

## I just wanna use Json.NET in Unity!

- Json.NET is a powerful, open source, and free serializing solution.
- But it's too smart to serialize something like Vectoe3 or Color, etc.
- It even tries to serialize the "normalized" property and throw a loop exception.
- And it always treats a dictionary key as a string, even if it's an array.

#### Overview:

- This has some common type converters, and sets them as default to make it up..
- If you're using Json.NET, just import and forget this, then coding like before.
- Include Json.Net.Unity3D in case you don't have any version of Json.NET.

The further technical documentation is available here. And the tutorial is right below.

#### Remarks:

- Remember to set the "Api Compatibility Lavel" to .NET 2.0 before importing.
- Thank James Newton-King!
- Thank SaladLab and Esun Kim!
- This's released as feedback for free.

#### **Release Notes:**

#### 1.1.1

- Change PartialConverter CanRead as "true" by default, avoid DefaultValueHandling.Populate causing deserializing fail.

#### 1.1

- Change the Json.NET dll from official to Json.Net.Unity3D for cross platform.
- Rearrange the Json.Net.Unity3D's asset files to indicate the provider.
- New class PartialConverter to simplify the code of other converters.
- Fix potential deserialization fail caused by bytecode stripping for IL2CPP.
- Fix initializing default converters fail caused by conditional compilation.
- Make the utility initialize the converters safer.

#### 1.0.3

- Refactoring.
- Update the included Json.NET to 10.0.3.

#### 1.0.2

- Update the documentation link.

#### 1.0.1

- Change NotImplementedException in some converters to InvalidOperationException, avoid showing in MonoDevelop's task list since unnecessary.
- Update the included Json.NET to 9.0.1.

#### 1.0

- First release.

#### **Publish Notes:**

- Requires: Unity 5.3.5f1 or higher.Category: Scripting / Input Output
- Keywords: Json NET Converter Serialize Deserialize



# **JsonNetUtility**

Released Packages » Json.NET Converters

Integrate custom Newtonsoft. Json. JsonConverter to use Json. NET in Unity. More...

## Static Public Attributes

static JsonSerializerSettings defaultSettings

The default Newtonsoft. Json. JsonSerializerSettings. More...

# **Detailed Description**

Integrate custom Newtonsoft. Json. JsonConverter to use Json. NET in Unity.

To use Json.NET, please set Unity "PlayerSettings/Api Compatibility Lavel" to .NET 2.0. Then download from its website and import the .NET 2.0 dll. Json.NET doesn't support serializing some types originally, e.g., UnityEngine.Vector3. This has the defaultSettings includes necessary custom converters by default for Unity using it. And assign to Newtonsoft.Json.JsonConvert.DefaultSettings when initializing if the original null.

Now we can use Json.NET just like before:

```
Debug.Log(JsonConvert.SerializeObject(Vector3.up));
var vec = JsonConvert.DeserializeObject<Vector2>("{'x':1.0,'y':0.0}");
```

User can directly modify defaultSettings for customization, and override it:

```
JsonConvert.DefaultSettings = () => new JsonSerializerSettings(){
   Converters = JsonNetUtility.defaultSettings.Converters,
   DefaultValueHandling = DefaultValueHandling.Populate
};
```

## Member Data Documentation

#### JsonSerializerSettings defaultSettings

static

The default Newtonsoft. Json. JsonSerializerSettings.

All its properties stay default, but the Converters includes below:

- 1. All custom Newtonsoft. Json. JsonConverter with constructor needs no params.
- 2. All Newtonsoft. Json. JsonConverter from WanzyeeStudio. Json.
- 3. Newtonsoft.Json.Converters.StringEnumConverter.
- 4. Newtonsoft.Json.Converters.VersionConverter.

# PartialConverter< T > abstract

Released Packages » Json.NET Converters

Custom base Newtonsoft. Json. JsonConverter to filter serialized properties. More...

Inherits JsonConverter.

## **Public Member Functions**

override bool	CanConvert (Type objectType)  Determine if the object type is T. More
override object	ReadJson (JsonReader reader, Type objectType, object existingValue, JsonSerializer serializer)  Read the specified properties to the object. More
override void	WriteJson (JsonWriter writer, object value, JsonSerializer serializer) Write the specified properties of the object. More

## **Protected Member Functions**

```
abstract string[] GetPropertyNames ()
Get the property names to serialize, only used once when initializing. More...

virtual T CreateInstance ()
Create the instance for ReadJson() to populate. More...
```

# **Detailed Description**

Custom base Newtonsoft. Json. JsonConverter to filter serialized properties.

