



Orca 4.0.1 Mechanism for Robotics

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ABSTRACT

This paper describes the Orca 4.0.1 open-source software project which applies Mechanism foundation Software Engineering principles to robotics. The paper gives the industrial aspects of the structure which set it apart from other parallel efforts. Among them are the conversion of a commercial middleware package, minimalist approach to framework design, and a commitment to multi-language multi-platform support. The paper explains our decision to use a comparatively modern opening in the field of general-purpose middleware packages.

INTRODUCTION

This research paper is about Orca 4.0.1 software structure for developing robotic systems. It is one of several systems with similar objectives which are currently under improvement.

The software growth in the environment of robotics currently attract great attention because generating robotic software is difficult and takes lot of time and supposed to be one of the limiting factors in the progress of robotics now a days. It is usually recognized that the key to making progress in this area is software use again, which includes the open-source software and commercially accessible alternatives.

Orca 4.0.1 is one of the open-source frameworks for creating mechanism-based robotic systems. This software shows defining and developing the building-blocks which can be pieced together to form randomly difficult robotic systems. The different types of

systems we are targeting range from particular vehicles to circulated sensor networks. Mainly, we visualize usage patterns typical for both commercial and academic areas.

The research main objective is to support software reuse in robotics. Many factors supply to the success or failure of a reuse initiative. Based on an formal survey of the field, it appears like there is a growing agreement that a successful framework would be:

- 1) Open-source
- 2) Modular
- 3) Circulated under a license in commercial applications;
- 4) Tested and documented modules

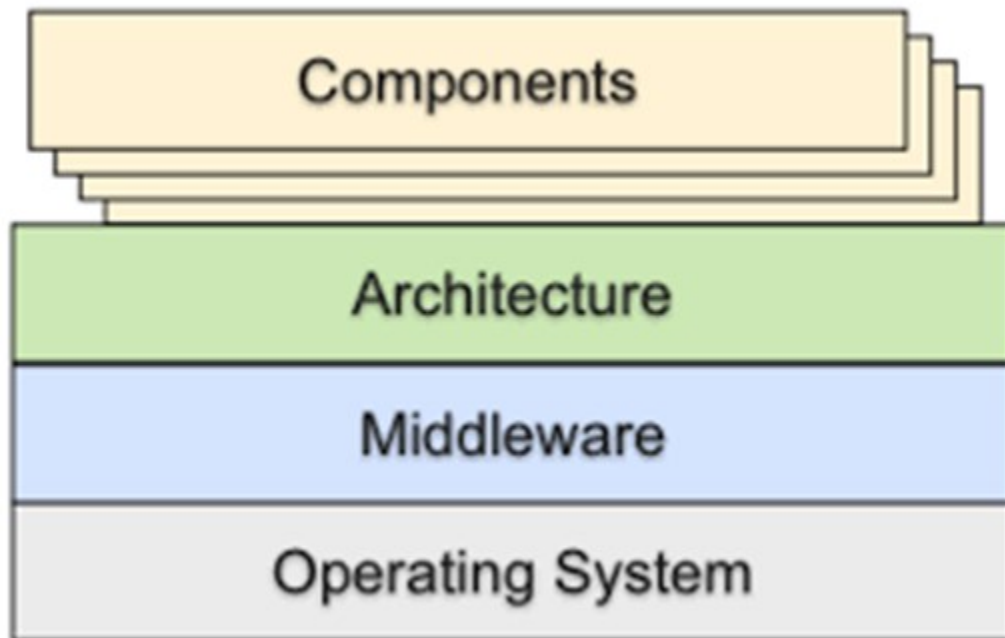
The above requirements are satisfied by Orca 4.0.1 design. Orca 4.0.1 is the open-source under a combination of LGPL and GPL licenses. The framework must containing the following things

