Viz Datapool Release Notes

Installation

The Viz Datapool installer was updated in version 2.9.0 to include both Viz Engine 2.x and Viz Engine 3.x plugins. The installer will search for previous Viz Datapool installations and remove them. Then both Viz Engine 2.x and Viz Engine 3.x plugins will be installed according to the detected Viz versions on the machine.

NOTE: Version 2.9.0 and higher require the installation of *vcredist_2005sp1_x86.exe* from Microsoft (an updated version of Microsoft Visual C++ redistributable Package). This package is installed by other Vizrt products and probably exists on your machine. However, if Viz Datapool plugins do not load correctly when Viz is launched, download and install vcredist_2005sp1_x86.exe from Microsoft download center or from the Viz Datapool folder on the ftp.

New in 2.11.0

New Plugins (Viz Engine 3.x only)

- **DataViz3Script** The DataViz3Script plugin will invoke a predefined Viz Engine 3.x scripting subroutine or function, with the updated value of its defined data field (DP variable) or with a DP expression as an argument. In the case of a function, the returned value of the function can be assigned to a DP variable.
- **DataSHM** The DataSHM (Shared Memory) plugin will use its defined data field or a DP expression to update a string type shared memory entry.
- DataSHMTracker The DataSHMTracker plugin monitors a string type shared memory entry. When the entry changes, the plugin will use the updated value to update the related DP variable.

New Features

- DataPool (scene plugin) (Viz Engine 3.x only) A new option was added to
 monitor a specific key, i.e. "DP_COMMAND", in the 3 different types of Viz Engine
 3.x shared memory (Scene, Global, and Distributed). When changed, the updated
 value will be interpreted as one of 3 possible DP commands: Set, Copy and Link,
 based on the string prefix.
 - 1. Use the prefix "DP_COPY", to copy the value of the DataPool field to another field.
 - 2. Use the prefix "DP_LINK", to link the value of the DataPool field to another field.
 - 3. Use the prefix "DP_SET", to set the value of the DataPool field to another field.
 - 4. Another option is using the defined DataPool field without a command.
- Action parameter (used by all the plugins)
 - A new option was added, enabling the user to set a DataPool variable value with a Viz Engine answer string to a specific command. An example will be Var1 == 0 MAIN VERSION;
 - It is now possible to use \$(THIS_SCENE) in addition to \$(SCENE). Both variables hold the same value.

DataPool Library

- Added an option to define a folder containing the DP configuration files (other than Viz Engine root folder) in the DataPool.ini file. The DataPool.ini file entry is ConfigurationFolder=K:/
- o Improved DataPool printouts in Viz Engine console.

DataMaterialTable

- An option to Auto Load the color table file on loading the scene was added.
- An option to have a separate Material Table for each scene was added.
- DataParamTracker, DataObjectTracker Extended plugin ability: Now the option of Object Container supports working with a DataStructure as with a DataObject.
- DataCounter, DataTimer The standard DP field name was added to the plugin GUI, enabling DP macros, like \$(PARENT), to be used in the action field and the option to update Local or Global variables.
- Updated user manual for DataPool version 2.11.X

Bug Fixes

- DataLUImage A crash was fixed for Viz Engine 3.x.
- **DataMath, DataMathObject** The internal representation of numbers was changed from float to double, enabling the handling of a wider range of numbers and increased accuracy.
- DataObject, DataArray An immediate registration of the sub containers, in case that the DP variable name was changed via a dispatcher callback, was added (previously, this registration took place only on the next rendered frame).
- DataPool Library -
 - A DP variable name \$(CONTAINER) is now unique, based on the Viz Engine container Id. Previously \$(CONTAINER) value was the container name which is stored in the \$(CONTNAME) variable.
 - Extended sanity checks and error printouts were added while reading the
 *.dp files.
- DataArray A crash was fixed in a unique situation when using the Extra Types option in the DataPool.ini file.
- DataSystem The "No Wait" option is now working similar to the "Wait" option.
- **DataMathObject** The option Misc/TC was improved enabling the usage of partial time code definition (without the hours for example).
- **DataHyperLink** A bug, causing the option of Search Children to fail in Viz Engine 3.x, was fixed that.
- DataPool (scene plugin) Added a redraw command in a few more cases.
- **DataScreen** The use of the plugin SDK was replaced by using the external command protocol.

