

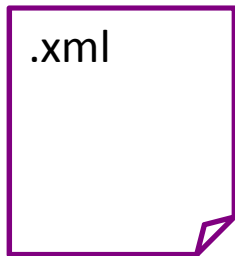
Automation and iCub applications

Tutorial VVV 2013

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The YARP Manager

- The **yarp manager** is a graphic interface to monitor processes
- It allows to start/stopping/monitor, redirect i/o
- In addition it automates establishing connections between modules



Module	ID	Status	Host	Parameters	Stdio	Work Dir	Environment
objectDetector	0	stopped	nat				YARP_PORT_PREFIX=
yarpview	1	stopped	nat	--name /viewer/object --x 300 --y 0			YARP_PORT_PREFIX=
yarpview	2	stopped	nat	--name /viewer/cam/left --x 0 --y 0			YARP_PORT_PREFIX=
yarpview	3	stopped	nat	--name /viewer/cam/right --x 600 --y 0			YARP_PORT_PREFIX=
moveball	4	stopped	nat				YARP_PORT_PREFIX=

Connection	ID	Status	From	Resource	ID	Status
External	0	disconnected	/icubSim/cam/left	nat	0	available
Internal	1	disconnected	/icubSim/cam/right	/icubSim/cam/left	1	available
Internal	2	disconnected	/icubSim/cam/right	/icubSim/world	2	available
External	3	disconnected	/icubSim/cam/left			
Internal	4	disconnected	/objectDetector/image/out			

Yarp module manager

File Edit Manage Help

Open File Import Files... Select All Refresh Status Run Stop Kill Connect Disconnect Help

Entities

- Applications
 - Detector
 - Tracker
- Modules
- Resources
 - nat
 - Templates

Detector

Module	ID	Status	Host	Parameters	Stdio	Work Dir	Environment
objectDetector	0	running	nat				YARP_PORT_PREFIX=
yarpview	1	running	nat	--name /viewer/object --x 300 --y 0			YARP_PORT_PREFIX=
yarpview	2	running	nat	--name /viewer/cam/left --x 0 --y 0			YARP_PORT_PREFIX=
yarpview	3	running	nat	--name /viewer/cam/right --x 600 --y 0			YARP_PORT_PREFIX=
moveball	4	running	nat				YARP_PORT_PREFIX=

Connection	ID	Status	From	Resource	ID	Status
External	0	connected	/icubSim/cam/left	nat	0	unknown
Internal	1	connected	/icubSim/cam/right	/icubSim/cam/left	1	unknown
Internal	2	connected	/icubSim/cam/right	/icubSim/world	2	unknown
External	3	connected	/icubSim/cam/left			
Internal	4	connected	/objectDetector/image/out			

