## semver-utils 1.1.0

Generated by Doxygen 1.8.10

Sat May 14 2016 18:47:01

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## Main Page

#### 1.1 Introduction

libsemver is a C++ library with C bindings that provides the following functionality:

- · Parsing a version number into an object.
- · Comparing versions.
- · Modifying versions object.

Versions are checked against Semantic Versioning 2.0.0 (http://semver.org/).

### 1.2 Changelog

See the History page.

### 1.3 Available Bindings

libsemver is a C++ library with C bindings which makes it available to a wide range of programming languages. If a programming language has C bindings, then libsemver can be used from it. The C binding provides all the functionality provided by the C++ implementation and it can be used as a fallback solution when the C++ API cannot be used.

### 1.4 libtool's versioning scheme

libtool's versioning scheme is described by three integers: current:revision:age where:

- current is the most recent interface number implemented by the library.
- revision is the implementation number of the current interface.
- age is the difference between the newest and the oldest interface that the library implements.

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## 1.5 Reporting Bugs and Suggestions

If you find problems or have suggestions about this program or this manual, please report them as new issues in the official GitHub repository at https://github.com/emcrisostomo/semver-utils. Please, read the CONTRIBUTING.md file for detailed instructions on how to contribute to fswatch.

# **History**

## 2.1 1:0:0

• Initial release.

History

# Namespace Index

3.1	Name	enaca	Liet
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Here is a list of all documented namespaces with brief descriptions:	
semver	
Main namespace of libsemver	. 11

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# **Class Index**

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Here are the classes, structs, unions and interfaces with brief descriptions:	
semver_tsemver::version	13
Class that represents a version number	13

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# File Index

## 5.1 File List

Here is a list of all documented files with brief descriptions:

libsemver/gettext.h
libsemver/gettext_defs.h
libsemver/c++/version.hpp
Header of the semver::version class
libsemver/c/errors.h
libsemver/c/libsemver.cpp
Main libsemver source file 2
libsemver/c/libsemver.h
Header of the libsemver library

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# **Namespace Documentation**

### 6.1 semver Namespace Reference

Main namespace of libsemver.

#### **Classes**

· class version

Class that represents a version number.

#### **Functions**

- static std::vector< unsigned int > parse\_version (const std::string &v)
- static void match\_prerelease (const std::string &s)
- static void match\_metadata (const std::string &s)
- static void **check\_identifier** (const std::string &s)
- static const std::string PRERELEASE\_PATTERN ("([0-9A-Za-z-]+(\\.[0-9A-Za-z-]+)\*)")
- static const std::string **METADATA\_PATTERN** ("([0-9A-Za-z-]+(\\.[0-9A-Za-z-]+)\*)")

### 6.1.1 Detailed Description

Main namespace of libsemver.

Namespace	Documen	ıtation
Hamespace	Documen	latioi

## **Class Documentation**

### 7.1 semver\_t Struct Reference

#### **Public Attributes**

void \* ptr

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

· libsemver/c/libsemver.h

#### 7.2 semver::version Class Reference

Class that represents a version number.

```
#include <version.hpp>
```

### **Public Member Functions**

version (const std::vector< unsigned int > versions, const std::string prerelease="", const std::string meta-data="")

Constructs a semver::version instance with the specified parameters. The parameters must comply with Semantic Versioning 2.0.0.

• std::string str () const

Converts a version to its string representation.

std::vector< unsigned int > get\_version () const

Gets the version components.

• unsigned int get\_version (unsigned int index) const

Gets the specified version component.

• std::string get\_prerelease () const

Gets the prerelease string.

• std::string get\_metadata () const

Gets the metadata string.

version bump\_major () const

Bumps the major version component.

• version bump\_minor () const

Bumps the minor version component.

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· version bump\_patch () const

Bumps the patch version component.

· version bump (unsigned int index) const

Bumps the specified version component.

• version strip\_prerelease () const

Strips the prerelease component.

• version strip\_metadata () const

Strips the metadata component.

• bool is\_release () const

Checks whether the instance is a release version.

• bool operator== (const version &rh) const

Checks two instances for equality.

• bool operator< (const version &rh) const

Compares two instances.

• bool operator> (const version &rh) const

Compares two instances.

