RStudio Launcher Plugin SDK

99.9.9

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Chapter 1

Hierarchical Index

1.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Chapter 2

Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 3

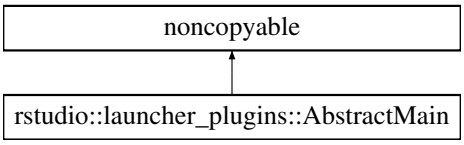
Class Documentation

3.1 rstudio::launcher_plugins::AbstractMain Class Reference

Base class for the Plugin Main class, which runs the plugin.

`#include <AbstractMain.hpp>`

Inheritance diagram for rstudio::launcher_plugins::AbstractMain:



Public Member Functions

- AbstractMain ()=default

  Default Constructor.
- virtual ~AbstractMain ()=default

  Default destructor.
- int run (int in_argCount, char **in_argList)

  Runs the plugin.

3.1.1 Detailed Description

Base class for the Plugin Main class, which runs the plugin.

3.1.2 Member Function Documentation

3.1.2.1 run()

```
int rstudio::launcher_plugins::AbstractMain::run (
            int in_argCount,
            char ** in_argList )
```

Runs the plugin.

Parameters

in_argCount	The number of arguments in in_argList.
in_argList	The argument list to the program.

Returns

0 on a successful exit. A non-zero error code, otherwise.

The documentation for this class was generated from the following file:

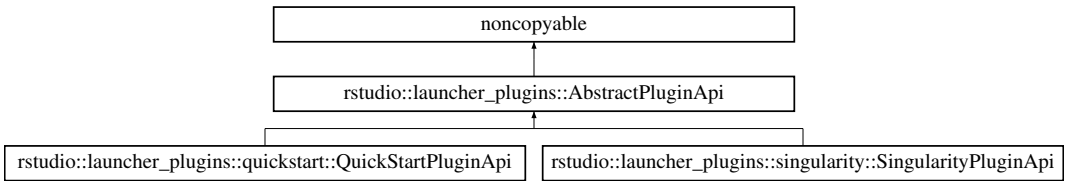
- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/AbstractMain.hpp

3.2 rstudio::launcher_plugins::AbstractPluginApi Class Reference

Base class for the Launcher Plugin API.

`#include <AbstractPluginApi.hpp>`

Inheritance diagram for rstudio::launcher_plugins::AbstractPluginApi:



Public Member Functions

- virtual ~AbstractPluginApi ()=default

  Virtual destructor.
- virtual Error initialize ()=0

  This method should initialize any components needed to communicate with the job scheduling tool, including custom options (TODO: other examples).

3.2.1 Detailed Description

Base class for the Launcher Plugin API.

3.2.2 Member Function Documentation

3.2.2.1 initialize()

```
virtual Error rstudio::launcher_plugins::AbstractPluginApi::initialize ( )  [pure virtual]
```

This method should initialize any components needed to communicate with the job scheduling tool, including custom options (TODO: other examples).

Returns

Success if all components needed by this Plugin were successfully initialized; Error otherwise.

Implemented in rstudio::launcher_plugins::singularity::SingularityPluginApi, and rstudio::launcher_plugins::quickstart::QuickStartPlugi

The documentation for this class was generated from the following file:

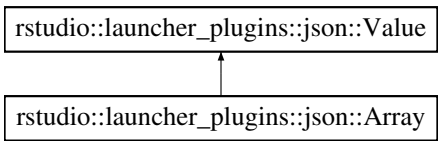
- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/AbstractPluginApi.hpp

3.3 rstudio::launcher_plugins::json::Array Class Reference

Class which represents a JSON array.

```
#include <Json.hpp>
```

Inheritance diagram for rstudio::launcher_plugins::json::Array:



Classes

- class Iterator

  Class which allows iterating over the elements of a JSON array.

Public Types

- typedef Value value_type

  Typedef required for the inheritance of std::iterator with a value_type of json::Value.
- typedef std::reverse_iterator< Iterator > ReverseIterator

  Reverse iterator for a JSON array.

Public Member Functions

- Array ()

  Constructs an empty JSON array.
- Array (const StringPairList &in_strPairs)

  Constructs a JSON array from a list of string pairs as an array of strings in the format "key=value".
- Array (const Array &in_other)

  Copy constructor.
- Array (Array &&in_other)

  Move constructor.
- Array & operator= (const Array &in_other)

  Assignment operator.
- Array & operator= (Array &&in_other) noexcept

  Move operator.
- Value operator[ ] (size_t in_index) const

  Accessor operator. Gets the JSON value at the specified position in the array.
- Iterator begin () const

  Gets an iterator pointing to the first member of this array.
- Iterator end () const

  Gets an iterator after the last member of this array.
- ReverseIterator rbegin () const

  Gets an iterator pointing to the last member of this array, which iterates in the reverse direction.
- ReverseIterator rend () const

  Gets an iterator before the first member of this array, which can be compared with an other ReverseIterator to determine when reverse iteration has ended.
- void clear ()

  Clears the JSON array.
- Iterator erase (const Iterator &in_itr)

  Erases the member specified by the provided iterator.
- Iterator erase (const Iterator &in_first, const Iterator &in_last)

  Erases a range of member specified by the provided iterators to the first and last members to erase.
- Value getBack () const

  Gets the value at the back of the JSON array.
- Value getFront () const

  Gets the value at the front of the JSON array.
- Value getValueAt (size_t in_index) const

  Gets the value at the specified index of the JSON array.
- size_t getSize () const

  Gets the number of values in the JSON array.
- bool isEmpty () const

  Checks whether the JSON array is empty.
- void push_back (const Value &in_value)

  Pushes the value onto the end of the JSON array.
- bool toSetString (std::set< std::string > &out_set) const

  Converts this JSON array to a set of strings.
- StringPairList toStringPairList () const

  Converts this array into a vector of string pairs. Elements of the form "key=value" will be parsed into the pair <"key", "value">. Elements which are not in that format (e.g. "value") will be parsed as <"value", "">. Any elements of the array which are not strings will be skipped.
- bool toVectorInt (std::vector< int > &out_set) const

  Converts this JSON array to a vector of integers.
- bool toVectorString (std::vector< std::string > &out_set) const

  Converts this JSON array to a vector of strings.

Friends

- class **Value**

Additional Inherited Members

3.3.1 Detailed Description

Class which represents a JSON array.

3.3.2 Constructor & Destructor Documentation

3.3.2.1 Array() [1/3]

```
rstudio::launcher_plugins::json::Array::Array (
            const StringPairList & in_strPairs )  [explicit]
```

Constructs a JSON array from a list of string pairs as an array of strings in the format "key=value".

Parameters

in_strPairs	The list of string pairs from which to construct this array.

3.3.2.2 Array() [2/3]

```
rstudio::launcher_plugins::json::Array::Array (
            const Array & in_other )
```

Copy constructor.

Parameters

in_other	The JSON array to copy from.

3.3.2.3 Array() [3/3]

```
rstudio::launcher_plugins::json::Array::Array (
            Array && in_other )
```

Move constructor.

Parameters

in_other	The JSON array to move to this Object.

3.3.3 Member Function Documentation

3.3.3.1 begin()

```
Iterator rstudio::launcher_plugins::json::Array::begin ( ) const
```

Gets an iterator pointing to the first member of this array.

Returns

An iterator pointing to the first member of this array.

3.3.3.2 end()

```
Iterator rstudio::launcher_plugins::json::Array::end ( ) const
```

Gets an iterator after the last member of this array.

Returns

An iterator after the last member of this array.

3.3.3.3 erase() [1/2]

```
Iterator rstudio::launcher_plugins::json::Array::erase (
            const Iterator & in_first,
            const Iterator & in_last )
```

Erases a range of member specified by the provided iterators to the first and last members to erase.

Parameters

in_first	The iterator pointing to the first member to erase.
in_last	The iterator pointing to the last member to erase.

Returns

An iterator pointing to the member immediately after the last erased member.

3.3.3.4 erase() [2/2]

```
Iterator rstudio::launcher_plugins::json::Array::erase (
            const Iterator & in_itr )
```

Erases the member specified by the provided iterator.

Parameters

in_itr	The iterator pointing to the member to erase.

Returns

An iterator pointing to the member immediately after the erased member.

3.3.3.5 getBack()

```
Value rstudio::launcher_plugins::json::Array::getBack ( ) const
```

Gets the value at the back of the JSON array.

Returns

The value at the back of the JSON array or an empty value, if the array is emtpy.

3.3.3.6 getFront()

```
Value rstudio::launcher_plugins::json::Array::getFront ( ) const
```

Gets the value at the front of the JSON array.

Returns

The value at the front of the JSON array or an empty value, if the array is emtpy.

3.3.3.7 getSize()

```
size_t rstudio::launcher_plugins::json::Array::getSize ( ) const
```

Gets the number of values in the JSON array.

Returns

The number of values in the JSON array.

3.3.3.8 getValueAt()

```
Value rstudio::launcher_plugins::json::Array::getValueAt (
            size_t in_index ) const
```

Gets the value at the specified index of the JSON array.

Parameters

in_index	The index of the value to retrieve.

Returns

The value at the specified index or an empty value if the index is out of bounds.

3.3.3.9 isEmpty()

```
bool rstudio::launcher_plugins::json::Array::isEmpty ( ) const
```

Checks whether the JSON array is empty.

Returns

True if the JSON array has no members; false otherwise.

3.3.3.10 operator=() [1/2]

```
Array& rstudio::launcher_plugins::json::Array::operator= (
            Array && in_other )  [noexcept]
```

Move operator.

Parameters

in_other	The JSON Array to move from.

Returns

A reference to this JSON Array.

3.3.3.11 operator=() [2/2]

```
Array& rstudio::launcher_plugins::json::Array::operator= (
            const Array & in_other )
```

Assignment operator.

Parameters

in_other	The JSON array to copy from.

Returns

A reference to this JSON array.

3.3.3.12 operator[]()

```
Value rstudio::launcher_plugins::json::Array::operator[] (
            size_t in_index ) const
```

Accessor operator. Gets the JSON value at the specified position in the array.

Parameters

in_index	The position of the element to access.

Exceptions

std::out_of_range	If in_index is greater than or equal to the value returned by getSize().

Returns

The value of the member with the specified name, if it exists; empty JSON value otherwise.

3.3.3.13 push_back()

```
void rstudio::launcher_plugins::json::Array::push_back (
            const Value & in_value )
```

Pushes the value onto the end of the JSON array.

MAINTENANCE NOTE: This method must be named in the STL style to work with STL functions and types such as std::back_inserter.

Parameters

in_value	The value to push onto the end of the JSON array.

3.3.3.14 rbegin()

```
ReverseIterator rstudio::launcher_plugins::json::Array::rbegin ( ) const
```

Gets an iterator pointing to the last member of this array, which iterates in the reverse direction.

Returns

A reverse iterator pointing to the last member of this array.

3.3.3.15 rend()

```
ReverseIterator rstudio::launcher_plugins::json::Array::rend ( ) const
```

Gets an iterator before the first member of this array, which can be compared with an other ReverseIterator to determine when reverse iteration has ended.

Returns

An iterator before the first member of this array.

3.3.3.16 toSetString()

```
bool rstudio::launcher_plugins::json::Array::toSetString (
            std::set< std::string > & out_set ) const
```

Converts this JSON array to a set of strings.

Parameters

out_set	The set of strings.

Returns

True if this array could be converted to a set of strings; false otherwise.

3.3.3.17 toStringPairList()

```
StringPairList rstudio::launcher_plugins::json::Array::toStringPairList ( ) const
```

Converts this array into a vector of string pairs. Elements of the form "key=value" will be parsed into the pair <"key", "value">. Elements which are not in that format (e.g. "value") will be parsed as <"value", "">. Any elements of the array which are not strings will be skipped.

Returns

The string elements of this JSON array as key value pairs.

3.3.3.18 toVectorInt()

```
bool rstudio::launcher_plugins::json::Array::toVectorInt (
            std::vector< int > & out_set ) const
```

Converts this JSON array to a vector of integers.

Parameters

out_set	The vector of integers.

Returns

True if this array could be converted to a vector of integers; false otherwise.

3.3.3.19 toVectorString()

```
bool rstudio::launcher_plugins::json::Array::toVectorString (
            std::vector< std::string > & out_set ) const
```

Converts this JSON array to a vector of strings.

Parameters

out_set	The vector of strings.

Returns

True if this array could be converted to a vector of strings; false otherwise.

The documentation for this class was generated from the following file:

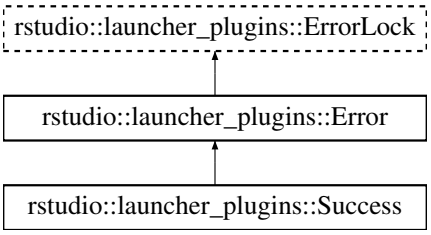
- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/json/Json.hpp

3.4 rstudio::launcher_plugins::Error Class Reference

Class which represents an error.

`#include <Error.hpp>`

Inheritance diagram for rstudio::launcher_plugins::Error:



Public Member Functions

- Error ()=default
  Default constructor.
- Error (const Error &in_other)
  Copy constructor.
- Error (const boost::system::error_code &in_ec, const ErrorLocation &in_location)
  Constructor.
- Error (const boost::system::error_code &in_ec, const Error &in_cause, const ErrorLocation &in_location)
  Constructor.
- Error (const boost::system::error_code &in_ec, std::string in_message, const ErrorLocation &in_location)
  Constructor.
- Error (const boost::system::error_code &in_ec, std::string in_message, const Error &in_cause, const ErrorLocation &in_location)
  Constructor.
- Error (int in_code, std::string in_name, const ErrorLocation &in_location)
  Constructor.
- Error (int in_code, std::string in_name, const Error &in_cause, const ErrorLocation &in_location)
  Constructor.
- Error (int in_code, std::string in_name, std::string in_message, const ErrorLocation &in_location)

Constructor.

- Error (int in_code, std::string in_name, std::string in_message, const Error &in_cause, const ErrorLocation &in_location)

  Constructor.
- ~Error () override=default

  Non-virtual destructor because only Success inherits Error and it will keep Error lightweight.
- operator bool () const

  Overloaded operator bool to allow Errors to be treated as boolean values.
- bool operator! () const

  Overloaded operator ! to allow Errors to be treated as boolean values.
- bool operator== (const Error &in_other) const

  Equality operator. Two errors are equal if their codes and names are the same.
- bool operator== (const boost::system::error_code &in_ec) const

  Equality operator. Two errors are equal if their codes and names are the same.
- bool operator!= (const Error &in_other) const

  Inequality operator. Two errors are equal if their codes and names are the same.
- bool operator!= (const boost::system::error_code &in_ec) const

  Inequality operator. Two errors are equal if their codes and names are the same.
- void addOrUpdateProperty (const std::string &in_name, const std::string &in_value)

  Add or updates a property of this error. If any properties with the specified name exist, they will all be updated.
- void addOrUpdateProperty (const std::string &in_name, const system::FilePath &in_value)

  Add or updates a property of this error. If any properties with the specified name exist, they will all be updated.
- void addOrUpdateProperty (const std::string &in_name, int in_value)

  Add or updates a property of this error. If any properties with the specified name exist, they will all be updated.
- void addProperty (const std::string &in_name, const std::string &in_value)

  Adds a property of this error. If a property with the same name already exists, a duplicate will be added.
- void addProperty (const std::string &in_name, const system::FilePath &in_value)

  Adds a property of this error. If a property with the same name already exists, a duplicate will be added.
- void addProperty (const std::string &in_name, int in_value)

  Adds a property of this error. If a property with the same name already exists, a duplicate will be added.
- std::string asString () const

  Formats the error as a string.
- const Error & getCause () const

  Gets the error which caused this error.
- int getCode () const

  Gets the error code.
- const ErrorLocation & getLocation () const

  Gets the location where the error occurred.
- const std::string & getMessage () const

  Gets the error message.
- const std::string & getName () const

  Gets the name of the error.
- const ErrorProperties & getProperties () const

  Gets the custom properties of the error.
- std::string getProperty (const std::string &name) const

  Gets a custom property of this error.
- std::string getSummary () const

  Gets the cause of the error.
- bool isExpected () const

  Gets whether this error was expected or not.
- void setExpected ()

  Sets the property that indicates that this error was expected.

