

# Using the JavaScript Distribution

This page provides important information for users of the Ice for JavaScript distribution.

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## Overview of the Ice for JavaScript Distribution

Ice for JavaScript is available as npm and bower packages. The following npm packages are provided for Node.js developers:

- [ice](#) - Ice for JavaScript run time
- [slice2js](#) - Slice-to-JavaScript compiler
- [gulp-ice-builder](#) - Gulp plug-in to integrate `slice2js` with the gulp build system

The following bower package is provided for developers of browser-based applications:

- [bower-ice](#) - Ice for JavaScript run time

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## Installing the Ice for JavaScript Distribution

### Using NPM

Install the Ice for JavaScript run time libraries using npm:

```
npm install ice --save
```

This package also includes the browser version of Ice for JavaScript in `node_modules/lib`.

### Using CDN

Ice for JavaScript browser libraries are available at <https://cdnjs.com/libraries/ice/3.7.0>

### Slice-to-JavaScript Compiler

The Slice-to-JavaScript compiler (`slice2js`) can be installed with this command:

```
npm install --save-dev slice2js
```

This command builds the compiler from source therefore you must have a supported C++ compiler installed.



In order to use `slice2js` on the command line, use the `npm --global` option to install this package.

The `slice2js` package includes all of the standard Slice files and automatically adds the slice directory to the include file search path.

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## Using Ice for JavaScript

The Ice manual provides a complete description of the [JavaScript mapping](#).

### Node.js Applications

You can use several top-level Ice packages in your Node.js applications, as shown below:

#### JavaScript

```
var Ice      = require('ice').Ice;
var Glacier2 = require('ice').Glacier2;
var IceStorm = require('ice').IceStorm;
var IceGrid  = require('ice').IceGrid;

var communicator = Ice.initialize(process.argv);
var proxy = communicator.stringToProxy("hello:tcp -h localhost -p 10000");
```

## Browser Applications

Add the necessary `<script>` tags to your html to include the Ice for JavaScript components you require:

```
<script src="https://cdnjs.cloudflare.com/ajax/libs/ice/3.7.0/Ice.js"></script>
<script src="https://cdnjs.cloudflare.com/ajax/libs/ice/3.7.0/Glacier2.js"></script>
<script src="https://cdnjs.cloudflare.com/ajax/libs/ice/3.7.0/IceStorm.js"></script>
<script src="https://cdnjs.cloudflare.com/ajax/libs/ice/3.7.0/IceGrid.js"></script>
<script type="text/javascript">

var communicator = Ice.initialize();
var proxy = communicator.stringToProxy("hello:ws -h localhost -p 10002");
</script>
```

For older browsers that do not support all of the required EcmaScript 6 features used by Ice for JavaScript, we provide a pre-compiled version of the libraries using the [Babel](#) JavaScript compiler. These libraries depend on the babel polyfill run time and are available in the es5 subdirectory with the same names as the main libraries:

```
<script src="https://cdnjs.cloudflare.com/ajax/libs/babel-polyfill/6.23.0/polyfill.min.js"></script>
<script src="https://cdnjs.cloudflare.com/ajax/libs/ice/3.7.0/es5/Ice.js"></script>
<script src="https://cdnjs.cloudflare.com/ajax/libs/ice/3.7.0/es5/Glacier2.js"></script>
<script src="https://cdnjs.cloudflare.com/ajax/libs/ice/3.7.0/es5/IceStorm.js"></script>
<script src="https://cdnjs.cloudflare.com/ajax/libs/ice/3.7.0/es5/IceGrid.js"></script>
<script type="text/javascript">

var communicator = Ice.initialize();
var proxy = communicator.stringToProxy("hello:ws -h localhost -p 10002");
</script>
```

Minified versions are available with the `.min.js` extension.

## Slice-to-JavaScript Compiler

You can execute the Slice-to-JavaScript compiler from code as shown below:

#### JavaScript

```
var slice2js = require('slice2js');
slice2js.compile(["Hello.ice"]);
```

If you installed the `slice2js` package globally, you can also run `slice2js` on the command line.

Refer to the [manual](#) for a description of the arguments accepted by `slice2js`.

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## Using the Sample Programs

The Ice sample programs are provided in a [GitHub repository](#). You can browse this repository to see build and usage instructions for all supported programming languages. Simply clone this repository:

```
git clone -b 3.7 https://github.com/zeroc-ice/ice-demos.git
cd ice-demos
```

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