Useful for Unity or 3rd party classes, since we can't insert any Newtonsoft. Json. JsonIgnoreAttribute. By the way, this works by reflection to access properties. Please make sure your property not to be stripped by Unity.

It's very easy to make a custom converter, just inherit and override **GetPropertyNames()** as the filter:

```
public class SomeConverter : PartialConverter<SomeClass>{
    protected override string[] GetPropertyNames(){
        return new []{"someField", "someProperty", "etc"};
    }
}
```

## abstract string [] GetPropertyNames ( )

protected pure virtual

Get the property names to serialize, only used once when initializing.

#### **Returns**

The property names.

Implemented in BoundsConverter, Matrix4x4Converter, ColorConverter, QuaternionConverter, RectConverter, RectOffsetConverter, Vector2Converter, Vector3Converter, and Vector4Converter.

## virtual T CreateInstance ( )

protected virtual

Create the instance for **ReadJson()** to populate.

#### **Returns**

The instance.

## override bool CanConvert ( Type objectType )

Determine if the object type is T.

#### **Parameters**

objectType Type of the object.

#### **Returns**

true if this can convert the specified type; otherwise, false.

```
override object ReadJson ( JsonReader
                                         reader,
                          Type
                                         objectType,
                          object
                                         existingValue,
                          JsonSerializer serializer
```

Read the specified properties to the object.

#### **Returns**

The object value.

#### **Parameters**

The Newtonsoft. Json. JsonReader to read from. reader

objectType Type of the object.

existingValue The existing value of object being read.

```
override void WriteJson ( JsonWriter writer,
object value,
JsonSerializer serializer
)
```

Write the specified properties of the object.

## **Parameters**

writer The Newtonsoft. Json. JsonWriter to write to.

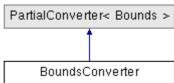
value The value.

# **BoundsConverter**

**Released Packages » Json.NET Converters** 

Custom Newtonsoft. Json. JsonConverter for UnityEngine. Bounds. More...

Inheritance diagram for BoundsConverter:



# **Public Member Functions**

override bool	CanConvert (Type objectType)  Determine if the object type is T. More
override object	ReadJson (JsonReader reader, Type objectType, object existingValue, JsonSerializer serializer) Read the specified properties to the object. More
override void	WriteJson (JsonWriter writer, object value, JsonSerializer serializer) Write the specified properties of the object. More

# **Protected Member Functions**

override string[]	GetPropertyNames () Get the property names include center, extents. More
virtual T	CreateInstance ()
	Create the instance for ReadJson() to populate. More

# **Properties**

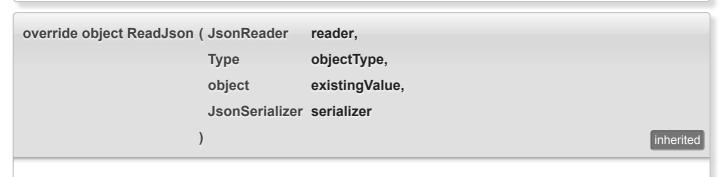
override bool CanRead [get]

Determine if this converter can read Json. More...

# **Detailed Description**

Custom Newtonsoft.Json.JsonConverter for UnityEngine.Bounds.

```
override string [] GetPropertyNames ( )
                                                                                          protected virtual
Get the property names include center, extents.
Returns
      The property names.
Implements PartialConverter< Bounds >.
virtual T CreateInstance ( )
                                                                                 protected virtual inherited
Create the instance for ReadJson() to populate.
Returns
      The instance.
override bool CanConvert ( Type objectType )
                                                                                                 inherited
Determine if the object type is T.
Parameters
      objectType Type of the object.
Returns
```



Read the specified properties to the object.

#### **Returns**

The object value.

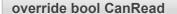
#### **Parameters**

**reader** The Newtonsoft.Json.JsonReader to read from.

true if this can convert the specified type; otherwise, false.

**objectType** Type of the object.

existingValue The existing value of object being read.



get inherited

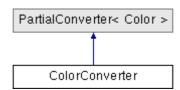
Determine if this converter can read Json.

