About JADE and Code Migration

Fernando G. Tinetti
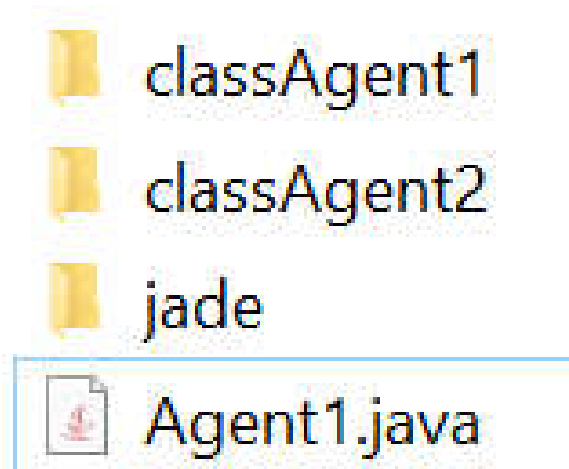
2025

Video at https://youtu.be/7Y6ayOg1R6E

Directories/Folders and File/s

Starting with
(classAgent2 not used
in this sequence)

📁 classAgent1

📁 classAgent2

📁 jade

📄 Agent1.java

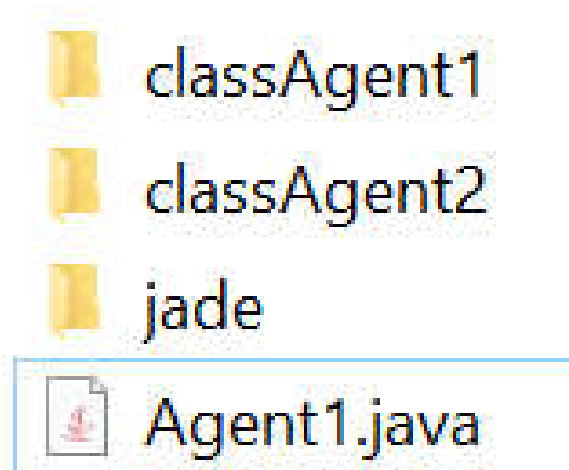# Directories/Folders and File/s

Agent1.java Source Code:

```
>more .\Agent1.java
import jade.core.*;

public class Agent1 extends Agent
{
  // Run once at creation
  public void setup()
  {
    Location location = here();
    System.out.println("\n\nHi, agent with local name " + getLocalName());
    System.out.println("And full name... " + getName());
    System.out.println("At location " + location.getID() + "\n\n");
  }
}
```
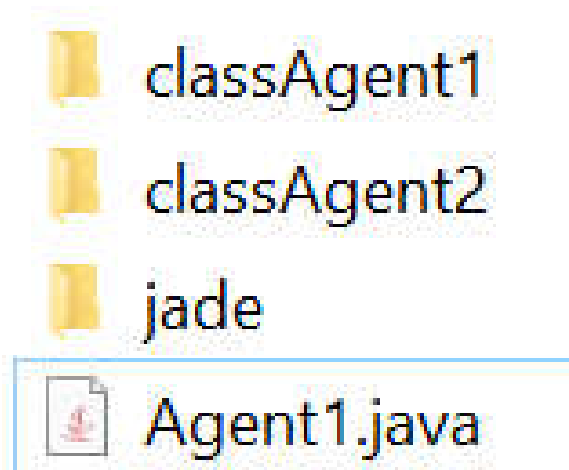
Directories/Folders and File/s

📁 classAgent1

📁 classAgent2

📁 jade

📄 Agent1.java

Compile:

```
>javac -cp jade\4.6.0\jade\lib\jade.jar -d classAgent1 Agent1.java
```

Directories/Folders and File/s

classAgent1

classAgent2

jade
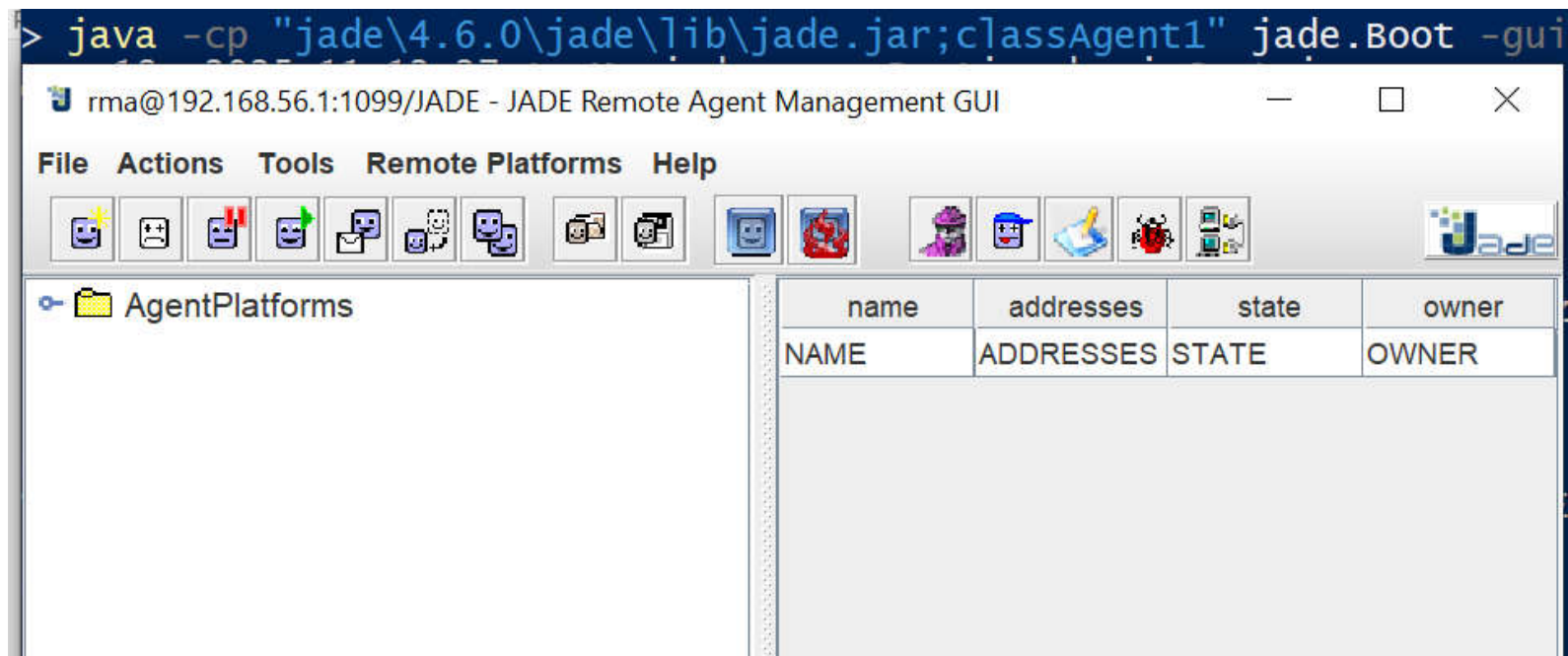
.class generated in the corresponding directory