Messages Notes

Current application: Detector

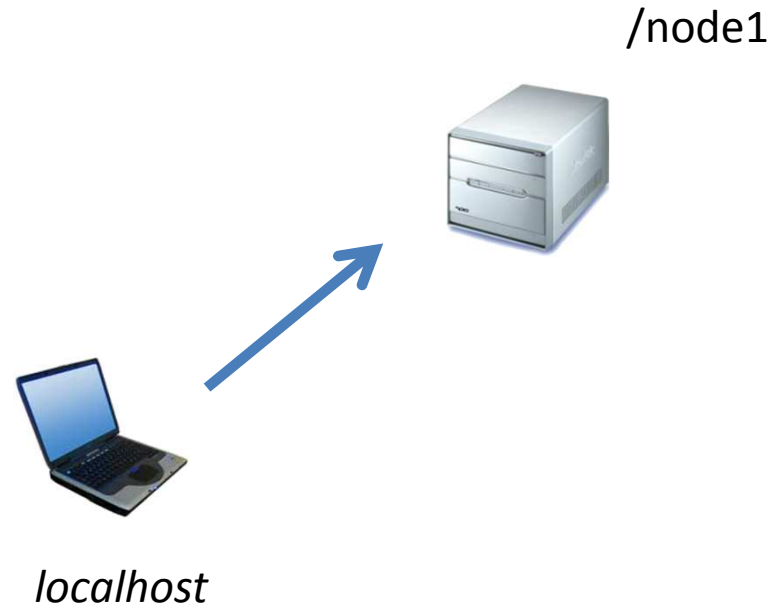
gyarpmanager documentation

- <http://wiki.icub.org/yarpdoc/yarpmanager.html>

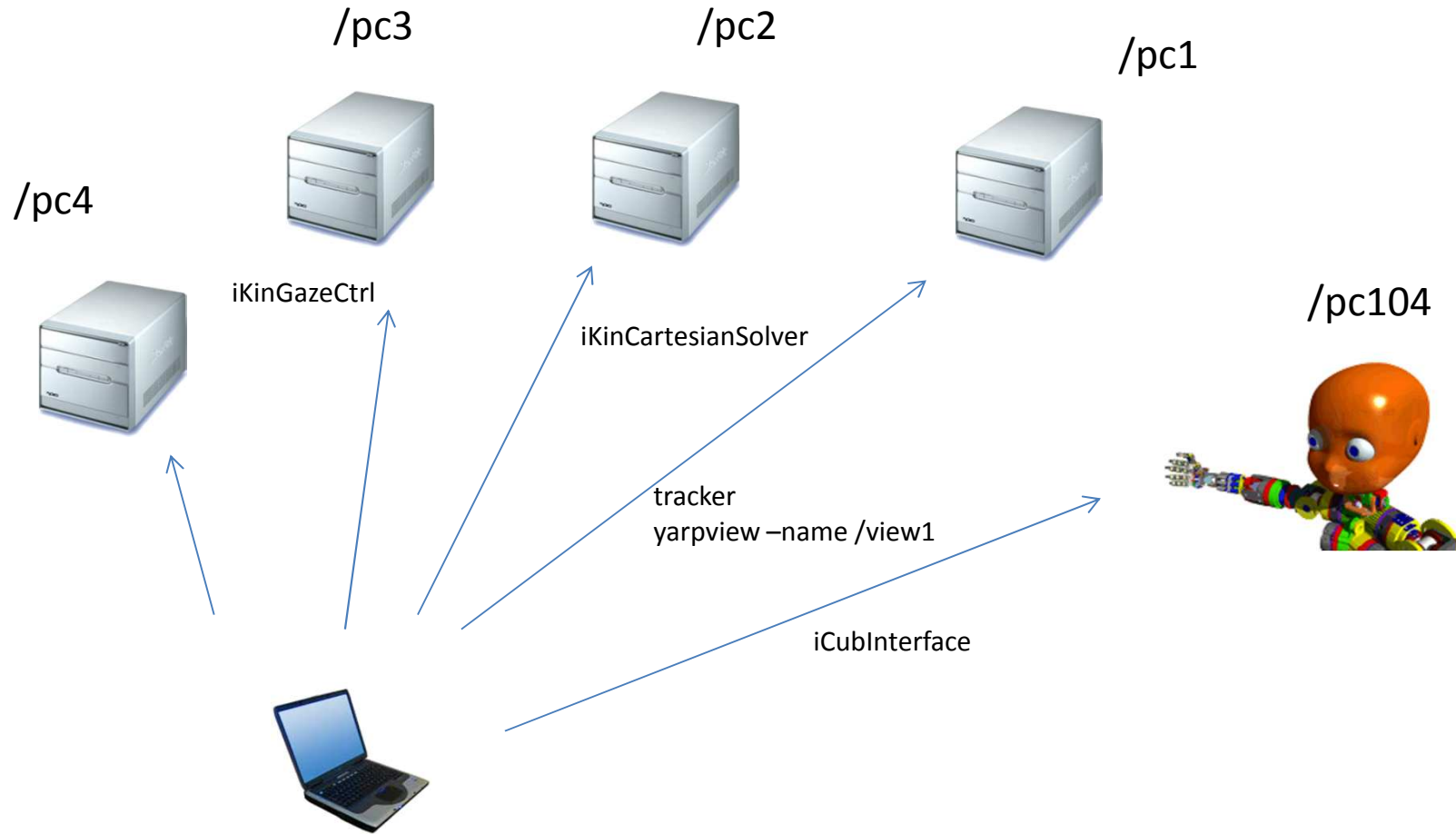
Starting a server

```
$node1: yarprun -server /node1
```