# ColorConverter

**Released Packages » Json.NET Converters** 

Custom Newtonsoft.Json.JsonConverter for UnityEngine.Color. More...

Inheritance diagram for ColorConverter:



# **Public Member Functions**

override bool	CanConvert (Type objectType)  Determine if the object type is T. More
override object	ReadJson (JsonReader reader, Type objectType, object existingValue, JsonSerializer serializer) Read the specified properties to the object. More
override void	WriteJson (JsonWriter writer, object value, JsonSerializer serializer) Write the specified properties of the object. More

# **Protected Member Functions**

override string[]	GetPropertyNames () Get the property names include r, g, b, a. More
virtual T	CreateInstance ()
	Create the instance for ReadJson() to populate. More

# **Properties**

override bool CanRead [get]

Determine if this converter can read Json. More...

# **Detailed Description**

Custom Newtonsoft.Json.JsonConverter for UnityEngine.Color.

```
override string [] GetPropertyNames ( )

Get the property names include r, g, b, a.

Returns
The property names.

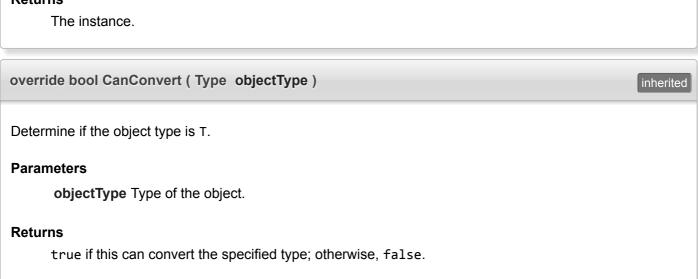
Implements PartialConverter< Color >.

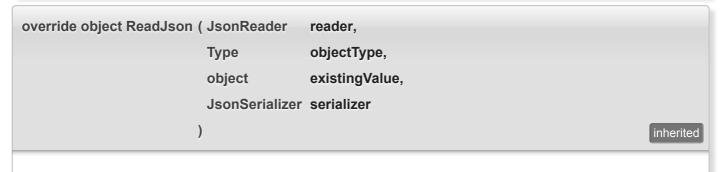
virtual T CreateInstance ( )

Create the instance for ReadJson() to populate.

Returns
The instance.

override bool CanConvert ( Type objectType )
```





Read the specified properties to the object.

#### **Returns**

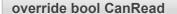
The object value.

#### **Parameters**

reader The Newtonsoft.Json.JsonReader to read from.

**objectType** Type of the object.

existingValue The existing value of object being read.



get inherited

Determine if this converter can read Json.

# **DictionaryConverter**

Released Packages » Json.NET Converters

Custom Newtonsoft. Json. JsonConverter for System. Collections. Generic. Dictionary. More...

Inherits JsonConverter.

# **Public Member Functions**

override bool	<pre>CanConvert (Type objectType) Determine if the type is System.Collections.Generic.Dictionary. More</pre>
override object	ReadJson (JsonReader reader, Type objectType, object existingValue, JsonSerializer serializer) Read as System.Collections.Generic.KeyValuePair array to rebuild a dictionary. More
override void	WriteJson (JsonWriter writer, object value, JsonSerializer serializer) Write as System.Collections.Generic.KeyValuePair array. More

# **Detailed Description**

Custom Newtonsoft. Json. JsonConverter for System. Collections. Generic. Dictionary.

# Member Function Documentation

override bool CanConvert ( Type objectType )

Determine if the type is System.Collections.Generic.Dictionary.

#### **Parameters**

objectType Type of the object.

#### **Returns**

true if this can convert the specified type; otherwise, false.

```
override object ReadJson ( JsonReader reader,

Type objectType,

object existingValue,

JsonSerializer serializer
)
```

Read as System.Collections.Generic.KeyValuePair array to rebuild a dictionary.

#### **Returns**

The object value.

#### **Parameters**

reader The Newtonsoft.Json.JsonReader to read from.

**objectType** Type of the object.

existingValue The existing value of object being read.

**serializer** The calling serializer.

```
override void WriteJson ( JsonWriter writer,
object value,
JsonSerializer serializer
)
```

Write as System.Collections.Generic.KeyValuePair array.