Agent1.java

```
>dir .\classAgent1\_

    Dir                                              \classAgent1

Mode
----                                         Length Name
                                             ------ ----
-a----                                         1125 Agent1.class
```
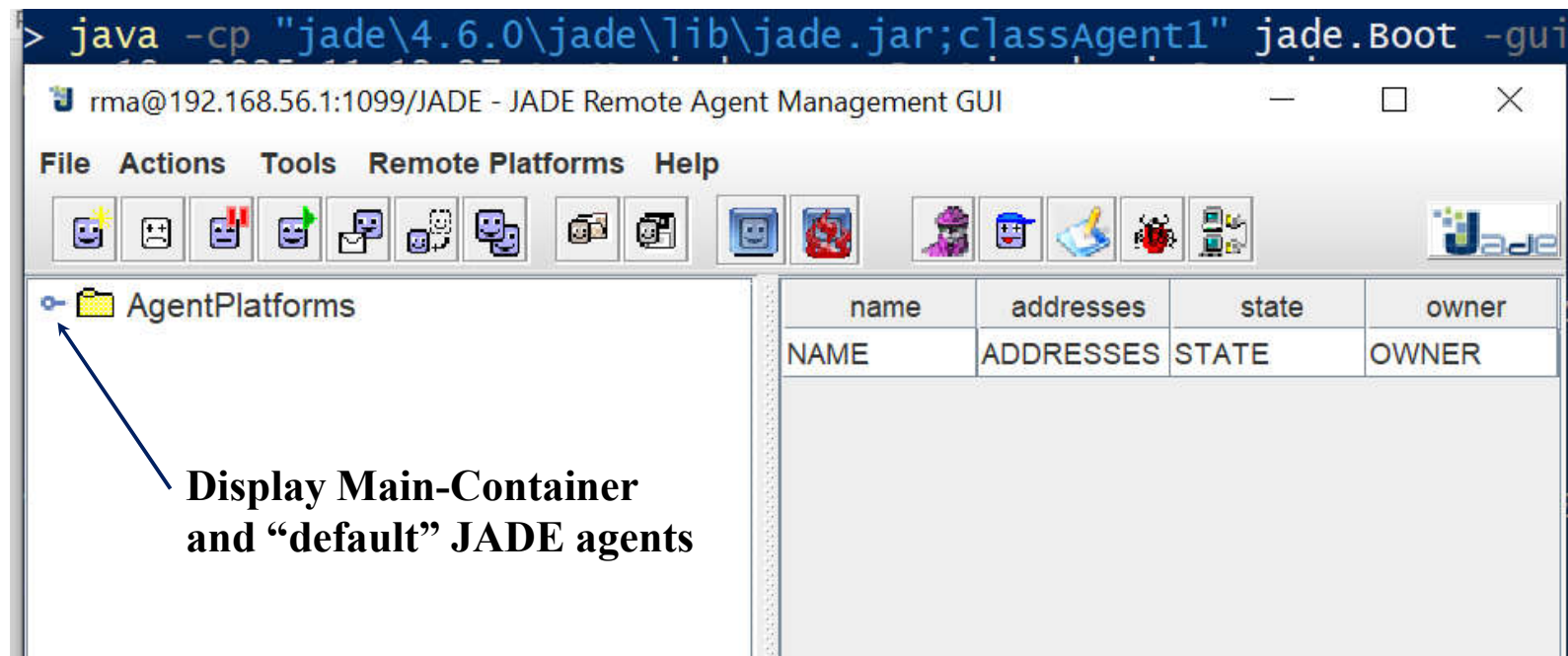
Start JADE Environment and Agent

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Display Main-Container
and "default" JADE agents