run a server, which will wait for
commands on /node1



- The manager has two ways to execute processes:
locally (localhost) or through yarprun
- yarprun is a server that waits for commands on a port
- start/termination/kill monitor lifecycle
<http://wiki.icub.org/yarpd/doc/db/dd7/yarprun.html>



Syntax

```
<application>
  <name>Name of the application</name> //this can be anything, just a symbolic name

  <dependencies>
    <port>/port1 </port>
    <port>/port2 </port>
  </dependencies>

  <module>
    <name>mymodule1 </name>
    <parameters>--threshold 1 --name /myName</parameters>
    <node>localhost</node>
  </module>

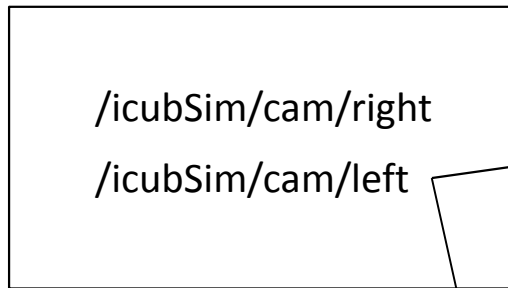
  <module>
    <name>mymodule2</name>
    ...
  </module>

  <connection>
    <from>/port1</from>
    <to>/otherport</to>
    <protocol>udp</protocol>
  </connection>

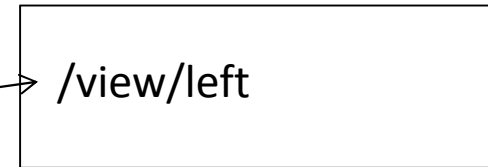
  <connection>
    ...
  </connection>

</application>
```

