# **Robustel Centre Manager RobustLink**

**Centralized M2M Management Platform** 

For GoRugged Series Router & Gateway

# **User Guide**

Document Na	ame:	User Guide
Firmware	:	1.01.00
Date	:	2013-12-12
Status	:	Confidential
Doc ID	:	RT_UG_RobustLink_v.1.0.0

ecords pe	r page:	25 💌	-				Search:			_
Index S	itatus	Device ID	Device Type	IMEI	RSS	IP Address	Version	Region	n Syn	Deta
1	×	1097178433233	R3000	357789045177448	0	172.16.1.230	1.01.00			
2	×	351535051012052	M1000_ProV2	351535051012052	26	10.57.221.233	Version 2.3.0			Config
Dev	ice ID:	35153505	1012052				· · · · · · · · · · · · · · · · · · ·			
Devic	e Type:	M1000_	ProV/2							
D	MEI:	35153505	1012052							
18	MSI:	460012834	4295510							
R	SSI:	26								
Reg	gister:	Registered Ho	me Network							
Ope	arator:	CHN-UN	ICOM							
Ce	ell ID:	"2504","	39AA"							
SMS	Center:	+8613010	200500							
ToTal SI	M Numb	per: 1								
Current S	IM Num	nber: SIM	1							
IP Ac	ddress:	10.57.22	1.233							
DI	NS1:	221.4	.8.1							
D?	NS2:	0.0.0	0.0							
Onlin	e Time:	144	7							
Transn	nit Stati	e: 1								
Send I	Packets	459	7							
ecords fre	om 1 to	2 (Total: 2)					Fir	st Prev	1 1	Jext L
			Copyright 6	2013 Kobustel Techno	rogiës, i	al rights reserved				



www.robustel.com

#### **About This Document**

This document describes the software of Robustel RobustLink, Centralized M2M Management Platform.

Copyright© Guangzhou Robustel Technologies Co., Limited All Rights Reserved.

#### **Trademarks and Permissions**

Robustel are trademark of Guangzhou Robustel Technologies Co. Limited. All other trademarks and trade names mentioned in this document are the property of their respective holders.

#### Disclaimer

No part of this document may be reproduced in any form without the written permission of the copyright owner. The contents of this document are subject to revision without notice due to continued progress in methodology, design and manufacturing. Robustel shall have no liability for any error or damage of any kind resulting from the use of this document.

#### **Technical Support Contact Information**

 Tel:
 +86-18924045664

 Fax:
 +86-20-82321505

 E-mail:
 support@robustel.com

 Web:
 www.robustel.com

#### **Revision History**

Updates between document versions are cumulative. Therefore, the latest document version contains all updates made to previous versions.

Release Date	RobustLink Version	Doc Version	Details
2013-12-12	1.00	v.1.0.0	First release

## Contents

Chapter 1.	Pro	duct	5					
1.1.	Ove	erview	5					
1.2.	Sele	ection and Ordering Data	5					
Chapter 2.	Inst	allation	6					
2.1.	Syst	System requirement						
2.2.	Inst	allation steps	6					
Chapter 3.	Con	figuration settings over web browser	9					
3.1.	Con	ntrol Panel	9					
3.2.	HOI	ME	9					
3.3.	CON	NFIGURATION -> Basic Setting						
3.4.	CON	NFIGURATION -> Data forwarding						
3.5.	CON	NFIGURATION -> XML						
3.6.	ADN	MINISTRATION -> My Account						
3.7.	ADN	MINISTRATION -> New Account						
3.8.	ADN	MINISTRATION -> Account List						
3.9.	ADN	MINISTRATION -> Upload Firmware						
3.10.	ADN	MINISTRATION -> Update Firmware						
3.11.	ADN	MINISTRATION -> Update Plans -> New Plans						
3.12.	ADN	VINISTRATION -> Update Plans -> Plans List						
3.13.	ADN	MINISTRATION -> Agent Server						
3.14.	ADN	MINISTRATION -> MySQL						
3.15.	ADN	MINISTRATION -> Device Register						
Chapter 4.	Exa	mples						
4.1.	Арр	plication Diagram for Introduction	23					
4.2.	Mai	nage M1000 Pro V2 via RobustLink	23					
4.	2.1.	Connect M1000 Pro V2 to RobustLink						
4.	2.2.	Forward data from M1000 Pro V2 to RobustLink						
4.3.	Mai	nage R3000 via RobustLink						
4.	3.1.	Connect to RobustLink						
4.	3.2.	Forward data from R3000 to RobustLink						
Chapter 5.	Trou	ubleshooting						
5.1.	Trou	ubleshooting for installing RobustLink						

# Chapter 1. Product

### 1.1. Overview

Robustel RobustLink is an industrial-grade centralized management and administration system for Robustel GoRugged series router & gateway, including R3000, M1000 XP and M1000 Pro V2.

RobustLink consists of three parts: Web Server (Apache), Agent Server and MySQL. Users can configure relevant parameters of RobustLink via Web Server; Agent Server is platform for data communication which will process all the data coming from slave device, or via vise; MySQL is a database used to store parameters and transaction data. Three parts should work together to ensure all the functions of RobustLink.



RobustLink allows user to monitor, configure and manage large numbers of remote devices on a private network over the web.

It mainly has following features:

- Remote Monitoring
- Remote Configuration
- Remote Firmware Updates
- Data Forwarding
- Number of Devices: 1000+
- Management: Web

### 1.2. Selection and Ordering Data

Please refer to corresponding RobusLink datasheet.

# **Chapter 2. Installation**

#### 2.1. System requirement

Windows 7 (32/64), Windows Vista (32/64), Windows 2008 (32/64), Windows 2003 (32/64), Windows 2000, Windows XP (32/64)

#### 2.2. Installation steps

\_

- 1 Download RobustLink installation packet *xampp.rar* via link: <u>https://app.box.com/s/e7p0lrx3o3mv6csgech8</u>.
- 2 **Extract** *xampp.rar* to computer's root directory, non-system root directory will be advised, such as D hard dish, and then the path will be "D:\xampp".
- 3 Close software applications which will use port 80, 443 and 3306. Normally, Skype.exe will occupy port 80, so please close Skype.exe every time before you start RobustLink.
- 4 Double click "xampp-control.exe" --> click "Start" to enable both "Apache" (Web Server) and "MySQL".