Start JADE Environment and Agent

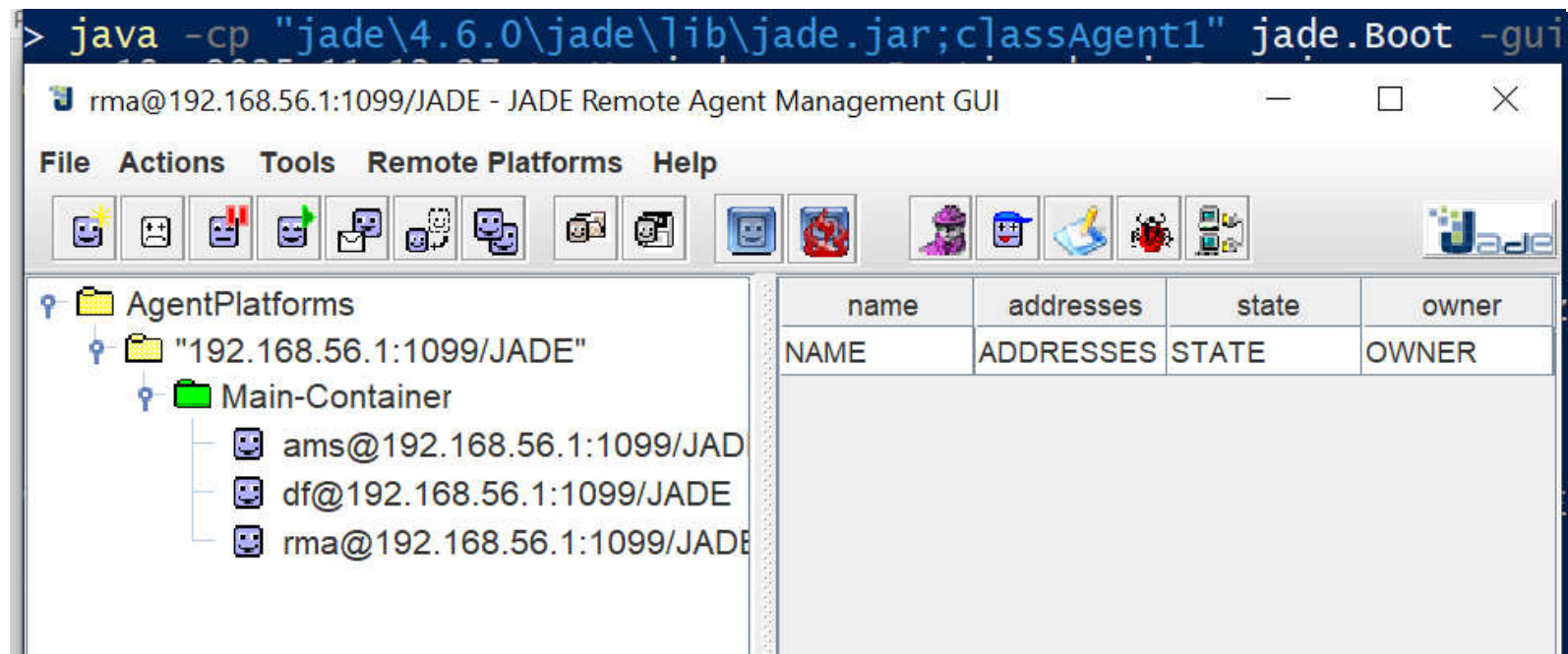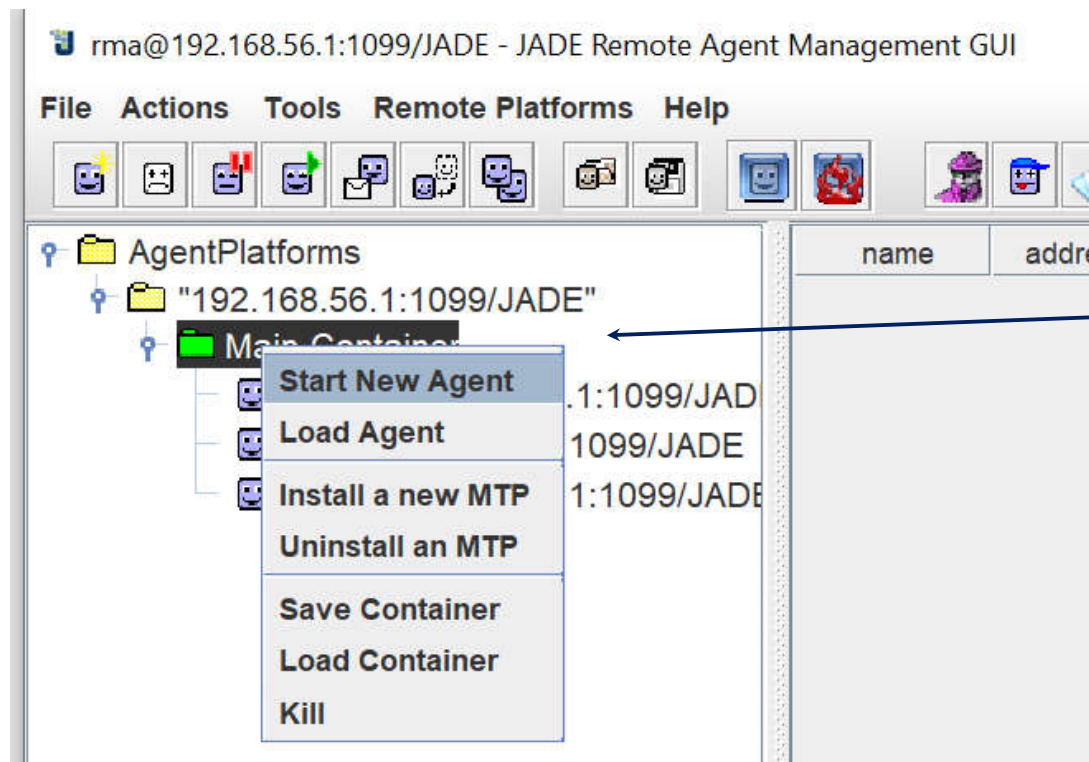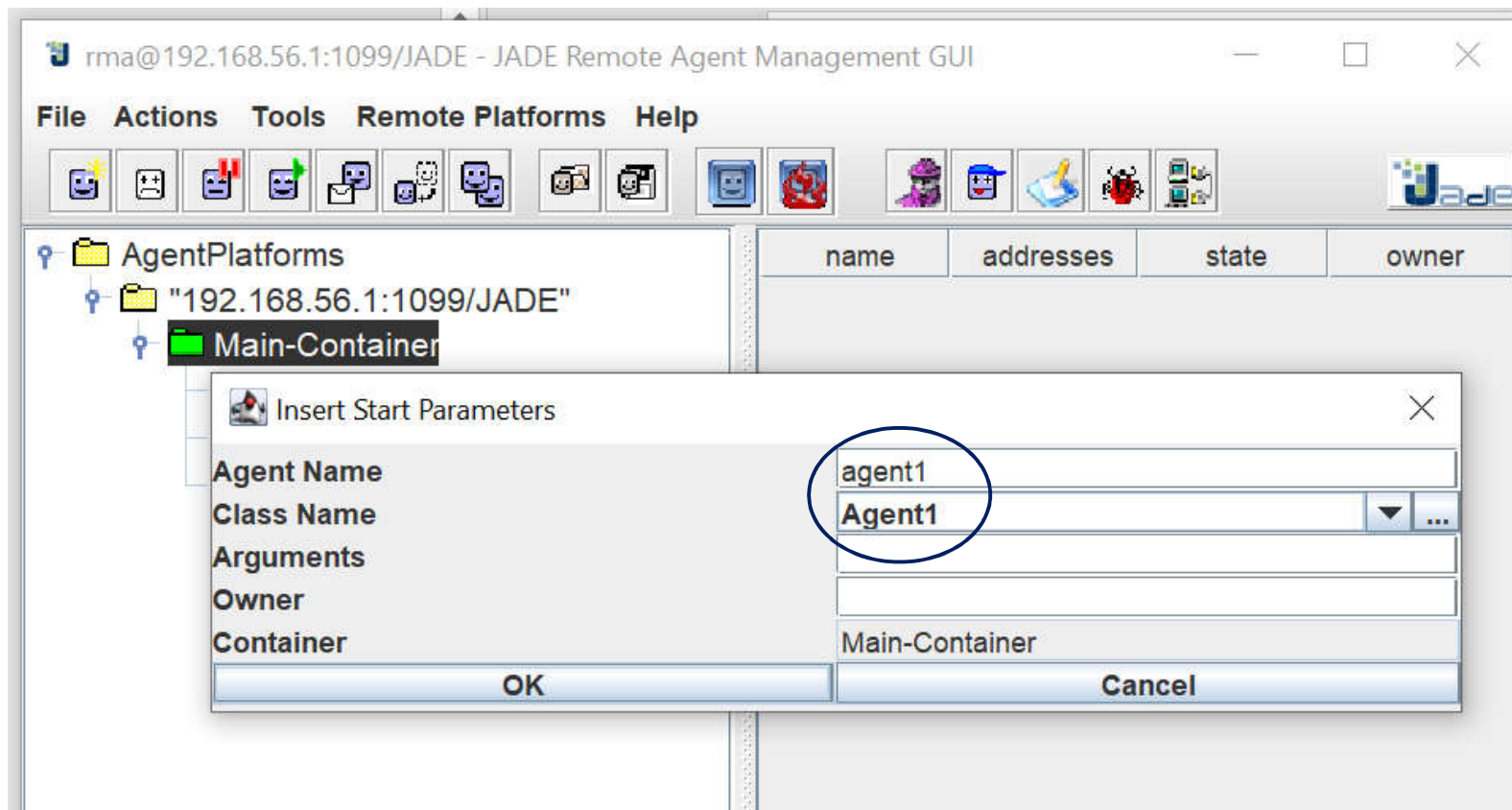