

Namespace SnowflakeID

Classes

[Snowflake](#)

This class represents the Snowflake object. [Wikipedia article about SnowflakeID](#) 

[SnowflakeIDGenerator](#)

Generator class for [Snowflake](#).

This keeps track of time, machine number and sequence.

[SnowflakeIDGeneratorOptions](#)

Option object for [SnowflakeIDGenerator](#).

[SnowflakeIDGeneratorServiceCollectionExtensions](#)

Extension methods to register [SnowflakeIDGenerator](#) services.

Interfaces

[ISnowflakeIDGenerator](#)

Interface for the generator class for [Snowflake](#).

This keeps track of time, machine number, and sequence.

[ISnowflakeIDGeneratorClsCompliant](#)

Interface for the generator class for [Snowflake](#).

This keeps track of time, machine number and sequence.

Interface ISnowflakeIDGenerator

Namespace: [SnowflakeID](#)

Assembly: SnowflakeIDGenerator.dll

Interface for the generator class for [Snowflake](#).

This keeps track of time, machine number, and sequence.

```
[CLSCompliant(false)]  
public interface ISnowflakeIDGenerator
```

Remarks

[NuGet](#) 

[Source](#) 

[API](#) 

[Site](#) 

Properties


ConfiguredEpoch

Gets the date configured as the epoch for the generator.

```
DateTime ConfiguredEpoch { get; }
```

Property Value

[DateTime](#) 

The [DateTime](#)  value representing the custom epoch date.

Remarks

The epoch date is used as the starting point for generating unique IDs.

ConfiguredMachineId

Gets the configured machine ID for the generator.

```
int ConfiguredMachineId { get; }
```

Property Value

[int](#)

The [int](#) value representing the machine ID.

Remarks

The machine ID is used to ensure uniqueness across different instances of the generator.

Methods

GetCode()

Gets the next Snowflake ID as a number.

```
ulong GetCode()
```

Returns

[ulong](#)

A [ulong](#) representing the next Snowflake ID.

Remarks

This method generates a new Snowflake ID and returns it as a numeric value.

GetCodeString()

Gets the next Snowflake ID as a string.

```
string GetCodeString()
```

Returns

[string](#)

A [string](#) representing the next Snowflake ID.

Remarks

This method generates a new Snowflake ID and returns it as a string value.

GetSnowflake()

Generates the next Snowflake ID.

```
Snowflake GetSnowflake()
```

Returns

[Snowflake](#)

A [Snowflake](#) object containing the generated ID.

Remarks

This method generates a new Snowflake ID and returns it as a [Snowflake](#) object.

Interface ISnowflakeIDGeneratorClsCompliant

Namespace: [SnowflakeID](#)

Assembly: SnowflakeIDGenerator.dll

Interface for the generator class for [Snowflake](#).

This keeps track of time, machine number and sequence.

```
public interface ISnowflakeIDGeneratorClsCompliant
```

Remarks

[NuGet](#)

[Source](#)

[API](#)

[Site](#)

Properties


ConfiguredEpoch

Gets the date configured as the epoch for the generator.

```
DateTime ConfiguredEpoch { get; }
```

Property Value

[DateTime](#)

The [DateTime](#) value representing the custom epoch date.

Remarks

The epoch date is used as the starting point for generating unique IDs.

ConfiguredMachineId

Gets the configured machine ID for the generator.

```
int ConfiguredMachineId { get; }
```

Property Value

[int](#)

The [int](#) value representing the machine ID.

Remarks

The machine ID is used to ensure uniqueness across different instances of the generator.

Methods

GetCodeString()

Gets the next Snowflake ID as a string.

```
string GetCodeString()
```

Returns

[string](#)

A [string](#) representing the next Snowflake ID.

Remarks

This method generates a new Snowflake ID and returns it as a string value.

GetSnowflake()

Generates the next Snowflake ID.

```
Snowflake GetSnowflake()
```

Returns

[Snowflake](#)

A [Snowflake](#) object containing the generated ID.

Remarks

This method generates a new Snowflake ID and returns it as a [Snowflake](#) object.

Class Snowflake

Namespace: [SnowflakeID](#)

Assembly: SnowflakeIDGenerator.dll

This class represents the Snowflake object. [Wikipedia article about SnowflakeID](#)

```
public class Snowflake : IEquatable<Snowflake>, IComparable<Snowflake>, IComparable
```

Inheritance

[object](#) ← Snowflake

Implements

[IEquatable](#) <[Snowflake](#)>, [IComparable](#) <[Snowflake](#)>, [IComparable](#)

Inherited Members

[object.Equals\(object, object\)](#), [object.ReferenceEquals\(object, object\)](#), [object.GetType\(\)](#), [object.MemberwiseClone\(\)](#)

Remarks

[NuGet](#)

[Source](#)

[API](#)

[Site](#)

Constructors

Snowflake()

Initializes a new instance of the [Snowflake](#) class using the default epoch (UNIX time 1-1-1970).

```
public Snowflake()
```

Snowflake(DateTime)

Initializes a new instance of the [Snowflake](#) class using a custom date as epoch.

```
public Snowflake(DateTime epoch)
```

Parameters

epoch [DateTime](#)

The date to use as the epoch.