3.4.1 Detailed Description

Class which represents an error.

This class should not be derived from since it is returned by value throughout the SDK. Instead, create helper functions for each "subclass" of Error that would be desired.

3.4.2 Constructor & Destructor Documentation

3.4.2.1 Error() [1/9]

```
rstudio::launcher_plugins::Error::Error (
            const Error & in_other )
```

Copy constructor.

Parameters

in_other	The error to copy.

3.4.2.2 Error() [2/9]

```
rstudio::launcher_plugins::Error::Error (
            const boost::system::error_code & in_ec,
            const ErrorLocation & in_location )
```

Constructor.

Parameters

in_ec	The boost error code to convert from.
in_location	The location of the error.

3.4.2.3 Error() [3/9]

```
rstudio::launcher_plugins::Error::Error (
            const boost::system::error_code & in_ec,
            const Error & in_cause,
            const ErrorLocation & in_location )
```

Constructor.

Parameters

in_ec	The boost error code to convert from.
in_cause	The error which caused this error.
in_location	The location of the error.

3.4.2.4 Error() [4/9]

```
rstudio::launcher_plugins::Error::Error (
            const boost::system::error_code & in_ec,
            std::string in_message,
            const ErrorLocation & in_location )
```

Constructor.

Parameters

in_ec	The boost error code to convert from.
in_message	The detailed error message. (e.g. "The JobNetworkRequest is not supported by this plugin.")
in_location	The location of the error.

3.4.2.5 Error() [5/9]

```
rstudio::launcher_plugins::Error::Error (
            const boost::system::error_code & in_ec,
            std::string in_message,
            const Error & in_cause,
            const ErrorLocation & in_location )
```

Constructor.

Parameters

in_ec	The boost error code to convert from.
in_message	The detailed error message. (e.g. "The JobNetworkRequest is not supported by this plugin.")
in_cause	The error which caused this error.
in_location	The location of the error.

3.4.2.6 Error() [6/9]

```
rstudio::launcher_plugins::Error::Error (
            int in_code,
```

```
            std::string in_name,
            const ErrorLocation & in_location )
```

Constructor.

Parameters

in_code	The non-zero error code. Note that an error code of zero indicates success. (e.g. 1)
in_name	A contextual or categorical name for the error. (e.g. "RequestNotSupported")
in_location	The location of the error.

3.4.2.7 Error() [7/9]

```
rstudio::launcher_plugins::Error::Error (
            int in_code,
            std::string in_name,
            const Error & in_cause,
            const ErrorLocation & in_location )
```

Constructor.

Parameters

in_code	The non-zero error code. Note that an error code of zero indicates success. (e.g. 1)
in_name	A contextual or categorical name for the error. (e.g. "RequestNotSupported")
in_cause	The error which caused this error.
in_location	The location of the error.

3.4.2.8 Error() [8/9]

```
rstudio::launcher_plugins::Error::Error (
            int in_code,
            std::string in_name,
            std::string in_message,
            const ErrorLocation & in_location )
```

Constructor.

Parameters

in_code	The non-zero error code. Note that an error code of zero indicates success. (e.g. 1)
in_name	A contextual or categorical name for the error. (e.g. "RequestNotSupported")
in_message	The detailed error message. (e.g. "The JobNetworkRequest is not supported by this plugin.")
in_location	The location of the error.

3.4.2.9 Error() [9/9]

```
rstudio::launcher_plugins::Error::Error (
            int in_code,
            std::string in_name,
            std::string in_message,
            const Error & in_cause,
            const ErrorLocation & in_location )
```

Constructor.

Parameters

in_code	The non-zero error code. Note that an error code of zero indicates success. (e.g. 1)
in_name	A contextual or categorical name for the error. (e.g. "RequestNotSupported")
in_message	The detailed error message. (e.g. "The JobNetworkRequest is not supported by this plugin.")
in_cause	The error which caused this error.
in_location	The location of the error.

3.4.3 Member Function Documentation

3.4.3.1 addOrUpdateProperty() [1/3]

```
void rstudio::launcher_plugins::Error::addOrUpdateProperty (
            const std::string & in_name,
            const std::string & in_value )
```

Add or updates a property of this error. If any properties with the specified name exist, they will all be updated.

Parameters

in_name	The name of the property to add or update.
in_value	The new value of the property.

3.4.3.2 addOrUpdateProperty() [2/3]

```
void rstudio::launcher_plugins::Error::addOrUpdateProperty (
            const std::string & in_name,
            const system::FilePath & in_value )
```

Add or updates a property of this error. If any properties with the specified name exist, they will all be updated.

Parameters

in_name	The name of the property to add or update.
in_value	The new value of the property.

3.4.3.3 addOrUpdateProperty() [3/3]

```
void rstudio::launcher_plugins::Error::addOrUpdateProperty (
            const std::string & in_name,
            int in_value )
```

Add or updates a property of this error. If any properties with the specified name exist, they will all be updated.

Parameters

in_name	The name of the property to add or update.
in_value	The new value of the property.

3.4.3.4 addProperty() [1/3]

```
void rstudio::launcher_plugins::Error::addProperty (
            const std::string & in_name,
            const std::string & in_value )
```

Adds a property of this error. If a property with the same name already exists, a duplicate will be added.

Parameters

in_name	The name of the property to add or update.
in_value	The new value of the property.

3.4.3.5 addProperty() [2/3]

```
void rstudio::launcher_plugins::Error::addProperty (
            const std::string & in_name,
            const system::FilePath & in_value )
```

Adds a property of this error. If a property with the same name already exists, a duplicate will be added.

Parameters

in_name	The name of the property to add or update.
in_value	The new value of the property.

3.4.3.6 addProperty() [3/3]

```
void rstudio::launcher_plugins::Error::addProperty (
            const std::string & in_name,
            int in_value )
```

Adds a property of this error. If a property with the same name already exists, a duplicate will be added.

Parameters

in_name	The name of the property to add or update.
in_value	The new value of the property.

3.4.3.7 asString()

```
std::string rstudio::launcher_plugins::Error::asString ( ) const
```

Formats the error as a string.

Returns

The error formatted as a string.

3.4.3.8 getCause()

```
const Error& rstudio::launcher_plugins::Error::getCause ( ) const
```

Gets the error which caused this error.

Returns

The error which caused this error.

3.4.3.9 getCode()

```
int rstudio::launcher_plugins::Error::getCode ( ) const
```

Gets the error code.

Returns

The error code.

3.4.3.10 getLocation()

```
const ErrorLocation& rstudio::launcher_plugins::Error::getLocation ( ) const
```

Gets the location where the error occurred.

Returns

The location where the error occurred.

3.4.3.11 getMessage()

```
const std::string& rstudio::launcher_plugins::Error::getMessage ( ) const
```

Gets the error message.

Returns

The error message.

3.4.3.12 getName()

```
const std::string& rstudio::launcher_plugins::Error::getName ( ) const
```

Gets the name of the error.

Returns

The name of the error.

3.4.3.13 getProperties()

```
const ErrorProperties& rstudio::launcher_plugins::Error::getProperties ( ) const
```

Gets the custom properties of the error.

Returns

The custom properties of this error.

3.4.3.14 getProperty()

```
std::string rstudio::launcher_plugins::Error::getProperty (
            const std::string & name ) const
```

Gets a custom property of this error.

Parameters

name	The name of the property to retrieve.

Returns

The value of the specified property, if it exists; empty string otherwise.

3.4.3.15 getSummary()

```
std::string rstudio::launcher_plugins::Error::getSummary ( ) const
```

Gets the cause of the error.

Returns

The cause of the error.

3.4.3.16 isExpected()

```
bool rstudio::launcher_plugins::Error::isExpected ( ) const
```

Gets whether this error was expected or not.

Returns

True if this error was expected; false otherwise.

3.4.3.17 operator bool()

```
rstudio::launcher_plugins::Error::operator bool ( ) const  [explicit]
```

Overloaded operator bool to allow Errors to be treated as boolean values.

Returns

True if there is an error; false otherwise.

3.4.3.18 operator"!()

```
bool rstudio::launcher_plugins::Error::operator!  ( ) const
```

Overloaded operator ! to allow Errors to be treated as boolean values.

Returns

True if there is not an error; false otherwise.

3.4.3.19 operator"!=() [1/2]

```
bool rstudio::launcher_plugins::Error::operator!= (
            const boost::system::error_code & in_ec ) const
```

Inequality operator. Two errors are equal if their codes and names are the same.

Parameters

in_ec	The boost error code to compare with this error.

Returns

True if !(this == in_ec) would return true; false otherwise.

3.4.3.20 operator"!=() [2/2]

```
bool rstudio::launcher_plugins::Error::operator!= (
            const Error & in_other ) const
```

Inequality operator. Two errors are equal if their codes and names are the same.

Parameters

in_other	The error to compare with this error.

Returns

True if in_other is not equal to this error; false otherwise.

3.4.3.21 operator==() [1/2]

```
bool rstudio::launcher_plugins::Error::operator== (
            const boost::system::error_code & in_ec ) const
```

Equality operator. Two errors are equal if their codes and names are the same.

Parameters

in_ec	The boost error code to compare with this error.

Returns

True if in_ec has the same error code and category name as this error; false otherwise.

3.4.3.22 operator==() [2/2]

```
bool rstudio::launcher_plugins::Error::operator== (
            const Error & in_other ) const
```

Equality operator. Two errors are equal if their codes and names are the same.

Parameters

in_other	The error to compare with this error.

Returns

True if in_other is equal to this error; false otherwise.

The documentation for this class was generated from the following file:

- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/Error.hpp

3.5 rstudio::launcher_plugins::ErrorLocation Class Reference

Class which represents the location of an error.

`#include <Error.hpp>`

Public Member Functions

- ErrorLocation ()
  Default constructor.
- ErrorLocation (const ErrorLocation &in_other)
  Copy constructor.
- ErrorLocation (ErrorLocation &&in_other) noexcept
  Move constructor.
- ErrorLocation (const char *in_function, const char *in_file, long in_line)
  Constructor.
- ErrorLocation & operator= (const ErrorLocation &in_other)
  Assignment operator.
- bool operator== (const ErrorLocation &in_location) const
  Equality comparison operator.
- std::string asString () const
  Formats the error location as a string.
- const std::string & getFile () const
  Gets the file where the error occurred.
- const std::string & getFunction () const
  Gets the function where the error occurred.
- long getLine () const
  Gets the line where the error occurred.
- bool hasLocation () const
  Checks whether the location is set.

3.5.1 Detailed Description

Class which represents the location of an error.

3.5.2 Constructor & Destructor Documentation

3.5.2.1 ErrorLocation() [1/3]

```
rstudio::launcher_plugins::ErrorLocation::ErrorLocation (
            const ErrorLocation & in_other )
```

Copy constructor.

Parameters

in_other	The error location to move to this.

3.5.2.2 ErrorLocation() [2/3]

```
rstudio::launcher_plugins::ErrorLocation::ErrorLocation (
            ErrorLocation && in_other )  [noexcept]
```

Move constructor.

Parameters

in_other	The error location to move to this.

3.5.2.3 ErrorLocation() [3/3]

```
rstudio::launcher_plugins::ErrorLocation::ErrorLocation (
            const char * in_function,
            const char * in_file,
            long in_line )
```

Constructor.

Parameters

in_function	The function in which the error occurred.
in_file	The file in which the error occurred.
in_line	The line at which the error occurred.

3.5.3 Member Function Documentation

3.5.3.1 asString()

```
std::string rstudio::launcher_plugins::ErrorLocation::asString ( ) const
```

Formats the error location as a string.

Returns

The error location formatted as a string.

3.5.3.2 getFile()

```
const std::string& rstudio::launcher_plugins::ErrorLocation::getFile ( ) const
```

Gets the file where the error occurred.

Returns

The file where the error occurred.

3.5.3.3 getFunction()

```
const std::string& rstudio::launcher_plugins::ErrorLocation::getFunction ( ) const
```

Gets the function where the error occurred.

Returns

The function where the error occurred.

3.5.3.4 getLine()

```
long rstudio::launcher_plugins::ErrorLocation::getLine ( ) const
```

Gets the line where the error occurred.

Returns

The line where the error occurred.

3.5.3.5 hasLocation()

```
bool rstudio::launcher_plugins::ErrorLocation::hasLocation ( ) const
```

Checks whether the location is set.

Returns

True if a location has been set; false otherwise.

3.5.3.6 operator=()

```
ErrorLocation& rstudio::launcher_plugins::ErrorLocation::operator= (
            const ErrorLocation & in_other )
```

Assignment operator.

Parameters

in_other	The location to copy to this location.

Returns

A reference to this location.

3.5.3.7 operator==()

```
bool rstudio::launcher_plugins::ErrorLocation::operator== (
            const ErrorLocation & in_location ) const
```

Equality comparison operator.

Parameters

in_location	The location to compare this location with.

Returns

True if in_location is the same as this location; false otherwise.

The documentation for this class was generated from the following file:

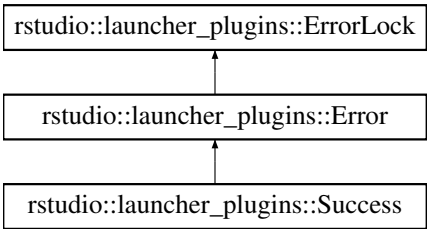
- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/Error.hpp

3.6 rstudio::launcher_plugins::ErrorLock Class Reference

A class which can be derived from in order to prevent child classes from being derived from further.

`#include <Error.hpp>`

Inheritance diagram for rstudio::launcher_plugins::ErrorLock:



Friends

- class **Error**
- class **Success**

3.6.1 Detailed Description

A class which can be derived from in order to prevent child classes from being derived from further.

The documentation for this class was generated from the following file:

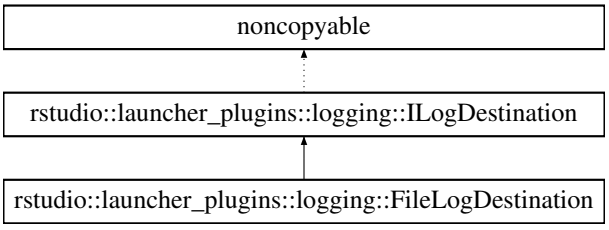
- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/Error.hpp

3.7 rstudio::launcher_plugins::logging::FileLogDestination Class Reference

Class which allows sending log messages to a file.

`#include <FileLogDestination.hpp>`

Inheritance diagram for rstudio::launcher_plugins::logging::FileLogDestination:



Public Member Functions

- FileLogDestination (unsigned int in_id, LogLevel in_logLevel, const std::string &in_programId, FileLogOptions in_logOptions)

  Constructor.
- ~FileLogDestination () override

  Destructor.
- unsigned int getId () const override

  Gets the unique ID of this file log destination.
- void writeLog (LogLevel in_logLevel, const std::string &in_message) override

  Writes a message to the log file.

Additional Inherited Members

3.7.1 Detailed Description

Class which allows sending log messages to a file.

3.7.2 Constructor & Destructor Documentation

3.7.2.1 FileLogDestination()

```
rstudio::launcher_plugins::logging::FileLogDestination::FileLogDestination (
            unsigned int in_id,
            LogLevel in_logLevel,
            const std::string & in_programId,
            FileLogOptions in_logOptions )
```

Constructor.

Parameters

in_id	The ID of this log destination. Must be unique for each file log destination and $>$ 100.
in_logLevel	The most detailed level of log to be written to this log file.
in_programId	The ID of this program.
in_logOptions	The options for log file creation and management.

If the log file cannot be opened, no logs will be written to the file. If there are other log destinations registered an error will be logged regarding the failure.

3.7.3 Member Function Documentation

3.7.3.1 getId()

```
unsigned int rstudio::launcher_plugins::logging::FileLogDestination::getId ( ) const  [override],
[virtual]
```

Gets the unique ID of this file log destination.

Returns

The unique ID of this file log destination.

Implements rstudio::launcher_plugins::logging::ILogDestination.