#### **Static Public Member Functions**

• static version from string (std::string v)

Constructs a semver::version instance from a std::string.

#### 7.2.1 Detailed Description

Class that represents a version number.

This class represents a version number complying with \_Semantic Versioning 2.0.0 (http://semver.org/). As a supported extension this class allows version numbers to contain any number of components greater than 2. Instances of this class are designed to be immutable.

#### 7.2.2 Constructor & Destructor Documentation

7.2.2.1 semver::version::version ( const std::vector< unsigned int > versions, const std::string prerelease = " ", const std::string metadata = " " )

Constructs a semver::version instance with the specified parameters. The parameters must comply with *Semantic Versioning 2.0.0*.

#### **Parameters**

versions	The version components. As a supported extension this class allows versions numbers to contain any number of components greater than 2.
prerelease	An optional prerelease string.
metadata	An optional metadata string.

#### Returns

A semver::version instance.

#### **Exceptions**

std::invalid\_argument | if the parameters do not comply with Semantic Versioning 2.0.0.

#### 7.2.3 Member Function Documentation

7.2.3.1 version semver::version::bump ( unsigned int index ) const

Bumps the specified version component.

The component index is bumped and all components whose index is grater than index are set to 0. If index is greater than the current size s of the version number, then index + 1 - s components are added and set to 0.

#### Returns

A semver::version object representing the bumped version.

7.2.3.2 version semver::version::bump\_major() const

Bumps the major version component.

This method uses ::bump();

Returns

A semver::version object containing the bumped version.

7.2.3.3 version semver::version::bump\_minor() const

Bumps the minor version component.

This method uses ::bump();

Returns

A semver::version object representing the bumped version.

7.2.3.4 version semver::version::bump\_patch ( ) const

Bumps the patch version component.

This method uses ::bump();

Returns

A semver::version object representing the bumped version.

7.2.3.5 version semver::version::from\_string( std::string v ) [static]

Constructs a semver::version instance from a std::string.

The version number v must comply with *Semantic Versioning 2.0.0*. As a supported extension this class allows version numbers to contain any number of components greater than 2.

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#### **Parameters**

V	The version number to parse.

#### Returns

A semver::version instance.

#### **Exceptions**

std::invalid_argument	if $v$ is not a valid version number.

7.2.3.6 std::string semver::version::get\_metadata ( ) const

Gets the metadata string.

Returns

The metadata string.

7.2.3.7 std::string semver::version::get\_prerelease ( ) const

Gets the prerelease string.

Returns

The prerelease string.

7.2.3.8 std::vector< unsigned int> semver::version::get\_version ( ) const

Gets the version components.

Returns

The version components.

7.2.3.9 unsigned int semver::version::get\_version ( unsigned int index ) const

Gets the specified version component.

Returns

The specified version component, or 0 if the specified index does not exist.

7.2.3.10 bool semver::version::is\_release ( ) const

Checks whether the instance is a release version.

Returns

true if the instance represents a release version, false otherwise.

7.2.3.11 bool semver::version::operator < ( const version & rh ) const

Compares two instances.

An instance is less than another if its version number is less than the other's. Components are compared one by one, starting from the first. If the two components are equal, then the following component is considered. If the first component is less than the second, then true is returned, otherwise false is returned.

#### **Parameters**

V	The instance to be compared with.

#### Returns

true if this instance is less than rh, false otherwise.

7.2.3.12 bool semver::version::operator== ( const version & rh ) const

Checks two instances for equality.

Two instances are equal if and only if all its components are equal.

#### **Parameters**

V	The instance to be compared with.

#### Returns

true if rh is equal to this instance, false otherwise.

7.2.3.13 bool semver::version::operator> ( const version & rh ) const

Compares two instances.

An instance is greater than another if its version number is less than the other's. Components are compared one by one, starting from the first. If the two components are equal, then the following component is considered. If the first component is greater than the second, then true is returned, otherwise false is returned.

#### **Parameters**

V	The instance to be compared with.

#### Returns

true if this instance is greater than rh, false otherwise.

7.2.3.14 std::string semver::version::str ( ) const

Converts a version to its string representation.

#### Returns

The string representation of this instance.

