

KBSW180140 Win32- Virtual Wall/Virtual Track Operation(Add, Delete, Modify

This document introduces the demo project of "artifacts_demo", explaining user operation of Virtual Wall/Virtual Track, including how to add/delete /modify artifacts.

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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

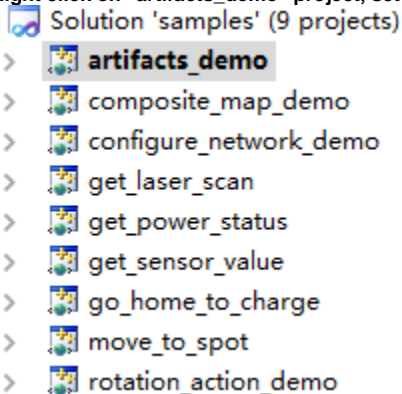
- Slamware SDP mini
- Slamware SDP
- Slamware Kit
- Zeus/Apollo robot base

Download


[Win32-Demo](#)

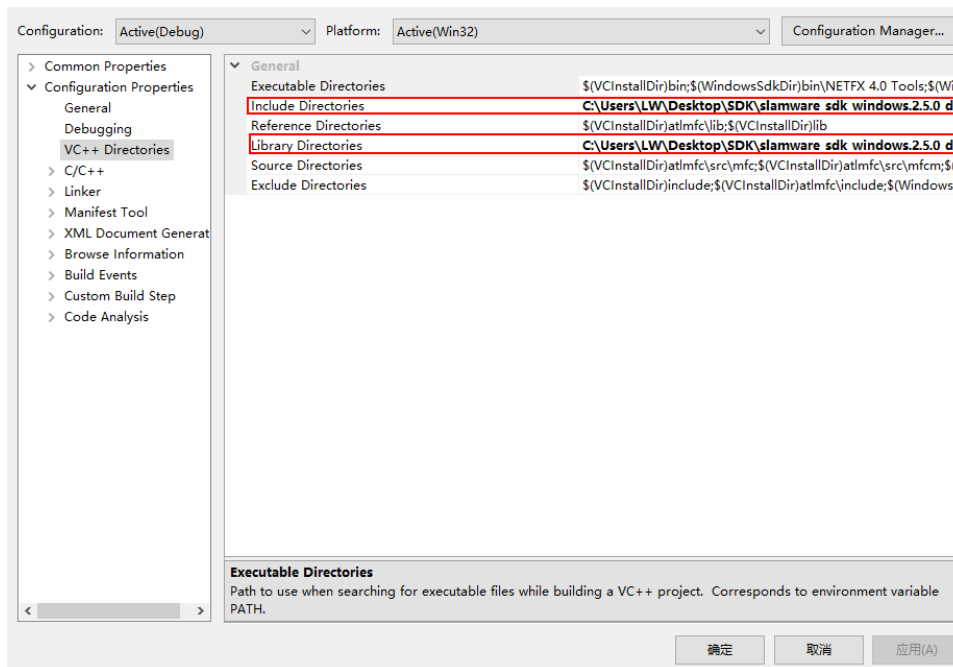
Compiling

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

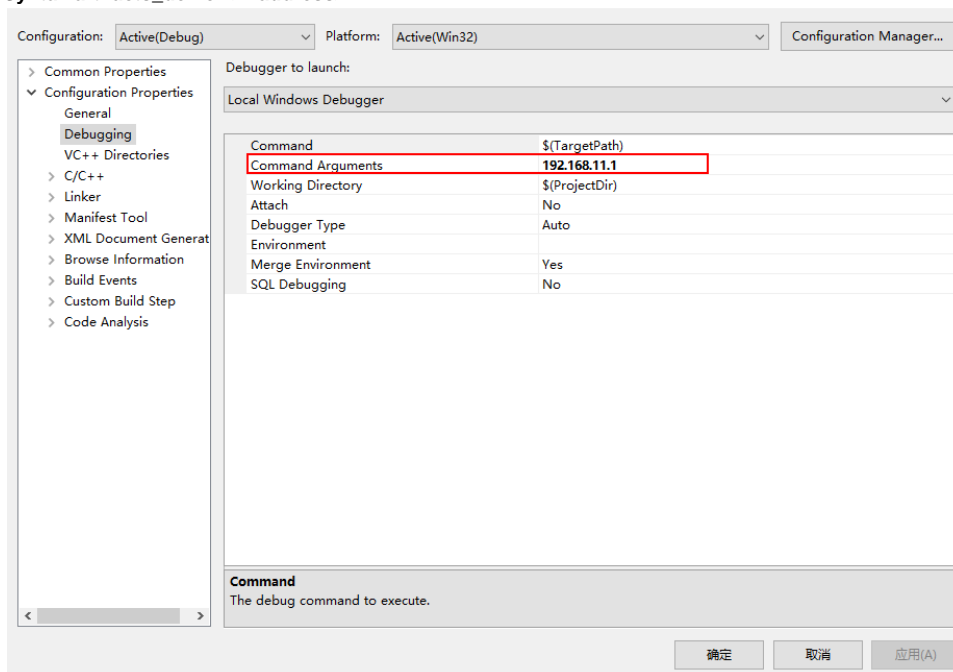


2. Right click on "artifacts_demo", then " Properties"configure "include" and "lib" directories to the corresponding folder path of Slamware SDK.