Fields

MaxMachineId

Max number of machines / servers allowed. Range from 0 to MaxMachineId-1

```
public const long MaxMachineId = 1024
```

Field Value

[long](#)

MaxSequence

The maximum sequence number that can be generated per millisecond. When this value is reached, the sequence is reset to 0.

```
public const long MaxSequence = 4096
```

Field Value

[long](#)

MaxTimestamp

Max number of milliseconds since epoch. Range from 0 to MaxTimestamp-1

```
public const long MaxTimestamp = 4398046511104
```

Field Value

[long](#)

NumberOfDigits

Total number of digits for the generated code.

```
public static readonly int NumberOfDigits
```

Field Value

[int](#)

An [int](#) representing the number of digits.

Properties

Code

Gets the Snowflake ID as a string.

```
public string Code { get; }
```

Property Value

[string](#)

A [string](#) representing the Snowflake ID.

Epoch

Gets the current epoch being used.

```
public DateTime Epoch { get; }
```

Property Value

[DateTime](#) 

A [DateTime](#)  representing the current epoch.

Id

Gets the Snowflake ID.

```
[CLSCompliant(false)]  
public virtual ulong Id { get; }
```

Property Value

[ulong](#) 

A [ulong](#)  representing the Snowflake ID.

MachineId

Gets or sets the machine/server number.

```
[CLSCompliant(false)]  
public ulong MachineId { get; set; }
```

Property Value

[ulong](#) 

Exceptions

[ArgumentOutOfRangeException](#) 

Thrown when the value is greater than or equal to [MaxMachineId](#).

MachineIdInt32

Gets or sets the machine/server number as an integer.

```
public int MachineIdInt32 { get; set; }
```

Property Value

[int](#)

Exceptions

[ArgumentOutOfRangeException](#)

Thrown when the value is negative or greater than or equal to [MaxMachineId](#).

Sequence

Gets or sets the sequence number.

```
[CLSCompliant(false)]  
public ulong Sequence { get; set; }
```

Property Value

[ulong](#)

Exceptions

[ArgumentOutOfRangeException](#)

Thrown when the value is greater than or equal to [MaxSequence](#).

SequenceInt32

Gets or sets the sequence number as an integer.

```
public int SequenceInt32 { get; set; }
```

Property Value

[int](#)

Exceptions

[ArgumentOutOfRangeException](#)

Thrown when the value is negative or greater than or equal to [MaxSequence](#).

Timestamp

Gets or sets the timestamp as the number of milliseconds since the selected epoch.

```
[CLSCompliant(false)]  
public ulong Timestamp { get; set; }
```

Property Value

[ulong](#)

Exceptions

[ArgumentOutOfRangeException](#)

Thrown when the value is greater than or equal to [MaxTimestamp](#).

TimestampInt64

Gets or sets the timestamp as the number of milliseconds since the selected epoch.

```
public long TimestampInt64 { get; set; }
```

Property Value

[long](#)

Exceptions

Thrown when the value is less than 0 or greater than or equal to [MaxTimestamp](#).

UtcDateTime

Sets the timeStamp portion of the snowflake based on current time and selected epoch. Gets real time of the snowflake based on selected epoch.

```
public DateTime UtcDateTime { get; set; }
```

Property Value

[DateTime](#)↗

Methods

ChangeEpoch(DateTime)

Changes the snowflake's epoch keeping the code intact. This will adjust the represented [UtcDateTime](#) to match the new epoch.

```
public void ChangeEpoch(DateTime newEpoch)
```

Parameters

newEpoch [DateTime](#)↗

The new epoch to set.

CompareTo(Snowflake)

Compares the current Snowflake object with another Snowflake object.

```
public int CompareTo(Snowflake other)
```

Parameters

other [Snowflake](#)

The Snowflake object to compare with the current Snowflake object.

Returns

[int](#)

A value that indicates the relative order of the objects being compared. The return value has these meanings:

- Less than zero: This object is less than the **other** parameter.
- Zero: This object is equal to **other**.
- Greater than zero: This object is greater than **other**.

Exceptions

[SnowflakesUsingDifferentEpochsException](#)

Thrown when comparing Snowflake objects generated using different epochs.

CompareTo(object)

Compares the current Snowflake object with another object.

```
public int CompareTo(object obj)
```

Parameters

obj [object](#)

The object to compare with the current Snowflake object.

Returns

[int](#)

A value that indicates the relative order of the objects being compared. The return value has these meanings:

- Less than zero: This object is less than the `obj` parameter.
- Zero: This object is equal to `obj`.
- Greater than zero: This object is greater than `obj`.