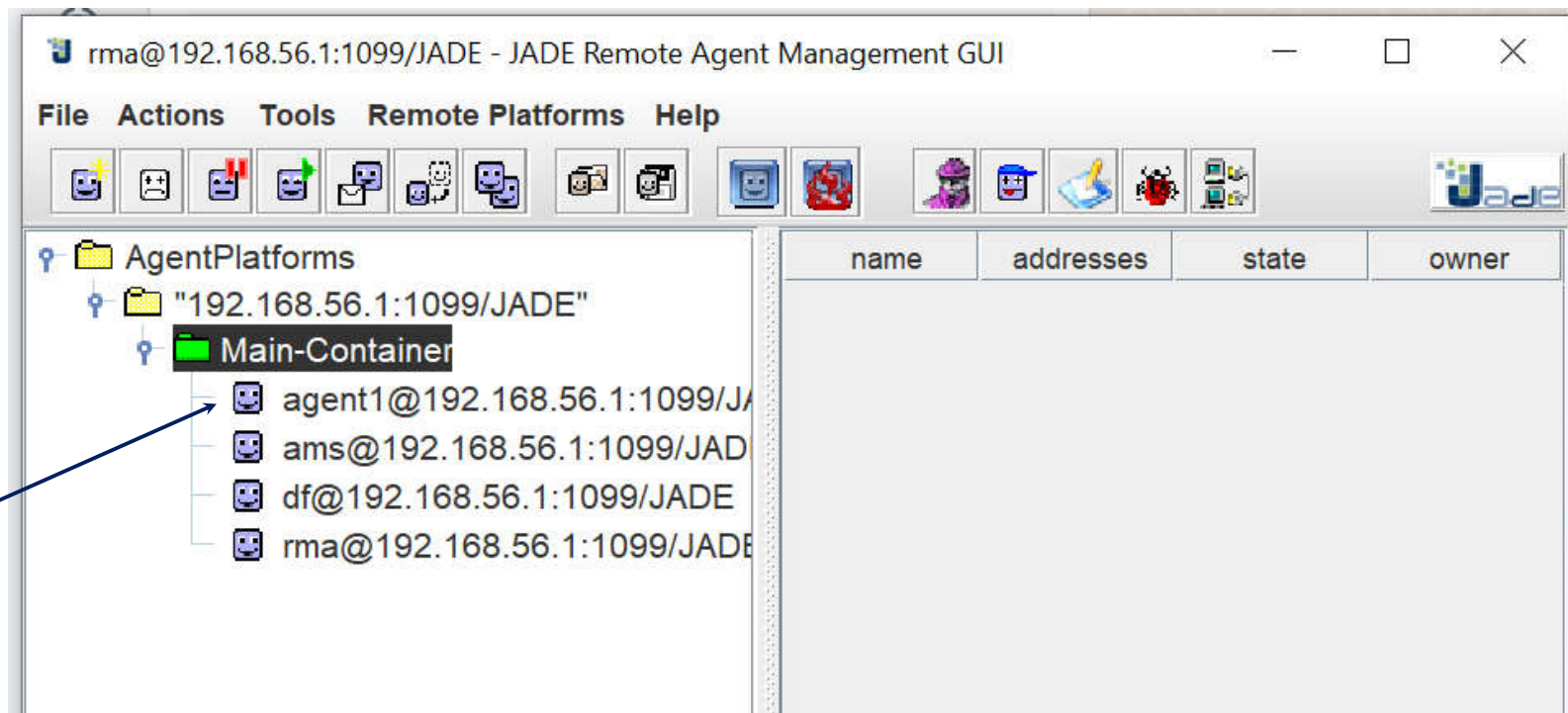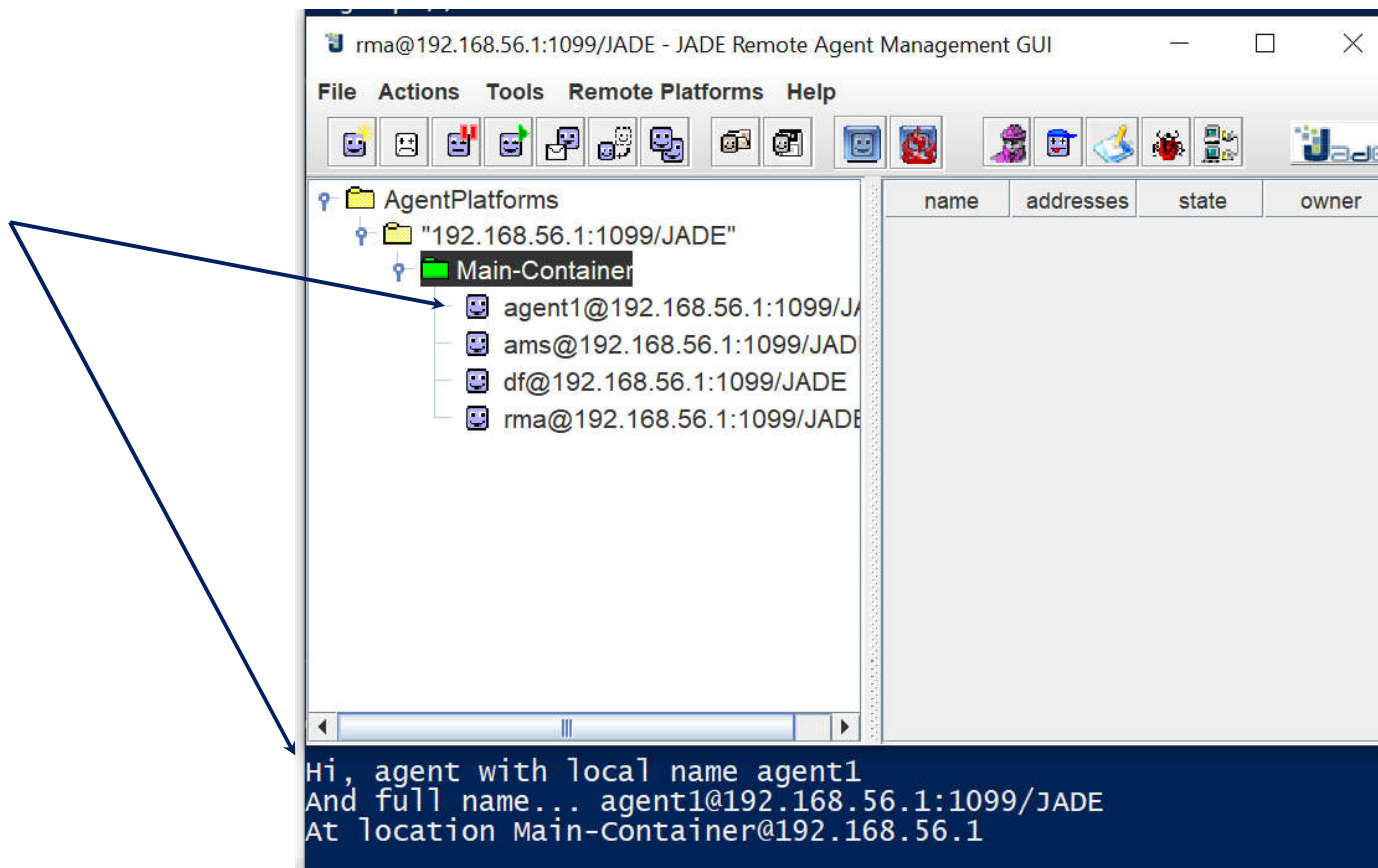# Start JADE Environment and Agent