New in 2.10.0

New Features

- DataSelector The option to dissolve between the selected objects was added.
- DataParameter
 - The option to control a scene plugin parameter was added.

- The option to invoke a push button press was added
- DataText Added the option to convert the data string to upper case, lower case, etc. (this feature currently supports only the very basic list of letter 'a'-'z' and 'A'-'Z'. No support for UTF-8 strings).

DataKeyFrame -

- o The option Reset KeyFrame is now working properly. This option makes it easier for the user to get a smooth animation from the previous sent value. If it is defined (the Reset KeyFrame), on an update of the DP value, the previous update will be set to the reset keyframe, and the director will also jump to it, After doing this, the user can send **Start** command to the director and get the smooth transition from the previous value.
- Updated plugin editor UI the parameters "Data Contains Keyframe Time" and Data Contains Keyframe Value" were removed. Received data will always reference the keyframe value. To update keyframe time, use the DataKeyTime plugin.
- DataMaterial A material path prefix parameter was added.
- DataTime Four new variables were added:
 - <Prefix>_RELDAY and <Prefix>_RELDAYNAME These values represent relative day number and relative day name. The values of <Prefix>_RELDAY are integer 0, 1, -1, 2, -3, etc. The values of <Prefix>_RELDAYNAME are Yesterday, Today, Tomorrow (like relative days -1, 0, 1) and any day name (Sunday, Monday, etc.).
 - o <Prefix>_HOURS_SHORT show 12 hours clock time.
 - < Prefix>_AMPM used with < Prefix>_HOUR_SHORT to display AM or PM.
- **DataImage** Adding a check if the image exists in the Viz Engine database or the disk, before trying to change the image. (This fix avoids getting white texture for wrong image names.)
- DataObjectTracker, DataParameterTracker Adding more options for the Object Container.
- DataTable Added the option to set the object type in Data Table remotely, via Viz command.
- **DataObject, DataArray** A new dispatcher option was added, retrieving a list of the active DP fields "controlled" by the plugins.

Bug Fixes

- **DataParameter** The interpolation parameters are working now for both Geometry and Function plugins.
- DataPool plugin The default value of "Update DataPool On Load" was changed to false.
- DataPool Library -
 - Added sanity checks to avoid crashes that happened especially with transition logic scenes.
 - o A refresh call was added to all plugins, improving behavior while copying an existing sub tree (design) which includes DataPool plugins.
 - o The macros \$(HOSTNAME) and \$(HOSTIP) were fixed.
 - Handling of Viz DataPool plugins inside merged objects was improved (especially objects which are loaded on the fly by using Data3DObject).
- DataClock The variable HOURS_SHORT is now 12, 1, 2 ..., 11 and not 0, 1, 2 ..., 11.
- **DataCondition** The precision parameter is used in simple comparisons (=) of numbers.
- **DataFeedback** In Viz Engine 3.x, the plugin will check if the scene is in the renderer or in the editor (not just loaded).
- **DataAnim** The minimum and maximum values, of integer and float variables, were increased.
- **DataObject, DataArray** Fixed a problem with changing the Field Name after copying a design object.

New in 2.9.4

New Features

- **DataMath, DataMathObject** Added the option to set the decimal places for floating numbers.
- DataCountdown -

- o A new variable was added for tenth of a second
- o An option to stop the variables update on time was added

Bug Fixes

- **Viz Datapool (scene plugin)** The size of the DataOutput field was increased to be 64K.
 - DataClick Some debug printouts were removed.

New in 2.9.4.Beta1

New Features

• **Viz Datapool Configuration files (.dp)** – Added the option to read Viz Datapool configuration (*.dp) files from disk, while the Viz Engine is running.

NOTE: This feature was added specifically for 24/7 users, where Viz Engine is running constantly. It is not advised to use this feature in standard Viz Engine environments, where the recommended workflow is still to restart the Viz Engine after changing the Viz Datapool configuration files.

Bug Fixes

The printout mechanism of all Viz Datapool plugins was changed. This change
was required to support Viz Engine in preview mode, when running without a
console.

New in 2.9.3.Beta7

New Features

• DataMathObject - added the option ABS (for absolute value) to the MATH section.