3.7.3.2 writeLog()

```
void rstudio::launcher_plugins::logging::FileLogDestination::writeLog (
            LogLevel in_logLevel,
            const std::string & in_message )  [override], [virtual]
```

Writes a message to the log file.

Parameters

in_logLevel	The log level of the message to write. Filtering is done prior to this call. This is for informational purposes only.
in_message	The message to write to the log file.

Implements rstudio::launcher_plugins::logging::ILogDestination.

The documentation for this class was generated from the following file:

- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/logging/FileLogDestination.hpp

3.8 rstudio::launcher_plugins::logging::FileLogOptions Class Reference

Class which represents the options for a file logger.

```
#include <FileLogDestination.hpp>
```

Public Member Functions

- FileLogOptions (system::FilePath in_directory)

  Constructor.
- FileLogOptions (system::FilePath in_directory, std::string in_fileMode, double in_maxSizeMb, bool in_do↩ Rotation, bool in_includePid)

  Constructor.

- const system::FilePath & getDirectory () const

  Gets the directory where log files should be written.
- const std::string & getFileMode () const

  Gets the permissions with which log files should be created.
- double getMaxSizeMb () const

  Gets the maximum size of log files, in MB.
- bool doRotation () const

  Returns whether or not to rotate log files before overwriting them.
- bool includePid () const

  Returns whether or not to include the PID in the logs.

3.8.1 Detailed Description

Class which represents the options for a file logger.

3.8.2 Constructor & Destructor Documentation

3.8.2.1 FileLogOptions() [1/2]

```
rstudio::launcher_plugins::logging::FileLogOptions::FileLogOptions (
            system::FilePath in_directory )
```

Constructor.

This constructor is intentionally not explicit to allow for conversion from system::FilePath to FileLogOptions.

Parameters

in_directory	The directory in which to create log files.

3.8.2.2 FileLogOptions() [2/2]

```
rstudio::launcher_plugins::logging::FileLogOptions::FileLogOptions (
            system::FilePath in_directory,
            std::string in_fileMode,
            double in_maxSizeMb,
            bool in_doRotation,
            bool in_includePid )
```

Constructor.

Parameters

in_directory	The directory in which to create log files.

Parameters

in_fileMode	The permissions to set on log files.
in_maxSizeMb	The maximum size of log files, in MB, before they are rotated and/or overwritten.
in_doRotation	Whether to rotate log files or not.
in_includePid	Whether to include the PID of the process in the logs.

3.8.3 Member Function Documentation

3.8.3.1 doRotation()

```
bool rstudio::launcher_plugins::logging::FileLogOptions::doRotation ( ) const
```

Returns whether or not to rotate log files before overwriting them.

Returns

True if log files should be rotated; false otherwise.

3.8.3.2 getDirectory()

```
const system::FilePath& rstudio::launcher_plugins::logging::FileLogOptions::getDirectory ( )
const
```

Gets the directory where log files should be written.

Returns

The directory where log files should be written.

3.8.3.3 getFileMode()

```
const std::string& rstudio::launcher_plugins::logging::FileLogOptions::getFileMode ( ) const
```

Gets the permissions with which log files should be created.

Returns

The permissions with which log files should be created.

3.8.3.4 getMaxSizeMb()

```
double rstudio::launcher_plugins::logging::FileLogOptions::getMaxSizeMb ( ) const
```

Gets the maximum size of log files, in MB.

Returns

The maximum size of log files, in MB.

3.8.3.5 includePid()

```
bool rstudio::launcher_plugins::logging::FileLogOptions::includePid ( ) const
```

Returns whether or not to include the PID in the logs.

Returns

True if the PID should be included in the logs; false otherwise.

The documentation for this class was generated from the following file:

- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/logging/FileLogDestination.hpp

3.9 rstudio::launcher_plugins::system::FilePath Class Reference

Class which represents a path on the system. May be any type of file (e.g. directory, symlink, regular file, etc.)

```
#include <FilePath.hpp>
```

Public Types

- enum MoveType { MoveDirect, MoveCrossDevice }

  Enum which represents the type of move to perform.
- typedef std::function< bool(int, const FilePath &)> RecursiveIterationFunction

  Function which recursively iterates over FilePath objects.

Public Member Functions

- FilePath ()

  Default constructor.
- FilePath (const std::string &in_absolutePath)

  Constructor.
- bool operator== (const FilePath &in_other) const

  Comparison operator. File paths are equal if their absolute representations are equal.
- bool operator!= (const FilePath &in_other) const

  Comparison operator. File paths are equal if their absolute representations are equal.
- bool operator< (const FilePath &in_other) const

  Less-than operator to establish natural order. The natural order is based on the absolute representation of the paths.
- FilePath completeChildPath (const std::string &in_filePath) const

  Gets the provided relative path as a child of this path.
- Error completeChildPath (const std::string &in_filePath, FilePath &out_childPath) const

  Gets the provided relative path as a child of this path.
- FilePath completePath (const std::string &in_filePath) const

  Completes the provided path relative to this path. If the provided path is not relative, it will be returned as is. Relative paths such as ".." are permitted.
- Error copy (const FilePath &in_targetPath) const

  Copies this file path to the specified location.
- Error copyDirectoryRecursive (const FilePath &in_targetPath) const

  Copies this directory recursively to the specified location.
- Error createDirectory (const std::string &in_filePath) const

  Creates the specified directory.
- Error ensureDirectory () const

  Creates this directory, if it does not exist.
- Error ensureFile () const

  Creates this file, if it does not exist.
- bool exists () const

  Checks whether this file path exists in the file system.
- std::string getAbsolutePath () const

  Gets the full absolute representation of this file path.
- std::string getAbsolutePathNative () const

  Gets the full absolute representation of this file path in native format.
- std::string getCanonicalPath () const

  Gets the canonical representation of this file path. The path must exist so that its canonical location on disk can be obtained.
- Error getChildren (std::vector< FilePath > &out_filePaths) const

  Gets the children of this directory. Sub-directories will not be traversed.
- Error getChildrenRecursive (const RecursiveIterationFunction &in_iterationFunction) const

  Gets the children of this directory recursively. Sub-directories will be traversed.
- std::string getExtension () const

  Gets the extension of the file, including the leading '.'.
- std::string getExtensionLowerCase () const

  Gets the extension of the file in lower case, including the leading '.'.
- std::string getFilename () const

  Gets only the name of the file, including the extension.
- std::time_t getLastWriteTime () const

  Get the last time this file path was written.
- std::string getLexicallyNormalPath () const

Gets the lexically normal representation of this file path, with . and .. components resolved and/or removed.

- std::string getMimeContentType (const std::string &in_defaultType="text/plain") const

  Gets the mime content type of this file.
- FilePath getParent () const

  Gets the parent directory of this file path.
- std::string getRelativePath (const FilePath &in_parentPath) const

  Gets the representation of this path, relative to the provided path.
- uintmax_t getSize () const

  Gets the size of this file path in bytes.
- uintmax_t getSizeRecursive () const

  Gets the size of this file path and all sub-directories and files in it, in bytes.
- std::string getStem () const

  Gets only the name of the file, excluding the extension.
- bool hasExtension (const std::string &in_extension) const

  Checks whether this file has the specified extension.
- bool hasExtensionLowerCase (const std::string &in_extension) const

  Checks whether this file has the specified extension when it is converted to lower case.
- bool hasTextMimeType () const

  Checks whether this file has a text mime content type.
- bool isDirectory () const

  Checks whether this file path is a directory.
- bool isEmpty () const

  Checks whether this file path contains a path or not.
- bool isEquivalentTo (const FilePath &in_other) const

  Checks whether this file path points to the same location in the filesystem as the specified file path.
- bool isHidden () const

  Checks whether this file path is a hidden file or directory.
- bool isJunction () const

  Checks whether this file path is a Windows junction.
- bool isRegularFile () const

  Checks whether this file path is a regular file.
- bool isSymlink () const

  Checks whether this file path is a symbolic link.
- bool isWithin (const FilePath &in_scopePath) const

  Checks whether this file path is within the specified file path.
- Error makeCurrentPath (bool in_autoCreate=false) const

  Changes the current working directory to location represented by this file path.
- Error move (const FilePath &in_targetPath, MoveType in_type=MoveCrossDevice) const

  Moves the current directory to the specified directory.
- Error moveIndirect (const FilePath &in_targetPath) const

  Performs an indirect move by copying this directory to the target and then deleting this directory.
- Error openForRead (std::shared_ptr< std::istream > &out_stream) const

  Opens this file for read.
- Error openForWrite (std::shared_ptr< std::ostream > &out_stream, bool in_truncate=true) const

  Opens this file for write.
- Error remove () const

  Removes this file or directory from the filesystem.
- Error removeIfExists () const

  Removes this file or directory from the filesystem, if it exists.
- Error resetDirectory () const

  Removes the directory represented by this FilePath, if it exists, and recreates it.

- FilePath resolveSymlink () const

  Resolves this symbolic link to the location to which it is pointing. If this FilePath is not a symbolic link, the original FilePath is returned.
- void setLastWriteTime (std::time_t in_time=::time(nullptr)) const

  Sets the last time that this file was modified to the specified time.

Static Public Member Functions

- static std::string createAliasedPath (const FilePath &in_filePath, const FilePath &in_userHomePath)

  Creates a path in which the user home path will be replaced by the ~ alias.
- static bool exists (const std::string &in_filePath)

  Checks whether the specified path exists.
- static bool isEqualCaseInsensitive (const FilePath &in_filePath1, const FilePath &in_filePath2)

  Checks whether the two provided files are equal, ignoring case. Two files are equal if their absolute paths are equal.
- static bool isRootPath (const std::string &in_filePath)

  Checks whether the specified path is a root path or a relative path.
- static Error makeCurrent (const std::string &in_filePath)

  Changes the current working directory to the specified path.
- static FilePath resolveAliasedPath (const std::string &in_aliasedPath, const FilePath &in_userHomePath)

  Resolves the '~' alias within the path to the user's home path.
- static FilePath safeCurrentPath (const FilePath &in_revertToPath)

  Checks whether the current working directory exists. If it does not, moves the current working directory to the specified path.
- static Error tempFilePath (FilePath &out_filePath)

  Creates a randomly named file in the temp directory.
- static Error tempFilePath (const std::string &in_extension, FilePath &out_filePath)

  Creates a randomly named file with the specified extension in the temp directory.
- static Error uniqueFilePath (const std::string &in_basePath, FilePath &out_filePath)

  Creates a file with a random name in the specified directory.
- static Error uniqueFilePath (const std::string &in_basePath, const std::string &in_extension, FilePath &out↩ _filePath)

  Creates a file with a random name and the specified extension in the specified directory.

3.9.1 Detailed Description

Class which represents a path on the system. May be any type of file (e.g. directory, symlink, regular file, etc.)

3.9.2 Member Typedef Documentation

3.9.2.1 RecursiveIterationFunction

```
typedef std::function<bool(int, const FilePath&)> rstudio::launcher_plugins::system::FilePath::RecursiveItera
```

Function which recursively iterates over FilePath objects.

Parameters

int	The depth of the iteration.
FilePath	The current FilePath object in the recursive iteration.

Returns

True if the computation can continue; false otherwise.

3.9.3 Member Enumeration Documentation

3.9.3.1 MoveType

```
enum rstudio::launcher_plugins::system::FilePath::MoveType
```

Enum which represents the type of move to perform.

Enumerator

MoveDirect	Attempt to perform an ordinary move
MoveCrossDevice	Perform an ordinary move, but fallback to copy/delete on cross-device errors

3.9.4 Constructor & Destructor Documentation

3.9.4.1 FilePath()

```
rstudio::launcher_plugins::system::FilePath::FilePath (
            const std::string & in_absolutePath )  [explicit]
```

Constructor.

Parameters

in_absolutePath	The string representation of the path.

3.9.5 Member Function Documentation

3.9.5.1 completeChildPath() [1/2]

```
FilePath rstudio::launcher_plugins::system::FilePath::completeChildPath (
            const std::string & in_filePath ) const
```

Gets the provided relative path as a child of this path.

Parameters

in_filePath	The path to get as a child of this path. Must be a relative path.

Returns

The completed child path, or this path if the provided path was not relative or another error occurred.

3.9.5.2 completeChildPath() [2/2]

```
Error rstudio::launcher_plugins::system::FilePath::completeChildPath (
            const std::string & in_filePath,
            FilePath & out_childPath ) const
```

Gets the provided relative path as a child of this path.

Parameters

in_filePath	The path to get as a child of this path. Must be a relative path that refers to a path strictly within this one (i.e. ".." isn't allowed)
out_childPath	The completed child path. Not valid if an error is returned.

Returns

Success if the child path could be completed; Error otherwise.

3.9.5.3 completePath()

```
FilePath rstudio::launcher_plugins::system::FilePath::completePath (
            const std::string & in_filePath ) const
```

Completes the provided path relative to this path. If the provided path is not relative, it will be returned as is. Relative paths such as ".." are permitted.

Parameters

in_filePath	in_filePathThe path to complete.

Returns

The completed path if the provided path was relative, or the provided path if it was not relative.

3.9.5.4 copy()

```
Error rstudio::launcher_plugins::system::FilePath::copy (
            const FilePath & in_targetPath ) const
```

Copies this file path to the specified location.

Parameters

in_targetPath	The location to copy this file path to.

Returns

Success if the copy could be completed; Error otherwise.

3.9.5.5 copyDirectoryRecursive()

```
Error rstudio::launcher_plugins::system::FilePath::copyDirectoryRecursive (
            const FilePath & in_targetPath ) const
```

Copies this directory recursively to the specified location.

Parameters

in_targetPath	The location to which to copy this directory and its contents.

Returns

Success if the copy could be completed; Error otherwise.

3.9.5.6 createAliasedPath()

```
static std::string rstudio::launcher_plugins::system::FilePath::createAliasedPath (
            const FilePath & in_filePath,
            const FilePath & in_userHomePath )  [static]
```

Creates a path in which the user home path will be replaced by the ~ alias.

Parameters

in_filePath	The path to convert to an aliased path.
in_userHomePath	The user home path.

Returns

If the path is within the user home path, an aliased path; the original path otherwise.

3.9.5.7 createDirectory()

```
Error rstudio::launcher_plugins::system::FilePath::createDirectory (
            const std::string & in_filePath ) const
```

Creates the specified directory.

Parameters

in_filePath	The directory to create, relative to this directory.

Returns

Success if the directory could be created; Error if it could not be created for any reason.

3.9.5.8 ensureDirectory()

```
Error rstudio::launcher_plugins::system::FilePath::ensureDirectory ( ) const
```

Creates this directory, if it does not exist.

Returns

Success if the directory could be created or it exists already; Error otherwise.

3.9.5.9 ensureFile()

```
Error rstudio::launcher_plugins::system::FilePath::ensureFile ( ) const
```

Creates this file, if it does not exist.

Returns

Success if the file could be created or it exists already; Error otherwise.

3.9.5.10 exists() [1/2]

```
bool rstudio::launcher_plugins::system::FilePath::exists ( ) const
```

Checks whether this file path exists in the file system.

Returns

True if this file path exists; false otherwise.

3.9.5.11 exists() [2/2]

```
static bool rstudio::launcher_plugins::system::FilePath::exists (
            const std::string & in_filePath )  [static]
```

Checks whether the specified path exists.

Parameters

in_filePath	The path to check.

Returns

True if the specified path exists; false otherwise.

3.9.5.12 getAbsolutePath()

```
std::string rstudio::launcher_plugins::system::FilePath::getAbsolutePath ( ) const
```

Gets the full absolute representation of this file path.

Returns

The absolute representation of this file path.

3.9.5.13 getAbsolutePathNative()

```
std::string rstudio::launcher_plugins::system::FilePath::getAbsolutePathNative ( ) const
```

Gets the full absolute representation of this file path in native format.

Returns

The absolute representation of this file path in native format.

3.9.5.14 getCanonicalPath()

```
std::string rstudio::launcher_plugins::system::FilePath::getCanonicalPath ( ) const
```

Gets the canonical representation of this file path. The path must exist so that its canonical location on disk can be obtained.