ខ	xampp-cor	ntrol.exe						
	Control P XA	anel v3.1. MPP Con	Deta 6 [Co trol Panel v3	.1.0 Be	<sup>September</sup> ta 6	20th 2012 ]		Config
Modules Service	Module	PID(s)	Port(s)	Actions				Netstat
×	Apache			Start	Admin	Config	Logs	🗾 Shell
×	MySQL			Start	Admin	Config	Logs	🔁 Explorer
×	FileZilla			Start	Admin	Config	Logs	🦻 Services
	Mercury			Start	Admin	Config	Logs	😡 Help
×	Tomcat			Start	Admin	Config	Logs	Quit
17:02:43	[main]	Running wi	th Administrator	rights -	good!			<u>^</u>
17:02:43	[main]	XAMPP Inst	allation Directo	ry: ″d:∖x	ampp∖″			
17:02:43	[main]	Checking f	or prerequisites	ł.				
17:02:43	[main]	All prereq	uisites tound ng Modules					
17:02:43	[main]	Starting C	heck-Timer					
17:02:43	[main]	Control Pa	nel Ready					
								<b></b>

5 If succeed to start Apache and MySQL, Characters like "80, 443" and "3306" will show up.

🔀 XAEPP	Control F	anel v3.1.	D Beta 6 [ Co	piled: S	eptember	20th 2012	]	
ន	ХА	MPP Con	trol Panel v3	.1.0 Beta	a 6			Config
<ul> <li>Modules</li> <li>Service</li> </ul>	Module	PID(s)	Port(s)	Actions				💿 Netstat
×	Apache	4460 6184	80, 443	Stop	Admin	Config	Logs	🗾 Shell
×	MySQL	6344	3306	Stop	Admin	Config	Logs	🔁 Explorer
×	FileZilla			Start	Admin	Config	Logs	📑 Services
	Mercury			Start	Admin	Config	Logs	😡 Help
×	Tomcat			Start	Admin	Config	Logs	Quit
16:56:08	[main]	Initializi	ng Control Panel					~
16:56:08	[main]	Windows Ve	rsion: Windows X	Р SP3 32-Ъ	it			
16:56:08	[main]	XAMPP Vers	ion: 1.8.1					_
16:56:08	[main]	Control Pa	nel Version: 3.1	.O Beta 6	[ Compile	1: September	: 20th 2012	· ]
16:56:08	[main]	Running wi	th Administrator	rights -	good!			
16:56:08	[main]	XAMPP Inst	allation Directo	ry: ˈd:∖xa	mpp\"			
16.56.00	[main]	Unecking f	or prerequisites					
16.56.08	[main]	AII prereg Initializi	uisites Iouna ng Modules					~
								.;

6 Open the browser, such as Opera, Google Chrome and Firefox --> enter http://127.0.0.1/login.php or http://localhost/login.php in the address bar.



7 Enter password **123456** in the new page to install MySQL (database), other parameters stay default.



8 Double click "*RobustLink\_start.bat*" (Agent Server). If connect to MySQL (database) successfully, it will show the following diagram.



C:\VINDOVS\system32\cmd.exe	- 🗆 🗙
Please dont close Window while Robustlink is running	
Robustlink Agent Server is trying to start	
Please wait	
open config file config.bin fail	
use default parameters	
2013-11-05 15:27:13 [I] connect to database success	
2013-11-05 15:27:13 [I] connect to database success	
2013-11-05 15:27:13 [I] connect to database success	
2013-11-05 15:27:13 [I] connect to database success	
2013-11-05 15:27:13 [I] connect to database success	
2013-11-05 15:27:13 [I] connect to database success	
2013-11-05 15:27:13 [I] connect to database success	
2013-11-05 15:27:13 [I] connect to database success	
2013-11-05 15:27:14 [I] start telnet service on port 31009	
2013-11-05 15:27:14 [I] <952> start tcp server on port 31000	
2013-11-05 15:27:14 [I] <936> start tcp server on port 31001	

9 Enter: <u>http://127.0.0.1/login.php</u> or <u>http://localhost/login.php</u> in the address bar again --> Username "admin" --> Password "admin" --> click "Login".

User authentication required. Login please.				
Username:	admin			
Password:	•••••			
Language:	English 💌			
Don't have an account?	Sign up Login			

10 After successfully login, you can see Web Server of RobustLink.

lob	uste	el								admin (
HOME	CONFIGUR	RATION ADMIN	ISTRATION HEL	Р						
ecords pe	er page: 25	*					Sea	rch:		
Index	Status 🔶	Device ID 🔶	Device Type 🔶	IMEI	RSSI	IP Address 🔶	Version 🔶	Region 🔶	Sync	Details
				No reco	ords to disp	olay				
0/0								First	Prev	Next Last
			Copyright © 201	3 Robuste	l Technologi	es. All rights reserved				
					10	12 2012				

# **Chapter 3. Configuration settings over web browser**

## 3.1. Control Panel

User can click "admin" --> "Logout" to logout web browser of RobustLink.

Robustel							admin <b>D</b>
HOME CONFIGURATION ADMIN	ISTRATION HELP						
Records per page: 25 🗸				Sea	rch:		
Index Status Device ID	Device Type 🔶 🛛 II	MEI RSSI	IP Address 🗧	Version 🔶	Region 🔶	Sync	Details
	N	lo records to disp	olay				
0-0/0					First	Prev N	Jext Last
	Copyright © 2013 R	obustel Technologi	es. All rights reserved.				

### 3.2. HOME

This section shows status of slave devices which had ever logged in RobustLink, or the devices which are connecting to RobustLink.

Robustel admin 🛛										
HOME	CONFI	GURATION ADMIN	ISTRATION	HELP						
Records p	per page:	25 💌					Search:			
Index	Status	Device ID 🔶	Device Type 🔶	IMEI 🔶	RSSI	IP Address 🔶	Version	Region	Sync	Details
1	~	300513060001	R3000	357789045177448	10	10.56.114.138	1.01.00			
2	×	1097167457505	M1000_ProV2		0					<u>Config</u>
3	×	1097178433233	M1000_ProV2		0					<u>Config</u>
4	×	11111111300012	R3000		0	172.16.2.186	1.01.00			
5	×	351535051012052	M1000_ProV2		0					<u>Config</u>

	HOME
Item	Description
Pacardo Dar paga	Selected from "10", "25", "50", "all", user can set how many devices are wanted
Records Per page	to show in one page.
Search	User can enter characters to search specific information. For example, when
Search	enter "R3000", all information relevant to R3000 will show up.
Index	Show the index of devices.
Statuc	Show the status of devices. If device login to RobustLink, it will show "
Status	it will show "🔽".
Device ID	Show the ID of device.
Device Type	Show the type of device: M1000 XP, M1000 Pro V2 or R3000.
IMEI	Show the IMEI number of device's wireless module.
RSSI	Show device's current signal level.
IP Address	Show device's current IP address.
Version	Show device's firmware version.
Region	Show specific region information of device.
Supe	Show whether the device information is synchronous with RobustLink. It shows
Sync	blank while synchronous, If not it will show symbol " $f A$ ".
	Show note information. User can click "Config" to open another configure web
Details	page.
	<b>Note</b> : It's only available for M1000 XP and M1000 Pro V2.

## 3.3. CONFIGURATION -> Basic Setting

This section allows user to do basic settings of RobustLink.