• DataKeyTime- added the option to set the length / duration of a pause point.

Bug Fixes

- **DataMathObject** improved handling of the case where the second argument is a number.
- **DataKeyTime** improved handling of the case where the DP variable is defining the time in frames.

New in 2.9.3.Beta6

Bug Fixes

- **DataNumber** The number 0 will be displayed always as a positive number (without any sign symbol).
- DataParameter buffer size was increased from 4K to 64K.

New in 2.9.3.Beta5

Bug Fixes

• **Datalmage** – A blank image name (or an image name containing only blank characters) is ignored (a blank image name caused Viz Engine 3.x to crash).

New in 2.9.3.Beta4

Bug Fixes

- Improved validity checks for the maximum length of a DP variable (which is 99 characters).
- DataObjectTracker If the destination field name included the "/" character, it would have been truncated. This bug was fixed in general, for all similar situations in Viz Datapool plugins.
- DataGraphPoint Fixed a compatibility issue with the remote container
 mechanism, in a special case scenario where the remote container is assigned by
 another plugin or by an external application (For example, this is the case in the
 storm path scenes of the Viz Weather). This bug was fixed in general, for all Viz
 Datapool plugins.

New in 2.9.3.Beta3

New Features

- DataText added the option to replace the sub string "\n" with the Windows End-of-Line characters (ASCII 13 & 10). This option is also supported, and might be very useful, in the strings defined in DP conversion table.
- **DataParameter** a different function is used for updating geometry objects, using the send_command function, resulting in immediate update in the renderer.

Buffer size was increased to 4K (previously 1K).

Action parameter (all plugins using this field) – buffer size was increase from 2K to 8K.

Bug Fixes

- **DataParamTracker** while tracing a Viz text value, all excessive End-of-Line characters at the end of the string are removed.
 - The default value of the parameter name is "text" which is commonly used in the plugin.
- Improved stability when clearing DP objects memory.

- Added validity checks to **DataImage** and **Data3DObject** plugins.
- **DataFeedback** changed the default settings for reading the TCP response messages to OFF, for better backward compatibility. The parameter can be turned on from the plugin GUI.

New in 2.9.2

New Features

- **Viz Datapool** scene plugin is added automatically to the scene when any data pool plugin is added to the scene hierarchy.
- **DataNumber plugin** standard interpolation parameters (Data Min, Data Max, Value Min. Value Max) were added.
- **DataMathObject** Two options were added to the Misc section:
 - o **TC** Convert a time code string to seconds.
 - o Length Calculate the length (as a string) of a Viz Datapool variable. In

NOTE: In both options, the second argument defines an offset (positive or negative) to the result.

Bug Fixes

• **DataMaterial** – when an invalid material name is used, the container will keep the current material (instead of using a default material).

New in 2.9.1.BETA1

Bug Fixes:

• DataMathObject, DataCondition, DataAction, DataActionTable – Additional protection was added to avoid a loop caused by changing the same variable which is the trigger variable. For example, the following phrase in DataCondition is valid: if (A > 100) then A = "BIG" else A = "small".

• **DataActionTable** – comparison of the DP variable to the different cases is now ignoring the end-of-line character at the end of the string.

New in 2.9.1.BETA0

General:

- The development environment of this Viz Datapool version was changed from VC7 to VC8. Requires Viz version is Viz 2.8PL3 (or later versions).
- The documentation (User manual and the Scene Design Tutorial) was updated to include the new features of this version.

Note: Scene Design Tutorial is not part of the Viz Datapool installer. To use the scene design tutorial, import the tutorial archive to Viz and copy the document to your machine.

New Features:

- Use Other Container The use other container option was improved and extended enabling the user to set relative container links. Current options are Parent, Grand Parent, Great Grand Parent and Remote (Remote option maintains backwards compatibility).
- Conversion Tables An additional token was added: __DEFAULT__. This token can be used in any of the conversion tables as a default conversion value, i.e. any value not found in the table will be converted to the default value.
 - An environment variable "DP_OBJECTS_DIR" was added, defining the folder of the DP_ConvTables.csv file.
- **DataTime** The offset option in is now available for both modes: machine time mode and Viz Datapool variable time mode.
- DataFeedback Added the option to add the EOL character to the end of the TCP message (this is important, for example, when sending commands to the MSE).
 In addition, the returned TCP messages (if any) are read and ignored (this option can be important, preventing the sending socket from being blocked).
- **DataClock** the option to control the leading zeros in the seconds, minutes, and hours variables was added.

