Unity Composition Overview

PiRho Soft

Introduction

Roadmap

The following is a list of planned features for future releases. This will be periodically updated with more features, additions, and fixes and more specific information (like release dates) as our plans develop. If there is something you would like to see that isn't listed here, or something that is listed that you would like to voice your support for (and potentially increase its priority), let us know!

Features

- First class integration with DOTS

- Update custom editors to support UIElements

- Support for the new InputSystem

- Intellisense/auto complete in VariableReference and Expression editing

- Broader support for exposing, editing, and animating properties using graphs

- Precompilation of entire graphs and objects for enhanced performance (competitive with hand written code)

- Graph analysis and display for inspecting how variables and bindings are being used

Additions

- More logging and debugging info, including a visualizer for bindings and expressions

- Live display of graph execution information (iterations, frame count, elapsed time)

- Various visual enhancements of the graph window, including better connection drawing and animated view changes

- More built in node and binding types

- More transition effects

- Support for number formatting and expression evaluation in messages

- `Other` type for VariableValue so non Object derived types can be stored using a ClassMap

- Reflection fallback for `Object/Other` VariableValues that aren't IVariableStores and don't have a ClassMap

- DictionaryAdapter and ObjectAdapter (using ClassMaps) for use with MappedVariable or IVariableStore implementations

- More example projects, including ones using these types that don't have an example: TimeScaleNode, TextInputBinding, SetAnimationParameterNode, PlayAnimationStateNode, PlayTimelineNode, ImageColorBinding, CutoffTransition Distort, PixelateTransition, CreateScriptableObjectNode, and ResetVariableNode

- MenuBinding that works like ListBinding but uses MenuItemTemplates

- Potentially add commands or operators for testing enum flags in expressions

- Break on error option in graph execution

- Simplified and documented interface for extending expressions with custom keywords and

operators

- Store VariableValue enums as int so they don't box (i.e allocate)

- Expose access restrictions for set, add, and remove to MappedVariable for lists

- Context sensitive mouse cursors in graph window (disabled due to odd AddCursorRect behaviour with zoom)

- Improve custom binding interface with a generic base class that looks up the sibling component the binding is acting on

Bug Fixes

- the outputs in the connection lists for MockupGraph and MockupNode must have unique names but this is not enforced by the editor

- pasting a node in a graph, then undoing, then redoing will not maintain connections

- right clicking in the graph window then right clicking again in a different place sometimes pans the view

- when zoomed tooltips in the graph window don't show up in the correct place

- the VariablePool inspector doesn't repaint when changing the constraint from a SelectionControl until mouse over

- lists in a VariableStore are not assigned a definition so statically typed lists (i.e ListAdapters) cannot have items added

- auto scrolling in MenuInput doesn't take into account different anchors

- switching focused menus with MenuInput is based on item index without accounting for scrolling - it should be based on the item position instead

- key events are not repeated when holding down a key

- GetVariableNames in BindingRoot does not include names from _parent

Log Descriptions

The following lists all the warning and error messages that may be printed to the Console by the Composition Framework. Each message has an associated id that corresponds to an entry in this list for easy searchability. For example the following image shows an error with id `CEEE`. Searching this page will take you to the entry which will explain in more detail what the message means and potential ways to fix it.
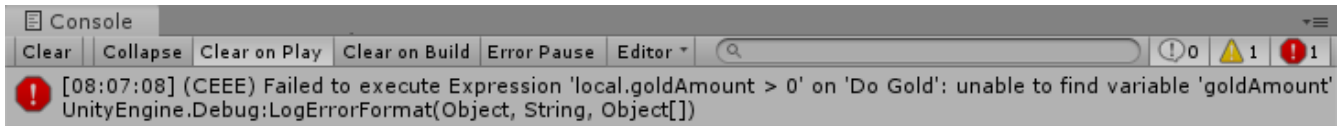
Warnings

CAANPIL

Unable to wait on Animation Player '{0}': the Animation Clip '{1}' was set to loop and would have never finished

{0}	The name of the GameObject containing the AnimationPlayer that triggered the warning.
{1}	The name of the AnimationClip that is being played.

Effect

> The AnimationClip will still play successfully but the wait setting will be ignored.

Resolution

> Either tell the AnimationPlayer to play the animation without looping (i.e call *PlayAnimation* instead of *PlayAnimationAndWait* or clear the *WaitForCompletion* flag if using a PlayAnimationNode) or change the AnimationClip to one that doesn't loop.

CAAUPIL

Unable to wait on Audio Player '{0}': the Audio Clip '{1}' was set to loop and would have never finished

{0}	The name of the GameObject containing the AudioPlayer that triggered the warning.
{1}	The name of the AudioClip that is being played.

Effect

> The AudioClip will still play successfully but the wait setting will be ignored.

Resolution

> Either tell the AudioPlayer to play the sound without looping (call *PlaySound* instead of *PlaySoundAndWait* or clear the *WaitForCompletion* flag if using a PlaySoundNode) or change the AudioClip to one that doesn't loop.

CBBBWT

Bar Binding '{0}' has an Image with a type that is not 'Filled'

{0}	The name of the GameObject containing the BarBinding that triggered the warning.

Effect

The Image will have its *type* set to `Filled` with default values for the other fill related properties.

Resolution

Change the `Image Type` of the Image to `Filled`.

CBLBMT

Unable to create item for List Binding '{0}': the Template is null

{0}	The name of the ListBinding that triggered the warning.

Effect

The ListBinding will do nothing.

Resolution

Set the *Template* property of the ListBinding.