Mouse right button

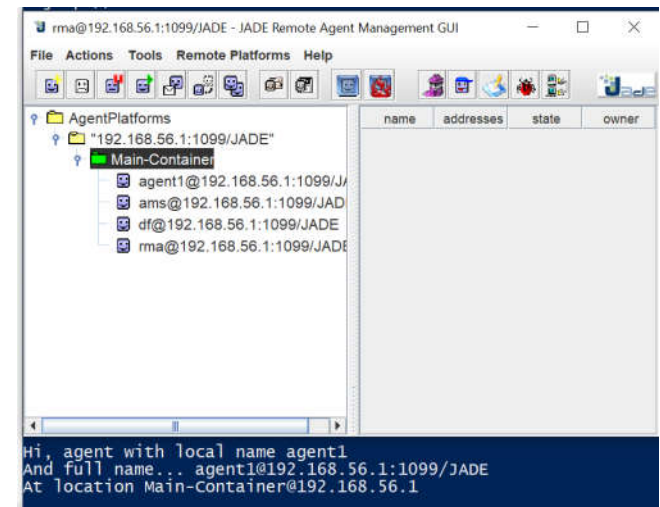# Start JADE Environment and Agent

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Note that the Java environment (JVM):

-Starts JADE with gui according to
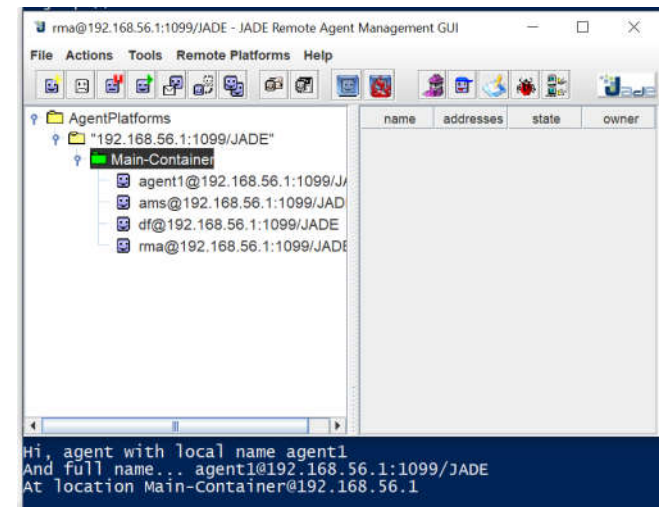
-Finds the agent class using


```
> java -cp "jade\4.6.0\jade\lib\jade.jar;classAgent1" jade.Boot -gui
```

Start JADE Environment and Agent

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-Finds the agent class using


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```
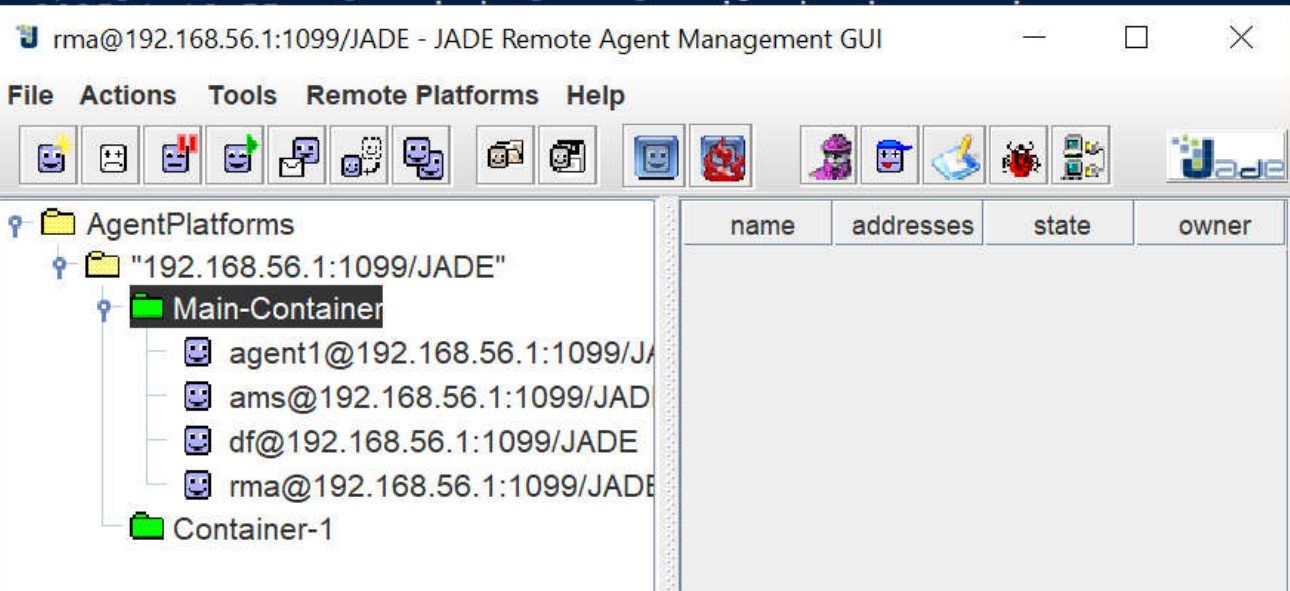
Add Container to the Platform

-Simulates another distributed system site/computer (another JVM, actually, in the same computer)

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```
>java -cp "jade\4.6.0\jade\lib\jade.jar" jade.Boot -container -host localhost
```

JADE Environment

```
INFO:
mar 18      rma@192.168.56.1:1099/JADE
INFO:       Container-1
mar 18
```

Add Container to the Platform

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JADE Environment

JADE Container to be added to a platform with an existing Main-Container

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JADE Environment

JADE Container to be added to a platform with an existing Main-Container

Location at which the JADE Platform Main-Container is currently running

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INFO:          rma@192.168.56.1:1099/JADE
mar 18         Container-1
INFO:
mar 18
```