IOME CONFIGURATION	ADMINISTRATION HELP
■ AS Configuration	Agent Server Basic Setting
Basic Setting	
Data Forwarding	Device Login Password:
	Heartbeat Interval (s): 60
Batch Configuration	
XML	Enable Data Forwarding
	Forward Data By Modbus Address (Modbus TCP)
	Apply

Basic Setting				
Item	Description	Default		
Device Login Password	Set devices login password. Devices need to enter this password before login RobustLink.	Null		
Heartbeat Interval(s)	When using GPRS/UMTS with a session running, most ISPs will monitor traffic flow. If there is none for a predetermined period of time then it shut the connection down at either the DHCP server or the APN, th performed so that system resources are not taken up unnecessarily. To this happening you will need to send periodic Heartbeat bytes to keep TCP connection always online. This item allows user to time interval between two Heartbeat pac Setting from 10 to 3600 secs.			
Enable Data Forwarding	Click to enable data forwarding function. After enable this function, RobustLink is acted as a data forwarding platform preparing to receive data from slave sites (M1000XP, M1000 Pro V2 or R3000). If the modem or router also enable data forwarding function and register to RobustLink, then all the data will be forwarded from slave sites to RobustLink. And RobustLink will forward the data to other site (user can configure the destination site in tab "Configuration"> "Data Forwarding"). User can check data record in Agent Server (RobustLink_start.bat) which will show what data has been sent to RobustLink.	Disable		
Forward Data By Modbus Address (Modbus TCP)	Click to allow RobustLink to forward data according to Modbus Address of slave devices. <b>Note</b> : If user clicks to enable this function, "Enable Data Forwarding" will be enabled automatically, this function should be enabled together with "Enable Data Forwarding".	Disable		

## **3.4. CONFIGURATION -> Data forwarding**

This section allows user to do data forwarding configurations. For example, port number of RobustLink, Modbus Start and End address. Clicking anywhere of records page will pop up a new subpage "Data Forwarding" (blue color

#### characters).

IOME CONFIGURATION	ADMINISTRATIO	N HELP			
AS Configuration	Device Dat	a Forwarding Setting			
Basic Setting	-			- · · [	
Data Forwarding	Records pe	er page: 25 💌		Search:	
	Index	Device ID 🔶	Port	Modbus Start Addr 🛛 🔶	Modbus End Addr 🔶
Batch Configuration	1	300513060001	0	0	0
XML	2	1097167457505	0	0	0
	3	1097178433233	0	0	0
	4	11111111300012	0	0	0
	5	351535051012052	0	0	0

Data Forwarding		×
Device ID:	300513060001	
Port:	0	
Modbus Start Addr(1-247):	0	
Modbus End Addr(1-247):	0	
	Apply Cancel	

Data forwarding					
Item	Description	Default			
Records Per page	Selected from "10", "25", "50", "all", user can set how many devices are wanted to show in one page.	25			
Search	User can enter characters to search specific information. For example, when enter "R3000", all information relevant to R3000 will show up.	Null			
Index	Show the index of each device.	/			
Device ID	Show the ID of device.	/			
Port	Show the local port number assigned to each device which have logged in RobustLink. Default port number is "0". In the new subpage "Data Forwarding", user can assign each device a new local idle port whose range is 0-65535. Please avoid using famous ports which often spread over 0-1023. For example, "80" is for Web browser. So we recommend you to use the ports above 5000.	0			
Modbus Start Addr	Show Modbus start address (ID) of slave device. In the new subpage "Data Forwarding", user can assign a new Modbus Start Address (ID) to each device.	0			
Modbus End Addr	Show Modbus End address (ID) of slave device. In the new subpage "Data Forwarding", user can assign a new Modbus End Address (ID) to each device.	0			
Apply	Click to apply above port forwarding settings.	/			
Cancel	Click to cancel above port forwarding settings.	/			
Note: There are 2 ways t	Note: There are 2 ways to do data forwarding. One is to enable "Enable Data Forwarding", then RobustLink will				
forward data from different slave devices to different ports according to device ID; the other is to enable "Forward					

Data By Modbus Address (Modbus TCP)" and define a range of Modbus Address basing on the settings of "Port", "Modbus Start Addr" and "Modbus End Addr", then RobustLink will forward data from different devices to one port or different ports according to the range of Modbus Address. It depends on the users whether use one port or different ports to accept data from different range of Modbus Address.

### 3.5. CONFIGURATION -> XML

This section allow user to import configuration file of R3000 for batch configuration. This function only available for R3000.

HOME CONFIGURATION	ADMINISTRATIO	ON HE	LP				
AS Configuration	Batch Con	figuration	List				
Data Forwarding	Records per page: 25 💌 Search:						
	Index	Status	Device ID 🔶	Device Type 🔶	IMEI 🔶	Version 🗌	
Batch Configuration	1	<ul> <li>Image: A second s</li></ul>	300513060001	R3000	357789045177448	1.01.00	
	Records fi	om 1 to 1	(Total: 1)		First Prev 1	Next Last	
	Reboot o	levices aft	er configure.	未选择文件。	Batch Configurati	on	

XML				
Item	Description	Default		
Decordo Dor pago	Selected from "10", "25", "50", "all", user can set how many devices are	25		
Records Per page	wanted to show in one page.	25		
Soarch	User can enter characters to search specific information. For example, when			
Search	enter "R3000", all information relevant to R3000 will show up.	Null		
Index	Show the index of each device	Null		
Status	Show the status of devices. If device login to RobustLink, it will show	Null		
Status	" 🔽 ", or it will show " 🔀 ".			
Device ID	Show the ID of device.	Null		
Device Type	Show the type of device. For example, "M1000 XP", "M1000 Pro V2" or	Null		
Device Type	"R3000".	Null		
IMEI	Show the IMEI number of device.	Null		
Version	Show the firmware version of device.	Null		
	Click to select the device you want to do batch configuration.	Null		
Reboot devices after	Click to reheat device after configuration	Null		
configure	Click to reboot device after configuration.			
Browse	Click to upload configuration file (XML).	/		
RT_UG_RobustLink_v.1.0.0	12.12.2013	13 / 43		

	Click to do batch configuration.	
Batch Configuration	<b>Note</b> : before click to do batch configuration, please click "💷" to select the	/
	device.	

## **3.6. ADMINISTRATION -> My Account**

This section allows user to check current account which has logged in RobustLink.

HOME CONFIGURATION	ADMINISTRATION HELP	
🛛 Account Management	My Account	
My Account		
New Account	Username:	admin
Account List	Language:	English
	Access Level:	Administrator
Update Management		

### 3.7. ADMINISTRATION -> New Account

This section allows user to add new accounts.

HOME CONFIGURATION	ADMINISTRATION HELP	
🛛 Account Management	Register a new account	
My Account New Account	Username: New Password:	
Update Management	Confirm Password: Access Level:	ReadOnly
Upload Firmware Update Firmware	Register	
Update Plans		

New Account				
Item	Description	Default		
Username	inter a new username here. The range of data length is from 5 to 64.			
New Password	Enter a new password here. The range of data length is from 5 to 64.	Null		
Confirm Password	Enter again the password as what you set in "New Password". The range of data length is from 5 to 64.			
			Access Level	Selected from "ReadOnly", "ReadWrite", "Administrator".
ReadOnly: User can read the status of tab "HOME", "CONFIGURATION"				
and "ADMINISTRATOR", but can't change the settings.				
ReadWrite: User can read the status of tab "HOME", "CONFIGURATION"				

	and "ADMINISTRATOR", also can change the settings of "CONFIGURATION						
	-> Basic Settings", "CONFIGURATION ->Data Forwarding",						
	"CONFIGURA	"CONFIGURATION -> XML" and "ADMINISTRATOR -> Device Register".					
	Administrator: User have highest authority to access RobustLink, can read						
	and change the settings of all configuration items.						
Register	Click to regis	ter the new ac	count.				

#### 3.8. ADMINISTRATION -> Account List

This section allows user to check the list of current account.

