

VIBes

A Visualizer for Intervals and Boxes

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VIBes

Visualizer for Intervals and Boxes

- People working with interval methods need to display results (mainly boxes and simple shapes)
- Displaying simple graphics often require to use big libraries (e.g. Qt)
- Need for a lightweight and easy to use way to display simple graphical results

VIBes architecture

C++,
Python or
Matlab
application

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Vibes API

VIBes architecture



Vibes viewer

A teal rounded square box representing the Vibes viewer component.



C++,
Python or
Matlab
application

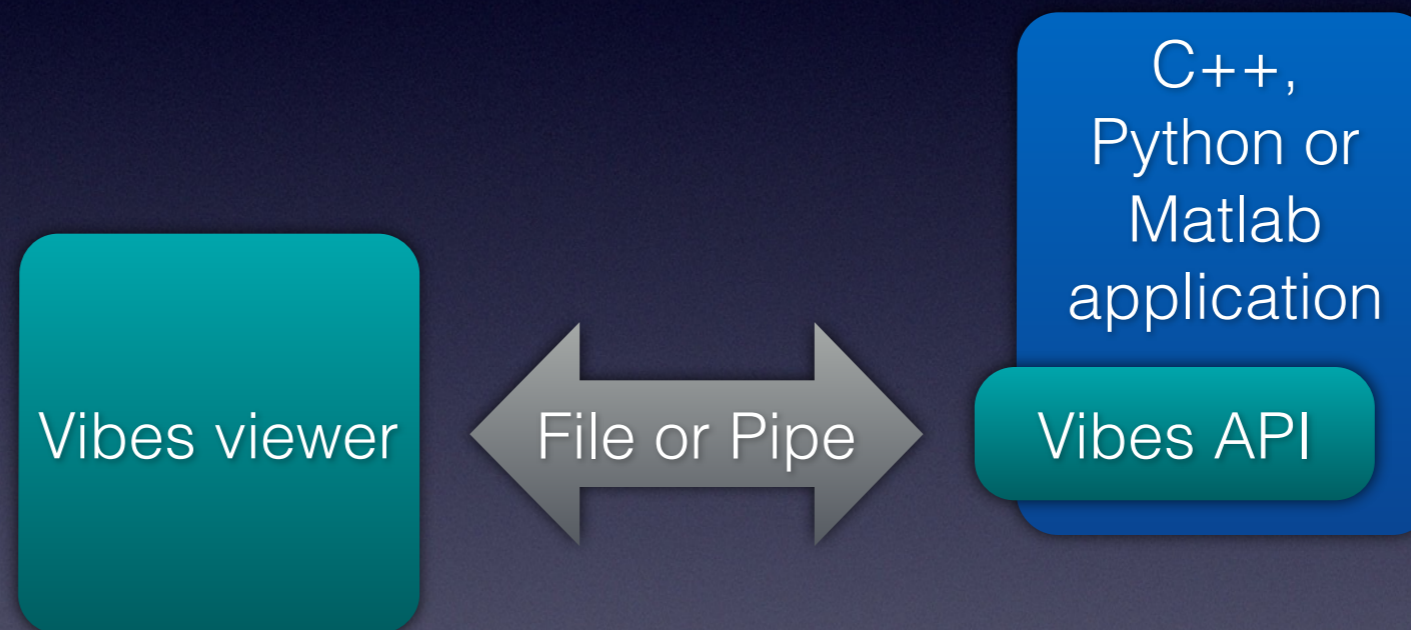
A blue rounded square box representing the application layer, containing the Vibes API component.