CDONIO

unable to disable object for node '{0}': the object '{1}' is not a GameObject, Behaviour, or Renderer

CEBFC

unable to bind enabled state for binding {0}: the Command '{1}' failed with error {2}

CEBFE

unable to bind enabled state for binding {0}: the expression '{1}' failed with error {2}

CEBIO

unable to bind enabled state for binding {0}: the object '{1}' is not a GameObject, Behaviour, or Renderer

CEBIV

unable to bind enabled state for binding {0}: the expression '{1}' did not evaluate to a bool

CEBMV

unable to bind enabled state for binding {0}: the expression is empty

CEIR

The Expression '{0}' was expected to return type {1} but instead returned type {2}

CEONIO

unable to enable object for node '{0}': the object '{1}' is not a GameObject, Behaviour, or Renderer

CEXBFC

unable to bind text for binding {0}: the Command '{1}' failed with error {2}

CEXBFE

unable to bind text for binding {0}: the expression '{1}' failed with error {2}

CEXBMV

unable to bind text for binding {0}: the expression is empty

CIGNIA

failed to assign to variable '{0}' from node '{1}': the variable has an incompatible type

CIGNIE

failed to resolve variable '{0}' on node '{1}': the variable has enum type {2} and should have enum type {3}

CIGNIO

failed to resolve variable '{0}' on node '{1}': the object is a {2} and cannot be converted to a {3}

CIGNIV

failed to resolve variable '{0}' on node '{1}': the variable has type {2} and should have type {3}

CIGNMA

failed to assign to variable '{0}' from node '{1}': the variable could not be found

CIGNMV

failed to resolve variable '{0}' on node '{1}': the variable could not be found

CIGNROA

failed to assign to variable '{0}' from node '{1}': the variable is read only

CIMMV

Unable to set text on message '{0}': the variable '{1}' could not be found

CNSLS

Unable to load scene for {0}: the scene '{1}' could not be found. Make sure this variable refers to an int or a string

CNSUS

Unable to unload scene for {0}: the scene '{1}' could not be found. Make sure this variable refers to an int or a string

CSCIE

Failed to expand item {0}: the variable '{1}' is not an IVariableList

CTMIA

this TransitionRenderer has already been added

CTMIR

this TransitionRenderer has not been added

CVBIA

failed to assign to variable '{0}' from binding '{1}': the variable has an incompatible type

CVBIE

failed to resolve variable '{0}' on binding '{1}': the variable has enum type {2} and should have enum type {3}

CVBIO

failed to resolve variable '{0}' on binding '{1}': the object is a {2} and cannot be converted to a {3}

CVBIV

failed to resolve variable '{0}' on binding '{1}': the variable has type {2} and should have type {3}

CVBMA

failed to assign to variable '{0}' from binding '{1}': the variable could not be found

CVBMV

failed to resolve variable '{0}' on binding '{1}': the variable could not be found

CVBROA

failed to assign to variable '{0}' from binding '{1}': the variable is read only

CWWIW

unable to watch variable {0} of type {1} - only variable stores can be watched

CWWMW

unable to find variable {0} to watch

Errors

CCEE

Failed to execute Command '{0}' on '{1}': {2}

CCIGPF

Failed to process Node '{0}': the Node yielded a value other than null or IEnumerator

CCNMF

failed to set target: unable to find field {0} for instruction graph node {1}

CCNMI

failed to set target: index {0} is out of range for instruction graph node {1}

CCNMK

failed to set target: unable to find key {0} for instruction graph node {1}

CCSONIO

failed to create object for {0}: an object of type '{1}' could not be instantiated

CCSONIT

failed to create object for {0}: the type '{1}' could not be found

CEEE

Failed to execute Expression '{0}' on '{1}': {2}

CELDK

Failed to add keyword '{0}': a keyword with the same text has already been added

CELDL

Failed to add constant '{0}': a constant with the same text has already been added

CEPDC

Failed to add Command '{0}': a Command with the same name has already been added

CEPDIO

Failed to add infix operator '{0}': an infix operator with the same symbol has already been added

CEPDPO

Failed to add prefix operator '{0}': a prefix operator with the same symbol has already been added

CEPE

Failed to parse Expression at location {1} ({2}): {3} Expression: {0}

CEPMC

Failed to remove Command '{0}': a Command with the same name has not been added

CETE

Failed to parse Expression at location {1}: {2} Expression: {0}

CIAR

Failed to run Instruction '{0}': the Instruction is already running

CISIC

failed to create context for {0}: the variable '{1}' does not satisfy the constraint

CISII

failed to create input for {0}: the variable '{1}' does not satisfy the constraint

CISIOT

failed to store output {0}: the variable '{1}' has an incompatible type

CISMI

failed to read input {0}: the variable '{1}' could not be found

CISMO

failed to store output {0}: the variable '{1}' could not be found

CISROO

failed to store output {0}: the variable '{1}' is read only

CMVSIF

failed to map field '{0}' of type '{1}': Only VariableValue types can be mapped

CMVSIP

failed to map property '{0}' of type '{1}': Only VariableValue types can be mapped

CSCII

Failed to create item {0}: the variable '{1}' is not an IVariableStore or IVariableList

CSCMB

Failed to initialize item {0}: the template '{1}' does not have a Binding Root

CSCMI

Failed to create item {0}: the variable '{1}' could not be found

CSQIS

Unable to run sequence for {0}: index {1} has no connection

CTMS

Failed to load Transition {0}: the shader has not been set

CVDII

Failed to initialize variable: the definition specifies type {0} but the initializer returned type {1}

ISCMC

Failed to create item {0}: SelectionControl '{1}' does not have a child with the specified name

ISCMT

Failed to create item {0}: the object template has not been assigned