• **Data3DObject** – The character "\n" was removed from the data string (as updated previously in the **DataImage** plugin).

Bug Fixes:

- Conversion Table The EOL characters are removed from the converted values.
- DataText fixed bug in the last trim option of Choose Bytes.
- DataGraphPoint enabled the use of "Use Other Container" parameter options.
- DataTime enabled the option of setting the time, using a Viz Datapool variable, in milliseconds.
- **DataHyperLink** Switching to VC8 fixed a problem in the search children option, which did not work.
- **DataTable** fixed a bug causing viz to crash in case of an empty config.dp file.
- Updated the "info" field in several plugins.

New in 2.9.0.BETA2

Bug fixes:

- **DataImage** Geometry rebuild was added to solve a problem with image containers containing only geometry but no image.
- Improved implementation of the Conversion Tables.

New in 2.9.0.BETA1

New features:

• A new reference option to the Parent container (similar to the remote container option) was added. This option is valid when using design objects (even a

merged one) that will be added to the scene on the fly. This option enhances the remote container option and retains a direct link between the containers. The Parent Container option should be preferred when possible.

- **DataText** Advanced text manipulation was added for trimming incoming data. Four trim options are implemented:
 - Remove prefix remove all characters from the beginning of the string to the defined delimiting substring (including).
 - Remove suffix remove all characters from defined delimiting substring (including) to the end of the string.
 - o Split data using delimiter Y and select sub string number X.
 - Select a simple range of bytes X-Y.

NOTE: When using more than one trim option the AND operator is used, i.e., if all options are used the following result will be used:

Remove prefix AND remove suffix AND split data AND select substring number X AND select bytes number X-Y.

- A general conversion file, containing conversion tables was added to be used
 with low level Viz Datapool plugins. The tables are defined in one file
 DP_ConvTable.csv, located in the Viz folder (As the name indicates, the file can
 be edited with Excel or any text editor).
- DataMathObject New Boolean functions were added: XOR, NOT, NOR and NAND. To support the additional options, the GUI was changed and it can be expanded to reveal all options.
- **DataDevice** A new option was added to read the DP dump file automatically, when starting Viz.

- DataInRange Updating range description in editing mode (Viz Artist).
- Remote container option used with a copied container with Viz Datapool plugin.
- **DataClock** reference count of relevant Viz Datapool Variables
- DataCountDown reference count of relevant Viz Datapool Variables
- DataHyperlink bug fix/work around, when the field name is a member of a Data Object.

• **Viz Datapool** dump file format was modified. The dump file can be written to disk and loaded with the **DataDevice** plugin.

New in 2.8.BETA2

Bug fixes:

- **DataImage** Viz Engine 3.x would crash in some cases when a prefix was not defined. "\n" characters added by viz are removed now from the image name.
- DataInRangege When changing range description the UI would not refresh.

New in 2.8.BETA1

New features:

- **DataInRange** plugin was added. The plugin compares a field name with a set of value ranges defined by the user, and assigns a defined value to the output field according to the comparison result.
- A new configuration option was added From version 2.8.Beta1 the user can
 define the scope of Viz Datapool management. Up to this version, Viz Datapool
 management scope was Viz, i.e. all variables and values were defined in Viz and
 when changing scenes the same variables were used for all loaded scenes. If a
 file named Viz Datapool.ini, containing the line MultiDatapool = 1, is found in
 Viz directory then a separate Viz Datapool segment will be assigned to each
 scene loaded to Viz.

NOTE: This is a major change effecting the way Viz and Viz Datapool work. If you are already using Viz Datapool Onair, and you want to use this feature, Please test the scene behavior intensively before using it Onair.