## **Parameters**

writer The Newtonsoft. Json. JsonWriter to write to.

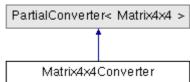
value The value.

## Matrix4x4Converter

**Released Packages » Json.NET Converters** 

Custom Newtonsoft.Json.JsonConverter for UnityEngine.Matrix4x4. More...

Inheritance diagram for Matrix4x4Converter:



# **Public Member Functions**

override bool	CanConvert (Type objectType)  Determine if the object type is T. More
override object	ReadJson (JsonReader reader, Type objectType, object existingValue, JsonSerializer serializer) Read the specified properties to the object. More
override void	WriteJson (JsonWriter writer, object value, JsonSerializer serializer) Write the specified properties of the object. More

# **Protected Member Functions**

override string[]	GetPropertyNames () Get the property names include from m00 to m33. More
virtual T	CreateInstance ()
	Create the instance for ReadJson() to populate. More

# **Properties**

override bool CanRead [get]

Determine if this converter can read Json. More...

# **Detailed Description**

Custom Newtonsoft.Json.JsonConverter for UnityEngine.Matrix4x4.

```
override string [] GetPropertyNames ( )
                                                                                          protected virtual
Get the property names include from m00 to m33.
Returns
      The property names.
Implements PartialConverter< Matrix4x4 >.
virtual T CreateInstance ( )
                                                                                 protected virtual inherited
Create the instance for ReadJson() to populate.
Returns
      The instance.
override bool CanConvert ( Type objectType )
                                                                                                 inherited
Determine if the object type is T.
Parameters
      objectType Type of the object.
Returns
      true if this can convert the specified type; otherwise, false.
override object ReadJson ( JsonReader reader,
```

```
override object ReadJson ( JsonReader reader,

Type objectType,
object existingValue,
JsonSerializer serializer
) inherited
```

Read the specified properties to the object.

#### **Returns**

The object value.

#### **Parameters**

**reader** The Newtonsoft.Json.JsonReader to read from.

**objectType** Type of the object.

existingValue The existing value of object being read.



get inherited

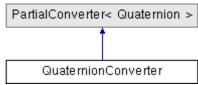
Determine if this converter can read Json.

## QuaternionConverter

Released Packages » Json.NET Converters

Custom Newtonsoft. Json. JsonConverter for UnityEngine. Quaternion. More...

Inheritance diagram for QuaternionConverter:



# **Public Member Functions**

override bool	CanConvert (Type objectType)  Determine if the object type is T. More
override object	ReadJson (JsonReader reader, Type objectType, object existingValue, JsonSerializer serializer) Read the specified properties to the object. More
override void	WriteJson (JsonWriter writer, object value, JsonSerializer serializer) Write the specified properties of the object. More

## **Protected Member Functions**

```
override string[] GetPropertyNames ()
Get the property names include x, y, z, w. More...

virtual T CreateInstance ()
Create the instance for ReadJson() to populate. More...
```

# **Detailed Description**

Custom Newtonsoft. Json. JsonConverter for UnityEngine. Quaternion.



## virtual T CreateInstance ( )

protected virtual inherited



Create the instance for ReadJson() to populate.

#### **Returns**

The instance.

## override bool CanConvert ( Type objectType )

inherited

Determine if the object type is T.

## **Parameters**

objectType Type of the object.

#### Returns

true if this can convert the specified type; otherwise, false.

```
override object ReadJson ( JsonReader
                                        reader,
```

Type objectType, object existingValue,

JsonSerializer serializer

)

inherited

Read the specified properties to the object.

#### **Returns**

The object value.

#### **Parameters**

reader The Newtonsoft. Json. JsonReader to read from.

objectType Type of the object.

existingValue The existing value of object being read.

```
override void WriteJson ( JsonWriter writer,
object value,
JsonSerializer serializer
) inherited
```

Write the specified properties of the object.

## **Parameters**

writer The Newtonsoft.Json.JsonWriter to write to.

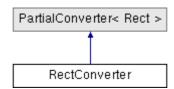
value The value.

## RectConverter

**Released Packages » Json.NET Converters** 

Custom Newtonsoft.Json.JsonConverter for UnityEngine.Rect. More...