Add Container to the Platform

-Simulates another distributed system site/computer (another JVM, actually, in the same computer)

```
>
>java -cp "jade\4.6.0\jade\lib\jade.jar" jade.Boot -container -host localhost
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JADE Environment

JADE Container to be added to a platform with an existing Main-Container

Location at which the JADE Platform Main-Container is currently running

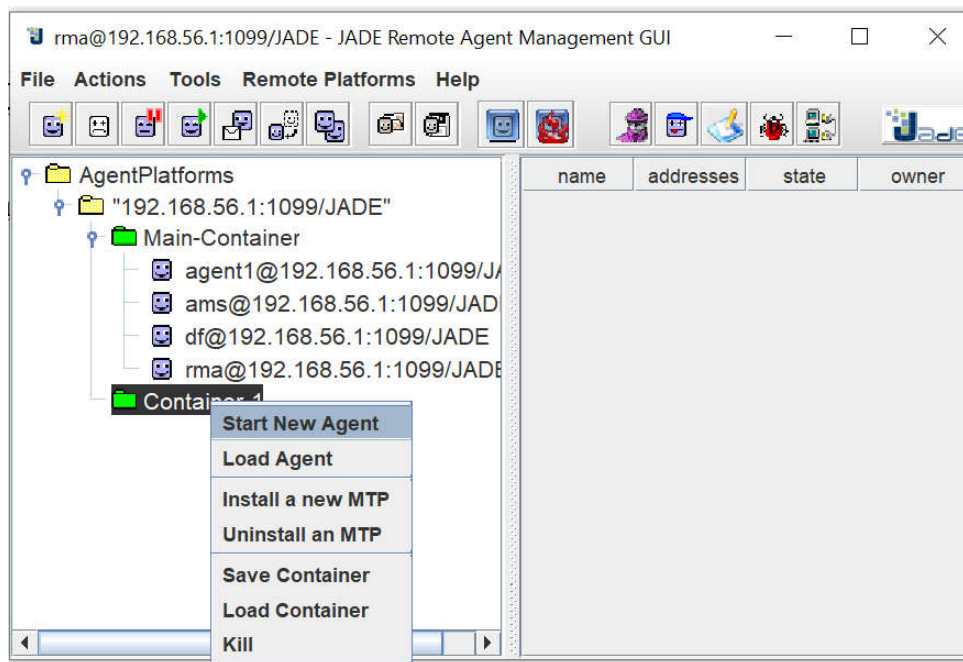The new container in the JADE platform is named "Container-1"

```
INFO:
mar 18      🙂 rma@192.168.56.1:1099/JADE
INFO:          📁 Container-1
mar 18
```
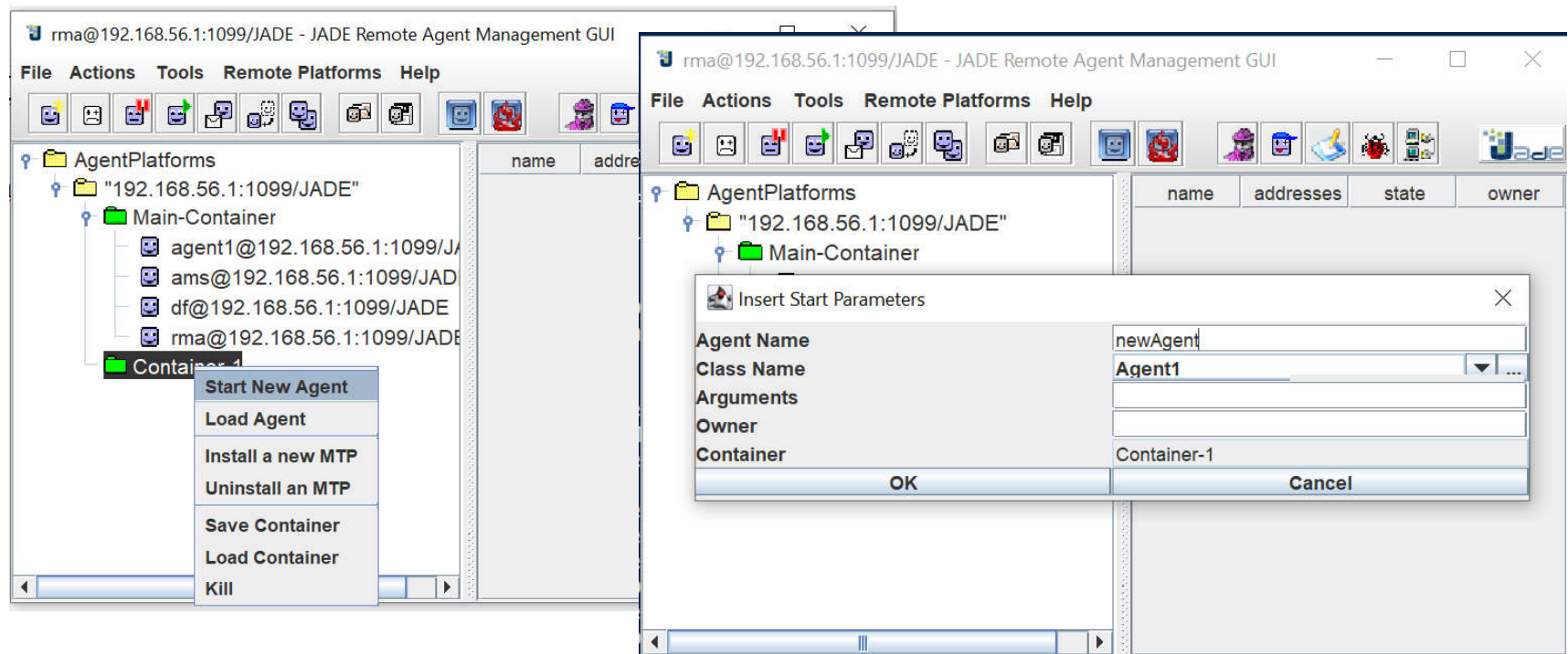
Add Container to the Platform

-Try to create an agent in the new container:

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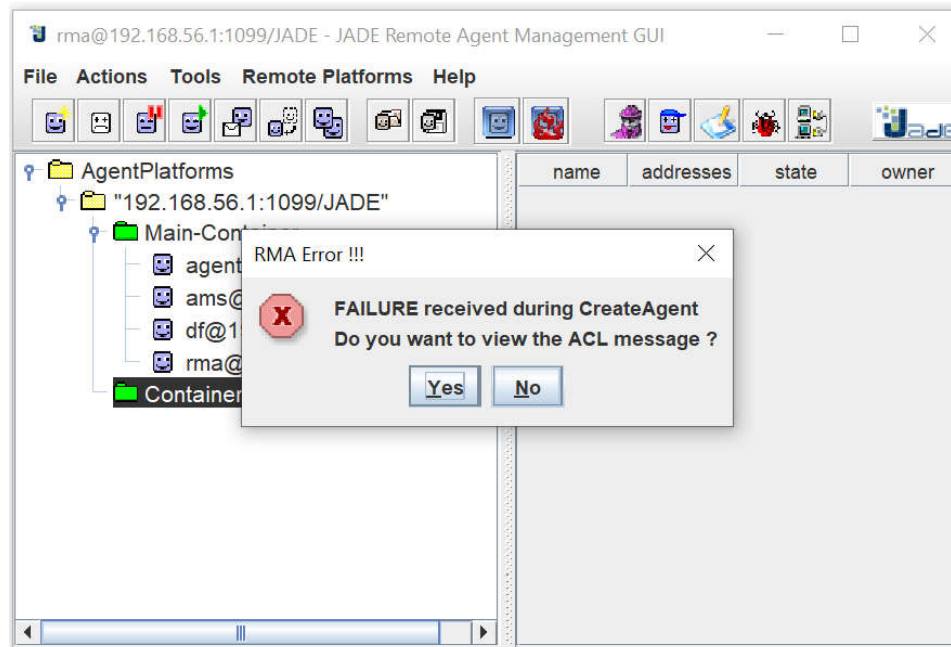# Add Container to the Platform

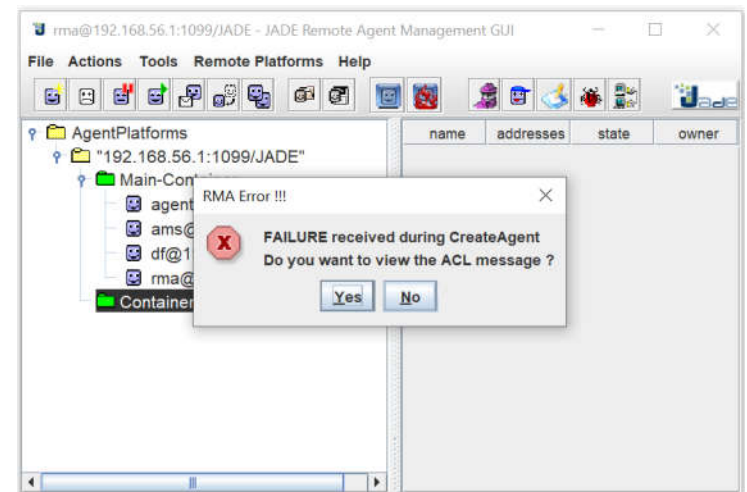-Try to create an agent in the new container:

Add Container to the Platform

-Try to create an agent in the new container:
The class Agent1 (file Agent1.class) is not
found, the JVM does not have access to the
class file (only the JADE classes and
packages are available):