Returns

The canonical representation of this file path.

3.9.5.15 getChildren()

```
Error rstudio::launcher_plugins::system::FilePath::getChildren (
            std::vector< FilePath > & out_filePaths ) const
```

Gets the children of this directory. Sub-directories will not be traversed.

Parameters

out_filePaths	The children of this directory.

Returns

Success if the children could be retrieved; Error otherwise (e.g. if this path does not exist).

3.9.5.16 getChildrenRecursive()

```
Error rstudio::launcher_plugins::system::FilePath::getChildrenRecursive (
            const RecursiveIterationFunction & in_iterationFunction ) const
```

Gets the children of this directory recursively. Sub-directories will be traversed.

Parameters

in_iterationFunction	The function to perform for each child of this directory.

Returns

Success if the children could be iterated; Error otherwise (e.g. if tis path does not exist).

3.9.5.17 getExtension()

```
std::string rstudio::launcher_plugins::system::FilePath::getExtension ( ) const
```

Gets the extension of the file, including the leading '.'.

Returns

The extension of the file.

3.9.5.18 getExtensionLowerCase()

```
std::string rstudio::launcher_plugins::system::FilePath::getExtensionLowerCase ( ) const
```

Gets the extension of the file in lower case, including the leading '.'.

Returns

The extension of the file in lower case.

3.9.5.19 getFilename()

```
std::string rstudio::launcher_plugins::system::FilePath::getFilename ( ) const
```

Gets only the name of the file, including the extension.

Returns

The name of the file, including the extension.

3.9.5.20 getLastWriteTime()

```
std::time_t rstudio::launcher_plugins::system::FilePath::getLastWriteTime ( ) const
```

Get the last time this file path was written.

Returns

The time of the last write.

3.9.5.21 getLexicallyNormalPath()

```
std::string rstudio::launcher_plugins::system::FilePath::getLexicallyNormalPath ( ) const
```

Gets the lexically normal representation of this file path, with . and .. components resolved and/or removed.

Returns

The lexically normal representation of this file path.

3.9.5.22 getMimeContentType()

```
std::string rstudio::launcher_plugins::system::FilePath::getMimeContentType (
            const std::string & in_defaultType = "text/plain" ) const
```

Gets the mime content type of this file.

Parameters

in_defaultType	The default mime content type to return if this file does not have a mime content type. Default: "text/plain".

Returns

The mime content type of this file, or the default type if the file does not have a mime content type.

3.9.5.23 getParent()

```
FilePath rstudio::launcher_plugins::system::FilePath::getParent ( ) const
```

Gets the parent directory of this file path.

Returns

The parent directory of this file path.

3.9.5.24 getRelativePath()

```
std::string rstudio::launcher_plugins::system::FilePath::getRelativePath (
            const FilePath & in_parentPath ) const
```

Gets the representation of this path, relative to the provided path.

Parameters

in_parentPath	The parent of this path.

Returns

The representation of this path, relative to the provided parent, or empty if this path is not within the provided parent.

3.9.5.25 getSize()

```
uintmax_t rstudio::launcher_plugins::system::FilePath::getSize ( ) const
```

Gets the size of this file path in bytes.

Returns

The size of this file path in bytes.

3.9.5.26 getSizeRecursive()

```
uintmax_t rstudio::launcher_plugins::system::FilePath::getSizeRecursive ( ) const
```

Gets the size of this file path and all sub-directories and files in it, in bytes.

Returns

The size of this file path and all sub-directories and files in it, in bytes.

3.9.5.27 getStem()

```
std::string rstudio::launcher_plugins::system::FilePath::getStem ( ) const
```

Gets only the name of the file, excluding the extension.

Returns

The name of the file, excluding the extension.

3.9.5.28 hasExtension()

```
bool rstudio::launcher_plugins::system::FilePath::hasExtension (
            const std::string & in_extension ) const
```

Checks whether this file has the specified extension.

Parameters

in_extension	The extension to check this file for.

Returns

True if the extension of this file matches the specified extension; false otherwise.

3.9.5.29 hasExtensionLowerCase()

```
bool rstudio::launcher_plugins::system::FilePath::hasExtensionLowerCase (
            const std::string & in_extension ) const
```

Checks whether this file has the specified extension when it is converted to lower case.

Parameters

in_extension	The extension to check this file for.

Returns

True if the lower case extension of this file matches the specified extension; false otherwise.

3.9.5.30 hasTextMimeType()

```
bool rstudio::launcher_plugins::system::FilePath::hasTextMimeType ( ) const
```

Checks whether this file has a text mime content type.

Returns

True if this file has a text mime content type; false otherwise.

3.9.5.31 isDirectory()

```
bool rstudio::launcher_plugins::system::FilePath::isDirectory ( ) const
```

Checks whether this file path is a directory.

Returns

True if this file path is a directory; false otherwise.

3.9.5.32 isEmpty()

```
bool rstudio::launcher_plugins::system::FilePath::isEmpty ( ) const
```

Checks whether this file path contains a path or not.

Returns

True if this file path does not contain a path; false otherwise.

3.9.5.33 isEqualCaseInsensitive()

```
static bool rstudio::launcher_plugins::system::FilePath::isEqualCaseInsensitive (
            const FilePath & in_filePath1,
            const FilePath & in_filePath2 )  [static]
```

Checks whether the two provided files are equal, ignoring case. Two files are equal if their absolute paths are equal.

Parameters

in_filePath1	The first file to compare.
in_filePath2	The second file to compare.

Returns

True if the absolute representations of the paths are equal, case insensitively; false otherwise.

3.9.5.34 isEquivalentTo()

```
bool rstudio::launcher_plugins::system::FilePath::isEquivalentTo (
            const FilePath & in_other ) const
```

Checks whether this file path points to the same location in the filesystem as the specified file path.

Parameters

in_other	The file path to which to compare this file path to.

Returns

True if this file path points to the same location in the filesystem as the specified file path; false otherwise.

3.9.5.35 isHidden()

```
bool rstudio::launcher_plugins::system::FilePath::isHidden ( ) const
```

Checks whether this file path is a hidden file or directory.

Returns

True if this file path is a hidden file or directory; false otherwise.

3.9.5.36 isJunction()

```
bool rstudio::launcher_plugins::system::FilePath::isJunction ( ) const
```

Checks whether this file path is a Windows junction.

Returns

True if this file path is a Windows junction; false otherwise.

3.9.5.37 isRegularFile()

```
bool rstudio::launcher_plugins::system::FilePath::isRegularFile ( ) const
```

Checks whether this file path is a regular file.

Returns

True if this file path is a regular file; false otherwise.

3.9.5.38 isRootPath()

```
static bool rstudio::launcher_plugins::system::FilePath::isRootPath (
            const std::string & in_filePath )  [static]
```

Checks whether the specified path is a root path or a relative path.

Parameters

in_filePath	The path to check.

Returns

True if the path is a root path; false if the path is a relative path.

3.9.5.39 isSymlink()

```
bool rstudio::launcher_plugins::system::FilePath::isSymlink ( ) const
```

Checks whether this file path is a symbolic link.

Returns

True if this file path is a symbolic link; false otherwise.

3.9.5.40 isWithin()

```
bool rstudio::launcher_plugins::system::FilePath::isWithin (
            const FilePath & in_scopePath ) const
```

Checks whether this file path is within the specified file path.

Parameters

in_scopePath	The potential parent path.

Returns

True if this file path is within the specified path, or if the two paths are equal; false otherwise.

3.9.5.41 makeCurrent()

```
static Error rstudio::launcher_plugins::system::FilePath::makeCurrent (
            const std::string & in_filePath )  [static]
```

Changes the current working directory to the specified path.

Parameters

in_filePath	The path to which to change the current working directory.

Returns

Success if in_path exists and can be moved to; Error otherwise.

3.9.5.42 makeCurrentPath()

```
Error rstudio::launcher_plugins::system::FilePath::makeCurrentPath (
            bool in_autoCreate = false ) const
```

Changes the current working directory to location represented by this file path.

Parameters

in_autoCreate	Controls whether to create the location represented by this file path if it does not exist. Default: false.

Returns

Success if the working directory was changed; Error otherwise.

3.9.5.43 move()

```
Error rstudio::launcher_plugins::system::FilePath::move (
            const FilePath & in_targetPath,
            MoveType in_type = MoveCrossDevice ) const
```

Moves the current directory to the specified directory.

Parameters

in_targetPath	The location to which to move this directory.
in_type	The type of move to perform, direct or cross device. See MoveType for more details. Default: MoveCrossDevice.

Returns

Success if this directory could be moved to the target; Error otherwise.

3.9.5.44 moveIndirect()

```
Error rstudio::launcher_plugins::system::FilePath::moveIndirect (
            const FilePath & in_targetPath ) const
```

Performs an indirect move by copying this directory to the target and then deleting this directory.

Parameters

in_targetPath	The location to which to move this directory.

Returns

Success if this directory could be moved to the target; Error otherwise.

3.9.5.45 openForRead()

```
Error rstudio::launcher_plugins::system::FilePath::openForRead (
            std::shared_ptr< std::istream > & out_stream ) const
```

Opens this file for read.

Parameters

out_stream	The input stream for this open file.

Returns

Success if the file was opened; system error otherwise (e.g. EPERM, ENOENT, etc.)

3.9.5.46 openForWrite()

```
Error rstudio::launcher_plugins::system::FilePath::openForWrite (
            std::shared_ptr< std::ostream > & out_stream,
            bool in_truncate = true ) const
```

Opens this file for write.

Parameters

out_stream	The output stream for this open file.
in_truncate	Whether to truncate the existing contents of the file. Default: true.

Returns

Success if the file was opened; system error otherwise (e.g. EPERM, ENOENT, etc.)

3.9.5.47 operator"!=()

```
bool rstudio::launcher_plugins::system::FilePath::operator!= (
            const FilePath & in_other ) const
```

Comparison operator. File paths are equal if their absolute representations are equal.

Parameters

in_other	The file path to compare with this file path.

Returns

True if the file paths are not equal; false otherwise.

3.9.5.48 operator<()

```
bool rstudio::launcher_plugins::system::FilePath::operator< (
            const FilePath & in_other ) const
```

Less-than operator to establish natural order. The natural order is based on the absolute representation of the paths.

Parameters

in_other	The path to which to compare this path.

Returns

True if the absolute representation of this path is less, alphabetically, than the absolute representation of the other path; false otherwise.

3.9.5.49 operator==()

```
bool rstudio::launcher_plugins::system::FilePath::operator== (
            const FilePath & in_other ) const
```

Comparison operator. File paths are equal if their absolute representations are equal.

Parameters

in_other	The file path to compare with this file path.

Returns

True if the file paths are equal; false otherwise.

3.9.5.50 remove()

```
Error rstudio::launcher_plugins::system::FilePath::remove ( ) const
```

Removes this file or directory from the filesystem.

Returns

Success if the file or directory was removed; Error otherwise.

3.9.5.51 removeIfExists()

```
Error rstudio::launcher_plugins::system::FilePath::removeIfExists ( ) const
```

Removes this file or directory from the filesystem, if it exists.

Returns

Success if the file or directory was removed, or if the file did not exist; Error otherwise.

3.9.5.52 resetDirectory()

```
Error rstudio::launcher_plugins::system::FilePath::resetDirectory ( ) const
```

Removes the directory represented by this FilePath, if it exists, and recreates it.

Returns

Success if the directory was able to be created freshly; Error otherwise.

3.9.5.53 resolveAliasedPath()

```
static FilePath rstudio::launcher_plugins::system::FilePath::resolveAliasedPath (
            const std::string & in_aliasedPath,
            const FilePath & in_userHomePath )  [static]
```

Resolves the '~' alias within the path to the user's home path.

Parameters

in_aliasedPath	The aliased path to resolve.
in_userHomePath	The user's home path.

Returns

The resolved path.

3.9.5.54 resolveSymlink()

```
FilePath rstudio::launcher_plugins::system::FilePath::resolveSymlink ( ) const
```

Resolves this symbolic link to the location to which it is pointing. If this FilePath is not a symbolic link, the original FilePath is returned.

Returns

The resolved symbolic link, or this path if it is not a symbolic link.

3.9.5.55 safeCurrentPath()

```
static FilePath rstudio::launcher_plugins::system::FilePath::safeCurrentPath (
            const FilePath & in_revertToPath )  [static]
```

Checks whether the current working directory exists. If it does not, moves the current working directory to the specified path.

Parameters

in_revertToPath	The path to revert to if the current working directory no longer exists.

Returns

The current working directory.

3.9.5.56 setLastWriteTime()

```
void rstudio::launcher_plugins::system::FilePath::setLastWriteTime (
            std::time_t in_time = ::time(nullptr) ) const
```

Sets the last time that this file was modified to the specified time.

Parameters

in_time	The time to which to set the last write time of this file. Default: now.

3.9.5.57 tempFilePath() [1/2]

```
static Error rstudio::launcher_plugins::system::FilePath::tempFilePath (
            const std::string & in_extension,
            FilePath & out_filePath )  [static]
```

Creates a randomly named file with the specified extension in the temp directory.

Parameters

in_extension	The extension with which to create the file. The extension should include the leading '.', e.g. '.zip'.
out_filePath	The absolute path of the newly created file, or an empty file path if the file could not be created.

Returns

Success if the file could be created; Error otherwise.

3.9.5.58 tempFilePath() [2/2]

```
static Error rstudio::launcher_plugins::system::FilePath::tempFilePath (
            FilePath & out_filePath )  [static]
```

Creates a randomly named file in the temp directory.

Parameters

out_filePath	The absolute path of the newly created file, or an empty file path if the file could not be created.

Returns

Success if the file could be created; Error otherwise.

3.9.5.59 uniqueFilePath() [1/2]

```
static Error rstudio::launcher_plugins::system::FilePath::uniqueFilePath (
            const std::string & in_basePath,
            const std::string & in_extension,
            FilePath & out_filePath )  [static]
```

Creates a file with a random name and the specified extension in the specified directory.

Parameters

in_basePath	The path at which to create the file.
in_extension	The extension with which to create the file. The extension should include the leading '.', e.g. '.zip'.
out_filePath	The absolute path of the newly created file, or an empty file path if the file could not be created.

Returns

Success if the file could be created; Error otherwise.

3.9.5.60 uniqueFilePath() [2/2]

```
static Error rstudio::launcher_plugins::system::FilePath::uniqueFilePath (
            const std::string & in_basePath,
            FilePath & out_filePath )  [static]
```

Creates a file with a random name in the specified directory.

Parameters

in_basePath	The path at which to create the file.
out_filePath	The absolute path of the newly created file, or an empty file path if the file could not be created.

Returns

Success if the file could be created; Error otherwise.

The documentation for this class was generated from the following file:

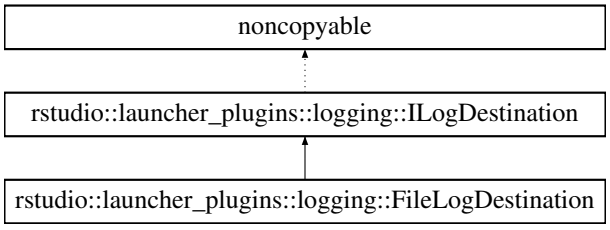
- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/system/FilePath.hpp

3.10 rstudio::launcher_plugins::logging::ILogDestination Class Reference

Interface which allows a logger to write a log message to a destination.

`#include <ILogDestination.hpp>`

Inheritance diagram for rstudio::launcher_plugins::logging::ILogDestination:



Public Member Functions

- ILogDestination (LogLevel in_logLevel)

  Constructor.
- virtual ~ILogDestination ()=default

  Virtual destructor to allow for inheritance.
- virtual unsigned int getId () const =0

  Gets the unique ID of the log destination.
- LogLevel getLogLevel ()

  Gets the maximum level of logs that will be written to this log destination.
- virtual void writeLog (LogLevel in_logLevel, const std::string &in_message)=0

  Writes a message to this log destination.

Protected Attributes

- LogLevel m_logLevel

  The maximum level of log messages to write for this logger.

3.10.1 Detailed Description

Interface which allows a logger to write a log message to a destination.

