1) Installato Ros 2 come nel manuale.... nulla di particolare da segnalare 2) Ci sono tre elementi fondamentali nella comunicazione su Ros2: topics, services, actions. Il topic l'argomento su cui stanno parlando un cliente che richiede un'azione e un "server" che contribuisce alla realizzazione. A differenza dei services le actions hanno la peculiarit di informare il cliente della situazione del processo al mittente. Ci sono due entit in gioco: actions Servers e action Clients. Un action server ha un nome e un tipo e il suo nome unico in un namespace. pu variare a seconda del tipo e ci possono essere omonimi tra vari namespace. E' responsabile di avvertire delle azioni a altre entit ros, accettare o accetare i "goal" ovvero le richieste da ogni utente e e opzionalmente dare un feedback.

Action Cliente invece invia uno o pi goals e monitora il loro progesso. Ci sono alcune differeenze fondamentali tra ros 1 e ros 2 (http://design.ros2.org/articles/actions.html).

STRUTTURA DI BASE DELLE ACTIONS.

Actions are specified using a form of the ROS Message IDL. The specification contains three sections, each of which is a message specification: 1. goal 2. result 3. feedback

MIDDLEWARE IMPLEMENATION

AZIONI POSSIBILI E REALE IMPLEMENTAZIONI DELLE ACTIONS

Send Goal Service

Direction: client calls server Request: description of goal and a UUID for the goal ID Response: whether goal was accepted or rejected and the time when the goal was accepted Cancel Goal Service

Direction: client calls server Request: goal ID and timestamp Response: response code and a list of goals that have transitioned to the CANCELING state

Get Result Service

Direction: client calls server Request: goal ID Response: status of goal and user defined result

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The purpose of this service is to get the final result of a goal. After a goal has been accepted the client should call this service to receive the result. The result will indicate the final status of the goal and any user defined data as part of the Action Interface Definition.

RESULT CACHING

The server should cache the result once it is ready so multiple clients have to opportunity to get it. This is also useful for debugging/introspection tools. Goal Status Topic

Direction: server publishes Content: list of in-progress goals with goal ID, time accepted, and an enum indicating the status

This topic is published by the server to broadcast the status of goals it has accepted. The purpose of the topic is for introspection; it is not used by the action client. Messages are published when transitions from one status to another occur.