Exceptions

[SnowflakesUsingDifferentEpochsException](#)

Thrown when comparing Snowflake objects generated using different epochs.

Equals(Snowflake)

Checks equality between this Snowflake object and another Snowflake object.

```
public virtual bool Equals(Snowflake other)
```

Parameters

`other` [Snowflake](#)

The Snowflake object to compare with the current Snowflake object.

Returns

[bool](#)

`true` if the specified Snowflake object is equal to the current Snowflake object; otherwise, `false`.

Equals(object)

Checks equality between this Snowflake object and another object.

```
public override bool Equals(object obj)
```

Parameters

`obj` [object](#)

The object to compare with the current Snowflake object.

Returns

[bool](#)

`true` if the specified object is equal to the current Snowflake object; otherwise, `false`.

FromString(string)

Creates a [Snowflake](#) instance from the specified string.

```
public static Snowflake FromString(string s)
```

Parameters

`s` [string](#)

The string representation of the [Snowflake](#).

Returns

[Snowflake](#)

A [Snowflake](#) instance that corresponds to the specified string.

FromUInt64(ulong)

Creates a [Snowflake](#) instance from the specified unsigned long integer.

```
[CLSCompliant(false)]  
public static Snowflake FromUInt64(ulong s)
```

Parameters

`s` [ulong](#)

The unsigned long integer representation of the [Snowflake](#).

Returns

[Snowflake](#)

A [Snowflake](#) instance that corresponds to the specified unsigned long integer.

GetHashCode()

Serves as the default hash function. Override of [GetHashCode\(\)](#).

```
public override int GetHashCode()
```

Returns

[int](#)

A hash code for the current Snowflake object.

Parse(string)

Creates a SnowflakeId object from a SnowflakeId code.

```
public static Snowflake Parse(string s)
```

Parameters

s [string](#)

The SnowflakeId code as a string.

Returns

[Snowflake](#)

A new instance of the [Snowflake](#) class.

Parse(string, DateTime)

Creates a SnowflakeId object from a SnowflakeId code using a custom epoch.

```
public static Snowflake Parse(string s, DateTime customEpoch)
```

Parameters

s [string](#)

The SnowflakeId code as a string.

customEpoch [DateTime](#)

The custom date to use as the epoch.

Returns

[Snowflake](#)

A new instance of the [Snowflake](#) class.

Parse(ulong)

Creates a SnowflakeId object from a SnowflakeId code.

```
[CLSCompliant(false)]  
public static Snowflake Parse(ulong b)
```

Parameters

b [ulong](#)

The SnowflakeId code as a ulong.

Returns

[Snowflake](#)

A new instance of the [Snowflake](#) class.

Parse(ulong, DateTime)

Creates a SnowflakeId object from a SnowflakeId code using a custom epoch.

```
[CLSCompliant(false)]  
public static Snowflake Parse(ulong b, DateTime customEpoch)
```

Parameters

b [ulong](#)

The SnowflakeId code as a ulong.

customEpoch [DateTime](#)

The custom date to use as the epoch.

Returns

[Snowflake](#)

A new instance of the [Snowflake](#) class.

RebaseEpoch(DateTime)

Rebase the Snowflake to a new epoch CHANGING THE GENERATED CODE but keeping the same date and time.

```
public void RebaseEpoch(DateTime newEpoch)
```

Parameters

newEpoch [DateTime](#)

The new epoch to set.

ToString()

Gets the Snowflake ID as a string.

```
public override string ToString()
```

Returns

[string](#)

A [string](#) representing the Snowflake ID.

ToUInt64()

Converts the current [Snowflake](#) instance to its unsigned long integer representation.

```
[CLSCompliant(false)]  
public ulong ToUInt64()
```

Returns

[ulong](#)

An unsigned long integer representation of the current [Snowflake](#) instance.

Remarks

If a loosely typed language (or a language that doesn't differentiate between number types, i.e.: Typescript) is part of your workflow, use [ToString\(\)](#) to avoid issues regarding floating-point underflow and rounding.

Operators

operator ==(Snowflake, Snowflake)

Determines whether two specified instances of [Snowflake](#) are equal.

```
public static bool operator ==(Snowflake s1, Snowflake s2)
```

Parameters

s1 [Snowflake](#)

The first [Snowflake](#) to compare.

s2 [Snowflake](#)

The second [Snowflake](#) to compare.

Returns

[bool](#)

`true` if the two [Snowflake](#) instances are equal; otherwise, `false`.

explicit operator Snowflake(string)

Converts the specified string to a [Snowflake](#) instance.

```
public static explicit operator Snowflake(string s)
```

Parameters

`s` [string](#)

The string to convert.

Returns

[Snowflake](#)

A [Snowflake](#) instance that is equivalent to the specified string.

explicit operator Snowflake(ulong)

Converts the specified unsigned long integer to a [Snowflake](#) instance.

```
[CLSCompliant(false)]  
public static explicit operator Snowflake(ulong s)
```

Parameters

`s` [ulong](#)

The unsigned long integer to convert.