HOME CONFIGURAT	ION ADMINISTRATION	IELP		
Account Management My Account	Account List			
New Account	Records per page:	25 💌	Search:	
Account List	Index	Username	Access Level	
	1	admin	Administrator	
🛛 Update Management	2	robustel	Read-Write	×
Upload Firmware	3	robustel2	Read-Only	×
Update Firmware	Records from 1 to	3 (Total: 3)	First Prev 1 Next	Last

*Note*: click "**IX**" to delete an account.

### **3.9. ADMINISTRATION -> Upload Firmware**

This section allows user to upload firmware of different type of device to RobustLink. And when need to update, user can select proper firmware to update.

Account Management	Firmware Name I	ist Of Devices		
My Account				
New Account	Records per page	: 25 💌	Search:	
Account List	Index	Device Type 🔶	Firmware Name	
	1	R3000	R3k.1.01.00.03_130703	×
🛿 Update Management	2	R3000	R3k.1.01.00.02_130530	×
Upload Firmware	3	R3000	R3k.1.01.00.02_130513	×
Undate Firmware	4	M1000_ProV2	M1000ProV2_V2.4.0.bin	×

Upload Firmware				
Item	Description	Default		

Records Per page	Selected from "10", "25", "50", "all", user can set how many devices are wanted to show in one page.			
Search	User can enter characters to search specific information. For example, when enter "R3000", all information relevant to R3000 will show up.			
Index	Show the index of each device			
Device Type	Show the type of each device. For example, "M1000 XP", "M1000 Pro V2" or "R3000".	/		
Firmware Name	Show the name of firmware.	/		
Please Select Device Type	Click to select the device type the firmware belong to. Selected from "M1000 XP", "M1000 Pro V2" and "R3000".	/		
Browse	Click to choose the firmware you want to upload to RobustLink.	/		
Upload Firmware	Click to upload firmware.	/		
Note: click "💌" to delet	e the uploaded firmware.			

## **3.10.** ADMINISTRATION -> Update Firmware

This section allows user to update firmware to RobustLink. And when need to update, user can select different firmware relevant to different device types.

HOME CONFIGURATION	DMINISTRATIO	N HELP			
Account Management My Account	Update Firm	nware list			
New Account	Records pe	r page: 25 💌		Search:	
Account List	Index	Device ID	Device Type 🔶	IMEI	Version 🗧 🗌
	1	300513060001	R3000	357789045177448	1.01.00
Update Management					
Upload Firmware					
Update Firmware					
Update Plans					
Service Management					
Agent Server					
MySQL	Records fro	om 1 to 1 (Total: 1)		First Prev	1 Next Last
Device Management	Please S	elect Firmware ៴	Update Firmware		
Device Register					

Update Firmware				
Item	Description	Default		
Records Per page	Selected from "10", "25", "50", "all", user can set how many devices are wanted to show in one page.	25		
Search	User can enter characters to search specific information. For example, when enter "R3000", all information relevant to R3000 will show up.	Null		
Index	Show the index of each device	/		
Device ID	Show the ID of device.	/		
RT_UG_RobustLink_v.1.0.0	12.12.2013	16 / 43		

Device Type	Show the type of device. For example, "M1000 XP" and "M1000 Pro V2" or "R3000".	/
IMEI	Show the IMEI number of device.	/
Version	Show the firmware version of device.	/
	Click to select the device you want to upgrade the firmware.	/
Please Select Firmware	Click to select one firmware which is uploaded in tab "Upload Firmware".	/
Update Firmware	Click to update the firmware you have selected.	/

### **3.11.** ADMINISTRATION -> Update Plans -> New Plans

This section allows user to set firmware update plans according to the time. Different firmware has to match correspond device. For example, firmware of M1000 Pro V2 has to match M1000 Pro V2, cannot match R3000.

S Account Management							
My Account	Devices l	ist for add	ing to update plans				
New Account	Records p	oer page:	25 💌		Search:		
Account List	Index	Status	Device ID 🔶	Device Type 🔶	IMEI 🔶	Version	
	1	~	300513060001	R3000	357789045177448	1.01.00	
🛚 Update Management	2	×	1097167457505	M1000_ProV2			
Upload Firmware	3	×	1097178433233	M1000_ProV2			
Update Firmware	4	×	351535051012052	M1000_ProV2			
Update Plans							
New Plans							
Plans List							
🛚 Service Management	Records f	rom 1 to -	4 (Total: 4)		First Prev 1	Next L	ast.
		Select F		2 4/9/12 Add 3	o Undato Blanc		

New Plans @ Update Plans				
Item	Description	Default		
Decende Der nore	Selected from "10", "25", "50", "all", user can set how many devices are	25		
Records Per page	wanted to show in one page.	23		
Soarch	User can enter characters to search specific information. For example,	Null		
Search	when enter "R3000", all information relevant to R3000 will show up.	Null		
Index	Show index of each device	/		
Status	Show the status of devices. If device login to RobustLink, it will show	1		
Status	" 🔽 ", or it will show " 🔀 ".	/		
Device ID	Show the ID of device.	/		
Dovice Type	Show the type of device. For example, "M1000 XP", "M1000 Pro V2" or	1		
Device Type	"R3000".	/		
IMEI	Show the IMEI number of device.	/		
Version	Show the firmware version of device.	/		

	Click to select the device you want to upgrade the firmware.	/
Please Select Firmware	Click to select one firmware which is uploaded in tab "Upload Firmware".	/
2013-07-11 04:03:27	Set a specified time. RobustLink will upgrade firmware automatically if reach this time.	/
Add to Update Plan	Click to add a new plan.	/

## **3.12.** ADMINISTRATION -> Update Plans -> Plans List

This section shows the list of firmware update plans.

HOME CONFIGURATION	DMINISTRAT	ION HELP				
Account Management	Update P	lans List				
My Account						
New Account	Records	per page: 🛛 25 🛛 👻		Sea	arch:	
Account List	Index	Device ID 🔶	Device Type	Update Time 🔶	Firmware Name	÷
	1	300513060001	R3000	2013-07-11 04:03:27	R3k.1.01.00.02_130513	×
🗵 Update Management	Records	from 1 to 1 (Total:	1)		First Prev 1 Next L	Last
Upload Firmware						
Update Firmware						
Update Plans						
New Plans						
Plans List						

Plans List @ Update Plans				
Item	Description	Default		
Deserves Dev vege	Selected from "10", "25", "50", "all", user can set how many devices are			
Records Per page	wanted to show in one page.	25		
Soarch	User can enter characters to search specific information. For example,	NUI		
Sedicii	when enter "R3000", all information relevant to R3000 will show up.			
Index	Show the index of each device.			
Device ID	Show the ID of device.			
Dovice Type	Show the type of device. For example, "M1000 XP", "M1000 Pro V2" or			
Device Type	"R3000".			
Update Time	Show the time you which you have set in tab "New Plans".			
Firmware Name	Show the firmware version which you have set in tab "New Plans".			
Note: click "X" to delet	e an update plan.			

## 3.13. ADMINISTRATION -> Agent Server

This section allows user to set parameters of Agent Server.