Log destinations IDs 0 - 100 are reserved for SDK provided log destinations.

3.10.2 Constructor & Destructor Documentation

3.10.2.1 ILogDestination()

```
rstudio::launcher_plugins::logging::ILogDestination::ILogDestination (
            LogLevel in_logLevel )  [inline], [explicit]
```

Constructor.

Parameters

in_logLevel	The most detailed level of log to be written to this log destination.

3.10.3 Member Function Documentation

3.10.3.1 getId()

```
virtual unsigned int rstudio::launcher_plugins::logging::ILogDestination::getId ( ) const
[pure virtual]
```

Gets the unique ID of the log destination.

Returns

The unique ID of the log destination.

Implemented in rstudio::launcher_plugins::logging::FileLogDestination.

3.10.3.2 getLogLevel()

```
LogLevel rstudio::launcher_plugins::logging::ILogDestination::getLogLevel ( )  [inline]
```

Gets the maximum level of logs that will be written to this log destination.

Returns

This log destination's maximum log level.

3.10.3.3 writeLog()

```
virtual void rstudio::launcher_plugins::logging::ILogDestination::writeLog (
            LogLevel in_logLevel,
            const std::string & in_message )  [pure virtual]
```

Writes a message to this log destination.

Parameters

in_logLevel	The log level of the message to write.
in_message	The message to write to the destination.

Implemented in rstudio::launcher_plugins::logging::FileLogDestination.

The documentation for this class was generated from the following file:

- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/logging/ILogDestination.hpp

3.11 rstudio::launcher_plugins::options::Options::Init Class Reference

Class for initializing Options.

`#include <Options.hpp>`

Public Member Functions

- Init (Options &in_owner)

  Helper class which initializes Options.
- template<class T >
  Init & operator() (const char *in_name, Value< T > &in_value, const char *in_description)

  Operator which initializes a specific option value.
- template<class T >
  Init & operator() (const char *in_name, Value< T > &&in_value, const char *in_description)

  Operator which initializes a specific option value.

3.11.1 Detailed Description

Class for initializing Options.

3.11.2 Constructor & Destructor Documentation

3.11.2.1 Init()

```
rstudio::launcher_plugins::options::Options::Init::Init (
            Options & in_owner )  [explicit]
```

Helper class which initializes Options.

Parameters

in_owner	The Options object which owns this init object.

3.11.3 Member Function Documentation

3.11.3.1 operator()() [1/2]

```
template<class T >
Init& rstudio::launcher_plugins::options::Options::Init::operator() (
            const char * in_name,
            Value< T > && in_value,
            const char * in_description )
```

Operator which initializes a specific option value.

Template Parameters

T	The type of the option.

Parameters

in_name	The name of the option.
in_value	The value object, which holds the default and the storage object. The Value object is not usable after this call.
in_description	The description of the option.

Returns

A reference to this Init object.

3.11.3.2 operator()() [2/2]

```
template<class T >
Init& rstudio::launcher_plugins::options::Options::Init::operator() (
            const char * in_name,
            Value< T > & in_value,
            const char * in_description )
```

Operator which initializes a specific option value.

Template Parameters

T	The type of the option.

Parameters

in_name	The name of the option.
in_value	The value object, which holds the default and the storage object. The Value object is not usable after this call.
in_description	The description of the option.

Returns

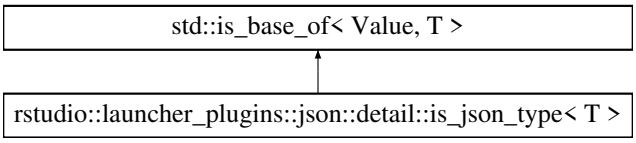
A reference to this Init object.

The documentation for this class was generated from the following file:

- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/options/Options.hpp

3.12 rstudio::launcher_plugins::json::detail::is_json_type< T > Struct Template Reference

Inheritance diagram for rstudio::launcher_plugins::json::detail::is_json_type< T >:



The documentation for this struct was generated from the following file:

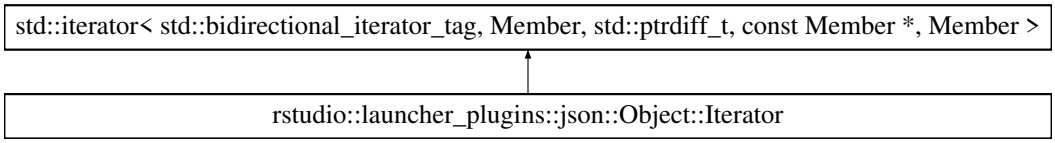
- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/json/Json.hpp

3.13 rstudio::launcher_plugins::json::Object::Iterator Class Reference

Class which allows iterating over the members of a JSON object.

`#include <Json.hpp>`

Inheritance diagram for rstudio::launcher_plugins::json::Object::Iterator:



Public Member Functions

- Iterator (const Object *in_parent, std::ptrdiff_t in_startPos=0)
  Constructor.
- Iterator (const Iterator &in_other)=default
  Copy constructor.
- Iterator & operator= (const Iterator &in_other)
  Assignment operator.
- Iterator & operator++ ()
  Pre-increment operator.
- Iterator & operator-- ()
  Pre-decrement operator.
- Iterator operator++ (int)
  Post-increment operator.
- Iterator operator-- (int)
  Post-decrement operator.
- bool operator== (const Iterator &in_other) const
  Equality operator.
- bool operator!= (const Iterator &in_other) const
  Inequality operator.
- reference operator* () const
  Dereference operator.

Friends

- class **Object**

3.13.1 Detailed Description

Class which allows iterating over the members of a JSON object.

3.13.2 Constructor & Destructor Documentation

3.13.2.1 Iterator() [1/2]

```
rstudio::launcher_plugins::json::Object::Iterator::Iterator (
            const Object * in_parent,
            std::ptrdiff_t in_startPos = 0 )  [explicit]
```

Constructor.

Parameters

in_parent	The parent object which will be iterated.
in_startPos	The starting position of the iterator. Default: the first member.

3.13.2.2 Iterator() [2/2]

```
rstudio::launcher_plugins::json::Object::Iterator::Iterator (
            const Iterator & in_other )  [default]
```

Copy constructor.

Parameters

in_other	The iterator to copy.

3.13.3 Member Function Documentation

3.13.3.1 operator"!=()

```
bool rstudio::launcher_plugins::json::Object::Iterator::operator!= (
            const Iterator & in_other ) const
```

Inequality operator.

Returns

True if this iterator is not the same as in_other; false otherwise.

3.13.3.2 operator*()

```
reference rstudio::launcher_plugins::json::Object::Iterator::operator* ( ) const
```

Dereference operator.

Returns

A reference to the value this iterator is currently pointing at.

3.13.3.3 operator++() [1/2]

```
Iterator& rstudio::launcher_plugins::json::Object::Iterator::operator++ ( )
```

Pre-increment operator.

Returns

A reference to this operator, incremented by one position.

3.13.3.4 operator++() [2/2]

```
Iterator rstudio::launcher_plugins::json::Object::Iterator::operator++ (
            int  )
```

Post-increment operator.

Returns

A copy of this operator prior to this increment.

3.13.3.5 operator--() [1/2]

```
Iterator& rstudio::launcher_plugins::json::Object::Iterator::operator-- ( )
```

Pre-decrement operator.

Returns

A reference to this operator, decremented by one position.

3.13.3.6 operator--() [2/2]

```
Iterator rstudio::launcher_plugins::json::Object::Iterator::operator-- (
            int  )
```

Post-decrement operator.

Returns

A copy of this operator prior to this decrement.

3.13.3.7 operator=()

```
Iterator& rstudio::launcher_plugins::json::Object::Iterator::operator= (
            const Iterator & in_other )
```

Assignment operator.

Parameters

in_other	The iterator to copy.

Returns

A reference to this iterator.

3.13.3.8 operator==()

```
bool rstudio::launcher_plugins::json::Object::Iterator::operator== (
            const Iterator & in_other ) const
```

Equality operator.

Returns

True if this iterator is the same as in_other; false otherwise.

The documentation for this class was generated from the following file:

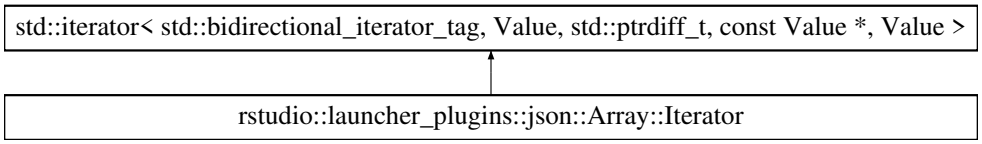
- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/json/Json.hpp

3.14 rstudio::launcher_plugins::json::Array::Iterator Class Reference

Class which allows iterating over the elements of a JSON array.

`#include <Json.hpp>`

Inheritance diagram for rstudio::launcher_plugins::json::Array::Iterator:



Public Member Functions

- Iterator (const Array *in_parent, std::ptrdiff_t in_startPos=0)
  Constructor.
- Iterator (const Iterator &in_other)=default
  Copy constructor.
- Iterator & operator= (const Iterator &in_other)
  Assignment operator.
- Iterator & operator++ ()
  Pre-increment operator.
- Iterator & operator-- ()
  Pre-decrement operator.
- Iterator operator++ (int)
  Post-increment operator.
- Iterator operator-- (int)
  Post-decrement operator.
- bool operator== (const Iterator &in_other) const
  Equality operator.
- bool operator!= (const Iterator &in_other) const
  Inequality operator.
- reference operator* () const
  Dereference operator.

Friends

- class **Array**

3.14.1 Detailed Description

Class which allows iterating over the elements of a JSON array.

3.14.2 Constructor & Destructor Documentation

3.14.2.1 Iterator() [1/2]

```
rstudio::launcher_plugins::json::Array::Iterator::Iterator (
            const Array * in_parent,
            std::ptrdiff_t in_startPos = 0 )  [explicit]
```

Constructor.

Parameters

in_parent	The parent array which will be iterated.
in_startPos	The starting position of the iterator. Default: the first member.

3.14.2.2 Iterator() [2/2]

```
rstudio::launcher_plugins::json::Array::Iterator::Iterator (
            const Iterator & in_other )  [default]
```

Copy constructor.

Parameters

in_other	The iterator to copy.

3.14.3 Member Function Documentation

3.14.3.1 operator"!=()

```
bool rstudio::launcher_plugins::json::Array::Iterator::operator!= (
            const Iterator & in_other ) const
```

Inequality operator.

Returns

True if this iterator is not the same as in_other; false otherwise.

3.14.3.2 operator*()

```
reference rstudio::launcher_plugins::json::Array::Iterator::operator* ( ) const
```

Dereference operator.

Returns

A reference to the value this iterator is currently pointing at.

3.14.3.3 operator++() [1/2]

```
Iterator& rstudio::launcher_plugins::json::Array::Iterator::operator++ ( )
```

Pre-increment operator.

Returns

A reference to this operator, incremented by one position.

3.14.3.4 operator++() [2/2]

```
Iterator rstudio::launcher_plugins::json::Array::Iterator::operator++ (
            int  )
```

Post-increment operator.

Returns

A copy of this operator prior to this increment.

3.14.3.5 operator--() [1/2]

```
Iterator& rstudio::launcher_plugins::json::Array::Iterator::operator-- ( )
```

Pre-decrement operator.

Returns

A reference to this operator, decremented by one position.

3.14.3.6 operator--() [2/2]

```
Iterator rstudio::launcher_plugins::json::Array::Iterator::operator-- (
            int  )
```

Post-decrement operator.

Returns

A copy of this operator prior to this decrement.

3.14.3.7 operator=()

```
Iterator& rstudio::launcher_plugins::json::Array::Iterator::operator= (
            const Iterator & in_other )
```

Assignment operator.

Parameters

in_other	The iterator to copy.

Returns

A reference to this iterator.

3.14.3.8 operator==()

```
bool rstudio::launcher_plugins::json::Array::Iterator::operator== (
            const Iterator & in_other ) const
```

Equality operator.

Returns

True if this iterator is the same as in_other; false otherwise.

The documentation for this class was generated from the following file:

- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/json/Json.hpp

3.15 rstudio::launcher_plugins::json::Object::Member Class Reference

Class which represents a single member of a JSON object.

`#include <Json.hpp>`

Public Member Functions

- Member ()=default

  Default constructor.
- Member (const std::shared_ptr< Impl > &in_impl)

  Creates a Member object via its private implementation.
- const std::string & getName () const

  Gets the name of the member.
- Value getValue () const

  Gets the value of the member.

Friends

- class **Iterator**

3.15.1 Detailed Description

Class which represents a single member of a JSON object.

3.15.2 Constructor & Destructor Documentation

3.15.2.1 Member()

```
rstudio::launcher_plugins::json::Object::Member::Member (
            const std::shared_ptr< Impl > & in_impl )
```

Creates a Member object via its private implementation.

Parameters

in_impl	The private implementation of the member.

3.15.3 Member Function Documentation

3.15.3.1 getName()

```
const std::string& rstudio::launcher_plugins::json::Object::Member::getName ( ) const
```

Gets the name of the member.

Returns

The name of the member.

3.15.3.2 getValue()

```
Value rstudio::launcher_plugins::json::Object::Member::getValue ( ) const
```

Gets the value of the member.

Returns

The value of the member.

The documentation for this class was generated from the following file:

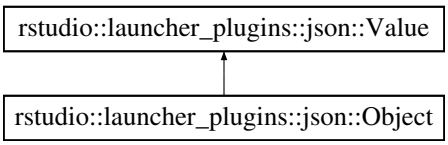
- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/json/Json.hpp

3.16 rstudio::launcher_plugins::json::Object Class Reference

Class which represents a specific type of JSON Value: a JSON object.

```
#include <Json.hpp>
```

Inheritance diagram for rstudio::launcher_plugins::json::Object:



Classes

- class Iterator

  Class which allows iterating over the members of a JSON object.
- class Member

  Class which represents a single member of a JSON object.

Public Types

- typedef std::reverse_iterator< Iterator > ReverseIterator

  Reverse iterator for a JSON object.

Public Member Functions

- Object ()

  Constructs an empty JSON object.
- Object (const StringPairList &in_strPairs)

  Constructs a JSON object from a list of string pairs.
- Object (const Object &in_other)

  Copy constructor.
- Object (Object &&in_other)

  Move constructor.
- Object & operator= (const Object &in_other)

  Assignment operator.
- Object & operator= (Object &&in_other) noexcept

  Move operator.
- Value operator[ ] (const char *in_name)

  Accessor operator. Gets the value a member of this JSON object by name. If no such object exists, an empty JSON value will be returned.
- Value operator[ ] (const std::string &in_name)

  Accessor operator. Gets the value a member of this JSON object by name. If no such object exists, an empty JSON value will be returned.
- Iterator find (const char *in_name) const

  Finds a JSON member by name.
- Iterator find (const std::string &in_name) const

  Finds a JSON member by name.
- Iterator begin () const

  Gets an iterator pointing to the first member of this object.
- Iterator end () const

  Gets an iterator after the last member of this object.
- ReverseIterator rbegin () const

  Gets an iterator pointing to the last member of this object, which iterates in the reverse direction.
- ReverseIterator rend () const

  Gets an iterator before the first member of this object, which can be compared with an other ReverseIterator to determine when reverse iteration has ended.
- void clear ()

  Clears the JSON object.
- bool erase (const char *in_name)

  Erases a member by name.
- bool erase (const std::string &in_name)

  Erases a member by name.
- Iterator erase (const Iterator &in_itr)

  Erases the member specified by the provided iterator.
- size_t getSize () const

  Gets the number of members in the JSON object.
- bool hasMember (const char *in_name) const

  Checks whether this object has a member with the specified name.
- bool hasMember (const std::string &in_name) const

  Checks whether this object has a member with the specified name.
- void insert (const std::string &in_name, const Value &in_value)

  Inserts the specified member into this JSON object. If an object with the same name already exists, it will be overridden.
- void insert (const Member &in_member)

Inserts the specified member into this JSON object. If an object with the same name already exists, it will be overridden.

- bool isEmpty () const

  Checks whether the JSON object is empty.