```
>java -cp "jade\4.6.0\jade\lib\jade.jar"
```

```
WARNING: Error serving H-Command jade.core.management.AgentManagement/1:
jade.core.IMTPException: Class Agent1 for agent ( agent-identifier :name
newAgent@192.168.56.1:1099/JADE ) not found - Caused by:   Agent1
```

Agent Migration

-An Agent1 agent cannot be crated at Container-1

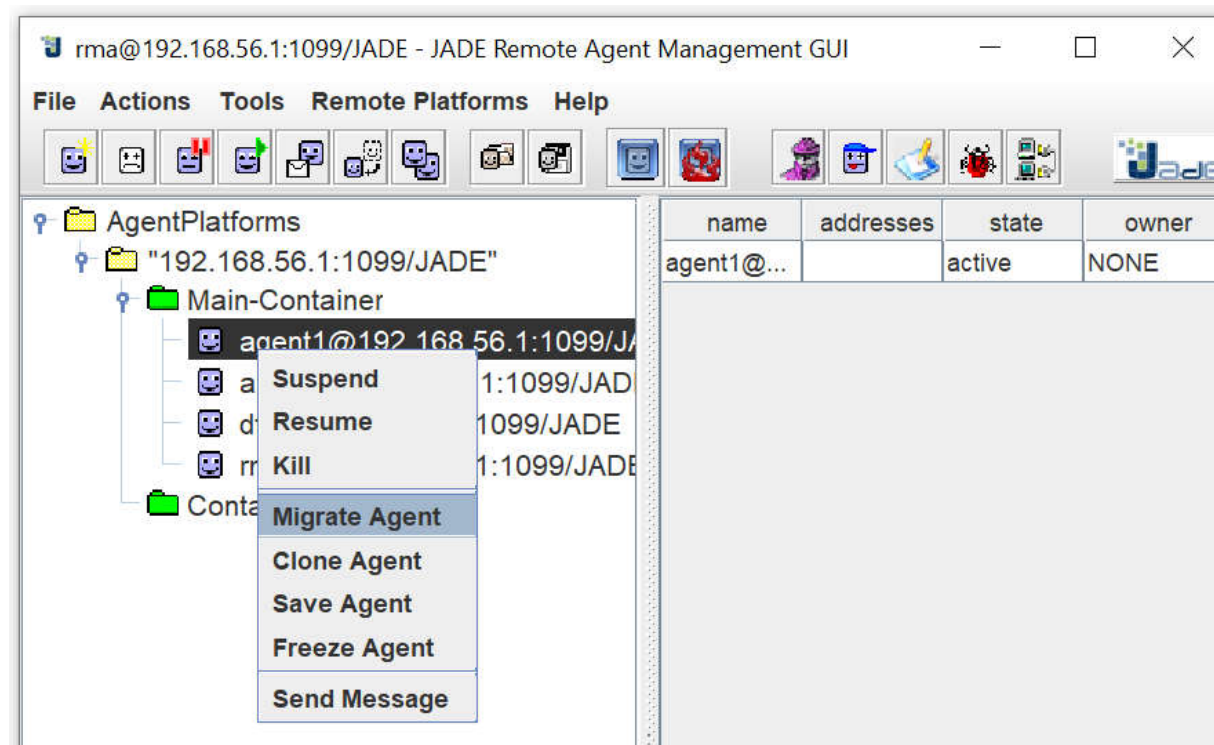> The JVM running the code related to Container-1 does not know/is not able to handle Agent1 objects (so far)
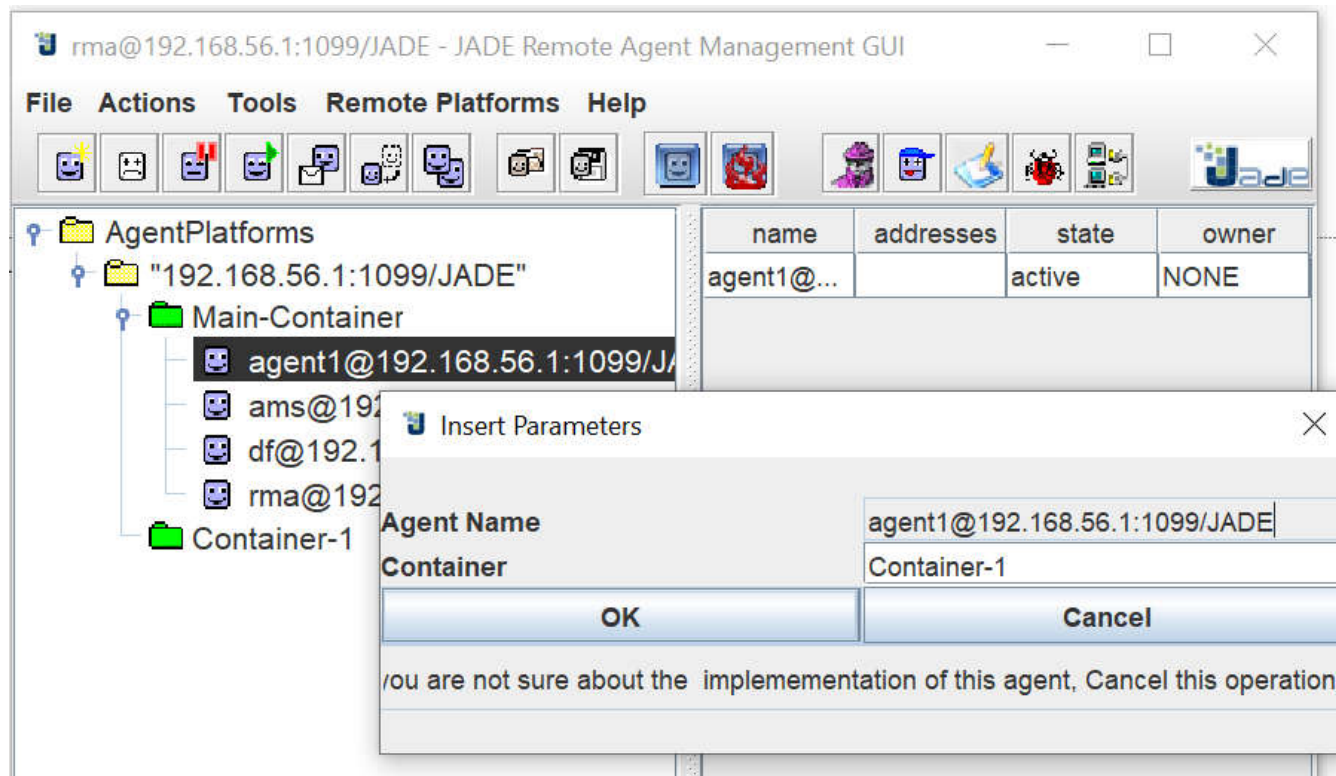
Agent Migration

-An Agent1 agent cannot be crated at Container-1

> The JVM running the code related to Container-1 does not know/is not able to handle Agent1 objects (so far)