#### Robustlink Central Manager User Guide

OME CONFIGURATION	ADMINISTRATION HELP		
■ Account Management	Agent Server Connection		
My Account			
New Account	Agent-Server Address:	localhost	
Account List	Port:	31001	
	Protocol:	tcp	
🛛 Update Management	Timeout (s):	30	
Upload Firmware	rineout (s).	50	
Update Firmware	Connect		
Update Plans			
New Plans			
Plans List			
🛛 Service Management			
Agent Server			
MySQL			

	Agent Server			
Item	Description	Default		
	Set IP address of Agent Server. For example, when Agent Server is installed			
Agent-Server Address	in the same IP address of MySQL and Apache, user can enter "localhost",			
	"127.0.0.1" in this filed; If Agent Server is set away from MySQL and			
	Apache, not in the same IP address, user should enter the IP address of			
	Agent Server. For example, when Agent Server is installed in remote server			
	(PC), its IP address is 120.197.58.89, and then we shall enter			
	"120.197.58.89" in this filed.			
Port	Set a local port number of Agent server.	31001		
Protocol	Set transport layer protocol which device used to connect to Agent Server.			
	<i>Note</i> : can't be selected yet.	ιcp		
	Set timeout when slave device connect to Agent Server. For example, if			
	"Timeout" is set as "30", when device keep on connecting Agent Server,			
Timeout(s)	after 30 seconds but still can't succeed to connect to Agent Server, log	30		
	information will show connection timeout.			
	Data range is from 5 to 60 seconds.			
Connect	Click to update settings to Agent Server after above settings.	/		

## 3.14. ADMINISTRATION -> MySQL

This section allows user to set parameters of MySQL.

#### Robustlink Central Manager User Guide

HOME CONFIGURATION	ADMINISTRATION HE	LP		
☑ Account Management	MySQL Connection			
My Account New Account	Hostname:	localhost		
Account List	Username:	root		
Update Management	Password: Port:	••••• 3306		
Update Firmware	DataBase Name:	robustel		
New Plans	Enable MySQL persis	tent connection (Recommend)		
Plans List	Notify connection se	tting to Agent-Server (Recomme	end)	
Service Management	Connect			
Agent Server MySQL				

	MySQL					
Item	Description	Default				
	Enter the IP address where MySQL is installed in. For example, if MySQL					
	is installed in the same PC of Web Server, user can enter "localhost" or					
Hostname	"127.0.0.1" in this filed; if MySQL is installed in different location	localhost				
	(120.197.59.63 for example) from Web Server, user shall enter					
	"120.197.59.63" in this filed.					
Username	Enter user name of MySQL.					
	Enter password of MySQL.					
Password	Note: Username and Password are used to login MySQL, we suggest user					
	do not change the settings of Username and Password.					
Port	Enter port number of MySQL.					
Connect	Click to update settings to MySQL after above settings.	/				
DataBase Name	Set name of MySQL.	robustel				
Enable MySOL persistent	Click to connect MySQL to Web Server persistently. If do not enable this					
connection (Recommand)	function, Web Server will just connect to MySQL if needed. For example,	Enable				
connection (Recommend)	add new account to RobustLink.					
	Click to send "MySQL Connection" information such as "Hostname",					
Notify connection setting	"Username", "Password", etc to Agent Server, and then Agent Server can					
to Agent-Server	be abled to connect to MySQL according to this information.	Enable				
(Recommend)	Note: when you change the MySQL Connection information, remember to					
	click "Connect" to let Agent Server know the credentials of MySQL.					
Connect	Click to update settings to Agent Server after above settings.	/				

## **3.15.** ADMINISTRATION -> Device Register

HOME CONFIGURATION	ADMINISTRATION HELP				
Account Management	Device Register List				
My Account					
New Account	Records per page: 25 💌		Searc	h:	
Account List	Index Status	Device ID 🔶	Device Type 🔶	IMEI 🔶	Version 🔶
		No reco	ords to display		
Update Management					
Upload Firmware					
Update Firmware					
Update Plans					
Service Management					
Agent Server					
MySQL	0-0/0			First Pr	rev Next Last
Device Management	В	rowse Batch Re	egister Export		
Device Register					
	Copyright © 2013 Robu	istel Technologies. All rig	hts reserved.		

This section allows user to set parameters of Device Register.

	Device Register	
Item	Description	Default
Pacardo Dar paga	Selected from "10", "25", "50", "all", user can set how many devices are	25
Records Per page	wanted to show in one page.	25
Search	User can enter characters to search specific information. For example,	Null
Search	when enter "R3000", all information relevant to R3000 will show up.	Null
Index	Show index of each device	/
Status	Show the status of devices. If device login to RobustLink, it will show	1
Status	" 🔽 ", or it will show " 🔀 ".	/
Device ID	Show the ID of device.	
Dovice Type	Show the type of device. For example, "M1000 XP", "M1000 Pro V2" or	
Device Type	"R3000".	
IMEI	Show the IMEI number of device.	/
Version	Show the firmware version of device.	/
Browse	Click to upload register file.	Browse
Batch Register	Click to start registering devices to RobustLink.	/
	Click to export register file: <i>device_register.xls</i> , user need to fill in device's	
	information such as "Device Type" and "Device ID" in this file.	
Export	Device ID of M1000 XP/M1000 Pro V2 is its IMEI number which will be	/
	found in the back label, or you can check this in ModemConfigurator ->	
	NMS -> M2M Platform -> Device ID.	

Device ID of R3000 is its SN number which will be found in the side label of R3000, or you can check this SN number in R3000's Web GUI -> Status ->	
System -> Router Information -> Serial Number.	
Note: section 4.2.1 and section 4.3.1's step 1 to step 4 will show how to	
register devices.	

# Chapter 4. Examples





- 1. M1000 Pro V2/ R3000 works as TCP Client with any IP which can access to Internet.
- 2. RobustLink works as TCP Server with fixed public IP or dynamic IP with domain name.
- 3. Another TCP Client site, Control Center for example, works as another TCP Client which connects with RobustLink via intranet (LAN port) or via Internet.

#### 4.2. Manage M1000 Pro V2 via RobustLink

#### 4.2.1. Connect M1000 Pro V2 to RobustLink

 Login RobustLink Web GUI, go to tab "ADMINISTRATION" -> "Device Register", click "Export" to export register file: device\_register.xls.

Account Management	Device Regi	ster List				
My Account						
New Account	Records per	page: 25 🔹		Sear	ch:	
Account List	Index	Status	Device ID 🔶	Device Type	IMEI 🔶	Version 🔶
			No reco	ords to display		
Update Management						
Upload Firmware						
Update Firmware						
Update Plans						
Service Management						
Agent Server						
MySQL	0-0/0				First F	Prev Next Last
Device Management		选择文件。	Batch Regi	Export		

 Open device\_register.xls, enter IMEI number of M1000 Pro V2 in tab "Device ID" and M1000\_ProV2 in tab "Device Type", and then save this file. Section 3.15 -> "Export" will show how to find IMEI number of M1000 Pro V2.

	А	В	С	D
1	Device ID	Device Type	Region	Phone Number
2	351535051960474	M1000_ProV2		
3	351535051012052	M1000_ProV2		
4	351535052002730	M1000_ProV2		
5	357804048811578	M1000_ProV2		
6	00300513060001	R3000		
7				

*Note*: In tab "Device Type", make sure enter **M1000\_ProV2**, any other format like **M1000 ProV2** or **M1000\_ProV2** will be unavailable.

