



- Supplement for JSON Function -

NTT ADVANCED TECHNOLOGY CORPORATION

Introduction

■ This document describes the details of JSON functions in user libraries.

- Related user libraries are as follows.

98_StructureData/

StructureData_JSONFileArraySize.ums7
StructureData_JSONFileReadArray.ums7
StructureData_JSONSaveVariableToFile.ums7
StructureData_JSONVariableNewObject.ums7
StructureData_JSONVariableNewArray.ums7
StructureData_JSONVariableAppendElement.ums7
StructureData_JSONVariableRead.ums7
StructureData_JSONVariableArraySize.ums7
StructureData_JSONVariableAppendArrayElement.ums7
StructureData_JSONVariableReadArray.ums7
StructureData_JSONFormatWrite.ums7
StructureData_JSONFormatRead.ums7

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*¹ The official name of Windows is Microsoft Windows Operating System.

*² The official name of VBScript is Microsoft Visual Basic Scripting Edition.

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Notes on this document

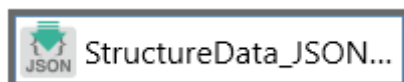
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- The descriptions in this manual assume that users understand Windows operations and functions. For information that is not described in this manual, see the documents provided by Microsoft.

StructureData_JSONFormatRead (1/2)

This section describes how each JSON data type is read by "StructureData_JSONFormatRead."

In the "Read JSON" property, specify the source JSON data (file or variable) and a pair of the key string and a variable name to store the corresponding value.

The value type is automatically determined by WinActor.



Property

Read JSON

Name: StructureData_JSONFormatRead

Comment:

Settings Details

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Key	Value
key	reading_result

Update Restore

StructureData_JSONFormatRead (2/2)

Table: Stored value examples

No	JSON (*1)	Type (*2)	Stored value (*3)
1	{ key : 123 }	Integer	123
2	{ key : 12.3 }	Decimal	12.3
3	{ key : "123" }	String	"123"
4	{ key : "null" }	String	"null"
5	{ key : "" }	String	""
6	{ key : { sub : 123 } }	Object	{ sub : 123 }
7	{ key : [1, 2, 3] }	Array	[1, 2, 3]
8	{ key : true }	Boolean	true
9	{ key : null }	Null	null

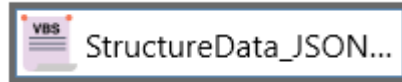
*1 Source JSON to be read.
*2 Value type which WinActor automatically determines. The value type is not stored in a variable.
*3 Value to be stored in a specified variable.

Notes:
The values of No.3 and 4 are quoted with "".
The null value of No.9 is read as null (unquoted four-character string).

StructureData_JSONVariableRead (1/4)

While StructureData_JSONFormatRead is to **read a value** in JSON, StructureData_JSONVariableRead can be used to **transfer a value** as-is or **read a value type**.

In the "StructureData_JSONVariableRead" property window, specify a source JSON for "JSON_variable," a key to read for "Key," what to read for "Read_intent," and a variable to store the result for "Value."

A screenshot of the 'Property' window for 'StructureData_JSONVariableRead'. The window has a title bar with 'Property' and standard window controls. Below the title bar is a 'Run Script' section with 'Name' set to 'StructureData_JSONVariableRead' and an empty 'Comment' field. There are three tabs: 'Settings' (selected), 'Script', and 'Annotation'. The 'Settings' tab contains instructions: 'Specify a key and a purpose in JSON to read a value.' followed by definitions for 'JSON_variable', 'Key', 'Read_intent', and 'Value'. Below these are four dropdown menus: 'JSON_variable' (set to 'Select variable name'), 'Key' (set to 'Value=>'), 'Read_intent' (set to 'Transfer'), and 'Value' (set to 'Select variable name'). At the bottom are 'Update' and 'Restore' buttons.

