

Version: 0.2-alpha

Heterogeneous Orchestration API

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Synopsis

This Project is a linux shared library for Linux. It provides a proper API for both application and service of the orchestration mechanism.

Requirements

[NONE]

Installation

Download the source code and copy both header and source files to your project's folder.

```
$ download as zip
$ cd "Source Code"/
$ sudo make
$ sudo make install
```

API

Client's API

```
Client(pid_t);
~Client();
void execute(void*);
void disconnect(void);
void setPriority(int);
void setProfiling(int);
void setAppName(char *);
void connect(string, int);
double getCurrentMs(void);
double getAverageMs(void);
IndividualPolicyType getPolicy(void);
void setPolicy(IndividualPolicyType);
void setGoalMs(double, double, double);
void registerImplementation(ImplementationKernel, ImplementationType);
void deregisterImplementation(ImplementationKernel, ImplementationType);
```

Service API

```
Server();  
~Server();  
void execute(void);  
void initialize(void);  
void beginServer(int,int);
```

Usage

Make sure you have included the header file.

```
#include <orchestration/orchestration.h>
```

Create some Kernel Functions

```
void CPUKernel1(void * arg)  
{  
    ...  
    ...  
}  
void CPUKernel2(void * arg)  
{  
    ...  
    ...  
}
```

Declare the proper λ -functions for each kernel

```
ImplementationKernel cpu1Impl = [&](void * arg) -> void
{
    CPUNode1(arg);
};
ImplementationKernel cpu2Impl = [&](void * arg) -> void
{
    CPUNode2(arg);
};
```

Initialize an Orchestration Client Object

```
Orchestration::Client TConnector(getpid());
```

Connect to the orchestration service

```
TConnector.connect("127.0.0.1", orchPort);
```

Configure some settings

```
TConnector.setAppName(appName);
TConnector.setPolicy(IndividualPolicyType::Balanced);
TConnector.setGoalMs(goal, lowestGoal, highestGoal);
TConnector.setPriority(priority);
```

Register the λ -functions

```
TConnector.registerImplementation(cpu1Impl, ARMA57);  
TConnector.registerImplementation(cpu2Impl, ARMA53);
```

Set the profiling

```
TConnector.setProfiling(profiling);
```

Execute the application

```
...  
TConnector.execute(arg);  
...
```

Close the connection

```
TConnector.disconnect();
```

Contributing

One of the easiest ways to contribute is to participate in discussions and discuss issues. You can also contribute by submitting pull requests with code changes. Please log a new issue in the appropriate section [Issues] or by e-mail. The best way to get your bug fixed is to be as detailed as you can be about the problem. Providing a minimal project

with steps to reproduce the problem is ideal.

Here are questions you can answer before you file a bug to make sure you're not missing any important information.

1. Did you read the documentation?
2. Did you include the command you executed in the issue?
3. What are the EXACT steps to reproduce this problem?
4. What package versions are you using?

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