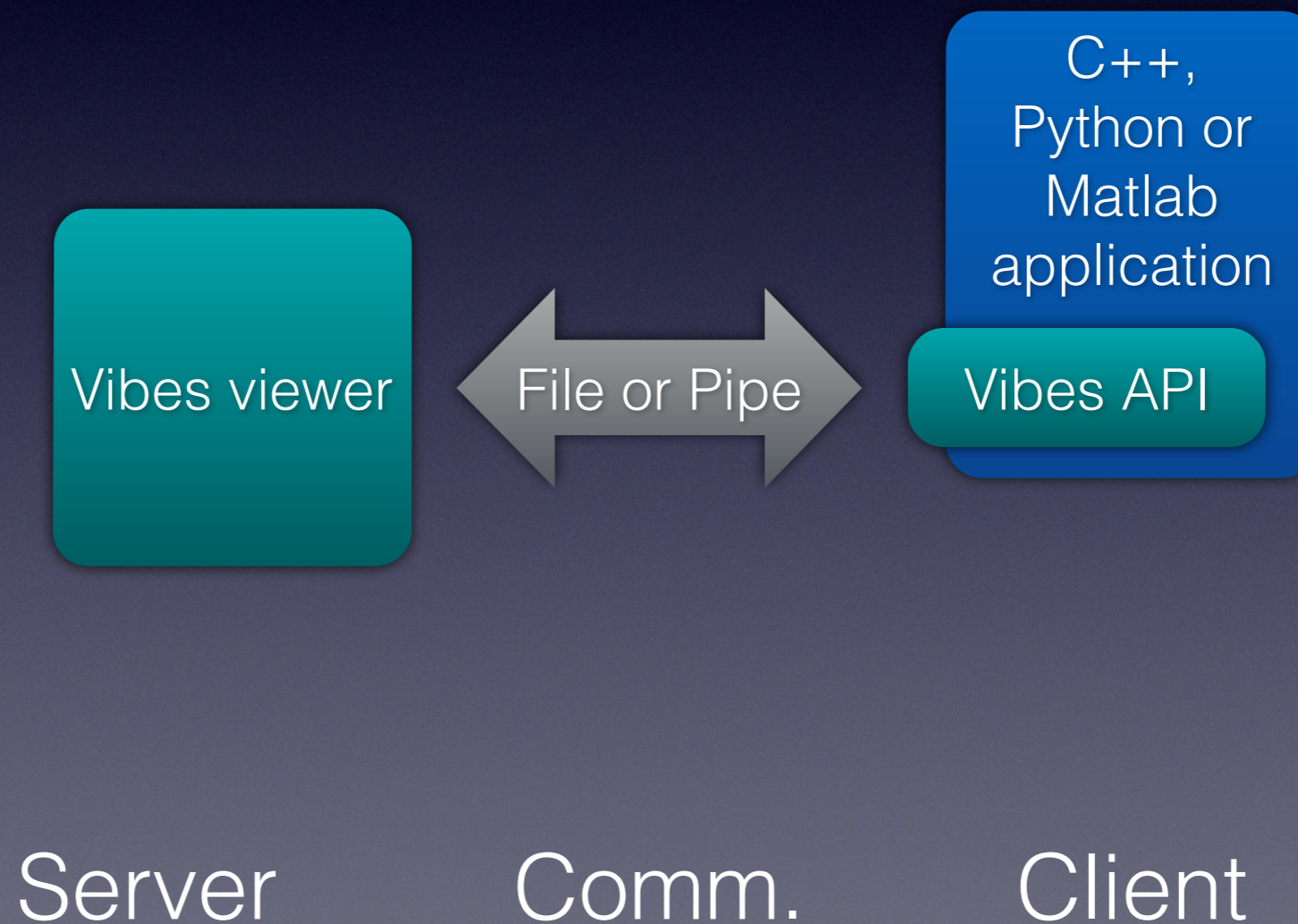
Vibes API

A teal rounded rectangular box representing the Vibes API component, positioned in front of the application layer box.