3. Click tab "Browse" to import file device\_register.xls which you have filled in "Device ID" and "Device Type" of M1000 Pro V2.

	Device Regist	er List				
My Account						
New Account	Records per p	oage: 25 👻		Sea	rch:	
Account List	Index	Status	Device ID	Device Type	IMEI	Version
			No reco	rds to display		
🛿 Update Management						
Upload Firmware						
Update Firmware						
Update Plans						
Service Management						
Service Management Agent Server					Les to Les	
Service Management Agent Server MySQL	0-0/0				First Pi	rev Next Last
Service Management Agent Server MySQL Device Management	<b>0-0/0</b> [ <b>浏览…</b> ]未述	も择文件。	Batch Regi	ster Export	First Pi	rev Next Last

#### 4. Click "Batch Register".

	HELP					
Device Regi	ster List					
Records per	page: 25	•	Search:	:		
Index	Status	Device ID 🔶	Device Type	IMEI	Version	+
1	×	00300513060001	R3000			×
2	×	00300913080058	R3000			×
3	×	351535051012052	M1000_ProV2			×
4	×	351535051960474	M1000_ProV2			×
5	×	351535052002730	M1000_ProV2			×
6	×	357804048811578	M1000_ProV2			×
Records fro	m 1 to 6 (T	iotal: 6)	Fir	et Drov	1 Novt	Lact
Records from				SL FIEV	I NEXL	Last
_ 浏览···- de	evice_regis	ter.xls Batch Register	Export			
Row[2]: R	egister a n	ew device successfully.				
Row[3]: R	egister a n	ew device successfully.	-			
Dow[4]+ D	odistor a p	ow dovice cuccosofully				
	Device Regis Records per Index 1 2 3 4 5 6 8 Records from ③ 密···· de ◎ Row[2]: R ◎ Row[2]: R ◎ Row[3]: R ◎ Row[3]: R	Device Register List Records per page: 25 Index Status 1 X 2 X 3 X 4 X 5 X 6 X Records from 1 to 6 (T 浏览… device_regis © Row[2]: Register a n © Row[3]: Register a n © Row[3]: Register a n	Device Register List         Records per page: 25 •         Index       Status       Device ID       4         1       X       00300513060001       2         2       X       00300913080058       3         3       X       351535051012052       4         4       X       351535052002730       6         6       X       357804048811578         Records from 1 to 6 (Total: 6)         Image:       device_register.xls       Batch Register         ©Row[2]: Register a new device successfully.       @Row[3]: Register a new device successfully.         @Row[3]: Register a new device successfully.       @Row[3]: Register a new device successfully.         @Row[3]: Register a new device successfully.       @Row[3]: Register a new device successfully.	Device Register List         Records per page: 25 < Search:         Index       Status       Device ID       Device Type         1       X       00300513060001       R3000         2       X       00300913080058       R3000         3       X       351535051012052       M1000_ProV2         4       X       351535052002730       M1000_ProV2         6       X       357804048811578       M1000_ProV2         6       X       357804048811578       M1000_ProV2         General to 6 (Total: 6)       Fir         Image:       device_register.xls       Batch Register       Export         @Row[2]: Register a new device successfully.	Device Register List         Search:         Index       Status       Device ID       Device Type       IMEI         1       X       00300513060001       R3000       1000       1000         2       X       00300913080058       R3000       1000_ProV2       1000_ProV2         4       X       351535051012052       M1000_ProV2       1000_ProV2       100_ProV2       100_ProV2       100_ProV2       100_ProV2       100_ProV2       1000_ProV2       100_ProV2       100_ProV2       100_ProV2       100_ProV2       100_ProV2       100_ProV2       100_ProV2       100_ProV2       100_ProV2       10_ProV2       10_ProV2	Device Register List         Records per page: 26 • Search:         Index       Status       Device ID       Device Type       IMEI       Version         1       X       00300513060001       R3000       1       1       Version       1         2       X       00300913080058       R3000       1       1       Version       1         3       X       351535051012052       M1000_ProV2       1

 Regarding of M1000 Pro V2: install an antenna -> insert SIM card into one of the SIM card slots -> connects M1000 Pro V2 to the PC's serial port -> switch to Config Mode -> power on M1000 Pro V2.



6. Run M1000 Pro V2 Configurator, Upgrade M1000 Pro V2's firmware to "Version **2.5.0**" (firmware version greater than or equal to version 2.3.3, such as version 2.5.0, will support RobustLink function), and then use M1000 Pro V2 Configurator V2.5.0.exe to configure.

R M1000 Pro V2 Configurator					
File Settings Help					
COM7 💌 Reboot for changes to take effect					
Wakeup         Reboot         Modbus         Advanced         NMS         Status         Management           Com         Basic         GPRS         Connection         Dual SIM         DDNS         Phone Book					
* This COM is only available under Normal Mode					
Serial Interface					
COM Type RS232 V Flow Ctrl None V					
Baud Rate 115200 - Parity None -					
Data Bits 8 💌 Stop Bits 1 💌					
Data Packing					
Interval Timeout 3 (2 - 100) *100ms					
Packet Length 0 (0 - 5000)					
Delimiter 1 00 (Hex) 🗆 Enable					
Delimiter 2 00 (Hex) 🗖 Enable					
Delimiter Process Do Nothing 🚽					
Read Write Default Reboot Exit					
Komp 2011-06-15 08:48:02					

**Note**: Please check the firmware version at the button of the Configurator to confirm that if it is newer than Version 2.3.3. If not please let us know what your firmware version is, we will provide you the proper firmware and configurator.

- Go to tab "COM", select relevant com Type and Baud Rate. For example, COM type RS232, Baud Rate 115200, Data Bits 8, Flow Ctrl None, Parity None, and Stop Bits 1.
- 8. Go to tab "**GPRS**" --> enter relevant ISP information, for example APN, User Name, etc. Make sure M1000 Pro V2 can establish PPP connection successfully.
- 9. Go to tab "**Connection**" --> go to item "Connection Control" --> select "Always Online" mode. Other settings stay default.
- 10. Go to tab "**NMS**"-->M2M Platform, click Enable to allow M1000 Pro V2 connect to RobustLink --> enter IP address and Port number of RobustLink's in item "Address" and "Port"--> enter a password which set in the

RobustLink's Web in item "Password" --> click to enable data forwarding in item "Data Forwarding Enable".