Returns

[Snowflake](#)

A [Snowflake](#) instance that is equivalent to the specified unsigned long integer.

operator >(Snowflake, Snowflake)

Determines whether the first specified [Snowflake](#) is greater than the second specified [Snowflake](#).

```
public static bool operator >(Snowflake s1, Snowflake s2)
```

Parameters

s1 [Snowflake](#)

The first [Snowflake](#) to compare.

s2 [Snowflake](#)

The second [Snowflake](#) to compare.

Returns

[bool](#)

true if the first [Snowflake](#) is greater than the second [Snowflake](#); otherwise, **false**.

Exceptions

[SnowflakesUsingDifferentEpochsException](#)

Thrown when comparing [Snowflake](#) objects generated using different epochs.

operator >=(Snowflake, Snowflake)

Determines whether the first specified [Snowflake](#) is greater than or equal to the second specified [Snowflake](#).

```
public static bool operator >=(Snowflake s1, Snowflake s2)
```

Parameters

s1 [Snowflake](#)

The first [Snowflake](#) to compare.

s2 [Snowflake](#)

The second [Snowflake](#) to compare.

Returns

[bool](#)

true if the first [Snowflake](#) is greater than or equal to the second [Snowflake](#); otherwise, **false**.

Exceptions

[SnowflakesUsingDifferentEpochsException](#)

Thrown when comparing [Snowflake](#) objects generated using different epochs.

implicit operator string(Snowflake)

Converts the specified [Snowflake](#) instance to its string representation.

```
public static implicit operator string(Snowflake s)
```

Parameters

s [Snowflake](#)

The [Snowflake](#) instance to convert.

Returns

[string](#)

A string representation of the specified [Snowflake](#) instance.

implicit operator ulong(Snowflake)

Converts the specified [Snowflake](#) instance to its unsigned long integer representation.

```
[CLSCompliant(false)]  
public static implicit operator ulong(Snowflake s)
```

Parameters

s [Snowflake](#)

The [Snowflake](#) instance to convert.

Returns

[ulong](#) 

An unsigned long integer representation of the specified [Snowflake](#) instance.

Remarks

If a loosely typed language (or a language that doesn't differentiate between number types, i.e.: Typescript) is part of your workflow, use the string representation to avoid issues regarding floating-point underflow and rounding.

operator !=(Snowflake, Snowflake)

Determines whether two specified instances of [Snowflake](#) are not equal.

```
public static bool operator !=(Snowflake s1, Snowflake s2)
```

Parameters

s1 [Snowflake](#)

The first [Snowflake](#) to compare.

s2 [Snowflake](#)

The second [Snowflake](#) to compare.

Returns

[bool](#)

`true` if the two [Snowflake](#) instances are not equal; otherwise, `false`.

operator <(Snowflake, Snowflake)

Determines whether the first specified [Snowflake](#) is less than the second specified [Snowflake](#).

```
public static bool operator <(Snowflake s1, Snowflake s2)
```

Parameters

`s1` [Snowflake](#)

The first [Snowflake](#) to compare.

`s2` [Snowflake](#)

The second [Snowflake](#) to compare.

Returns

[bool](#)

`true` if the first [Snowflake](#) is less than the second [Snowflake](#); otherwise, `false`.

Exceptions

[SnowflakesUsingDifferentEpochsException](#)

Thrown when comparing [Snowflake](#) objects generated using different epochs.

operator <=(Snowflake, Snowflake)

Determines whether the first specified [Snowflake](#) is less than or equal to the second specified [Snowflake](#).

```
public static bool operator <=(Snowflake s1, Snowflake s2)
```

Parameters

s1 [Snowflake](#)

The first [Snowflake](#) to compare.

s2 [Snowflake](#)

The second [Snowflake](#) to compare.

Returns

[bool](#)

true if the first [Snowflake](#) is less than or equal to the second [Snowflake](#); otherwise, **false**.

Exceptions

[SnowflakesUsingDifferentEpochsException](#)

Thrown when comparing [Snowflake](#) objects generated using different epochs.

Class SnowflakeIDGenerator

Namespace: [SnowflakeID](#)

Assembly: SnowflakeIDGenerator.dll

Generator class for [Snowflake](#).

