Intel Do-It-Yourself Challenge node.js

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Software

Why OpenCV and node.js ?

Arduino ... and more

The typical way to use an Arduino board is to compile and upload sketches. But the Galileo has a powerful Quark processor with Ethernet and WiFi links.

Processor

With a fast processor, you can process images, sound, data from sensors on the board itself. Here we'll use the computer vision library OpenCV.
Originally developed by Intel, it is now Open Source.

Network

We'll use the node.js framework to use network capabilities. Node.js is built on the Chrome JS runtime.

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You'll need

Ethernet and ssh

You'll need a Galileo board with the network configured.
You should be able to connect to the board with ssh.
Both WiFi and Ethernet are OK.
To transfer files between your PC and the board you can use the "scp" command on linux or Filezilla on Windows.

C/C++ development environment

For OpenCV you may edit, compile and execute on the Galileo itself. But it's faster to develop on your computer and upload the binary to the Galileo for execution.

node.js

node.js Hello World

Goal

Node.js is a framework using the Chrome JavaScript runtime and used to communicate over networks.

Here we'll create a web server listening on a port and answering "HelloWorld" in your browser.

Steps

Create a folder, copy paste the content of the next slide in a file called "hello.js"

Replace the X.X.X.X IP in the file with your board IP.

node.js Hello World

```
var http = require('http');
http.createServer(
  function (req, res) {
    res.writeHead(200,{'Content-Type': 'text/plain'});
    res.end('Hello World\n');
  }
).listen(1337, 'X.X.X.X');
console.log('Server running at http://X.X.X.X:1337/');
```

node.js Hello World

Launch the server

Launch the command : "node hello.js"

See the result

From a PC on the same network, launch a browser with : http://X.X.X.X:1337

You should see "Hello World"

Why is node.js so good ?
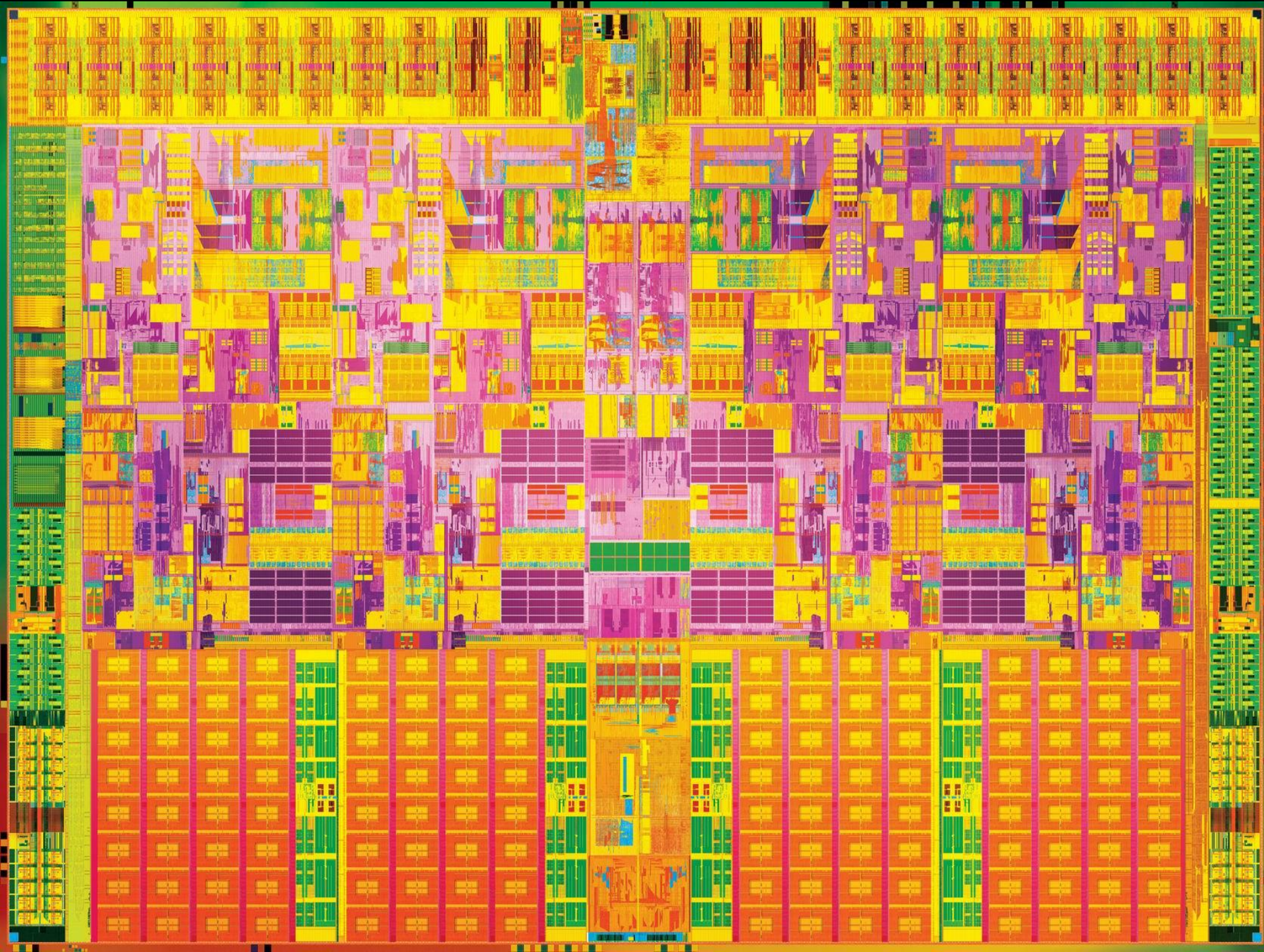
What is node.js exactly ?

NodeJS is a server-side Javascript solution, written in C.
It allows programmers to write JavaScript program and to execute than as a standalone application on a server.

What should I do ?

You easily develop server application,
typing less than 20 lines of code ! http://nodejs.org

NodeJS is very fast : non-blocking, asynchronous architecture! It's a way to be able to provide complex tools by using a simple and powerful high level language.

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