms.
<code>(--ignore_rest --)</code>	Ignores all command-line options that are listed after this argument.
<code>(--version -v)</code>	Displays version information.
<code>(--help -h)</code>	Displays command-line usage information.
HLA Only	These are the options specific to vrfSimHLA1516e and vrfSimUserHLA4.
<code>--disableRequestUpdates</code>	Disables the VR-Link Request for updates upon object discovery
<code>(--execName -x) <i>exec_name</i></code>	the name of the federation execution Default: VR-Link.
<code>(--federateName -N) <i>federate_name</i></code>	Specifies a unique name that can be assigned to the federate. Default: VR-Forces. (HLA Evolved only)
<code>(--federateType -p) <i>type</i></code>	Federate Type can be used to distinguish different categories of federates, and its only practical use is in save-and-restore.
<code>(--fedFileName -F) <i>fedfile_name</i></code>	FED file name.

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Table 2. vrfSim command-line options (continued)

Option	Description
<code>--fomMapperInitData data</code>	FOM Mapper initialization data.
<code>(--fomMapperLib -f) libname</code>	FOM Mapper library name.
<code>--fomModules module</code>	Specifies an HLA Evolved or HLA 4 FOM module. Can be used multiple times.
<code>--ignoreAdvisories</code>	Enables or disables HLA advisory messages. Default: true.
<code>(--localSettingsDesignator -S) designator</code>	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.
<code>--mimModules HLAE_MIM</code>	Specifies an HLA Evolved MIM module.
<code>--netnFomRevision revision_number</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.
<code>--netnFomVersion version_number</code>	Specifies the NETN FOM version as a double. The default (and currently the only supported version) is 3.0.
<code>--noRtiCompilerCheck</code>	Disable RTI Compiler version check.
<code>--rprFomRevision revision_number</code>	RPR FOM revision for RPR FOM 2.0, draft 17.
<code>--rprFomVersion version_number</code>	RPR FOM version. (0.5, 0.7, 0.8, 1.0, 2.0006, 2.0014, 2.0017, or 2.0)
<code>--setFomModuleList</code>	Overwrite FOM Modules with the listed modules. Accepts a comma-separated list of module names; the best practice is to list them in hierarchical order to prevent any issues related to dependencies.
<code>--timeManagement</code>	Enables time management for the sim engine.
DIS Only	These are the options specific to vrfSimDIS.
<code>--appIdRange lower-upper</code>	Specifies a range of application IDs that represent objects generated by VR-Forces.

Table 2. vrfSim command-line options (continued)

Option	Description
<code>--defaultObjectTimeout <i>timeout</i></code>	Specifies the timeout interval for objects.
<code>(--disPort -P) <i>port</i></code>	DIS port.
<code>--disVersion <i>version</i></code>	The DIS version. Default: 7.
<code>(--exerciseId -x) <i>ID</i></code>	Exercise ID.
<code>(--multicastAddresses -S) <i>address1 ... addressn</i></code>	Specifies one or more multicast addresses.
<code>--suppressSelfReflect</code>	Represses self reflection of the DIS exercise connection.

VR-Forces Launcher Command-Line Options

Table 3. vrfLauncher command-line options

Option	Description
<code>--appDataDir <i>directory</i></code>	Specifies the location of application data.
<code>(--config -C)</code>	Opens the Simulation Connections Configuration dialog box, even when a predefined connection is configured for auto-start.
<code>(--connection -c) <i>connection_name</i></code>	Specifies what predefined connection to use, even if it is different than the one selected as the auto-start option in the GUI.
<code>--dataDir <i>directory</i></code>	Specifies the location of the application's data directory.
<code>(--gui -g)</code>	Launches the VR-Forces GUI.
<code>(--locale -G) <i>language</i></code>	Specifies the locale (for localization).
<code>(--run -r) "<i>application</i>"</code>	Launches the specified application, where <i>application</i> is the name displayed in the Launcher (case sensitive). It does not need to be selected in the Launcher. If, after the application name, the next argument is <code>additionalargs--</code>, those arguments that follow are added to the command line for the application. The next <code>--run</code>, <code>-runGroup</code>, or <code>--connection</code> stops the additional arguments.
<code>(--runGroup -R) <i>group</i></code>	Launches all of the applications in the specified application group, regardless of whether they are all currently selected in the Launcher, where <i>group</i> is the name displayed in the Launcher (case sensitive). For information on groups, see "Using Application Groups".

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Table 3. vrflauncher command-line options (continued)

Option	Description
(--sim -s)	Launches the VR-Forces sim engine.
--useUserSettingsDirectory	Indicates that the system should use the user login settings directory instead of the shared application settings.
(--version -v)	Displays version information.
(--help -h)	Displays command-line usage information.

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

Table 4. Mouse Button Mappings (continued)

Navigation Action	Mouse Action	Context
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
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

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Table 5. Observer Keyboard Mappings (continued)

Observer Movement	Observer	Level Observer	Laptop	2D Level Observer
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
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

Table 5. Observer Keyboard Mappings (continued)

Observer Movement	Observer	Level Observer	Laptop	2D Level Observer
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
Reset observer: In absolute mode, go to the center of the scene. If attached, reset the attach position and orientation.	Space	Space	Space	Space
In absolute mode, go to the center of the scene. If attached, reset the attach position and orientation.				
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	>	>	>	>

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Table 5. Observer Keyboard Mappings (continued)

Observer Movement	Observer	Level Observer	Laptop	2D Level Observer
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
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

Table 5. Observer Keyboard Mappings (continued)

Observer Movement	Observer	Level Observer	Laptop	2D Level Observer
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
Toggle Developer Debug Overlay	F4	F4	F4	F4

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