This keeps track of time, machine number and sequence.

```
public class SnowflakeIDGenerator : ISnowflakeIDGenerator, ISnowflakeIDGeneratorClsCompliant
```

Inheritance

[object](#) ← SnowflakeIDGenerator

Implements

[ISnowflakeIDGenerator](#), [ISnowflakeIDGeneratorClsCompliant](#)

Inherited Members

[object.ToString\(\)](#), [object.Equals\(object\)](#), [object.Equals\(object, object\)](#),
[object.ReferenceEquals\(object, object\)](#), [object.GetHashCode\(\)](#), [object.GetType\(\)](#),
[object.MemberwiseClone\(\)](#)

Remarks

[NuGet](#)

[Source](#)

[API](#)

[Site](#)

Constructors

SnowflakeIDGenerator(int)

Creates a SnowflakeIDGenerator for a given machine number.

```
public SnowflakeIDGenerator(int machineId)
```

Parameters

`machineId` [int](#)

Machine number

Remarks

This constructor initializes the generator with a specific machine ID and uses the default epoch date. It ensures that the machine ID is within the valid range and sets the initial timestamp to prevent overflow issues.

Exceptions

[ArgumentOutOfRangeException](#)

Thrown when `machineId` is greater than or equal to [MaxMachineId](#).

SnowflakeIDGenerator(int, DateTime)

Creates a SnowflakeIDGenerator for a given machine number using a custom date as epoch.

```
public SnowflakeIDGenerator(int machineId, DateTime customEpoch)
```

Parameters

`machineId` [int](#)

Machine number

`customEpoch` [DateTime](#)

Date to use as epoch

Remarks

This constructor initializes the generator with a specific machine ID and a custom epoch date. It ensures that the machine ID is within the valid range and sets the initial timestamp to prevent overflow issues.

Exceptions

[ArgumentOutOfRangeException](#)

Thrown when `machineId` is greater than or equal to [MaxMachineId](#).

SnowflakeIDGenerator(ulong)

Creates a SnowflakeIDGenerator for a given machine number.

```
[CLSCompliant(false)]  
public SnowflakeIDGenerator(ulong machineId)
```

Parameters

`machineId` [ulong](#) 

Machine number

Remarks

This constructor initializes the generator with a specific machine ID and uses the default epoch date. It ensures that the machine ID is within the valid range and sets the initial timestamp to prevent overflow issues.

Exceptions

[ArgumentOutOfRangeException](#) 

Thrown when `machineId` is greater than or equal to [MaxMachineId](#).

SnowflakeIDGenerator(ulong, DateTime)

Creates a SnowflakeIDGenerator for a given machine number using a custom date as epoch.

```
[CLSCompliant(false)]  
public SnowflakeIDGenerator(ulong machineId, DateTime customEpoch)
```

Parameters

`machineId` [ulong](#) 

Machine number

`customEpoch` [DateTime](#)

Date to use as epoch

Remarks

This constructor initializes the generator with a specific machine ID and a custom epoch date. It ensures that the machine ID is within the valid range and sets the initial timestamp to prevent overflow issues.

Exceptions

[ArgumentOutOfRangeException](#)

Thrown when `machineId` is greater than or equal to [MaxMachineId](#).

Properties

ConfiguredEpoch

Gets the date configured as the epoch for the generator.

```
public DateTime ConfiguredEpoch { get; }
```

Property Value

[DateTime](#)

The [DateTime](#) value representing the custom epoch date.

Remarks

The epoch date is used as the starting point for generating unique IDs.

ConfiguredMachineId

Gets the configured machine ID for the generator.

```
public int ConfiguredMachineId { get; }
```

Property Value

[int](#)

The [int](#) value representing the machine ID.

Remarks

The machine ID is used to ensure uniqueness across different instances of the generator.

Methods

GetCode()

Gets the next Snowflake ID as a number.

```
[CLSCompliant(false)]  
public ulong GetCode()
```

Returns

[ulong](#)

A [ulong](#) representing the next Snowflake ID.

Remarks

This method generates a new Snowflake ID and returns it as a numeric value.

If a loosely typed language (or a language that doesn't differentiate between number types, i.e.: Typescript) is part of your workflow, use [GetCodeString\(\)](#) to avoid issues regarding floating-point underflow and rounding.

GetCode(ulong)

Static method to get the next Snowflake ID as a number for a given machine ID.

```
[CLSCompliant(false)]  
public static ulong GetCode(ulong machineId)
```


Parameters

machineId [ulong](#)

The machine ID as a [ulong](#).

Returns

[ulong](#)

A [ulong](#) representing the next Snowflake ID.

Remarks

This method generates a new Snowflake ID and returns it as a numeric value.

If a loosely typed language (or a language that doesn't differentiate between number types, i.e.: Typescript) is part of your workflow, use [GetCodeString\(ulong\)](#) to avoid issues regarding floating-point underflow and rounding.

GetCode(ulong, DateTime)

Static method to get the next Snowflake ID as a number for a given machine ID using a custom epoch date.

```
[CLSCompliant(false)]  
public static ulong GetCode(ulong machineId, DateTime customEpoch)
```

Parameters

machineId [ulong](#)

The machine ID as a [ulong](#).

customEpoch [DateTime](#)

The custom epoch date as a [DateTime](#).

Returns

[ulong](#)

A [ulong](#) representing the next Snowflake ID.

Remarks

This method generates a new Snowflake ID and returns it as a numeric value.