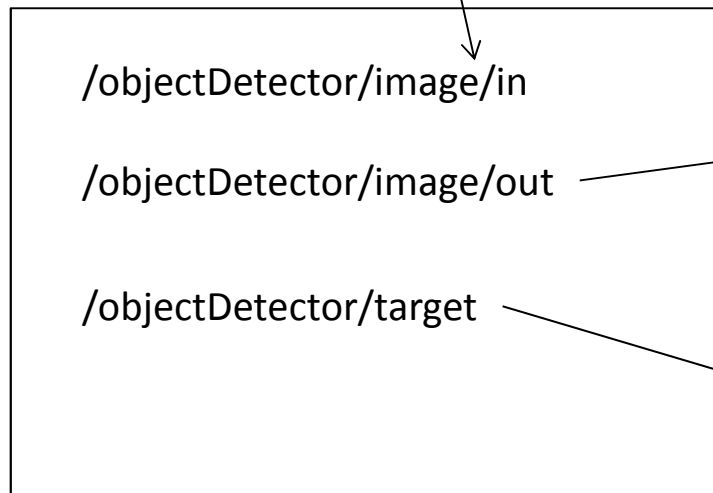
simulator



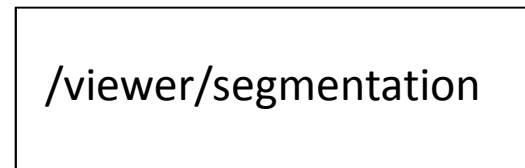
yarpview



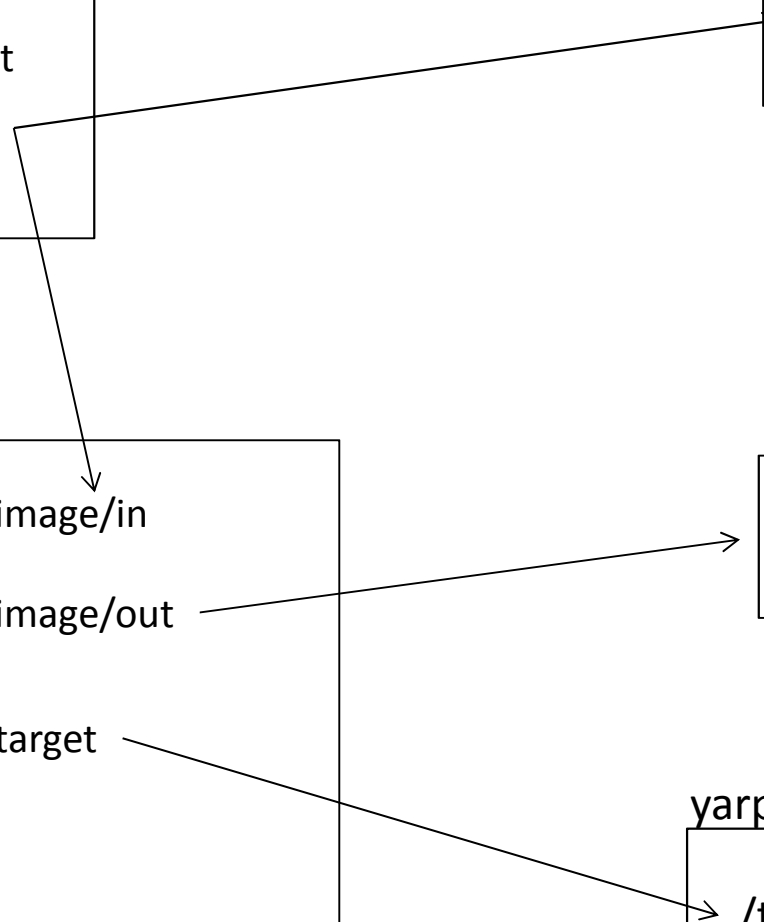
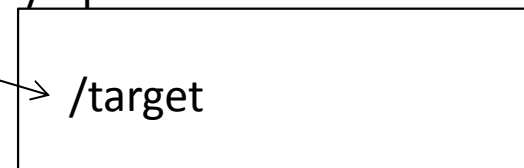
object_detector



yarpview



yarp read



An example

We want to start a test_grabber device and a viewer

```
yarpdev -device test_grabber -name /grabber
```

```
yarpview -name /viewer
```

```
yarp connect /grabber /viewer
```

```
<application>
```

```
  <name>Name of the application</name> //this can be anything, just a symbolic name
```

```
  <module>
```

```
    <name>yarpdev</name>
```

```
    <parameters>--device test_grabber --name /grabber</parameters>
```

```
    <node>localhost</node>
```

```
</module>
```

```
  <module>
```

```
    <name>yarpview</name>
```

```
    <parameters>--name /viewer</parameters>
```

```
    <node>localhost</node>
```

```
</module>
```

```
<connection>
```

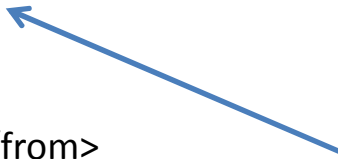
```
  <from>/grabber</from>
```

```
  <to>/viewer</to>
```

```
  <protocol>udp</protocol>
```

```
</connection>
```

```
</application>
```



or any other node in the network:
/node1, /node2 etc..

E.g. on the iCub: icub14, icub15, icub-b11...

Other tags

```
<dependencies>
```

```
  <port>/icub/cam/left</port>
```

```
  <port>/icub/cam/right</port>
```

```
</dependencies>
```

```
<module>
```

```
  ...
```

```
  <workdir>C:/mydir</workdir>
```

```
  <stdio>node3</stdio>
```

```
</module>
```