Inheritance diagram for RectConverter:



# **Public Member Functions**

override bool	CanConvert (Type objectType)  Determine if the object type is T. More
override object	ReadJson (JsonReader reader, Type objectType, object existingValue, JsonSerializer serializer) Read the specified properties to the object. More
override void	WriteJson (JsonWriter writer, object value, JsonSerializer serializer) Write the specified properties of the object. More

# **Protected Member Functions**

override string[]	<b>GetPropertyNames ()</b> Get the property names include x, y, width, height. More
virtual T	CreateInstance ()
	Create the instance for ReadJson() to populate. More

# **Properties**

override bool CanRead [get]

Determine if this converter can read Json. More...

# **Detailed Description**

Custom Newtonsoft.Json.JsonConverter for UnityEngine.Rect.

```
override string [] GetPropertyNames ( )

Get the property names include x, y, width, height.

Returns

The property names.

Implements PartialConverter< Rect >.

virtual T CreateInstance ( )

Create the instance for ReadJson() to populate.
```

Returns

The instance.

# override bool CanConvert ( Type objectType )

inherited

Determine if the object type is T.

#### **Parameters**

objectType Type of the object.

#### **Returns**

true if this can convert the specified type; otherwise, false.

Read the specified properties to the object.

#### **Returns**

The object value.

#### **Parameters**

**reader** The Newtonsoft.Json.JsonReader to read from.

**objectType** Type of the object.

existingValue The existing value of object being read.



get inherited

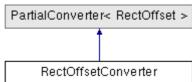
Determine if this converter can read Json.

## RectOffsetConverter

**Released Packages » Json.NET Converters** 

Custom Newtonsoft. Json. JsonConverter for UnityEngine. RectOffset. More...

Inheritance diagram for RectOffsetConverter:



# **Public Member Functions**

override bool	CanConvert (Type objectType)  Determine if the object type is T. More
override object	ReadJson (JsonReader reader, Type objectType, object existingValue, JsonSerializer serializer) Read the specified properties to the object. More
override void	WriteJson (JsonWriter writer, object value, JsonSerializer serializer) Write the specified properties of the object. More

# **Protected Member Functions**

override string[]	GetPropertyNames () Get the property names include left, right, top, bottom. More
virtual T	CreateInstance ()
	Create the instance for ReadJson() to populate. More

# **Properties**

override bool CanRead [get]

Determine if this converter can read Json. More...

# **Detailed Description**

Custom Newtonsoft.Json.JsonConverter for UnityEngine.RectOffset.

```
override string [] GetPropertyNames ( )
                                                                                          protected virtual
Get the property names include left, right, top, bottom.
Returns
      The property names.
Implements PartialConverter< RectOffset >.
virtual T CreateInstance ( )
                                                                                 protected virtual inherited
Create the instance for ReadJson() to populate.
Returns
      The instance.
override bool CanConvert ( Type objectType )
                                                                                                  inherited
Determine if the object type is T.
Parameters
      objectType Type of the object.
Returns
```

true if this can convert the specified type; otherwise, false.

Read the specified properties to the object.

#### **Returns**

The object value.

#### **Parameters**

**reader** The Newtonsoft.Json.JsonReader to read from.

**objectType** Type of the object.

existingValue The existing value of object being read.



get inherited

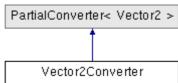
Determine if this converter can read Json.

## **Vector2Converter**

**Released Packages » Json.NET Converters** 

Custom Newtonsoft. Json. JsonConverter for UnityEngine. Vector 2. More...

Inheritance diagram for Vector2Converter:



# **Public Member Functions**

override bool	CanConvert (Type objectType)  Determine if the object type is T. More
override object	ReadJson (JsonReader reader, Type objectType, object existingValue, JsonSerializer serializer) Read the specified properties to the object. More
override void	WriteJson (JsonWriter writer, object value, JsonSerializer serializer) Write the specified properties of the object. More

## **Protected Member Functions**

override string[]	GetPropertyNames () Get the property names include x, y. More
virtual T	CreateInstance ()
	Create the instance for ReadJson() to populate. More

# **Properties**

override bool CanRead [get]

Determine if this converter can read Json. More...

# **Detailed Description**

Custom Newtonsoft.Json.JsonConverter for UnityEngine.Vector2.

```
override string [] GetPropertyNames ( )

Get the property names include x, y.

Returns
The property names.

Implements PartialConverter< Vector2 >.

virtual T CreateInstance ( )

protected virtual inherited
```

virtual T CreateInstance ( )

Create the instance for ReadJson() to populate.