If a loosely typed language (or a language that doesn't differentiate between number types, i.e.: Typescript) is part of your workflow, use [GetCodeString\(ulong, DateTime\)](#) to avoid issues regarding floating-point underflow and rounding.

GetCodeString()

Gets the next Snowflake ID as a string.

```
public string GetCodeString()
```

Returns

[string](#)

A [string](#) representing the next Snowflake ID.

Remarks

This method generates a new Snowflake ID and returns it as a string value.

GetCodeString(int)

Gets the next Snowflake ID as a string for a given machine ID.

```
public static string GetCodeString(int machineId)
```

Parameters

machineId [int](#)

The machine ID as an [int](#).

Returns

[string](#)

A [string](#) representing the next Snowflake ID.

GetCodeString(int, DateTime)

Gets the next Snowflake ID as a string for a given machine ID using a custom epoch date.

```
public static string GetCodeString(int machineId, DateTime customEpoch)
```

Parameters

machineId [int](#)

The machine ID as an [int](#).

customEpoch [DateTime](#)

The custom epoch date as a [DateTime](#).

Returns

[string](#)

A [string](#) representing the next Snowflake ID.

GetCodeString(ulong)

Gets the next Snowflake ID as a string for a given machine ID.

```
[CLSCompliant(false)]  
public static string GetCodeString(ulong machineId)
```

Parameters

machineId [ulong](#)

The machine ID as a [ulong](#).

Returns

[string](#)

A [string](#) representing the next Snowflake ID.

GetCodeString(ulong, DateTime)

Gets the next Snowflake ID as a string for a given machine ID using a custom epoch date.

```
[CLSCompliant(false)]  
public static string GetCodeString(ulong machineId, DateTime customEpoch)
```

Parameters

machineId [ulong](#)

The machine ID as a [ulong](#).

customEpoch [DateTime](#)

The custom epoch date as a [DateTime](#).

Returns

[string](#)

A [string](#) representing the next Snowflake ID.

GetSnowflake()

Generates the next Snowflake ID.

```
public Snowflake GetSnowflake()
```

Returns

[Snowflake](#)

A [Snowflake](#) object containing the generated ID.

Exceptions

[InvalidOperationException](#)

Thrown when the system clock is moved backwards.

GetSnowflake(int)

Static method to get the next Snowflake ID for a given machine ID.

```
public static Snowflake GetSnowflake(int machineId)
```

Parameters

machineId [int](#)

The machine ID as an [int](#).

Returns

[Snowflake](#)

A [Snowflake](#) object containing the generated ID.

GetSnowflake(int, DateTime)

Static method to get the next Snowflake ID for a given machine ID using a custom epoch date.

```
public static Snowflake GetSnowflake(int machineId, DateTime customEpoch)
```

Parameters

machineId [int](#)

The machine ID as an [int](#).

customEpoch [DateTime](#)

The custom epoch date as a [DateTime](#).

Returns

[Snowflake](#)

A [Snowflake](#) object containing the generated ID.

GetSnowflake(ulong)

Static method to get the next Snowflake ID for a given machine ID.

```
[CLSCompliant(false)]  
public static Snowflake GetSnowflake(ulong machineId)
```

Parameters

machineId [ulong](#)

The machine ID as a [ulong](#).

Returns

[Snowflake](#)

A [Snowflake](#) object containing the generated ID.

Remarks

This method generates a new Snowflake ID and returns it as a [Snowflake](#) object.

GetSnowflake(ulong, DateTime)

Static method to get the next Snowflake ID for a given machine ID using a custom epoch date.

```
[CLSCompliant(false)]  
public static Snowflake GetSnowflake(ulong machineId, DateTime customEpoch)
```

Parameters

machineId [ulong](#)

The machine ID as a [ulong](#).

customEpoch [DateTime](#)↗

The custom epoch date as a [DateTime](#)↗.

Returns

[Snowflake](#)

A [Snowflake](#) object containing the generated ID.

Class SnowflakeIdGeneratorOptions

Namespace: [SnowflakeID](#)

Assembly: SnowflakeIDGenerator.DependencyInjection.dll

Option object for [SnowflakeIDGenerator](#).

```
public class SnowflakeIdGeneratorOptions
```

Inheritance

[object](#)  ← SnowflakeIdGeneratorOptions

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#) 

Properties

Epoch

Gets or sets the epoch date as a string.


```
public string Epoch { get; set; }
```

Property Value

[string](#) 

The epoch date as a string in ISO 8601 format.

Remarks

This property allows setting the epoch date using a string representation. The date is parsed and stored internally as a [DateTime](#)  object in UTC.

MachineId

Gets or sets the machine ID.


```
public int MachineId { get; set; }
```

Property Value

[int](#)

The machine ID as an [int](#).

