

KBSW180137 Win32- Recover Localization

This document introduces the demo project of "recover_localization", how to call the `recoverlocalization()` API to have the robot re-position to the correct localization on the map. Before using this feature, please note the following:

1.The success rate of relocalization is related to the environment. Before re-positioning, it is recommended to use a clear environmental map with a sharp outline.

2.For the case where there is a similar environment in the map area, for example, there are offices 1 and 2 with the same environment layout on the map, if the robot is actually in the office 1, it may relocate to the office 2 during the relocalization process. . In this case, it is recommended to modify the office environment to make a distinction on the map when building the map (moving tables and chairs, adding pots, etc.).

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IDE Preparation

- **Software**
 - Visual Studio 2010 SP1
 - Slamware Windows SDK:[Slamware Windows SDK](#)
 - RoboStudio(for map display):[Robostudio installer](#)
 - Sample Code:



Higher version of Visual Studio will cause errors. sometime you will need to upgrade SP1 package to make your VS compatable with .Net Framework.

- **Hardware**

Either one of following

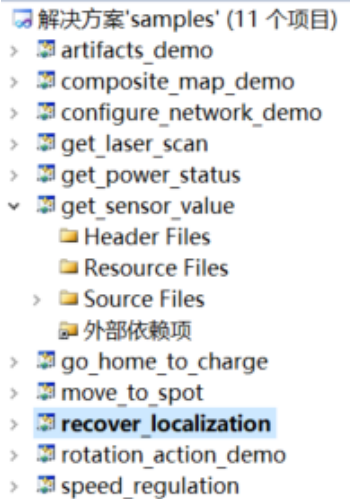
- Slamware SDP mini
 - Slamware SDP
 - Slamware Kit
 - Zeus/Apollo robot base
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Download

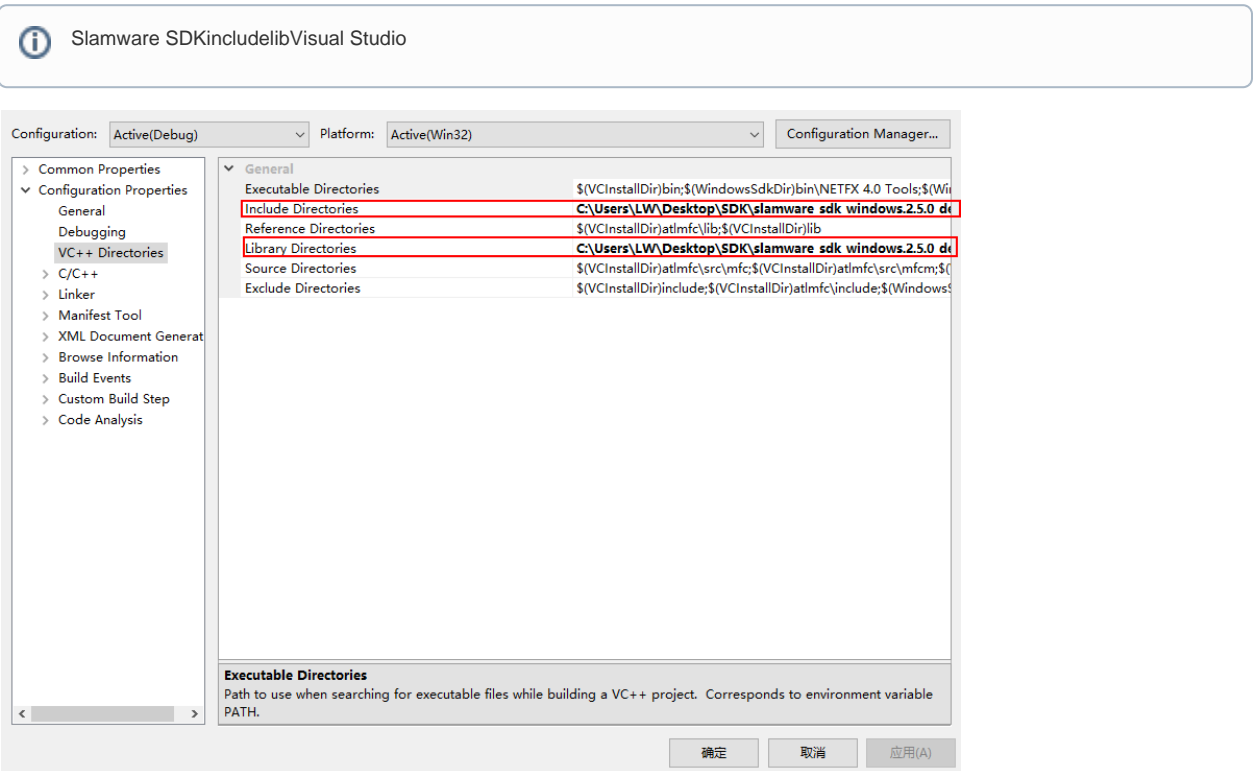
[Win32-Demo](#)