R M1000 Pro V2 Configurator										
File Settings Help										
COM7 💌 🗙 * Reboot for changes to take effect										
Com         Basic         GPRS         Connection         Dual SIM         DDNS         Phone Book           Wakeup         Reboot         Modbus         Advanced         NMS         Status         Management										
Basic										
Device Name DTU Configurator Password										
SMS Control										
Password Phone Group										
Remote TCP Management										
Enable TCP Server Port 30000										
Note: You can start a TCP client by SMS control										
M2M Platform										
Enable 🔽 Data Forwarding Enable 🔽										
Address 113.113.49.201 Port 31000										
Password Device ID 351535051012052										
Read Write Default Reboot										
Scom7 115200,n,8,1 Version 2.4.3 2013-11-04 18:44:54										

#### Note:

- Address: This address is RobustLink's IP address, which should be a public IP address or domain name. For example, 113.113.49.201, the address of USB dongle we use for test in this document.
- **Port:** This port number is the local port number of Agent Server (default port number is 31000), and then enter this number in this field. If Agent Server's port number is changed to another port number basing on the real application, 11021 for example, please enter 11021 in this field. Then go to xampp folder and find out file "RobustLink\_start.bat" -> right click and select "edit" --> change line 7 "RobustLink.exe" to "RobustLink.exe -p 11021" --> save and quit.
- **Password:** This password is configured in the RobustLink. This item shall be same with the password set in the RobustLink. Please refer to section **3.3 CONFIGURATION -> Basic Setting -> Device Login Password.**
- **Device ID:** This item let you know the default single ID number of M1000 Pro V2, can't be changed.
- Data Forwarding Enable: Click to enable data forwarding, the topology is: data from M1000 Pro V2 (TCP client) --> RobustLink (TCP server) --> another TCP Client. At this time tab "Connection"--> "Socket Application" can't be configure. If you disable this tab, data will not be forwarded via RobustLink, they will be sent normally as you set in tab "Connection"--> "Socket Application". But RobustLink still can manage and monitor the status of M1000 Pro V2. Whether Data Forwarding should be enabled depends on customer (user). "Data Forwarding Enable" will be enabled for instruction in this document.
- 11. Go to tab "**Status**" --> go to item "TCP/IP", if succeed to establish PPP connection and TCP connection, "PPP Status" will show "Up" and "TCP Status" will show "Connected".

- 12. Other tabs stay default. Click "Write" to save the settings --> click "Reboot".
- 13. Switch to Normal Mode (data transmission mode).
- 14. If M1000 Pro V2 login RobustLink successfully, it will show the following diagram.

Ro	bus	tel								admin 🛛
НОМЕ	CONF	IGURATION ADMIN	JISTRATION	HELP						
Records	Records per page: 25 V Search:									
Index	Status	Device ID 🔶	Device Type+	IMEI 🔶	RSSI	IP Address 🕂	Version 🔶	Region	Sync	Details
1	<b>~</b>	351535051012052	M1000_ProV2	351535051012052	26	10.20.27.225	Version 2.3.3			<u>Confiq</u>

15. If click the any place of Index 1, it will show the status information of M1000 ProV2.

d .									Course La D			
lecords	per page	: 25	<b>*</b>						Search:	1		
Index	Status		Device ID 🔷 🔶	Devi	ce Type	IMEI	RSSI	IP Address	Version 🔶	Region	Sync	Details
1	<b>~</b>	3515	535051012052	M1000	)_ProV2	351535051012052	26	10.20.27.225	Version 2.3.3			Config _
D	evice ID:		351535051012	2052								
De	vice Type	:	M1000_ProV	/2								
	IMEI:		351535051012	2052								
	IMSI:		460079148174	440								
	RSSI:		26									
F	legister:		Registered Road	dming								
C	perator:		CHINA MOBII	LE								
	Cell ID:		"2515","62D	С"								
SM	SMS Center: +8613800200500		500									
ToTal	ToTal SIM Number: 1											
Curren	Current SIM Number: SIM1											
IP	Address:		10.20.27.22	5								
	DNS1:		221.179.38.	7								
	DNS2:		120.196.165	.7								
Or	iline Time	:	1555									
Tran	ismit Stat	:e:	0									
Ser	nd Packet:	s:	5182									
Recie	eve Packe	ts:	2016									
	CRC32:		81									
Sta	rtup Time	91	2013-06-14 16:0	02:39								
Mo	dule Type	9:	BGS2-W									
Mod	ule Versic	n:	REVISION 01.3	301								
ecords	from 1 to	) <b>1 (</b> To	ital: 1)						Fin	st Prev	1 Ne	ext Last

#### 4.2.2. Forward data from M1000 Pro V2 to RobustLink

 Open RobustLink, go to tab "CONFIGURATION" --> "Basic Settings" --> click "Enable Data Forwarding"--> click "Apply" to activate these settings.

HOME CONFIGURATION	ADMINISTRATION HELP
AS Configuration	Agent-Server Link Checked for Devices
Basic Setting	
Data Forwarding	Device Login Password:
	Heartbeat Interval (s): 60
Batch Configuration	
XML	Enable Data Forwarding
	Forward Data By Modbus Address (Modbus TCP)
	Enable Safe Login
	Configuration successfully applied.

2. Go to tab "CONFIGURATION"--> "Data Forwarding".

HOME CONFIGURATION	ADMINISTRATIO	N HELP				
AS Configuration Basic Setting Device Data Forwarding Setting						
Data Forwarding	Records pe	r page: 25 🔽		Search:		
	Index	Device ID 🔶	Port	Modbus Start Addr 🛛 🔶	Modbus End Addr 🔶	
Batch Configuration	1	351535051012052	10000	0	0	

3. Click the any place of Index 1, show details of Data Forwarding information. Set an idle port number, for example 22233. Then click "Apply".

Data Forwarding	Records per p	age: 25 💌		Sear	ch:
	Index	Device ID	🔶 Port 🔶	Modbus Start Addr	Modbus End Addr 🔶
a Batch Configuration	Data Forma	dina		×	0
	Port: Modbus : Modbus :	 Start Addr(1-247): End Addr(1-247):	22233 0 0 Apply	Cancel	

*Note*: Now RobustLink agent has become a TCP server, IP address is 113.113.49.201, local port number is 22233.

4. Run Hercules (download via link <u>http://www.hw-group.com/products/hercules/index\_en.html</u>) --> go to tab "TCP Client" --> enter IP address and Port number of above TCP server which has been created in RobustLink --> click "Connect". If succeed to connect to the TCP Server, in this document, it will show up message "Connecting to 113.113.49.201 ...

Connected to 113.113.49.201".

😵 Hercules SETUP utility by HV-group.com	
UDP Setup Serial TCP Client TCP Server UDP Test Mode About	
Received/Sent data	
Connecting to 113.113.49.201	Module IP Port
Connected to 113.113.49.201	113.113.49.201 22233
	Ping X Disconnect
	TEA authorization TEA key 1: 01020304 3: 090A0B0C 2: 05060708 4: 0D0E0F10 Authorization code
j r Send	
	Send Send Send Hercules SETUP utility Version 3.2.5

 Run Terminal exe (download via link <u>https://www.box.com/s/67a68jraki9k1r0lijuz</u>) --> select the same serial port settings of M1000 Pro V2: COM 1, Baud Rate 115200, Data Bits 8, Parity none, Stop Bits 1, Handshaking none --> click "Connect" --> enter characters like "123456" --> click "Send".