- bool toStringMap (StringListMap &out_map) const

  Converts this JSON object to a map with string keys and a list of string values.

- StringPairList toStringPairList () const

  Converts this JSON object to a list of string pairs.

Static Public Member Functions

- static Member createMember (const std::string &in_name, const Value &in_value)

  Creates a JSON object from the given name and JSON value.

- static Error getSchemaDefaults (const std::string &in_schema, Object &out_schemaDefaults)

  Creates a JSON object which represents the schema defaults of the provided JSON schema string.

- static Object mergeObjects (const Object &in_base, const Object &in_overlay)

  Merges two JSON objects together. Conflicts between the base and the overlay will be resolved by taking the value in the overlay.

Friends

- class **Value**
- class **Iterator**

Additional Inherited Members

3.16.1 Detailed Description

Class which represents a specific type of JSON Value: a JSON object.

3.16.2 Constructor & Destructor Documentation

3.16.2.1 Object() [1/3]

```
rstudio::launcher_plugins::json::Object::Object (
            const StringPairList & in_strPairs )  [explicit]
```

Constructs a JSON object from a list of string pairs.

Parameters

in_strPairs	The list of string pairs from which to construct this object.

3.16.2.2 Object() [2/3]

```
rstudio::launcher_plugins::json::Object::Object (
            const Object & in_other )
```

Copy constructor.

Parameters

in_other	The JSON object to copy from.

3.16.2.3 Object() [3/3]

```
rstudio::launcher_plugins::json::Object::Object (
            Object && in_other )
```

Move constructor.

Parameters

in_other	The JSON object to move to this Object.

3.16.3 Member Function Documentation

3.16.3.1 begin()

```
Iterator rstudio::launcher_plugins::json::Object::begin ( ) const
```

Gets an iterator pointing to the first member of this object.

Returns

An iterator pointing to the first member of this object.

3.16.3.2 createMember()

```
static Member rstudio::launcher_plugins::json::Object::createMember (
            const std::string & in_name,
            const Value & in_value )  [static]
```

Creates a JSON object from the given name and JSON value.

Parameters

in_name	The name of the JSON object.
in_value	The value of the JSON object.

Returns

The newly created member.

3.16.3.3 end()

```
Iterator rstudio::launcher_plugins::json::Object::end ( ) const
```

Gets an iterator after the last member of this object.

Returns

An iterator after the last member of this object.

3.16.3.4 erase() [1/3]

```
bool rstudio::launcher_plugins::json::Object::erase (
            const char * in_name )
```

Erases a member by name.

Parameters

in_name	The name of the member to erase.

Returns

True if a member was erased; false otherwise.

3.16.3.5 erase() [2/3]

```
Iterator rstudio::launcher_plugins::json::Object::erase (
            const Iterator & in_itr )
```

Erases the member specified by the provided iterator.

Parameters

in_itr	The iterator pointing to the member to erase.

Returns

An iterator pointing to the member immediately after the erased member.

3.16.3.6 erase() [3/3]

```
bool rstudio::launcher_plugins::json::Object::erase (
            const std::string & in_name )
```

Erases a member by name.

Parameters

in_name	The name of the member to erase.

Returns

True if a member was erased; false otherwise.

3.16.3.7 find() [1/2]

```
Iterator rstudio::launcher_plugins::json::Object::find (
            const char * in_name ) const
```

Finds a JSON member by name.

Parameters

in_name	The name of the member to find.

Returns

If such a member exists, an iterator pointing to that member; the end iterator otherwise.

3.16.3.8 find() [2/2]

```
Iterator rstudio::launcher_plugins::json::Object::find (
            const std::string & in_name ) const
```

Finds a JSON member by name.

Parameters

in_name	The name of the member to find.

Returns

If such a member exists, an iterator pointing to that member; the end iterator otherwise.

3.16.3.9 getSchemaDefaults()

```
static Error rstudio::launcher_plugins::json::Object::getSchemaDefaults (
            const std::string & in_schema,
            Object & out_schemaDefaults )  [static]
```

Creates a JSON object which represents the schema defaults of the provided JSON schema string.

Parameters

in_schema	The JSON schema string to parse into a JSON object.
out_schemaDefaults	The parsed schema defaults. This object is not valid if an error is returned.

Returns

Success if in_schema could be parsed; Error otherwise.

3.16.3.10 getSize()

```
size_t rstudio::launcher_plugins::json::Object::getSize ( ) const
```

Gets the number of members in the JSON object.

Returns

The number of members in the JSON object.

3.16.3.11 hasMember() [1/2]

```
bool rstudio::launcher_plugins::json::Object::hasMember (
            const char * in_name ) const
```

Checks whether this object has a member with the specified name.

Parameters

in_name	The name of the member for which to check.

Returns

True if a member with the specified name exists; false otherwise.

3.16.3.12 hasMember() [2/2]

```
bool rstudio::launcher_plugins::json::Object::hasMember (
            const std::string & in_name ) const
```

Checks whether this object has a member with the specified name.

Parameters

in_name	The name of the member for which to check.

Returns

True if a member with the specified name exists; false otherwise.

3.16.3.13 insert() [1/2]

```
void rstudio::launcher_plugins::json::Object::insert (
            const Member & in_member )
```

Inserts the specified member into this JSON object. If an object with the same name already exists, it will be overridden.

Parameters

in_member	The member to insert.

3.16.3.14 insert() [2/2]

```
void rstudio::launcher_plugins::json::Object::insert (
            const std::string & in_name,
            const Value & in_value )
```

Inserts the specified member into this JSON object. If an object with the same name already exists, it will be overridden.

Parameters

in_name	The name of the JSON value to insert.
in_value	The value to insert.

3.16.3.15 isEmpty()

```
bool rstudio::launcher_plugins::json::Object::isEmpty ( ) const
```

Checks whether the JSON object is empty.

Returns

True if the JSON object has no members; false otherwise.

3.16.3.16 mergeObjects()

```
static Object rstudio::launcher_plugins::json::Object::mergeObjects (
            const Object & in_base,
            const Object & in_overlay )  [static]
```

Merges two JSON objects together. Conflicts between the base and the overlay will be resolved by taking the value in the overlay.

Parameters

in_base	The base object to merge.
in_overlay	The overlay object to merge with the base.

Returns

The merged object.

3.16.3.17 operator=() [1/2]

```
Object& rstudio::launcher_plugins::json::Object::operator= (
            const Object & in_other )
```

Assignment operator.

Parameters

in_other	The JSON object to copy from.

Returns

A reference to this JSON object.

3.16.3.18 operator=() [2/2]

```
Object& rstudio::launcher_plugins::json::Object::operator= (
            Object && in_other )  [noexcept]
```

Move operator.

Parameters

in_other	The JSON object to move from.

Returns

A reference to this JSON object.

3.16.3.19 operator[]() [1/2]

```
Value rstudio::launcher_plugins::json::Object::operator[] (
            const char * in_name )
```

Accessor operator. Gets the value a member of this JSON object by name. If no such object exists, an empty JSON value will be returned.

Parameters

in_name	The name of the member to access.

Returns

The value of the member with the specified name, if it exists; empty JSON value otherwise.

3.16.3.20 operator[]() [2/2]

```
Value rstudio::launcher_plugins::json::Object::operator[] (
            const std::string & in_name )
```

Accessor operator. Gets the value a member of this JSON object by name. If no such object exists, an empty JSON value will be returned.

Parameters

in_name	The name of the member to access.

Returns

The value of the member with the specified name, if it exists; empty JSON value otherwise.

3.16.3.21 rbegin()

```
ReverseIterator rstudio::launcher_plugins::json::Object::rbegin ( ) const
```

Gets an iterator pointing to the last member of this object, which iterates in the reverse direction.

Returns

A reverse iterator pointing to the last member of this object.

3.16.3.22 rend()

```
ReverseIterator rstudio::launcher_plugins::json::Object::rend ( ) const
```

Gets an iterator before the first member of this object, which can be compared with an other ReverseIterator to determine when reverse iteration has ended.

Returns

An iterator before the first member of this object.

3.16.3.23 toStringMap()

```
bool rstudio::launcher_plugins::json::Object::toStringMap (
            StringListMap & out_map ) const
```

Converts this JSON object to a map with string keys and a list of string values.

Parameters

out_map	The converted map, on success.

Returns

True if conversion succeeded; false otherwise.

3.16.3.24 toStringPairList()

```
StringPairList rstudio::launcher_plugins::json::Object::toStringPairList ( ) const
```

Converts this JSON object to a list of string pairs.

NOTE: This method will skip any members whose values are not string type.

Returns

The string pairs represented in this object.

The documentation for this class was generated from the following file:

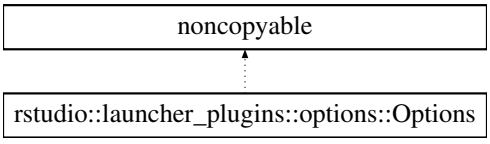
- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/json/Json.hpp

3.17 rstudio::launcher_plugins::options::Options Class Reference

Options for the plugin.

```
#include <Options.hpp>
```

Inheritance diagram for rstudio::launcher_plugins::options::Options:



Classes

- class Init

  Class for initializing Options.

Public Member Functions

- Init registerOptions ()

  Allows the caller to register their options using the Init helper object.
- Error readOptions (int in_argc, const char ∗const in_argv[ ], const system::FilePath &in_location)

  Reads the option file, loading all registered options.
- unsigned int getJobExpiryHours () const

  Gets the number of hours after which finished jobs expire and should be pruned from the plugin.
- unsigned int getHeartbeatIntervalSeconds () const

  Gets the number of seconds between heartbeats.
- logging::LogLevel getLogLevel () const

  Gets the maximum level of log messages to write.
- const system::FilePath & getScratchPath () const

  Gets the scratch path to which log files and other plugin data may be written.
- Error getServerUser (system::User &out_serverUser) const

  Gets the user to run as when root privileges are dropped.
- unsigned int getThreadPoolSize () const

  Gets the size of the thread pool.

Static Public Member Functions

- static Options & getInstance ()

  Gets the single instance of Options for the plugin.

3.17.1 Detailed Description

Options for the plugin.

3.17.2 Member Function Documentation

3.17.2.1 getHeartbeatIntervalSeconds()

```
unsigned int rstudio::launcher_plugins::options::Options::getHeartbeatIntervalSeconds ( )
const
```

Gets the number of seconds between heartbeats.

Returns

The number of seconds between heartbeats.

3.17.2.2 getInstance()

```
static Options& rstudio::launcher_plugins::options::Options::getInstance ( )  [static]
```

Gets the single instance of Options for the plugin.

Returns

The single instance of Options for the plugin.

3.17.2.3 getJobExpiryHours()

```
unsigned int rstudio::launcher_plugins::options::Options::getJobExpiryHours ( ) const
```

Gets the number of hours after which finished jobs expire and should be pruned from the plugin.

Returns

The number of hours after which finished jobs expire and should be pruned from the plugin.

3.17.2.4 getLogLevel()

```
logging::LogLevel rstudio::launcher_plugins::options::Options::getLogLevel ( ) const
```

Gets the maximum level of log messages to write.

Returns

The maximum level of log messages to write.

3.17.2.5 getScratchPath()

```
const system::FilePath& rstudio::launcher_plugins::options::Options::getScratchPath ( ) const
```

Gets the scratch path to which log files and other plugin data may be written.

Note that this does not include job output. Job output should be written in the location specified by the user when the job is run.

Returns

The scratch path to which log files and other plugin data may be written.

3.17.2.6 getServerUser()

```
Error rstudio::launcher_plugins::options::Options::getServerUser (
            system::User & out_serverUser ) const
```

Gets the user to run as when root privileges are dropped.

Parameters

out_serverUser	The server user, if it exists.

Returns

Success if the server user exists; error otherwise.

3.17.2.7 getThreadPoolSize()

```
unsigned int rstudio::launcher_plugins::options::Options::getThreadPoolSize ( ) const
```

Gets the size of the thread pool.

Returns

The size of the thread pool.

3.17.2.8 readOptions()

```
Error rstudio::launcher_plugins::options::Options::readOptions (
            int in_argc,
            const char *const in_argv[],
            const system::FilePath & in_location )
```

Reads the option file, loading all registered options.

registerOptions() must be called before this is called in order to include additional options.

Parameters

in_argc	The count of command line arguments.
in_argv	The command line arguments.
in_location	The location of the configuration file. Must exist.

Returns

Success if all required options were read and no parsing errors occurred; Error otherwise.

3.17.2.9 registerOptions()

```
Init rstudio::launcher_plugins::options::Options::registerOptions ( )
```

Allows the caller to register their options using the Init helper object.

Returns

The Init helper object with which options can be registered.

The documentation for this class was generated from the following file:

- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/options/Options.hpp

3.18 rstudio::launcher_plugins::system::PathScopeImplDeleter Struct Reference

Struct which implements the deleter for PathScopeImpl.

`#include <FilePath.hpp>`

Public Member Functions

- void operator() (PathScopeImpl *)

  Deletion operator.

3.18.1 Detailed Description

Struct which implements the deleter for PathScopeImpl.

The documentation for this struct was generated from the following file:

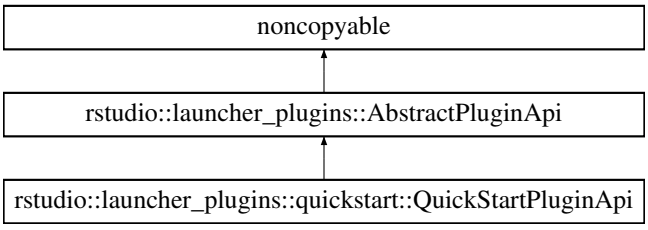
- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/system/FilePath.hpp

3.19 rstudio::launcher_plugins::quickstart::QuickStartPluginApi Class Reference

Launcher Plugin API for the QuickStart Plugin.

`#include <QuickStartPluginApi.hpp>`

Inheritance diagram for rstudio::launcher_plugins::quickstart::QuickStartPluginApi:



Public Member Functions

- Error initialize () override

  This method should initialize any components needed to communicate with the job scheduling tool, including custom options (TODO: other examples).

3.19.1 Detailed Description

Launcher Plugin API for the QuickStart Plugin.

3.19.2 Member Function Documentation

3.19.2.1 initialize()

```
Error rstudio::launcher_plugins::quickstart::QuickStartPluginApi::initialize ( )  [override],
[virtual]
```

This method should initialize any components needed to communicate with the job scheduling tool, including custom options (TODO: other examples).

Returns

Success if all components needed by this Plugin were successfully initialized; Error otherwise.

Implements rstudio::launcher_plugins::AbstractPluginApi.

The documentation for this class was generated from the following file:

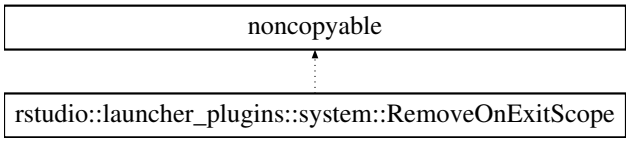
- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/plugins/QuickStart/include/QuickStartPluginApi.hpp

3.20 rstudio::launcher_plugins::system::RemoveOnExitScope Class Reference

RAII class for restoring the current working directory.

```
#include <FilePath.hpp>
```

Inheritance diagram for rstudio::launcher_plugins::system::RemoveOnExitScope:



Public Member Functions

- RemoveOnExitScope (FilePath in_restorePath, ErrorLocation in_location)

  Constructor.
- virtual ~RemoveOnExitScope ()

  Destructor. Removes the path that was provided in the constructor from the filesystem.

3.20.1 Detailed Description

RAII class for restoring the current working directory.

3.20.2 Constructor & Destructor Documentation

3.20.2.1 RemoveOnExitScope()

```
rstudio::launcher_plugins::system::RemoveOnExitScope::RemoveOnExitScope (
            FilePath in_restorePath,
            ErrorLocation in_location )
```

Constructor.

Parameters

in_restorePath	The path to which to restore the current working directory on destruction of this object.
in_location	The location where this object was constructed, for logging purposes.