StructureData_JSONVariableRead (2/4)

Table: Stored value examples (Read_intent = "Refer_to_value")

No	JSON (*1)	Type (*2)	Stored value (*3)
1	{ key : 123 }	Integer	123
2	{ key : 12.3 }	Decimal	12.3
3	{ key : "123" }	String	"123"
4	{ key : "null" }	String	"null"
5	{ key : "" }	String	""
6	{ key : { sub : 123 } }	Object	{ sub : 123 }
7	{ key : [1, 2, 3] }	Array	[1, 2, 3]
8	{ key : true }	Boolean	true
9	{ key : null }	Null	null

*1 Source JSON to be read.
*2 Value type which WinActor automatically determines. The value type is not stored in a variable.
*3 Value to be stored in a specified variable.

Notes:
The values of No.3 and 4 are quoted with "".
The null value of No.9 is read as null (unquoted four-character string).

In case of Read_intent="Refer_to_value,"
the stored value is the same as that of
"StructureData_JSONFormatRead."

StructureData_JSONVariableRead (3/4)

Table: Stored value examples (Read_intent = "Transfer")

No	JSON (*1)	Type (*2)	Stored value (*3)
1	{ key : 123 }	Integer	123
2	{ key : 12.3 }	Decimal	12.3
3	{ key : "123" }	String	123
4	{ key : "null" }	String	null
5	{ key : "" }	String	
6	{ key : { sub : 123 } }	Object	{ sub : 123 }
7	{ key : [1, 2, 3] }	Array	[1, 2, 3]
8	{ key : true }	Boolean	true
9	{ key : null }	Null	

*1 Source JSON to be read.
*2 Value type which WinActor automatically determines. The value type is not stored in a variable.
*3 Value to be stored in a specified variable.

Notes:
The values of No.3, 4, and 5 are unquoted.
The null value of No.9 is read as an empty string.

In case of Read_intent="Transfer," the stored value is modified so that it will be the same expression in the transferred JSON.

StructureData_JSONVariableRead (4/4)

Table: Stored value examples (Read_intent = "Determine_type")

No	JSON (*1)	Type (*2)	Stored value (*3)
1	{ key : 123 }	Integer	INTEGER
2	{ key : 12.3 }	Decimal	FLOAT
3	{ key : "123" }	String	STRING
4	{ key : "null" }	String	STRING
5	{ key : "" }	String	STRING
6	{ key : { sub : 123 } }	Object	OBJECT
7	{ key : [1, 2, 3] }	Array	ARRAY
8	{ key : true }	Boolean	BOOLEAN
9	{ key : null }	Null	NULL

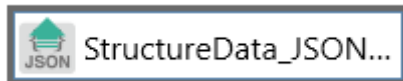
*1 Source JSON to be read.
*2 Value type which WinActor automatically determines.
*3 Value to be stored in a specified variable.

In case of Read_intent="Determine_type," the value type which WinActor automatically determined is stored.

StructureData_JSONFormatWrite (1/7)

This section describes how JSON data is written by "StructureData_JSONFormatWrite."

In the "Write JSON" property, specify JSON data to write for "Key," "Type," and "Value."



Property

Write JSON

Name: StructureData_JSONFormatWrite

Comment:

Settings Details

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Key	Type	Value
key	String	Value->123

Update Restore

StructureData_JSONFormatWrite (2/7)

Table: Written JSON data examples (1/6)

No	Type (*1)	Value (*2)	Written JSON data (*3)
1	Integer	123	{ "key" : 123 }
2	Integer	12.3	Error
3	Integer	null	Error
4	Integer		{ "key" : null }
5	Decimal	123	{ "key" : 123.0 }
6	Decimal	12.3	{ "key" : 12.3 }
7	Decimal	null	Error
8	Decimal		{ "key" : null }

*1 Type in the Property window.
*2 Value in the Property window.
*3 JSON data to be written to a specified variable or a file.