- 5) Flexible
- 6) Extensible
- 7) Suitably strong
- 8) Simple to use

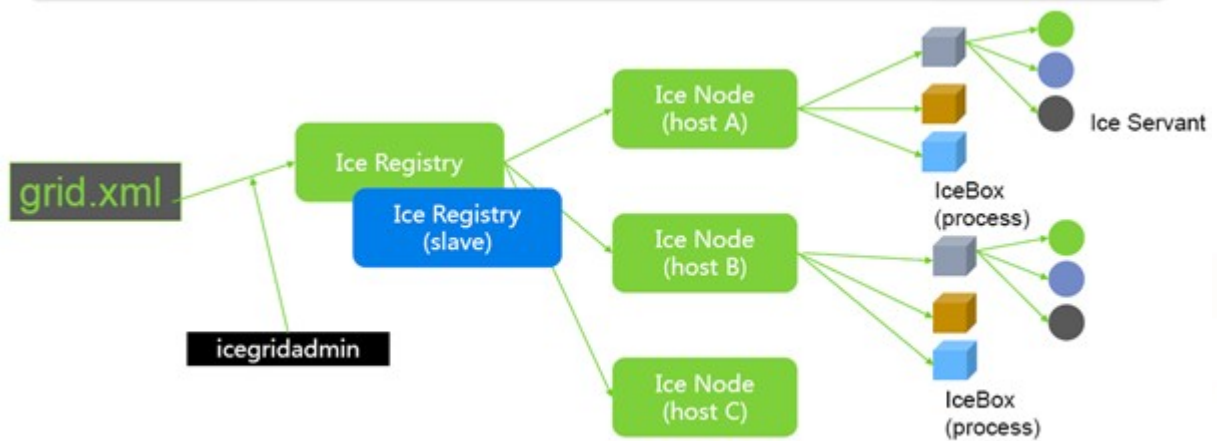
ICE MIDDLEWARE

To apply a circulated component-based system, one must be able to define interfaces and make a choice of communication machinery. In case of cross-platform procedure involving different operating systems, the software which provides such functionality is typically referred to as middleware. The realities of robotic software development that we consider

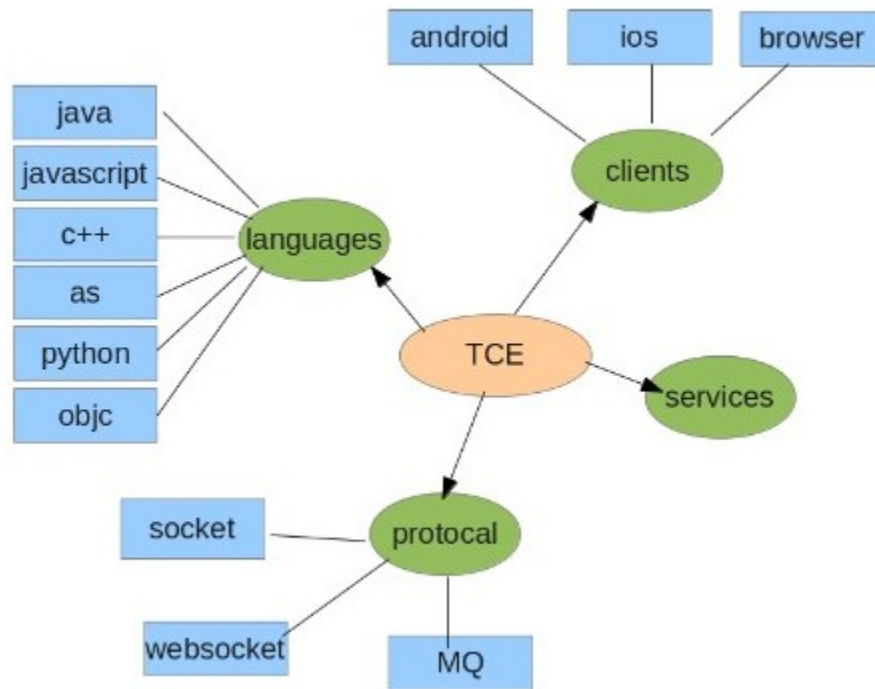
support for C/C++ on Linux to be necessary. This rules out Microsoft's COM+ and Sun's activity JavaBeans. Below alternatives are:



Using CORBA



Using Ice



Using XML technologies

Here describes what Ice is and what features it offers.

Ice

The Internet Communications Engine (Ice) is an implementation of middleware ideas similar in spirit to CORBA.

Ice Services

Ice middleware comes with a number of services which make available additional functionality. Some of them are used extensively in Orca 4.0.1

CONCLUSION

We have given that the current state of the Orca 4.0.1 project. Main instructions of current work are knowledge how to use Ice features successfully and improving reliability of obtainable components.

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