The documentation for this class was generated from the following file:

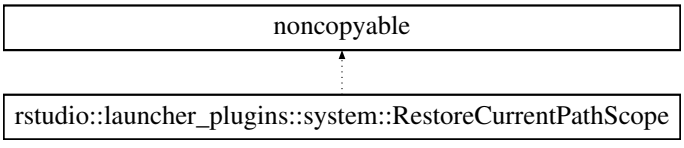
- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/system/FilePath.hpp

3.21 rstudio::launcher_plugins::system::RestoreCurrentPathScope Class Reference

RAII class for restoring the current working directory.

```
#include <FilePath.hpp>
```

Inheritance diagram for rstudio::launcher_plugins::system::RestoreCurrentPathScope:



Public Member Functions

- RestoreCurrentPathScope (FilePath in_restorePath, ErrorLocation in_location)

  Constructor.
- virtual ~RestoreCurrentPathScope ()

  Destructor. Returns the working directory to the original path.

3.21.1 Detailed Description

RAII class for restoring the current working directory.

3.21.2 Constructor & Destructor Documentation

3.21.2.1 RestoreCurrentPathScope()

```
rstudio::launcher_plugins::system::RestoreCurrentPathScope::RestoreCurrentPathScope (
            FilePath in_restorePath,
            ErrorLocation in_location )
```

Constructor.

Parameters

in_restorePath	The path to which to restore the current working directory on destruction of this object.
in_location	The location where this object was constructed, for logging purposes.

The documentation for this class was generated from the following file:

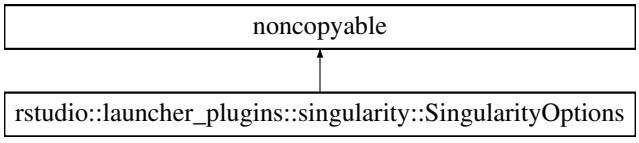
- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/system/FilePath.hpp

3.22 rstudio::launcher_plugins::singularity::SingularityOptions Class Reference

Class which stores options specific to the Singularity Container system.

```
#include <SingularityOptions.hpp>
```

Inheritance diagram for rstudio::launcher_plugins::singularity::SingularityOptions:



Public Member Functions

- const system::FilePath & getRContainer () const

  Gets the Singularity container to use for R.
- const system::FilePath & getRSessionContainer () const

  Gets the Singularity container to use for R Sessions.
- void initialize ()

  Method which initializes SingularityOptions. This method should be called exactly once, before the options file is read.

Static Public Member Functions

- static SingularityOptions & getInstance ()

  Gets the single instance of SingularityOptions for the plugin.

3.22.1 Detailed Description

Class which stores options specific to the Singularity Container system.

3.22.2 Member Function Documentation

3.22.2.1 getInstance()

```
static SingularityOptions& rstudio::launcher_plugins::singularity::SingularityOptions::get↩
Instance ( )  [static]
```

Gets the single instance of SingularityOptions for the plugin.

Returns

The single instance of SingularityOptions for the plugin.

3.22.2.2 getRContainer()

```
const system::FilePath& rstudio::launcher_plugins::singularity::SingularityOptions::getR↩
Container ( ) const
```

Gets the Singularity container to use for R.

NOTE: This option is a placeholder until I know what options I need. It will not end up in the release version of this plugin.

Returns

The Singularity container to use for R.

3.22.2.3 getRSessionContainer()

```
const system::FilePath& rstudio::launcher_plugins::singularity::SingularityOptions::getR↩
SessionContainer ( ) const
```

Gets the Singularity container to use for R Sessions.

NOTE: This option is a placeholder until I know what options I need. It will not end up in the release version of this plugin.

Returns

The Singularity container to use for R Sessions.

3.22.2.4 initialize()

```
void rstudio::launcher_plugins::singularity::SingularityOptions::initialize ( )
```

Method which initializes SingularityOptions. This method should be called exactly once, before the options file is read.

This is where SingularityOptions are registered with the Options object.

The documentation for this class was generated from the following file:

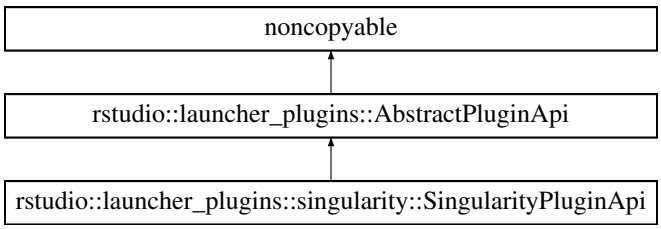
- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/plugins/Singularity/include/SingularityOptions.hpp

3.23 rstudio::launcher_plugins::singularity::SingularityPluginApi Class Reference

Launcher Plugin API for the Singularity Plugin.

```
#include <SingularityPluginApi.hpp>
```

Inheritance diagram for rstudio::launcher_plugins::singularity::SingularityPluginApi:



Public Member Functions

- Error initialize () override

  This method should initialize any components needed to communicate with the job scheduling tool, including custom options (TODO: other examples).

3.23.1 Detailed Description

Launcher Plugin API for the Singularity Plugin.

3.23.2 Member Function Documentation

3.23.2.1 initialize()

```
Error rstudio::launcher_plugins::singularity::SingularityPluginApi::initialize ( )  [override], [virtual]
```

This method should initialize any components needed to communicate with the job scheduling tool, including custom options (TODO: other examples).

Returns

Success if all components needed by this Plugin were successfully initialized; Error otherwise.

Implements rstudio::launcher_plugins::AbstractPluginApi.

The documentation for this class was generated from the following file:

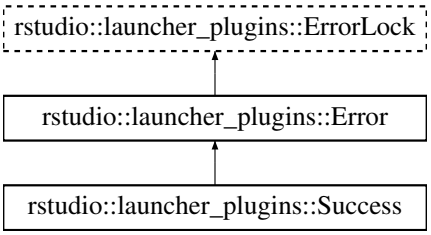
- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/plugins/Singularity/include/SingularityPluginApi.hpp

3.24 rstudio::launcher_plugins::Success Class Reference

Class which represents a successful operation (i.e. no error).

```
#include <Error.hpp>
```

Inheritance diagram for rstudio::launcher_plugins::Success:



Public Member Functions

- Success ()
  Constructor.

3.24.1 Detailed Description

Class which represents a successful operation (i.e. no error).

The documentation for this class was generated from the following file:

- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/Error.hpp

3.25 rstudio::launcher_plugins::system::User Class Reference

Class which represents a system user.

`#include <User.hpp>`

Public Member Functions

- User ()
  Default constructor.
- User (const User &in_other)
  Copy constructor.
- bool exists () const
  Checks whether the user represented by this object exists.
- bool isAllUsers () const
  Returns whether this object represents all users or not. See the default constructor for more details.
- bool isEmpty () const
  Checks whether this user is empty or not.
- const FilePath & getHomePath () const
  Gets the user home path, if it exists.
- GidType getGroupId () const
  Gets the ID of this user's primary group.
- UidType getUserId () const
  Gets the ID of this user.
- const std::string & getUsername () const
  Returns the name of this user.
- User & operator= (const User &in_other)
  Overloaded assignment operator.

Static Public Member Functions

- static FilePath getUserHomePath (const std::string &in_envOverride=std::string())
  Gets the user home path, as set in the environment.
- static Error getCurrentUser (User &out_currentUser)
  Gets the current user.
- static Error getUserFromIdentifier (const std::string &in_username, User &out_user)
  Gets a user from its username.
- static Error getUserFromIdentifier (UidType in_userId, User &out_user)
  Gets a user from its user ID.

3.25.1 Detailed Description

Class which represents a system user.

3.25.2 Constructor & Destructor Documentation

3.25.2.1 User() [1/2]

```
rstudio::launcher_plugins::system::User::User ( )
```

Default constructor.

Creates a user object which represents all users.

3.25.2.2 User() [2/2]

```
rstudio::launcher_plugins::system::User::User (
            const User & in_other )
```

Copy constructor.

Parameters

in_other	The user to copy.

3.25.3 Member Function Documentation

3.25.3.1 exists()

```
bool rstudio::launcher_plugins::system::User::exists ( ) const
```

Checks whether the user represented by this object exists.

If this is an empty user, or is a user object which represents all users, this method will return false as it does not represent a user which exists on the system.

Returns

True if this user exists; false otherwise.

3.25.3.2 getCurrentUser()

```
static Error rstudio::launcher_plugins::system::User::getCurrentUser (
            User & out_currentUser )  [static]
```

Gets the current user.

Parameters

out_currentUser	The user this process is currently executing on behalf of. This object will be the empty user if this function returns an error.

Returns

Success if the user could be retrieved; Error otherwise.

3.25.3.3 getGroupId()

```
GidType rstudio::launcher_plugins::system::User::getGroupId ( ) const
```

Gets the ID of this user's primary group.

Returns

The ID of this user's primary group.

3.25.3.4 getHomePath()

```
const FilePath& rstudio::launcher_plugins::system::User::getHomePath ( ) const
```

Gets the user home path, if it exists.

Returns

The user's home path, if it exists; empty path otherwise.

3.25.3.5 getUserFromIdentifier() [1/2]

```
static Error rstudio::launcher_plugins::system::User::getUserFromIdentifier (
            const std::string & in_username,
            User & out_user )  [static]
```

Gets a user from its username.

Parameters

in_username	The name of the user to create.
out_user	The created user.

Returns

Success if the user could be retrieved; Error otherwise.

3.25.3.6 getUserFromIdentifier() [2/2]

```
static Error rstudio::launcher_plugins::system::User::getUserFromIdentifier (
            UidType in_userId,
            User & out_user )  [static]
```

Gets a user from its user ID.

Parameters

in_↩ userId	The ID of the user to create.
out_user	The created user.

Returns

Success if the user could be retrieved; Error otherwise.

3.25.3.7 getUserHomePath()

```
static FilePath rstudio::launcher_plugins::system::User::getUserHomePath (
            const std::string & in_envOverride = std::string() )  [static]
```

Gets the user home path, as set in the environment.

Parameters

in_envOverride	If set, overrides the name of the environment variable to use as the user's home path. Multiple overrides may be specified by delimiting them with '|' in order of precedence.

Returns

The user home path, as set in the environment.

3.25.3.8 getUserId()

```
UidType rstudio::launcher_plugins::system::User::getUserId ( ) const
```

Gets the ID of this user.

Returns

The ID of this user.

3.25.3.9 getUsername()

```
const std::string& rstudio::launcher_plugins::system::User::getUsername ( ) const
```

Returns the name of this user.

Returns

The name of this user ("∗" for all users).

3.25.3.10 isAllUsers()

```
bool rstudio::launcher_plugins::system::User::isAllUsers ( ) const
```

Returns whether this object represents all users or not. See the default constructor for more details.

Returns

True if this object represents all users; false otherwise.

3.25.3.11 isEmpty()

```
bool rstudio::launcher_plugins::system::User::isEmpty ( ) const
```

Checks whether this user is empty or not.

Returns

3.25.3.12 operator=()

```
User& rstudio::launcher_plugins::system::User::operator= (
            const User & in_other )
```

Overloaded assignment operator.

Parameters

in_other	The user to copy to this one.

Returns

This user.

The documentation for this class was generated from the following file:

- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/system/User.hpp

3.26 rstudio::launcher_plugins::options::Value< T > Class Template Reference

Concrete class which represents an option Value.

`#include <Options.hpp>`

Public Member Functions

- Value ()
  Default Constructor.
- Value (T &io_storeTo)
  Constructor which takes an object to store the value to.
- Value & setDefaultValue (const T &in_defaultValue)
  Sets the default value of the option.

Friends

- class **Options**

3.26.1 Detailed Description

template<class T>
class rstudio::launcher_plugins::options::Value< T >

Concrete class which represents an option Value.

This class supports the following template types:

- bool
- char
- unsigned char

- short
- unsigned short
- int
- unsigned int
- long
- unsigned long
- long long
- unsigned long long
- float
- double
- long double
- std::string
- rstudio::launcher_plugins::logging::LogLevel
- rstudio::launcher_plugins::system::FilePath
- rstudio::launcher_plugins::system::User

If a custom type is needed, treat the option value as a string and do the parsing and conversion from the string value.

Template Parameters

T	The type of the option value.

3.26.2 Constructor & Destructor Documentation

3.26.2.1 Value()

```
template<class T>
rstudio::launcher_plugins::options::Value< T >::Value (
            T & io_storeTo )  [explicit]
```

Constructor which takes an object to store the value to.

Parameters

io_storeTo	The object to store the option value to. The caller is responsible for ensuring that this object is alive when the option file is parsed.

3.26.3 Member Function Documentation

3.26.3.1 setDefaultValue()

```
template<class T>
Value& rstudio::launcher_plugins::options::Value< T >::setDefaultValue (
            const T & in_defaultValue )
```

Sets the default value of the option.

Parameters

in_defaultValue	The default value of the option.

Returns

A reference to this value.

The documentation for this class was generated from the following file:

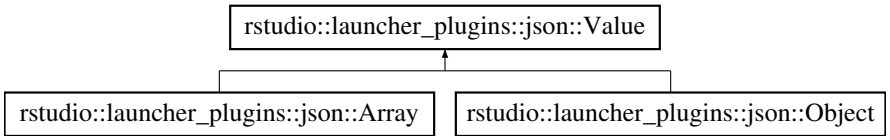
- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/options/Options.hpp

3.27 rstudio::launcher_plugins::json::Value Class Reference

Class which represents a json value.

```
#include <Json.hpp>
```

Inheritance diagram for rstudio::launcher_plugins::json::Value:



Public Member Functions

- Value ()
  Constructor.
- Value (ValueImplPtr in_valueImpl)
  Constructor. Creates a JSON value from a Value::Impl object.
- Value (const Value &in_other)
  Copy constructor.
- Value (Value &&in_other) noexcept

Move constructor.

- Value (bool in_value)

  Conversion constructor.
- Value (double in_value)

  Conversion constructor.
- Value (float in_value)

  Conversion constructor.
- Value (int in_value)

  Conversion constructor.
- Value (int64_t in_value)

  Conversion constructor.
- Value (const char *in_value)

  Conversion constructor.
- Value (const std::string &in_value)

  Conversion constructor.
- Value (unsigned int in_value)

  Conversion constructor.
- Value (uint64_t in_value)

  Conversion constructor.
- virtual ~Value ()=default

  Virtual destructor.
- Value & operator= (const Value &in_other)

  Assignment operator from Value.
- Value & operator= (Value &&in_other) noexcept

  Move operator.
- Value & operator= (bool in_value)

  Assignment operator.
- Value & operator= (double in_value)

  Assignment operator.
- Value & operator= (float in_value)

  Assignment operator.
- Value & operator= (int in_value)

  Assignment operator.
- Value & operator= (int64_t in_value)

  Assignment operator.
- Value & operator= (const char *in_value)

  Assignment operator.
- Value & operator= (const std::string &in_value)

  Assignment operator.
- Value & operator= (unsigned int in_value)

  Assignment operator.
- Value & operator= (uint64_t in_value)

  Assignment operator.
- bool operator== (const Value &in_other) const

  Equality operator.
- Value clone () const

  Makes a copy of this JSON value.
- Error coerce (const std::string &in_schema, std::vector< std::string > &out_propViolations)

  Attempts to coerce a JSON object to conform to the given schema by discarding non-conforming properties.
- Array getArray () const

  Gets the value as a JSON array. If the call to getType() does not return Type::ARRAY, this method is invalid.