Notes:

For No.2, an error occurs as a decimal value is specified for "Integer" type.
For No.5, a decimal value is written when an integer value is specified for "Decimal" type.
For No.3, 4, 7, and 8, use an empty string to write a null value.

StructureData_JSONFormatWrite (3/7)

Table: Written JSON data examples (2/6)

No	Type (*1)	Value (*2)	Written JSON data (*3)
9	String	123	{ "key" : "123" }
10	String	12.3	{ "key" : "12.3" }
11	String	"123"	{ "key" : "¥"123¥" }
12	String	null	{ "key" : "null" }
13	String		{ "key" : "" }

*1 Type in the Property window.
*2 Value in the Property window.
*3 JSON data to be written to a specified variable or a file.

Notes:

For No.11, the outer "" is added by WinActor. When the original value contains "", the result will be enclosed in double "".

For No.12 and 13, a null value cannot be written as "String" type. When "null" is specified for Value, it will be treated as a string "null." When an empty string is specified, it will be treated as an empty string.

Use "Null" type to write a null value.

StructureData_JSONFormatWrite (4/7)

Table: Written JSON data examples (3/6)

No	Type (*1)	Value (*2)	Written JSON data (*3)
14	Object	{ }	{ "key" : { } }
15	Object	{ sub : 123 }	{ "key" : { "sub" : 123 } }
16	Object	123	Error
17	Object	null	{ "key" : null }
18	Object		{ "key" : null }

*1 Type in the Property window.
*2 Value in the Property window.
*3 JSON data to be written to a specified variable or a file.

Notes:
For No.16, use { } to write an object.
For No.17 and 18, use an empty string or "null" to write a null value. An empty string is recommended in accordance with the way used for other types.

StructureData_JSONFormatWrite (5/7)

Table: Written JSON data examples (4/6)

No	Type (*1)	Value (*2)	Written JSON data (*3)
19	Array	[]	{ "key" : [] }
20	Array	[1,2,3]	{ "key" : [1, 2, 3] }
21	Array	123	Error
22	Array	null	{ "key" : null }
23	Array		{ "key" : null }

*1 Type in the Property window.
*2 Value in the Property window.
*3 JSON data to be written to a specified variable or a file.

Notes:
For No.21, use [] to write an array.
For No.22 and 23, use an empty string or "null" to write a null value. An empty string is recommended in accordance with the way used for other types.

StructureData_JSONFormatWrite (6/7)

Table: Written JSON data examples (5/6)

No	Type (*1)	Value (*2)	Written JSON data (*3)
24	Boolean	true	{ "key" : true }
25	Boolean	false	{ "key" : false }
26	Boolean	123	{ "key" : false }
27	Boolean	0	{ "key" : false }
28	Boolean	-1	{ "key" : false }
29	Boolean	abc	{ "key" : false }
30	Boolean	null	{ "key" : false }
31	Boolean		{ "key" : null }

*1 Type in the Property window.
*2 Value in the Property window.
*3 JSON data to be written to a specified variable or a file.

Notes:

For No.26, 27, 28, and 29, no error occurs and "false" is written. To avoid unintentional output, specify either "true" or "false" to write a Boolean value.

For No.30 and 31, use an empty string to write a null value.

StructureData_JSONFormatWrite (7/7)

Table: Written JSON data examples (6/6)

No	Type (*1)	Value (*2)	Written JSON data (*3)
32	Null	123	{ "key" : "123" }
33	Null	12.3	{ "key" : "12.3" }
34	Null	"123"	{ "key" : "¥"123¥" }
35	Null	null	{ "key" : "null" }
36	Null		{ "key" : null }

*1 Type in the Property window.
*2 Value in the Property window.
*3 JSON data to be written to a specified variable or a file.

Notes:

For No.32, 33, and 34, "Null" type basically has the same output as "String" type.

For No.35 and 36, the output for an empty string is different from that of "String" type.

Use an empty string to write a null value. When "null" is specified, it will be treated as a string "null."



Supplement for JSON Function

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