-Since JADE is capable of migrating agents, it is expected that agent1, running in the Main-Container, can be migrated to Container-1

> Thus, the JVM running the code related to Container-1 will be able to handle Agent1 objects, the Agent1 class code is "migrated"
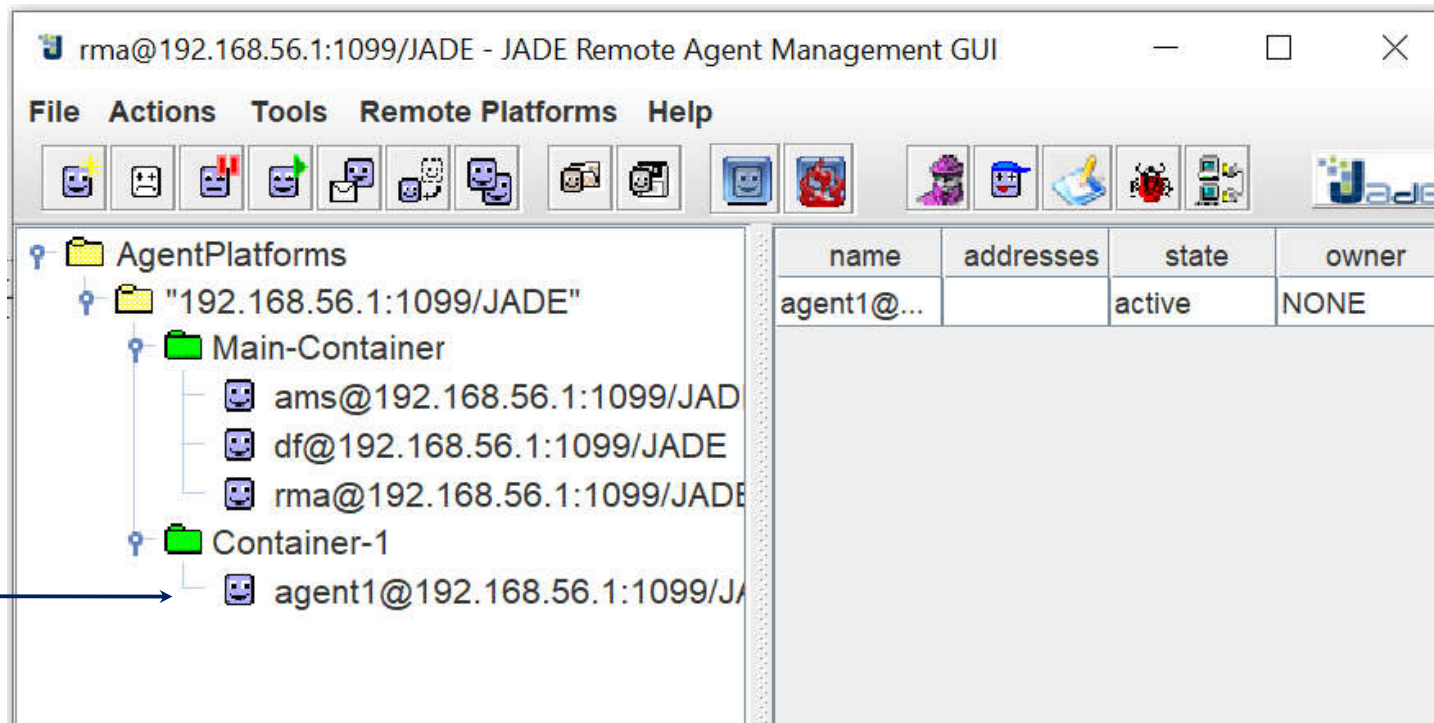
Agent Migration

Agent Migration

Agent Migration

Agent Migration

-agent1 is no longer running at Main-Container

-agent1 is running at Container-1 ==>

> The JVM running the code related to Container-1 is now able to handle Agent1 objects ∴ in some way has received the .class information/file