- bool getBool () const

  Gets the value as a bool. If the call to getType() does not return Type::BOOL, this method is invalid.
- double getDouble () const

  Gets the value as a double. If the call to getType() does not return Type::DOUBLE, this method is invalid.
- float getFloat () const

  Gets the value as a float. If the call to getType() does not return Type::FLOAT, this method is invalid.
- int getInt () const

  Gets the value as an int. If the call to getType() does not return Type::INT, this method is invalid.
- int64_t getInt64 () const

  Gets the value as an int64. If the call to getType() does not return Type::INT64, this method is invalid.
- Object getObject () const

  Gets the value as a JSON object. IF the call to getType() does not return Type::OBJECT, this method is invalid.
- std::string getString () const

  Gets the value as a string. If the call to getType() does not return Type::STRING, this method is invalid.
- Type getType () const

  Gets the type of this value.
- unsigned int getUInt () const

  Gets the value as an unsigned int. If the call to getType() does not return Type::UINT, this method is invalid.
- uint64_t getUInt64 () const

  Gets the value as an uint64. If the call to getType() does not return Type::UINT64, this method is invalid.
- template<typename T >
  T getValue () const

  Gets this JSON value as the specified type.
- bool isArray () const

  Checks whether the value is a JSON array or not.
- bool isBool () const

  Checks whether the value is a boolean value or not.
- bool isDouble () const

  Checks whether the value is a double value or not.
- bool isFloat () const

  Checks whether the value is a float value or not.
- bool isInt () const

  Checks whether the value is an int 32 value or not.
- bool isInt64 () const

  Checks whether the value is an int 64 value or not.
- bool isObject () const

  Checks whether the value is a JSON object or not.
- bool isString () const

  Checks whether the value is a string value or not.
- bool isNull () const

  Checks whether the value is null or not.
- bool isUInt () const

  Checks whether the value is an unsigned int 32 value or not.
- bool isUInt64 () const

  Checks whether the value is an unsigned int 64 value or not.
- Error parse (const char *in_jsonStr)

  Parses the JSON string into this value.
- Error parse (const std::string &in_jsonStr)

  Parses the JSON string into this value.
- Error parseAndValidate (const std::string &in_jsonStr, const std::string &in_schema)

  Parses the JSON string and validates it against the schema.

- Error validate (const std::string &in_schema) const

  Validates this JSON value against a schema.
- std::string write () const

  Writes this value to a string.
- void write (std::ostream &io_ostream) const

  Writes this value to the specified output stream.
- std::string writeFormatted () const

  Writes and formats this value to a string.
- void writeFormatted (std::ostream &io_ostream) const

  Writes and formats this value to the specified output stream.

Protected Types

- typedef std::shared_ptr< Impl > ValueImplPtr

  Convenience typedef for the type of the private implementation of json::Value.

Protected Member Functions

- PRIVATE_IMPL_SHARED (m_impl)

  Private implementation of Value.

Friends

- class **Array**

3.27.1 Detailed Description

Class which represents a json value.

3.27.2 Constructor & Destructor Documentation

3.27.2.1 Value() [1/12]

```
rstudio::launcher_plugins::json::Value::Value (
            ValueImplPtr in_valueImpl )  [explicit]
```

Constructor. Creates a JSON value from a Value::Impl object.

Parameters

in_valueImpl	The Value::Impl object to use for the creation of this JSON value.

3.27.2.2 Value() [2/12]

```
rstudio::launcher_plugins::json::Value::Value (
            const Value & in_other )
```

Copy constructor.

Parameters

in_other	The value to copy.

3.27.2.3 Value() [3/12]

```
rstudio::launcher_plugins::json::Value::Value (
            Value && in_other )  [noexcept]
```

Move constructor.

Parameters

in_other	The value to move from.

3.27.2.4 Value() [4/12]

```
rstudio::launcher_plugins::json::Value::Value (
            bool in_value )  [explicit]
```

Conversion constructor.

Parameters

in_value	The literal value to set this JSON Value to.

3.27.2.5 Value() [5/12]

```
rstudio::launcher_plugins::json::Value::Value (
            double in_value )  [explicit]
```

Conversion constructor.

Parameters

in_value	The literal value to set this JSON Value to.

3.27.2.6 Value() [6/12]

```
rstudio::launcher_plugins::json::Value::Value (
            float in_value )  [explicit]
```

Conversion constructor.

Parameters

in_value	The literal value to set this JSON Value to.

3.27.2.7 Value() [7/12]

```
rstudio::launcher_plugins::json::Value::Value (
            int in_value )  [explicit]
```

Conversion constructor.

Parameters

in_value	The literal value to set this JSON Value to.

3.27.2.8 Value() [8/12]

```
rstudio::launcher_plugins::json::Value::Value (
            int64_t in_value )  [explicit]
```

Conversion constructor.

Parameters

in_value	The literal value to set this JSON Value to.

3.27.2.9 Value() [9/12]

```
rstudio::launcher_plugins::json::Value::Value (
            const char * in_value )  [explicit]
```

Conversion constructor.

Parameters

in_value	The literal value to set this JSON Value to.

3.27.2.10 Value() [10/12]

```
rstudio::launcher_plugins::json::Value::Value (
            const std::string & in_value )  [explicit]
```

Conversion constructor.

Parameters

in_value	The literal value to set this JSON Value to.

3.27.2.11 Value() [11/12]

```
rstudio::launcher_plugins::json::Value::Value (
            unsigned int in_value )  [explicit]
```

Conversion constructor.

Parameters

in_value	The literal value to set this JSON Value to.

3.27.2.12 Value() [12/12]

```
rstudio::launcher_plugins::json::Value::Value (
            uint64_t in_value )  [explicit]
```

Conversion constructor.

Parameters

in_value	The literal value to set this JSON Value to.

3.27.3 Member Function Documentation

3.27.3.1 clone()

```
Value rstudio::launcher_plugins::json::Value::clone ( ) const
```

Makes a copy of this JSON value.

Returns

A copy of this JSON value.

3.27.3.2 coerce()

```
Error rstudio::launcher_plugins::json::Value::coerce (
            const std::string & in_schema,
            std::vector< std::string > & out_propViolations )
```

Attempts to coerce a JSON object to conform to the given schema by discarding non-conforming properties.

Parameters

in_schema	The schema to validate this value against.
out_propViolations	The names of the properties that did not conform to the schema.

Returns

Success if this JSON value matches the schema after coercion; Error otherwise.

3.27.3.3 getArray()

```
Array rstudio::launcher_plugins::json::Value::getArray ( ) const
```

Gets the value as a JSON array. If the call to getType() does not return Type::ARRAY, this method is invalid.

Returns

The value as a JSON array.

3.27.3.4 getBool()

```
bool rstudio::launcher_plugins::json::Value::getBool ( ) const
```

Gets the value as a bool. If the call to getType() does not return Type::BOOL, this method is invalid.

Returns

The value as a bool.

3.27.3.5 getDouble()

```
double rstudio::launcher_plugins::json::Value::getDouble ( ) const
```

Gets the value as a double. If the call to getType() does not return Type::DOUBLE, this method is invalid.

Returns

The value as a double.

3.27.3.6 getFloat()

```
float rstudio::launcher_plugins::json::Value::getFloat ( ) const
```

Gets the value as a float. If the call to getType() does not return Type::FLOAT, this method is invalid.

Returns

The value as a float.

3.27.3.7 getInt()

```
int rstudio::launcher_plugins::json::Value::getInt ( ) const
```

Gets the value as an int. If the call to getType() does not return Type::INT, this method is invalid.

Returns

The value as an int.

3.27.3.8 getInt64()

```
int64_t rstudio::launcher_plugins::json::Value::getInt64 ( ) const
```

Gets the value as an int64. If the call to getType() does not return Type::INT64, this method is invalid.

Returns

The value as an int64.

3.27.3.9 getObject()

```
Object rstudio::launcher_plugins::json::Value::getObject ( ) const
```

Gets the value as a JSON object. IF the call to getType() does not return Type::OBJECT, this method is invalid.

Returns

The value as a JSON object.

3.27.3.10 getString()

```
std::string rstudio::launcher_plugins::json::Value::getString ( ) const
```

Gets the value as a string. If the call to getType() does not return Type::STRING, this method is invalid.

Returns

The value as a string.

3.27.3.11 getType()

```
Type rstudio::launcher_plugins::json::Value::getType ( ) const
```

Gets the type of this value.

Returns

The type of this value.

3.27.3.12 getUInt()

```
unsigned int rstudio::launcher_plugins::json::Value::getUInt ( ) const
```

Gets the value as an unsigned int. If the call to getType() does not return Type::UINT, this method is invalid.

Returns

The value as an unsigned int.

3.27.3.13 getUInt64()

```
uint64_t rstudio::launcher_plugins::json::Value::getUInt64 ( ) const
```

Gets the value as an uint64. If the call to getType() does not return Type::UINT64, this method is invalid.

Returns

The value as an uint64.

3.27.3.14 getValue()

```
template<typename T >
T rstudio::launcher_plugins::json::Value::getValue ( ) const
```

Gets this JSON value as the specified type.

Before calling this method, the appropriate is<T> method should return true.

Template Parameters

T	The type to retrieve this value as.

Returns

This value as an object of type T.

3.27.3.15 isArray()

```
bool rstudio::launcher_plugins::json::Value::isArray ( ) const
```

Checks whether the value is a JSON array or not.

Returns

True if the value is a JSON array; false otherwise.

3.27.3.16 isBool()

```
bool rstudio::launcher_plugins::json::Value::isBool ( ) const
```

Checks whether the value is a boolean value or not.

Returns

True if the value is a boolean value; false otherwise.

3.27.3.17 isDouble()

```
bool rstudio::launcher_plugins::json::Value::isDouble ( ) const
```

Checks whether the value is a double value or not.

Returns

True if the value is a double value; false otherwise.

3.27.3.18 isFloat()

```
bool rstudio::launcher_plugins::json::Value::isFloat ( ) const
```

Checks whether the value is a float value or not.

Returns

True if the value is a float value; false otherwise.

3.27.3.19 isInt()

```
bool rstudio::launcher_plugins::json::Value::isInt ( ) const
```

Checks whether the value is an int 32 value or not.

Returns

True if the value is an int 32 value; false otherwise.

3.27.3.20 isInt64()

```
bool rstudio::launcher_plugins::json::Value::isInt64 ( ) const
```

Checks whether the value is an int 64 value or not.

Returns

True if the value is an int 64 value; false otherwise.

3.27.3.21 isNull()

```
bool rstudio::launcher_plugins::json::Value::isNull ( ) const
```

Checks whether the value is null or not.

Returns

True if the value is null; false otherwise.

3.27.3.22 isObject()

```
bool rstudio::launcher_plugins::json::Value::isObject ( ) const
```

Checks whether the value is a JSON object or not.

Returns

True if the value is a JSON object; false otherwise.

3.27.3.23 isString()

```
bool rstudio::launcher_plugins::json::Value::isString ( ) const
```

Checks whether the value is a string value or not.

Returns

True if the value is a string value; false otherwise.

3.27.3.24 isUInt()

```
bool rstudio::launcher_plugins::json::Value::isUInt ( ) const
```

Checks whether the value is an unsigned int 32 value or not.

Returns

True if the value is an unsigned int 32 value; false otherwise.

3.27.3.25 isUInt64()

```
bool rstudio::launcher_plugins::json::Value::isUInt64 ( ) const
```

Checks whether the value is an unsigned int 64 value or not.

Returns

True if the value is an unsigned int 64 value; false otherwise.

3.27.3.26 operator=() [1/11]

```
Value& rstudio::launcher_plugins::json::Value::operator= (
            bool in_value )
```

Assignment operator.

Parameters

in_value	The literal value to set this JSON Value to.

Returns

A reference to this value.

3.27.3.27 operator=() [2/11]

```
Value& rstudio::launcher_plugins::json::Value::operator= (
            const char * in_value )
```

Assignment operator.

Parameters

in_value	The literal value to set this JSON Value to.

Returns

A reference to this value.

3.27.3.28 operator=() [3/11]

```
Value& rstudio::launcher_plugins::json::Value::operator= (
            const std::string & in_value )
```

Assignment operator.

Parameters

in_value	The literal value to set this JSON Value to.

Returns

A reference to this value.

3.27.3.29 operator=() [4/11]

```
Value& rstudio::launcher_plugins::json::Value::operator= (
            const Value & in_other )
```

Assignment operator from Value.

Parameters

in_other	The value to copy to this value.

Returns

A reference to this value.

3.27.3.30 operator=() [5/11]

```
Value& rstudio::launcher_plugins::json::Value::operator= (
            double in_value )
```

Assignment operator.

Parameters

in_value	The literal value to set this JSON Value to.

Returns

A reference to this value.

3.27.3.31 operator=() [6/11]

```
Value& rstudio::launcher_plugins::json::Value::operator= (
            float in_value )
```

Assignment operator.

Parameters

in_value	The literal value to set this JSON Value to.

Returns

A reference to this value.

3.27.3.32 operator=() [7/11]

```
Value& rstudio::launcher_plugins::json::Value::operator= (
            int in_value )
```

Assignment operator.

Parameters

in_value	The literal value to set this JSON Value to.

Returns

A reference to this value.

3.27.3.33 operator=() [8/11]

```
Value& rstudio::launcher_plugins::json::Value::operator= (
            int64_t in_value )
```

Assignment operator.

Parameters

in_value	The literal value to set this JSON Value to.

Returns

A reference to this value.

3.27.3.34 operator=() [9/11]

```
Value& rstudio::launcher_plugins::json::Value::operator= (
            uint64_t in_value )
```

Assignment operator.

Parameters

in_value	The literal value to set this JSON Value to.

Returns

A reference to this value.

3.27.3.35 operator=() [10/11]

```
Value& rstudio::launcher_plugins::json::Value::operator= (
            unsigned int in_value )
```

Assignment operator.

Parameters

in_value	The literal value to set this JSON Value to.

Returns

A reference to this value.

3.27.3.36 operator=() [11/11]

```
Value& rstudio::launcher_plugins::json::Value::operator= (
            Value && in_other )  [noexcept]
```

Move operator.

Parameters

in_other	The value to move to this value.

Returns

A reference to this value.

3.27.3.37 operator==()

```
bool rstudio::launcher_plugins::json::Value::operator== (
            const Value & in_other ) const
```

Equality operator.

Parameters

in_other	The value to compare this value to.

Returns

True if the two values are the same; false otherwise.

3.27.3.38 parse() [1/2]

```
Error rstudio::launcher_plugins::json::Value::parse (
            const char * in_jsonStr )
```

Parses the JSON string into this value.

Parameters

in_jsonStr	The JSON string to parse.

Returns

Success on successful parse; error otherwise (e.g. ParseError)

3.27.3.39 parse() [2/2]

```
Error rstudio::launcher_plugins::json::Value::parse (
            const std::string & in_jsonStr )
```

Parses the JSON string into this value.

Parameters

in_jsonStr	The JSON string to parse.

Returns

Success on successful parse; error otherwise (e.g. ParseError)

3.27.3.40 parseAndValidate()

```
Error rstudio::launcher_plugins::json::Value::parseAndValidate (
            const std::string & in_jsonStr,
            const std::string & in_schema )
```

Parses the JSON string and validates it against the schema.

Parameters

in_jsonStr	The JSON string to parse.
in_schema	The schema to validate the JSON value against.

Returns

Success if the string could be parsed and the parsed object matches the schema; Error otherwise.

3.27.3.41 validate()

```
Error rstudio::launcher_plugins::json::Value::validate (
            const std::string & in_schema ) const
```

Validates this JSON value against a schema.

Parameters

in_schema	The schema to validate this value against.

Returns

Success if this JSON value matches the schema; the Error that occurred during validation otherwise.

3.27.3.42 write() [1/2]

```
std::string rstudio::launcher_plugins::json::Value::write ( ) const
```

Writes this value to a string.

Returns

The string representation of this value.

3.27.3.43 write() [2/2]

```
void rstudio::launcher_plugins::json::Value::write (
            std::ostream & io_ostream ) const
```

Writes this value to the specified output stream.

Parameters

io_ostream	The output stream to which to write this value.

3.27.3.44 writeFormatted() [1/2]

```
std::string rstudio::launcher_plugins::json::Value::writeFormatted ( ) const
```

Writes and formats this value to a string.

Returns

The formatted string representation of this value.

3.27.3.45 writeFormatted() [2/2]

```
void rstudio::launcher_plugins::json::Value::writeFormatted (
            std::ostream & io_ostream ) const
```

Writes and formats this value to the specified output stream.

Parameters

io_ostream	The output stream to which to write this value.

The documentation for this class was generated from the following file:

- /home/maria/GitRepos/rstudio-launcher-plugin-sdk/sdk/include/json/Json.hpp

Index