- Memory management was improved in several Viz Datapool plugins.
- In **DataKeyTime**, the option to set the time of Stop/Tag/Pause points and Action Key Frames was added.
- In **DataParamTracker**, the option to update data field only when the parameter changes was added.
- In DataCondition :

- When comparing strings, an end-of-line character at the end of the string is ignored.
- o The Do Once on condition change was added.
- o In **DataHyperlink**, the option to specify the mouse button (left, middle or right) was added for each dragging mode (position, rotation, and scaling).
- In DataObjectTracker and DataParameterTracker, a data filed defined in a Viz Datapool object can be used as the output data field.

o In DataNumber:

- o Added a Prefix and Suffix parameters.
- Added absolute mode for negative numbers.
- Auxiliary variables, starting with a # character, are not affected in a
 DataCopy. The display of DP object variables was improved.
- In **dp config** files, the option to use comments was added. A comment starts with // and ends by the end-of-line.
- In **DataKeyFrame**, the default format was changed from XYZ to X. Labeling was modified.
- In **DataInteractive**, the number of actions was increased to 50.
- Info with the variable names was added to **DataClock**, **DataTime**, **DataCountdown**.

Bug fixes:

- DataCopy Change Notifications.
- Data3DObject -optimizing object changes.
- **DataGraphPoint** Viz Engine 3.x plugin initialization.

New in 2.7.2

New features:

• **DataTime** plugin usage and variables definition was changed. The scope of the variables updated by the plugin can be set to local or global, and the config.dp file should be updated accordingly.

The user has to define explicitly if global or local variables should be updated by the plugin.

NOTE: This change is breaking compatibility and might require changes in existing scenes and Viz Datapool configuration files.

- New plugin was added DataMathObject. This plugin is an enhanced version
 of the old DataMath plugin and it enables the user to perform mathematical
 calculations using Viz Datapool object variables (DataMath will only work
 with simple Viz Datapool variables).
- **DataObjectTracker** the option "Update Always" was added. This option will cause **DataObjectTracker** to send an update every field drawn by Viz.
- **Viz Datapool** Three improvements were made:
 - A configurable command delimiter option (default delimiter is ";"). If a
 different delimiter is used, the command has to start with a special
 sequence defining the new delimiter.
 - A copy or link command can be sent to the Viz Datapool plugin using a "C" or "L" header. When one of these headers is used all the following assignments will be processed as copy or link commands.
 - The dispatcher token handling was improved (Note that both "Data" and "DATA" are supported).

- DataFeedBack is active only when the scene is currently loaded to the renderer. Other scenes residing in memory will not send DataFeedBack messages.
 - DataMaterialGradient Viz Engine 3.x version did not work correctly and a few minor bugs fixed.
 - Fixed bug in interpolation parameters, in case the difference between min and max values is zero or very small.
 - DataGraph fixed bug in calculation of Max value.
 - o DataMinMax fixed bug in calculation of Max value.

New in 2.7.0

New features:

- Viz Engine 3.x support a set of Viz Datapool plugins for Viz Engine 3.x is introduced.
- New DataCenter Plugin controlling the container's axis.
- Linked DP variables Changes in the source variable will be reflected in the target variable as well. This option is possible for objects as well. Some care has to be taken when setting the DP variables. This option as the Copy option is available from the DP scene plugin, DP device plugin, and from the DP actions (see below). This option is already implemented in a few tickers where it was required to change the values on the fly (even if the stock is displayed).
- The DataDevice plugin includes a new option to dump the DP content into a file, and to read a dump file into memory. Note that when creating a dump file, the full content of the DP memory is saved, BUT, when reading a file, the file content is appended to the DP memory content.
- In a DP action field it is possible to a copy or link Viz Datapool variables by specifying the letters C (Copy) or L (Link) at the beginning of the action (e.g. C Var1=Var2;L A=b;).
- It is possible to send copy and link commands via the UDP socket.
- The option to copy a container was added to DataGeom. Previously only a geometry object could be copied.
- Improved and enhanced interactivity was implemented in the interactivity plugins DataHyperlink, DataClick, DataManipulate, and DataInteractive.
- Adding to DataMath new options of Min, Max, and Average.
- Adding an Incremental option to DataPosition, DataRotation and DataScale.

- Avoiding some side effect while parsing a DP action.
- The total number of structures is unlimited (was limited to a 100).
- In DataCondition the Else action is hidden unless the Else button is pressed.

- Fixing the dispatcher calls of the Viz Datapool scene plugin.
- Fixing bug in the DataSelector, related to the "First Container Is" option.