Class

SnowflakeIdGeneratorServiceCollectionExtensions


Namespace: [SnowflakeId](#)

Assembly: SnowflakeIdGenerator.DependencyInjection.dll








Extension methods to register [SnowflakeIdGenerator](#) services.

```
public static class SnowflakeIdGeneratorServiceCollectionExtensions
```

Inheritance

[object](#)  ← SnowflakeIdGeneratorServiceCollectionExtensions

Inherited Members

[object.Equals\(object\)](#)  , [object.Equals\(object, object\)](#)  , [object.GetHashCode\(\)](#)  , [object.GetType\(\)](#)  , [object.MemberwiseClone\(\)](#)  , [object.ReferenceEquals\(object, object\)](#)  , [object.ToString\(\)](#) 

Remarks

[NuGet](#) 

[Source](#) 

[API](#) 

[Site](#) 

Methods

AddSnowflakeIdGeneratorService(IServiceCollection)

Registers a [SnowflakeIdGenerator](#) in [ISnowflakeIdGenerator](#).

```
public static IServiceCollection AddSnowflakeIdGeneratorService(this  
IServiceCollection serviceCollection)
```

Parameters

serviceCollection [IServiceCollection](#)

The [IServiceCollection](#) to add services to.

Returns

[IServiceCollection](#)

The updated [IServiceCollection](#).

AddSnowflakeIdGeneratorService(IServiceCollection, SnowflakeIdGeneratorOptions)

Registers a [SnowflakeIdGenerator](#) in [ISnowflakeIdGenerator](#).

```
public static IServiceCollection AddSnowflakeIdGeneratorService(this IServiceCollection
serviceCollection, SnowflakeIdGeneratorOptions options)
```

Parameters

serviceCollection [IServiceCollection](#)

The [IServiceCollection](#) to add services to.

options [SnowflakeIdGeneratorOptions](#)

Option object. Useful when obtaining from IConfigurationSection.

Returns

[IServiceCollection](#)

The updated [IServiceCollection](#).

AddSnowflakeIdGeneratorService(IServiceCollection, int)

Registers a [SnowflakeIdGenerator](#) in [ISnowflakeIdGenerator](#).

```
public static IServiceCollection AddSnowflakeIdGeneratorService(this IServiceCollection
serviceCollection, int machineId)
```

Parameters

serviceCollection [IServiceCollection](#)

The [IServiceCollection](#) to add services to.

machineId [int](#)

Machine number.

Returns

[IServiceCollection](#)

The updated [IServiceCollection](#).

AddSnowflakeIdGeneratorService(IServiceCollection, int, DateTime)

Registers a [SnowflakeIdGenerator](#) in [ISnowflakeIdGenerator](#).

```
public static IServiceCollection AddSnowflakeIdGeneratorService(this IServiceCollection  
serviceCollection, int machineId, DateTime customEpoch)
```

Parameters

serviceCollection [IServiceCollection](#)

The [IServiceCollection](#) to add services to.

machineId [int](#)

Machine number.

customEpoch [DateTime](#)

Date to use as epoch.

Returns

[IServiceCollection](#)

The updated [IServiceCollection](#).

AddSnowflakeIdGeneratorService(IServiceCollection, long, DateTime)

Registers a [SnowflakeIdGenerator](#) in [ISnowflakeIdGenerator](#).

```
public static IServiceCollection AddSnowflakeIdGeneratorService(this IServiceCollection  
serviceCollection, long machineId, DateTime customEpoch)
```

Parameters

serviceCollection [IServiceCollection](#)

The [IServiceCollection](#) to add services to.

machineId [long](#)

Machine number.

customEpoch [DateTime](#)

Date to use as epoch.

Returns

[IServiceCollection](#)

The updated [IServiceCollection](#).

AddSnowflakeIdGeneratorService(IServiceCollection, ulong)

Registers a [SnowflakeIdGenerator](#) in [ISnowflakeIdGenerator](#).

```
public static IServiceCollection AddSnowflakeIdGeneratorService(this IServiceCollection  
serviceCollection, ulong machineId)
```

Parameters

serviceCollection [IServiceCollection](#)

The [IServiceCollection](#) to add services to.

`machineId` [ulong](#)

Machine number.

Returns

[IServiceCollection](#)

The updated [IServiceCollection](#).

AddSnowflakeIdGeneratorService(IServiceCollection, ulong, DateTime)

Registers a [SnowflakeIdGenerator](#) in [ISnowflakeIdGenerator](#).

```
public static IServiceCollection AddSnowflakeIdGeneratorService(this IServiceCollection  
serviceCollection, ulong machineId, DateTime customEpoch)
```

Parameters

`serviceCollection` [IServiceCollection](#)

The [IServiceCollection](#) to add services to.

`machineId` [ulong](#)

Machine number.

`customEpoch` [DateTime](#)

Date to use as epoch.

Returns

[IServiceCollection](#)

The updated [IServiceCollection](#).

Namespace SnowflakeID.Exceptions

Classes

[SnowflakesUsingDifferentEpochsException](#)

Exception thrown when trying to compare IDs using different epochs.

