KBSW191011 Win32 - Configure the network of robot

This document introduces the demo project of "configure_network_demo", including how to configure the network in AP or STA modes.

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IDE Preperation

- 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 "configure_network_demo" project, set as StartUp project. 🤜 Solution 'samples' (9 projects)

 - 📓 artifacts_demo >
 - 🚼 composite_map_demo >
 - 🚼 configure_network_demo 5
 - 🧱 get laser scan >
 - 🐉 get_power_status >
 - > 🐺 get_sensor_value
 - 🚼 go_home_to_charge >
 - 📓 move_to_spot >
 - 🛐 rotation_action_demo >
- 2. Right click on " configure_network_demo ", then " Properties" configure "include" and "lib" directories to the corresponding folder path of Slamware SDK.

(î)

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

Configuration:	Active(Debug)	 Platform: Active 	Win32)	~	Configuration Manager
> Common Pr	operties	✓ General			
✓ Configuratio	n Properties	Executable Directories	\$(VCInstallDi	r)bin;\$(WindowsSdk	:Dir)bin\NETFX 4.0 Tools;\$(Wi
General		Include Directories	C:\Users\LW	/\Desktop\SDK\sla	mware sdk windows.2.5.0 d
Debuggi	ng	Reference Directories	\$(VCInstallDi	r)atImfc\lib;\$(VCInst	allDir)lib
VC++ Di	rectories	Library Directories	C:\Users\LW	\Desktop\SDK\sla	mware sdk windows.2.5.0 d
> C/C++		Source Directories	\$(VCInstallDi	r)atImfc\src\mfc;\$(V	CInstallDir)atImfc\src\mfcm;\$(
> Linker		Exclude Directories	\$(VCInstallDi	r)include;\$(VCInstall	Dir)atImfc\include;\$(Windows
> Manifest	Tool				
> XML Doo	ument Generat				
> Browse I	nformation				
> Build Eve	ents				
> Custom E	Build Step				
> Code An	alvsis				
		Executable Directories			
		Path to use when searching for ex	ecutable files while building a VC++ p	project. Correspond	ds to environment variable
<	>	РАТН.			
				确定	取消 応用(小)
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3. Right click on " configure_network_demo ", then "properties"set "Command Arguments" as follows: Syntax

Syntax configure_network_demo [OPTS] <SDP IP Address> slamware_address The ip address string of the SLAMWARE SDP. AP Configurate network in AP mode. STA Configurate network in STA mode. --disable-dhcp disable dhcp. --enable-dhcp enable dhcp. --disable-wifi disable wifi

-h Show	this	message
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Configuration:	Active(Debug)	√ P	latform:	Active((Win32)			~	Configuratio	on Manager
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Genera Debugg VC++ E > C/C++ > Linker > Manife: > XML Do > Browse > Build Ev > Custom > Code A	jing Directories Et Tool Cocument Generat Information rents Build Step nalysis	Command Ar Command Ar Working Dire Attach Debugger Ty Environment Merge Enviro SQL Debuggi	guments ictory pe nment ng			\$(Tar 192. No Auto Yes No	igetPath) 168.11.1 ojectDir)			
<		Command The debug comm	nand to e	xecute.						
								确定	取消	应用(A)

- 4. Click " F5" to execute.
- 5. Configure in AP and STA modes

· AP mode

After configuration, the wifi name(SSID), password, IP address, channel will become the value set in the figure below.



Verification: After reconnecting the slamware AP with SSID: test and password: 12345678, the slamware module can be connected with 192.168.11.101 (192.168.11.1 is still available as the default).

AND Slamware Core S/N Name Core Status Status and Co			
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Devices DDB/FECORE/FF700L/EE/FF700L/	lamate Core Status	Key	Value
MODE: SED: AP: Les: 152: 161: 11: RPLIDRE.A2 6096071-028304-0285084790113400 5N C/17A0D0F99608088454460 SN C/17A0D0F9606088454460 SI		DeviceSN	D58F7E2DE0EDF790D4E9F2F90754BDED
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Slamware Core Firmware Versions		S/N	C47ADDC9F69460B882A544E0
2.6.0 dev-sdp vre-20171219		Slamware Core Fi 2.6.0 dev-sdp vre-20171219	rmware Versions

And the WiFi channel has been changed to 6:

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) ×	
属性	
SSID:	test
协议:	802.11n
安全类型:	WPA2-个人
网络频带:	2.4 GHz
网络通道:	6

• STA mode

Please input the SSID and password of the a available LAN. After completion, the robot will access the LAN and can be connected with the IP allocated by the robot.



Verification: The slamware module can be accessed by connecting the client to the same LAN. In the figure below, the IP address assigned by the robot is 10.0.129.75.

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Similarly, you can use commands as described above to disable/enable DHCP, disable WIFI.

Code

AP mode

AP mode

```
std::map<std::string, std::string> options;
options["ssid"] = "test";
options["password"] = "12345678"; // password length should surpass 8
options["ip"] = "192.168.11.101"; // do not use address from 192.168.11.1 to 192.168.11.100 (reserved
for internal usage)
options["channel"] = "6";
result = sdp.configurateNetwork(NetworkMode::NetworkModeAP, options);
```

• STA mode

STA mode

```
std::map<std::string, std::string> options;
options["ssid"] = ssid;
options["password"] = password;
result = sdp.configurateNetwork(NetworkMode::NetworkModeStation, options);
```

Disable/enable DHCP

Disable/enable DHCP

```
if (opt_enable_dhcp == true) {
    std::cout << "enable DHCP" << std::endl;
options.clear();
    result = sdp.configurateNetwork(NetworkModeDHCPEnabled, options);
    }
    if (opt_disable_dhcp == true) {
        std::cout << "disable DHCP" << std::endl;
    options.clear();
        result = sdp.configurateNetwork(NetworkModeDHCPEnabled, options);
    }
</pre>
```

Disable WIFI

```
Disable wifi

if (opt_disable_wifi == true) {
    std::cout << "disable wifi" << std::endl;
    options.clear();
    result = sdp.configurateNetwork(NetworkMode::NetworkModeWifiDisabled,
    options);
    }
</pre>
```