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7.2.3.15 version semver::version::strip\_metadata ( ) const

Strips the metadata component.

Returns

A semver::version object representing the modified version.

7.2.3.16 version semver::version::strip\_prerelease ( ) const

Strips the prerelease component.

Returns

A semver::version object representing the modified version.

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

- libsemver/c++/version.hpp
- libsemver/c++/version.cpp

## **File Documentation**

## 8.1 libsemver/c++/version.hpp File Reference

Header of the semver::version class.

```
#include <vector>
#include <string>
```

#### Classes

· class semver::version

Class that represents a version number.

#### **Namespaces**

• semver

Main namespace of libsemver.

### 8.1.1 Detailed Description

Header of the semver::version class.

This header defines the semver::version class, the central type of the C++ API of libsemver library.

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Author

Enrico M. Crisostomo

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### 8.2 libsemver/c/libsemver.cpp File Reference

```
Main libsemver source file.
#include "libsemver.h"
#include "errors.h"
#include "../c++/version.hpp"
#include "../gettext defs.h"
#include <exception>
#include <cstdlib>
Functions
    · static void semver_set_last_error (int err)
    · static void semver reset last error ()
    • int semver last error ()
    • semver_t * semver_from_string (const char *str)
    • semver_t * semver_create (const unsigned int *c_vers, const unsigned long c_vers_num, const char
      *prerelease, const char *metadata)

    void semver_free (semver t *ver)

   • const char * semver_str (semver t *ver)

    unsigned int * semver_get_versions (semver_t *ver)

    unsigned int semver_get_version (semver_t *ver, unsigned int index)

   • const char * semver_get_prerelease (semver_t *ver)
    • const char * semver_get_metadata (semver_t *ver)
    • semver_t * semver_bump_major (semver_t *ver)
    semver_t * semver_bump_minor (semver_t *ver)
    semver_t * semver_bump_patch (semver_t *ver)
    • semver_t * semver_bump (semver_t *ver, unsigned int index)
    • semver_t * semver_strip_prerelease (semver_t *ver)

    semver t * semver strip metadata (semver t *ver)

    bool semver_is_release (semver_t *ver)

    bool semver equals (semver t *Ih, semver t *rh)

    • bool semver_is_less (semver_t *Ih, semver_t *rh)
```

#### **Variables**

· static THREAD\_LOCAL int last\_error

• bool semver\_is\_greater (semver\_t \*lh, semver\_t \*rh)

#### 8.2.1 Detailed Description

Main libsemver source file.

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#### 8.3 libsemver/c/libsemver.h File Reference

```
Header of the libsemver library.
#include <stdbool.h>
```

#### Classes

· struct semver t

#### **Typedefs**

typedef struct semver\_t semver\_t

#### **Functions**

- int semver\_last\_error ()
- semver\_t \* semver\_from\_string (const char \*str)
- semver\_t \* semver\_create (const unsigned int \*c\_vers, const unsigned long c\_vers\_num, const char \*prerelease, const char \*metadata)
- void semver\_free (semver\_t \*ver)
- const char \* semver\_str (semver\_t \*ver)
- unsigned int \* semver\_get\_versions (semver\_t \*ver)
- unsigned int semver\_get\_version (semver\_t \*ver, unsigned int index)
- const char \* semver\_get\_prerelease (semver\_t \*ver)
- const char \* semver\_get\_metadata (semver\_t \*ver)
- semver t \* semver\_bump\_major (semver t \*ver)
- semver t \* semver bump minor (semver t \*ver)
- semver\_t \* semver\_bump\_patch (semver\_t \*ver)
- $semver\_t * semver\_bump$  ( $semver\_t * ver$ , unsigned int index)
- semver\_t \* semver\_strip\_prerelease (semver\_t \*ver)
- semver t \* semver strip metadata (semver t \*ver)
- bool semver\_is\_release (semver\_t \*ver)
- bool **semver\_equals** (semver\_t \*Ih, semver\_t \*rh)
- bool semver\_is\_less (semver\_t \*Ih, semver\_t \*rh)
- bool semver\_is\_greater (semver\_t \*Ih, semver\_t \*rh)

#### 8.3.1 Detailed Description

Header of the libsemver library.

This header file defines the API of the libsemver library.

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