Compiling

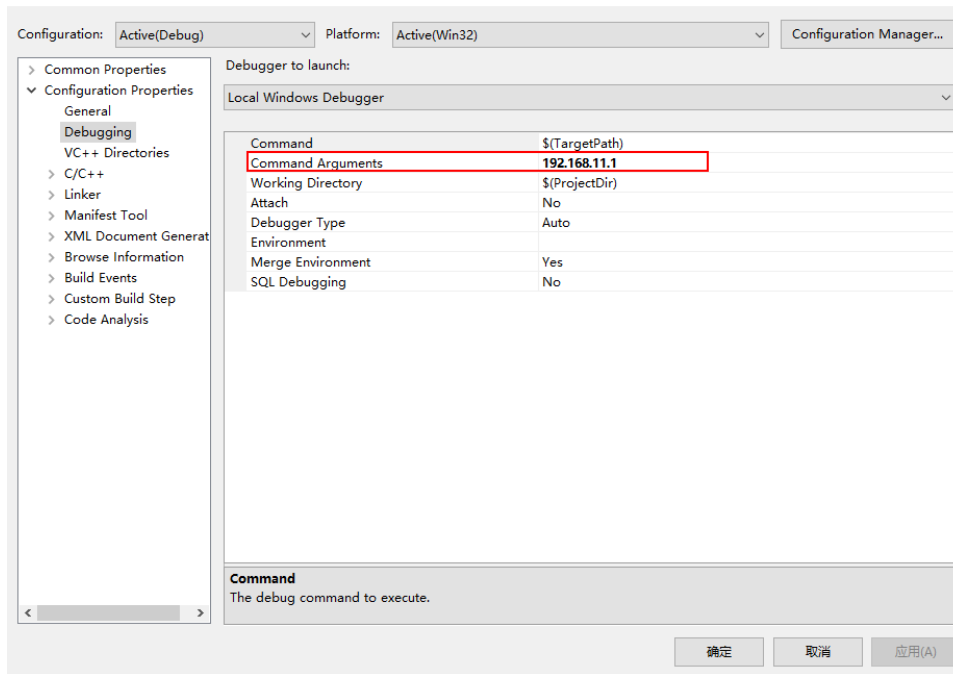
1. Right click on "recover_localization" project, set as StartUp project.



2. Right click on "recover_localization", then " Properties"configure "include" and "lib" directories to the corresponding folder path of Slamware SDK.



3. Right click on "recover_localization", then "properties"set "Command Arguments" as follows:
Syntax recover_localization <IP address>



4. Click " F5" to execute.
5. Robot motion and map could be seen on Robostudio.
Your browser does not support the HTML5 video element

Code

- When the actual position deviates from the theoretical position of the map, the demo project will start re-positioning operation. If the recover is successful, you can see in the robostudio that the robot re-positions to the correct position and the status will turn to the corresponding one.

```
SlamwareCorePlatform sdp = SlamwareCorePlatform::connect(ip_address, 1445);
std::cout <<"SDK Version: " << sdp.getSDKVersion() << std::endl;
std::cout <<"SDP Version: " << sdp.getSDPVersion() << std::endl;

rpos::actions::MoveAction action = sdp.getCurrentAction();
if (action)
    action.cancel();
//recover localization by giving an rectangle area; (0,0,0,0) represents the entire
map area.
action = sdp.recoverLocalization(rpos::core::RectangleF(0,0,0,0));

while(true)
{
    switch (action.getStatus())
    {
        case rpos::core::ActionStatusError:
            std::cout << "Action Failed: " << action.getReason() << std::endl;
            break;
        case rpos::core::ActionStatusRunning:
            std::cout <<"Current status: Running" << std::endl;
            break;
        case rpos::core::ActionStatusFinished:
            std::cout <<"Current status: Finished" << std::endl;
            break;
        default :
            std::cout <<"Status Unknown" << std::endl;
            break;
    }
}
```

