

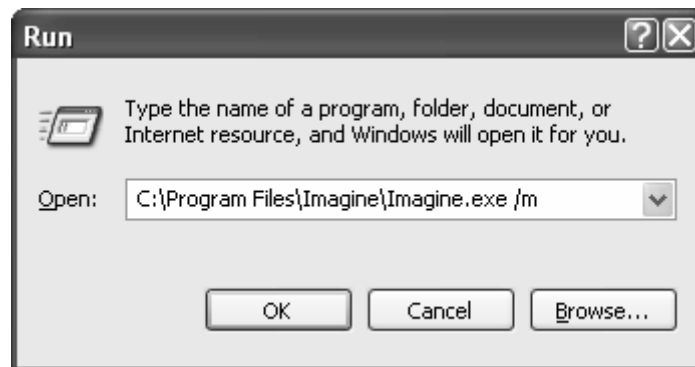
# 1 Connecting Two Imagines

This tutorial is an introduction to using a network in Imagine. We will learn how to:

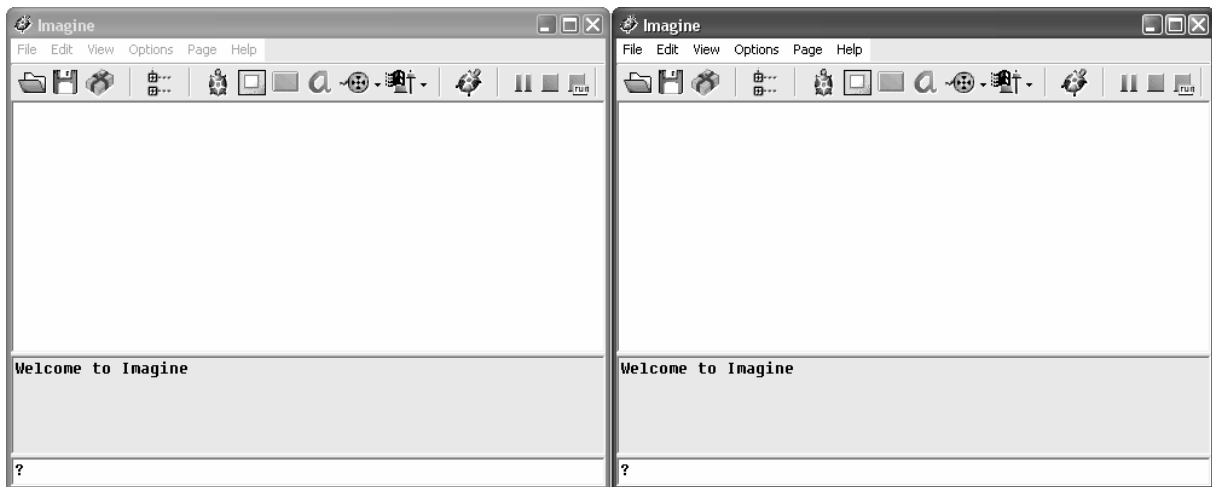
- § Connect two running Imagines together
- § Send a simple text message

To make the introduction into Imagine networking as simple as possible, we will connect the Imagines locally – running them on the same computer.

1. Let us launch two Imagines. It is necessary to launch them with `/m` command line options:



2. Restore their windows to normal size and arrange them next to each other:



Now we have two windows of Imagine – let us call them the Left and the Right Imagine.

3. Now, we connect these Imagines together using the `Net` object. This connection is done **locally** on the same computer. It allows easy testing and observing what is happening.

We start with the Left Imagine window. It will be the **server** Imagine project. To make it server we type the following commands into the command line:

- § `new "Net [style server]` This instruction creates new networking object and gives it the name – `net1`. Its `style` will be `server`.
- § `net1'connect` This instruction activates `net1` object and connects it to the network.

<pre>Welcome to Imagine ? new "NET [style server] ? net1'connect</pre>	<pre>Welcome to Imagine</pre>
--	-------------------------------

Networking object **net1** allows us to connect two or more Imagines together, to send data between them, check the network status etc.

At this moment we may connect the Right Imagine. The Right Imagine will be the **client** Imagine and it will be connected to the server. We write to the Right Imagine:

```
$ new "Net [style client server localhost]
$ net1'connect
```

<pre>Welcome to Imagine ? new "NET [style server] ? net1'connect</pre>	<pre>Welcome to Imagine ? new "NET [style client server localhost] ? net1'connect</pre>
--	---

First instruction has created new networking object named **net1** in the Right Imagine. Its **style** is **client**, that is, it behaves as a client connected to the local computer. Its **server** setting is **localhost**. Second instruction has activated **net1** object in the Right Imagine and has connected it to the network.

4. At this moment we have the Left Imagine and Right Imagine connected together. We may check this connection by asking for the list of currently connected users. We can type the following instruction into the Left and Right Imagine as well:

```
$ show net1'users
```

Show all users currently connected to **net1** networking object.

<pre>Welcome to Imagine ? new "NET [style server] ? net1'connect</pre>	<pre>? new "NET [style client server localhost] ? net1'connect ? sh net1'users [server client]</pre>
--	--

If everything works correctly, the result of this command should be **[server client]**.

5. It is possible to send a simple text message via net. Let us send “Hello” text from the Right Imagine to the Left Imagine (of course, the same is possible vice-versa as well):

```
$ net1'send [] [Hello]
```

Through object **net1** we send the list **[Hello]**. The empty list **[]** means we are sending the list to all users of this connection except us.

<pre>Welcome to Imagine ? new "NET [style server] ? net1'connect</pre>	<pre>? new "NET [style client server localhost] ? net1'connect ? sh net1'users [server client] ? net1'send [] [Hello]</pre>
--	---

This text was sent to all currently connected users except the sender himself/herself (now, it is only the Left Imagine).

Now, the Left Imagine should display received message:

```
$ show net1'message
```

Take the received message from buffer and show it in the text screen.

<pre>? new "NET [style server] ? net1'connect ? sh net1'message [Hello]</pre>	<pre>? new "NET [style client server localhost] ? net1'connect ? sh net1'users [server client] ? net1'send [] [Hello]</pre>
---	---

This command will show `[Hello]` in the text screen of the Left Imagine.

## **Conclusion**

It is very easy to connect two Imagines which are running in one computer in parallel. When you are going to send and receive texts, two commands are sufficient to know – namely, `send` and `message`. Connecting two Imagines locally is very useful for getting first experience and running your own introductory experiments. We will see that establishing connection between two computers is very similar to the steps described above.