Class

SnowflakesUsingDifferentEpochsException

Namespace: [SnowflakeID.Exceptions](#)

Assembly: SnowflakeIDGenerator.dll

Exception thrown when trying to compare IDs using different epochs.

```
[Serializable]  
public class SnowflakesUsingDifferentEpochsException : ArgumentException,  
    _Exception, ISerializable
```

Inheritance



















[object](#)  ← [Exception](#)  ← [SystemException](#)  ← [ArgumentException](#)  ←

SnowflakesUsingDifferentEpochsException

Implements

[_Exception](#) , [ISerializable](#) 

Inherited Members

[ArgumentException.GetObjectData\(SerializationInfo, StreamingContext\)](#) ,
[ArgumentException.Message](#) , [ArgumentException.ParamName](#) , [Exception.GetBaseException\(\)](#) ,
[Exception.ToString\(\)](#) , [Exception.GetType\(\)](#) , [Exception.Data](#) , [Exception.InnerException](#) ,
[Exception.TargetSite](#) , [Exception.StackTrace](#) , [Exception.HelpLink](#) , [Exception.Source](#) ,
[Exception.HResult](#) , [object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) ,
[object.ReferenceEquals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.MemberwiseClone\(\)](#) 

Constructors

SnowflakesUsingDifferentEpochsException()

Initializes a new instance of the [SnowflakesUsingDifferentEpochsException](#) class.

```
public SnowflakesUsingDifferentEpochsException()
```


SnowflakesUsingDifferentEpochsException(SerializationInfo, StreamingContext)

Initializes a new instance of the [SnowflakesUsingDifferentEpochsException](#) class with serialized data.

```
protected SnowflakesUsingDifferentEpochsException(SerializationInfo serializationInfo,  
StreamingContext streamingContext)
```

Parameters

serializationInfo [SerializationInfo](#) 

The object that holds the serialized object data.

streamingContext [StreamingContext](#) 

The contextual information about the source or destination.

SnowflakesUsingDifferentEpochsException(string)

Initializes a new instance of the [SnowflakesUsingDifferentEpochsException](#) class with a specified error message.

```
public SnowflakesUsingDifferentEpochsException(string message)
```

Parameters

message [string](#) 

The error message that explains the reason for the exception.

SnowflakesUsingDifferentEpochsException(string, Exception)

Initializes a new instance of the [SnowflakesUsingDifferentEpochsException](#) class with a specified error message and a reference to the inner exception that is the cause of this exception.

```
public SnowflakesUsingDifferentEpochsException(string message, Exception innerException)
```

Parameters

message [string](#)

The error message that explains the reason for the exception.

innerException [Exception](#)

The exception that is the cause of the current exception.

SnowflakesUsingDifferentEpochsException(string, string)

Initializes a new instance of the [SnowflakesUsingDifferentEpochsException](#) class with a specified error message and the name of the parameter that causes this exception.

```
public SnowflakesUsingDifferentEpochsException(string message, string paramName)
```

Parameters

message [string](#)

The error message that explains the reason for the exception.

paramName [string](#)

The name of the parameter that caused the current exception.

SnowflakesUsingDifferentEpochsException(string, string, Exception)

Initializes a new instance of the [SnowflakesUsingDifferentEpochsException](#) class with a specified error message, the parameter name, and a reference to the inner exception that is the cause of this exception.

```
public SnowflakesUsingDifferentEpochsException(string message, string paramName, Exception innerException)
```

Parameters

message [string](#)

The error message that explains the reason for the exception.

`paramName` [string](#)

The name of the parameter that caused the current exception.

`innerException` [Exception](#)

The exception that is the cause of the current exception.

Fields

DefaultMessage

Default message for the exception.

```
public const string DefaultMessage = "When comparing SnowflakeIds, both should be using the  
same epoch for the comparison to make sense."
```

Field Value

[string](#)

Namespace SnowflakeID.Helpers

Classes

[GlobalConstants](#)

Global constants used throughout the Snowflake ID generator.

Class GlobalConstants


Namespace: [SnowflakeID.Helpers](#)

Assembly: SnowflakeIDGenerator.dll








Global constants used throughout the Snowflake ID generator.

```
public static class GlobalConstants
```

Inheritance

[object](#)  ← GlobalConstants

Inherited Members

[object.ToString\(\)](#)  , [object.Equals\(object\)](#)  , [object.Equals\(object, object\)](#)  ,
[object.ReferenceEquals\(object, object\)](#)  , [object.GetHashCode\(\)](#)  , [object.GetType\(\)](#)  ,
[object.MemberwiseClone\(\)](#) 

Fields

DefaultEpoch

The default date used as the epoch if not configured.

```
public static readonly DateTime DefaultEpoch
```

Field Value

[DateTime](#) 

Remarks

This is set to Unix Epoch (January 1, 1970).