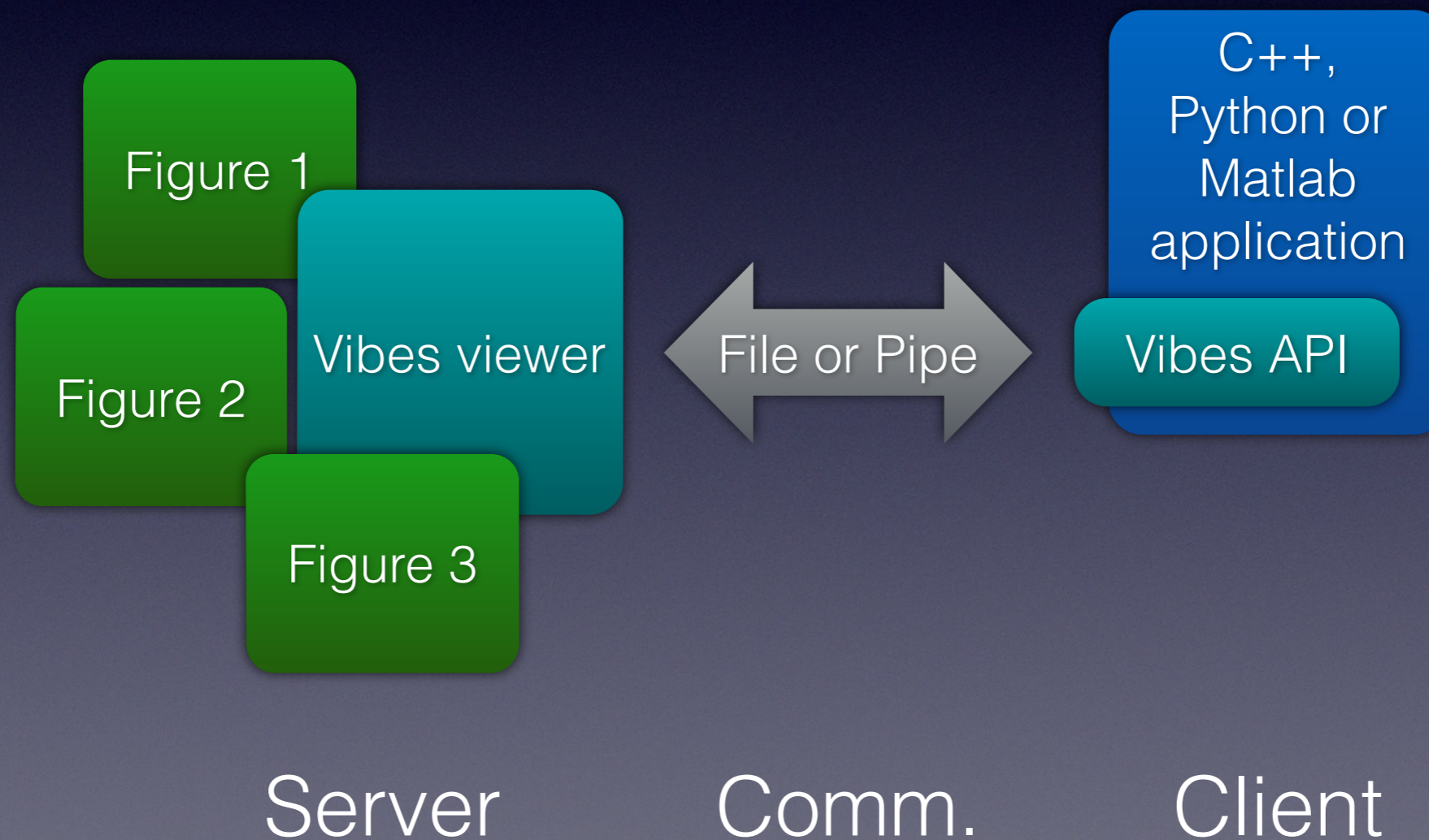
VIBes architecture



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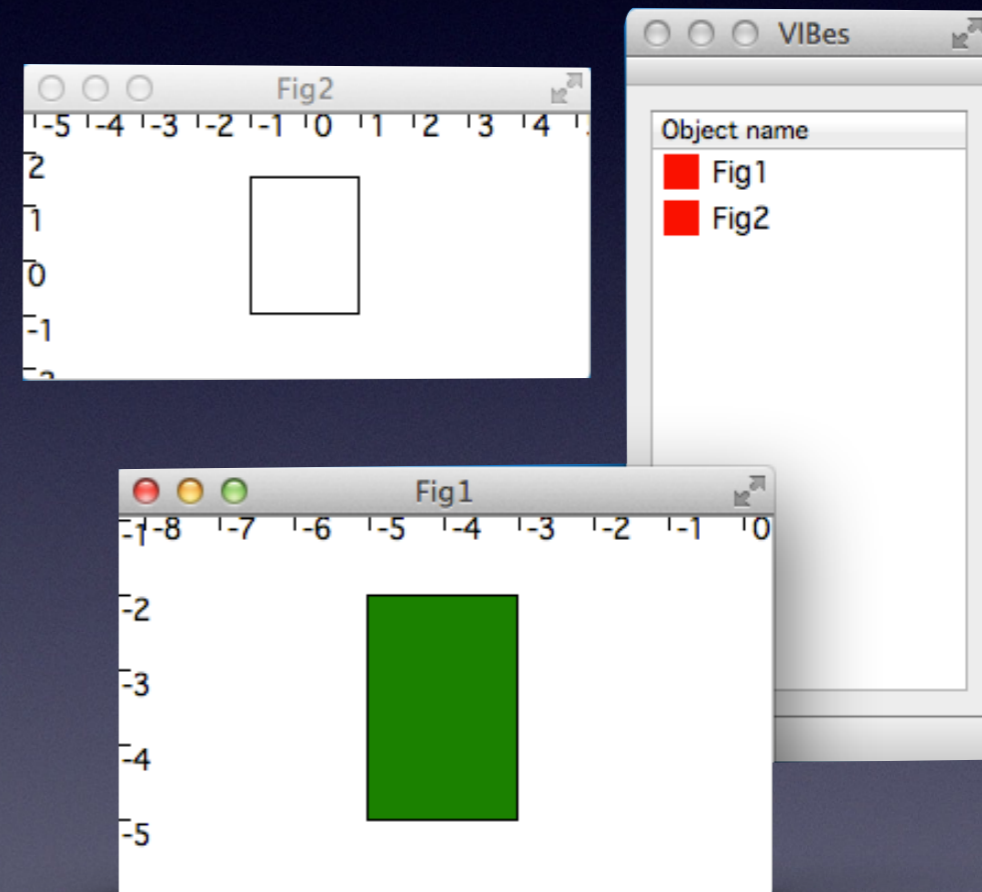


VIBes architecture



VIBes viewer (server)

- Available as an application for Windows, Linux and MacOS
- Listens for drawing commands from your program
- Provides zoom and navigation inside figures



Client API

- VIBes provides a simple drawing API accessible from C, C++ (available), Matlab, Python...
- Easy setup: no libraries, no dependencies
E.g. in C++, add `vibes.cpp` and include `vibes.h`
- Simple drawing functions (« Matlab style »)

```
#include "vibes.h"

int main()
{
    vibes::connect();
    vibes::figure();
    vibes::drawBox(0,1.25,0,1);
    vibes::drawBox(0,1,0,1.8,'r');
    vibes::drawBox(-3,-2,-1,4,"green");
    vibes::disconnect();
    return 0;
}
```


Communication

- JSON based communication protocol
- Client simply writes commands to a file (or named pipe).
- Easy to write a client API for a new language.

```
{  
  "action": "new",  
  "figure": "Fig1"  
}
```

```
{  
  "action": "draw",  
  "figure": "Fig1",  
  "shape": {  
    "type": "box",  
    "bounds": [-5, -3, -5, -2],  
    "color": "darkGreen"  
  }  
}
```

```
{  
  "action": "clear",  
  "figure": "Fig1"  
}
```

```
{  
  "action": "close",  
  "figure": "Fig1"  
}
```


First official release by the end of 2013

- Git repository: github.com/ENSTABretagneRobotics/VIBES
- Wiki with doc: github.com/ENSTABretagneRobotics/VIBES/wiki
- Forum: ost.io/@ENSTABretagneRobotics/VIBES/
- Roadmap:
 - API: More drawing functions. Layers and named objects. More languages (Python, Matlab, ...). IBEX interface.
 - Viewer: Export graphics, export data, figure annotation
 - What **you** need, feel free to contribute!

Demo