New in 2.6.1

New features:

Data3DObject: only load new geometry if the geometry name was changed.

New in 2.6.0

New features:

- DataManipulate: added single button mode for touch screen support (instead of 3 separate buttons for move/rot/scale)
- DataSystem: option to have New process run in no wait mode.
- DataLookup plugin searches for values in tables / arrays etc...
- DataClock added LOCAL_TIME variable.
- DataTime, added LOCAL_TIME as the input.

- DataGraph: Corrected problem with trying to attach to target container while point ID smaller than 1.
- DataClick: SubContainer Enter/leave actions improved.
- DataFeedback: Not opening 2 TCP sockets for each client.
 - Socket closing includes shutdown.
- DataHyperlink: Manipulating an object used to cause animation deletion, now fixed.
 - Fixed crash when DataHyperLink's function is disabled.

- DataManipulate: Same as hyperlink (for animation deletion).
- DataTime: All combination of source and target fields are possible
 - o 1 Reading from global writing to local (under DataObject/Array).
 - o 2 From local to global.
 - o 3 From local to local.
 - o 4 From Global to Global.
 - o Leading zeros works.
- DataParamTracker: Fixed bug when tracking geometry plugins.
- DataActionTable: fixed bug of having actions happen only when the value is not the one happening.

New in 2.5.7

- No new features in this version.
- Bug fix in UDP interface.

New in 2.5.6

- DataTime
 - Added a "Reset" button. Pressing this button will force DataTime to update all the output time fields (DAY, MONTH, HOUR etc.).
- DataMath
 - \circ The second argument can now be a number. Argument that begins with +, or digit is considered a number
 - Added a decrement operation (--)

New in 2.5

- New plugins
 - DataParamTracker tracks a plugin parameter and copies its value every frame into the output Viz Datapool field

- DataTexture controls texture attributes such as mapping, transformation etc.
- Clamp all the plugins that have data to viz mapping on the incoming values, now have a clamp button. Setting the clamp mode will clamp the incoming value to the data min/max range.
- Notify only when value change whenever a field value is set, the Viz Datapool notifies all the data plugins that use this field and calls their OnChange function. This happens also if the field was set to the same values. Selecting the "Notify only when value change" mode will notify the data plugins only if the field value was actually change. The default behavior remains as it was.
- Remote container all the data plugins that operate on their container can not operate on another container instead. A new radio-button was added to select which container will be operated on. Selecting the "Other" option will open a container placeholder. Once a container is dragged into this placeholder or if one of the other options is selected, the data plugin will operate on the remote container only. Using this capability it is possible to control several parameters or keyframes of the same container.
- UDP Multicast Viz Datapool now supports multicast communication

New in 2.4.1

New plugins

- DataKeyTime control the time of a keyframe in seconds or frames
- DataAnim animates an integer or float Viz Datapool field. The animation is done using an integer or float parameter in the plugin. This parameter is animated by viz using animation keyframes. The value of the animated parameter is copied every frame into the ourput Viz Datapool field
- DataTime treats the field value as time and splits it into time fields. The source field value can contain one of
 - Seconds since 1/1/1970
 - Minutes since 1/1/1970
 - Mili-seconds since 12:00 on the same day

This plugin, together with DataAnim, can be used to create progress bars

New in 2.4

New plugins

- o DataAlpha controls the Alpha value
- o DataKey controls the key on/off parameter of the Key object
- Updated icons
- UDP socket fixed.

New since 2.3.4

- Bug fixes.
- Fixed problems with initialization of hierarchies (DataObject, DataStructure, etc..)
- Added new macros for DataAction, DataCondition, ...
 - o \$(PARENT)
 - \$(CONTAINER)
 - o \$(FIELD_DATA)
 - o \$(FIELD_PATH)
- New plugins:
 - o DataCountDown (to have countdown clocks)
 - DataScreen (to control the screen coordinates transformations newly introduced in VIZ)
- Fixed a parser problem that solves trouble in SJIS.
- Added a new parameter to DataKeyFrame to specify what value of the key frame you're changing. For example, if you're doing bars you have to control the Y axis alone. However the keyframe has 3 values for X Y and Z. So now you can specify that your incoming data will control only the Y axis and then the X and Z are untouched.
- Fixed a bug in the UDP stuff. Now the port number can be changed.