

# CARTAgO Getting Started

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# Chapter 1

## Getting Started

### 1.1 CArtAgO Distribution

CArtAgO 2.0 distribution contains the source code and the binaries of the CArtAgO framework infrastructure, including also bridges to agent programming platforms available by default – currently, for version 2.0, only the *Jason* bridge is available.

The distribution includes the following folders:

- `src`
  - `main` – this folder contains the source code of CArtAgO
  - `bridges` – this folder contains the source code of available bridges to use CArtAgO with Agent Programming Languages
- `lib` – this folder contains the Java libraries (JAR) containing the binaries for CArtAgO and available bridges
- `examples`
  - `main` – this folder contains examples related to CArtAgO, with agents developed using the simple Java API
  - `bridges` – this folder contains examples using agents written using existing agent programming languages
- `doc`
  - `getting.started.pdf` – this document
  - `tech-rep-jaamas-2010.pdf` – a technical report describing the environment programming idea and CArtAgO model

- `cartago_by_example.pdf` – this is a tutorial describing the main features of CArtaGO using *Jason* as APL
- `main-api` – this folder contains the Java doc of CArtaGO main sources
- `c4jason-api` – this folder contains the Java doc of the source code of the bridge *Jason*+CArtaGO

## 1.2 Using CArtaGO

### 1.2.1 Using CArtaGO from *Jason*

To use CArtaGO into *Jason* applications, just include in the MAS configuration file:

- `cartago.jar` and `c4jason.jar` libraries in the declared class path;
- the declaration of `c4jason.Environment` as environment;
- the declaration of `c4jason.CAgentArch` as agent architecture, for each agent that needs to work within CArtaGO environment.

For example, consider the first example included in `examples/bridges/jason/example00-hello-world.mas2j`:

```
MAS example00_hello_world {

    environment:
    c4jason.CartagoEnvironment

    agents:
    hello_agent agentArchClass c4jason.CAgentArch;

    classpath: "../.../lib/cartago.jar";"../.../lib/c4jason.jar";
}
```

By default, a CArtaGO node is installed and the specified agents are automatically joined to the default workspace.

### 1.2.2 Using CArtaGO in Java

To use CArtaGO with simple Java agents, just include `cartago.jar` in the classpath. Then, `CartagoService` class provides the basic API to start a node and open a working session inside. By starting a session (method

startSession), an object implementing the ICartagoSession interface is returned, to act inside the workspace. For instance, consider the first example included in examples/main/examples, Ex00a\_HelloWorld:

```
package examples;

import cartago.*;
import cartago.security.*;

public class Ex00a_HelloWorld {

    public static void main(String[] args) throws Exception {
        CartagoService.startNode();
        ICartagoSession session = CartagoService.startSession("default",
            new AgentIdCredential("agent-0"), null);
        session.doAction(new Op("println","Hello, world!"), null, -1);
    }
}
```

### 1.3 CArtAgO sources on SVN

The up-to-date version of CArtAgO sources is available on SVN repository on Source Forge. The address of the repository is: <http://cartago.svn.sourceforge.net/svnroot/cartago>