Returns

The instance.

# override bool CanConvert ( Type objectType ) Determine if the object type is T. Parameters

objectType Type of the object.

## **Returns**

true if this can convert the specified type; otherwise, false.

Read the specified properties to the object.

#### **Returns**

The object value.

#### **Parameters**

**reader** The Newtonsoft.Json.JsonReader to read from.

**objectType** Type of the object.

existingValue The existing value of object being read.



get inherited

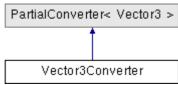
Determine if this converter can read Json.

## **Vector3Converter**

**Released Packages » Json.NET Converters** 

Custom Newtonsoft. Json. JsonConverter for UnityEngine. Vector 3. More...

Inheritance diagram for Vector3Converter:



# **Public Member Functions**

override bool	CanConvert (Type objectType)  Determine if the object type is T. More
override object	ReadJson (JsonReader reader, Type objectType, object existingValue, JsonSerializer serializer) Read the specified properties to the object. More
override void	WriteJson (JsonWriter writer, object value, JsonSerializer serializer) Write the specified properties of the object. More

# **Protected Member Functions**

override string[]	<b>GetPropertyNames ()</b> Get the property names include x, y, z. More
virtual T	CreateInstance ()
	Create the instance for ReadJson() to populate. More

# **Properties**

override bool CanRead [get]

Determine if this converter can read Json. More...

# **Detailed Description**

Custom Newtonsoft.Json.JsonConverter for UnityEngine.Vector3.

```
override string [] GetPropertyNames ( )

Get the property names include x, y, z.

Returns
The property names.

Implements PartialConverter< Vector3 >.

virtual T CreateInstance ( )

protected virtual inherited
```

virtual T CreateInstance ( )

Create the instance for ReadJson() to populate.

Returns

The instance.



**Returns**true if this can convert the specified type; otherwise, false.

```
override object ReadJson ( JsonReader reader,
Type objectType,
object existingValue,
JsonSerializer serializer
) inherited
```

Read the specified properties to the object.

#### **Returns**

The object value.

#### **Parameters**

**reader** The Newtonsoft.Json.JsonReader to read from.

**objectType** Type of the object.

existingValue The existing value of object being read.



get inherited

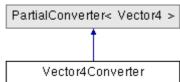
Determine if this converter can read Json.

## **Vector4Converter**

**Released Packages » Json.NET Converters** 

Custom Newtonsoft. Json. JsonConverter for UnityEngine. Vector 4. More...

Inheritance diagram for Vector4Converter:



# **Public Member Functions**

override bool	CanConvert (Type objectType)  Determine if the object type is T. More
override object	ReadJson (JsonReader reader, Type objectType, object existingValue, JsonSerializer serializer) Read the specified properties to the object. More
override void	WriteJson (JsonWriter writer, object value, JsonSerializer serializer) Write the specified properties of the object. More

# **Protected Member Functions**

override string[]	GetPropertyNames () Get the property names include x, y, z, w. More
virtual T	CreateInstance ()
	Create the instance for ReadJson() to populate. More

# **Properties**

override bool CanRead [get]

Determine if this converter can read Json. More...

# **Detailed Description**

Custom Newtonsoft.Json.JsonConverter for UnityEngine.Vector4.

```
override string [] GetPropertyNames ( )

Get the property names include x, y, z, w.

Returns

The property names.

Implements PartialConverter< Vector4 >.

virtual T CreateInstance ( )

protected virtual inherited

Create the instance for ReadJson() to populate.
```

Returns

The instance.

```
override bool CanConvert ( Type objectType )
```

inherited

Determine if the object type is T.

#### **Parameters**

objectType Type of the object.

#### **Returns**

true if this can convert the specified type; otherwise, false.

```
override object ReadJson ( JsonReader reader,

Type objectType,
object existingValue,
JsonSerializer serializer
) inherited
```

Read the specified properties to the object.

#### **Returns**

The object value.

#### **Parameters**

**reader** The Newtonsoft.Json.JsonReader to read from.

**objectType** Type of the object.

existingValue The existing value of object being read.



get inherited

Determine if this converter can read Json.