 It's not necessary to copy files to the project directory, user will only need to configure the folder path of SDK.



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



4. Click " F5" to execute.
5. In robostudio, the output will be as follows:
Your browser does not support the HTML5 video element

6. The output from console will be as follows:

```
Connecting SDP @ 192.168.11.1...
SDK Version: 2.5.0_dev
SDP Version: 2.5.0_dev (Nov  2 2017)
Clearing existing tracks and walls...
Adding virtual walls...
Adding virtual tracks...
Moving virtual walls...
Get all tracks...
ID: 0
Start from (-1 , -1) to (-1 , 1 )
ID: 1
Start from (-1 , 1) to (1 , 1 )
ID: 2
Start from (1 , 1) to (1 , -1 )
ID: 3
Start from (1 , -1) to (-1 , -1 )
Delete track by ID, please enter track ID:
```

7. Delete one of the virtual tracks by selecting one of the IDs. the ID selected in the video is 3.

Code

- Delete all virtual tracks/walls.

```
/
```

```
SlamwareCorePlatform sdp = SlamwareCorePlatform::connect(argv[1], 1445);
std::cout << "Clearing existing tracks and walls..." << std::endl;
sdp.clearLines(ArtifactUsageVirtualTrack);
sdp.clearLines(ArtifactUsageVirtualWall);
```

- Add virtual walls

```
std::cout << "Adding virtual walls..." << std::endl;
std::vector<Line> walls;
//add a 8 * 8 virtual wall square
walls.push_back(Line(Point(-4, -4), Point(-4, 4)));
walls.push_back(Line(Point(-4, 4), Point(4, 4)));
walls.push_back(Line(Point(4, 4), Point(4, -4)));
walls.push_back(Line(Point(4, -4), Point(-4, -4)));
sdp.addLines(ArtifactUsageVirtualWall, walls);
```

- Add virtual tracks

```
std::cout << "Adding virtual tracks..." << std::endl;
std::vector<Line> tracks;
//add a 2 * 2 virtual track square
tracks.push_back(Line(Point(-1, -1), Point(-1, 1)));
tracks.push_back(Line(Point(-1, 1), Point(1, 1)));
tracks.push_back(Line(Point(1, 1), Point(1, -1)));
tracks.push_back(Line(Point(1, -1), Point(-1, -1)));
sdp.addLines(ArtifactUsageVirtualTrack, tracks);
```

- Modify a virtual wall (similar with virtual wall modification)

```

std::cout << "Moving virtual walls..." << std::endl;
//sleep 5 seconds for displaying purpose only, not necessary
boost::this_thread::sleep_for(boost::chrono::milliseconds(5000));
std::vector<Line> get_walls = sdp.getLines(ArtifactUsageVirtualWall);
//shrink virtual wall square from 8 * 8 to 6 * 6
for (std::vector<Line>::iterator it = get_walls.begin() ; it != get_walls.end(); ++it)
{
    it->startP().x() *= 0.75f;
    it->startP().y() *= 0.75f;
}
sdp.moveLines(ArtifactUsageVirtualWall, get_walls);

```

- Delete virtual tracks(similar with virtual wall deletion

```

std::cout << "Get all tracks..." << std::endl;
std::vector<Line> get_tracks = sdp.getLines(ArtifactUsageVirtualTrack);
for (std::vector<Line>::iterator it = get_tracks.begin() ; it != get_tracks.end(); ++it) {
    std::cout << "ID: " << it->id() << std::endl;
    std::cout << "Start from ( " << it->startP().x() << " , " << it->startP().y() << " ) "
<< "to ( "
                                << it->endP().x() << " , " << it->endP().y() << " ) " << std:::
endl;
}

std::cout << "Delete track by ID, please enter track ID:" << std::endl;
int id;
bool is_found = false;
std::cin >> id ;
for (std::vector<Line>::iterator it = get_tracks.begin() ; it != get_tracks.end(); ++it) {
    if (id == it->id()) {
        sdp.removeLineById(ArtifactUsageVirtualTrack, id);
        is_found = true;
        break;
    }
}
if(!is_found)
    std::cout << "Wrong ID" << std::endl;

```