Connect         COM Poit         Baud rate         D           Disconnect         C COM2         600         9600         56000         C           About.         C COM4         2400         19200         115200         C           Quit         C COM6         C 4800         38400         256000         C	Nata bits     Parity     Stop Bits     Handshaking       5 <ul> <li>none</li> <li>1</li> <li>RTS/CTS</li> <li>RTS/CTS</li> <li>X0N/X0FF</li> <li>7</li> <li>mark</li> <li>8</li> <li>space</li> <li>2</li> <li>RTS/CTS + X0N/X0</li> <li>RTS/CTS + X0N/X0</li> <li>RTS on TX</li> <li>RT</li></ul>
Settings Auto Dis/Connect Set font Time CR=LF RxBox C	lear 27 🚖 ASCII table
Receive     C HEX       CLEAR     Reset Counter       0     €       Counter = 0     €       String	StartLog StopLog Dec 🔽 Hex 🥅 Bin
Transmit CLEAR DTR SET CLE RTS SET CLE	CR=CR+LF Send File
123456	CHEXEDOLI
123456	Transmit Macros           ✓         M1         1000 €           ✓         M2         1000 €           ✓         M3         1000 €
Connected	

6. Check Hercules, if data "123456" shows up, that means RobustLink succeed to forward data "123456" sent from M1000 Pro V2.

😵 Hercules SETUP utility by HW-group.com	
UDP Setup Serial TCP Client TCP Server UDP Test Mode About	
Received/Sent data Connecting to 113.113.49.201 Connected to 113.113.49.201 123456	TCP           Module IP         Port           [113.113.49.201         [22233]           Ping         X Disconnect
	TEA authorization           TEA key           1: 01020304         3: 090A0B0C           2: 05060708         4: 0D0E0F10           Authorization code         2:
	PortStore test  PortStore test  Received test data  Received to UDP
	Send HUDgroup Send www.HW-group.com Hercules SETUP utility Send Version 3.2.5
	Yeision 3.2.3

7. Enter characters "Hello" in Hercules --> click "Send".

😵 Hercules SEIOP utility by HV-group.com	
UDP Setup Serial TCP Client TCP Server UDP Test Mode About	
Received/Sent data	
Connecting to 113.113.49.201 Connected to 113.113.49.201 123456Hello	Module IP Port           113.113.49.201         22233
	Ping X Disconnect
	TEA authorization           TEA key           1: 01020304           2: 05060708           4: 0D0E0F10
	PortStore test PortStore test NVT disable Received test data
	Redirect to UDP
Send Hello F HEX F HEX	Send Send HUDgroup www.HW-group.com Hercules SETUP utility
	Send Version 3.2.5

8. Check Terminal.exe, if data "Hello" shows up, that means RobustLink succeed to forward data "Hello" which is sent from Control Center.

🦼 Terminal v1.9b - 20030716 - by Br <del>0y++</del>
COM Port         Baud rate         Data bits         Parity         Stop Bits         Handshaking           Disconnect         © COM2         © 600         © 56000         © 5         © none         © 1         © none           Disconnect         © COM2         © 1200         © 14400         © 57600         © 6         © odd         © 15         © none           About.         © COM3         © 2400         © 19200         © 115200         © 7         © mark         © 2         © RTS/CTS + X0N/X0FF           Quit         © COM6         © 4800         © 38400         © 256000         © 8         © space         © 2         © RTS on TX
Settings
Receive CLEAR Reset Counter 0 ← Counter = 0 ← HEX ⓒ String StopLog Dec ▼ Hex □ Bin
Hello
Transmit           CLEAR         DTR         SET         CLR         CLR         CR=CR+LF         Send File
123456 C::::Xend::
123456
Connected

### 4.3. Manage R3000 via RobustLink

#### 4.3.1. Connect to RobustLink

There are two ways for R3000 to connect to RobustLink, one is R3000 connect to Internet through cellular network (GPRS), then connect to RobustLink; the other is to connect to Internet through Ethernet (broadband), then connect to RobustLink. In this document we use the first method.

 Login RobustLink Web GUI, go to tab "ADMINISTRATION" -> "Device Register", click "Export" to export register file: device\_register.xls.

HOME CONFIGURATION	ADMINISTRATION HELP				
Account Management	Device Register List				
My Account					
New Account	Records per page: 25 -		Searc	h:	
Account List	Index Status	Device ID 🔶	Device Type	IMEI 🔶	Version 🔶
		No recor	ds to display		
Update Management					
Upload Firmware					
Update Firmware					
Update Plans					
Service Management					
Agent Server					
MySQL	0-0/0			First P	rev Next Last
Device Management	<b>浏览…</b> 未选择文件。	Batch Regis	ter Export		
Device Register					
	Copyright © 2013 Robust	el Technologies. All righ	ts reserved.		

2. Open device\_register.xls, enter SN number of R3000 in tab "Device ID" and **R3000** in tab "Device Type", and then save this file. Section 3.15 -> "Export" will show how to find SN number of R3000.

1	A	В	С	D
1	Device ID	Device Type	Region	Phone Number
2	351535051960474	M1000_ProV2		
3	351535051012052	M1000_ProV2		
4	351535052002730	M1000_ProV2		
5	357804048811578	M1000_ProV2		
6	00300513060001	R3000		
7				

**Note**: In tab "Device Type", make sure **R3000** is entered, any other format like **R 3000** or **r3000** will be unavailable.

 Click tab "Browse" and import file *device\_register.xls* which you have filled in "Device ID" and "Device Type" of R3000.

My Account	Device Regist	ter List				
New Account	Records per page: 25 -			Sear	rch:	
Account List	Index	Status	Device ID	Device Type	IMEI	Version
			No reco	rds to display		
🛿 Update Management			Mark Case			
Upload Firmware						
Undate Eirmware						
opuacerinimale						
Update Plans						
Update Plans						
Update Plans						
Update Plans Service Management Agent Server MySQL	0-0/0				First Pi	rev Next Last
Update Plans Service Management Agent Server MySQL Device Management	<b>0-0/0</b> [] <b>浏览…</b> ]未ì	选择文件。	Batch Regi	ster Export	First P	rev Next Last

#### 4. Click "Batch Register".

HOME CONFIGURATION	ADMINISTRATION	HELP					
Account Management	Device Regi	ster List					
My Account							
New Account	Records per	page: 25	•	Search:	:		
Account List	Index	Status	Device ID 🔶	Device Type 🔶	IMEI	Version 🔶	
	1	×	00300513060001	R3000			×
Update Management	2	×	00300913080058	R3000			×
Upload Firmware	3	X	351535051012052	M1000_ProV2			×
Undate Firmware	4	×	351535051960474	M1000_ProV2			×
	5	×	351535052002730	M1000_ProV2			×
Update Plans	6	×	357804048811578	M1000_ProV2			×
Service Management							
Agent Server							
Agent Server							
MySQL	Records from	n 1 to 6 (T	otal: 6)	First	st Prev	1 Next	Last
Device Management	de	vice_regis	ter.xls Batch Register	Export			
Device Register              © Row[2]: Register a new device successfully.               ~                 © Row[3]: Register a new device successfully.               ~							
	Dow[4]+ D	odictor a pr	w dovico cuccoccfully	•			
	Copyr	ight © 2013	Robustel Technologies. All rights re	served.			

5. Regarding of R3000, Install an antenna, insert SIM card into one of the card slot. Power on R3000, login R3000's Web GUI page.

User authentication required. Login please.						
Username:	admin					
Password:	••••					
Language:	English 💌					
Please enter your login	username and password.					
	Login					

6. Go to tab "Configuration"--> "Cellular WAN" --> enter relevant correct ISP settings --> click "Apply".

			_	Logged in as: admin
Status	Basic Ad	lvanced ISP Profile		
System	Cellular Settings			<u>^</u>
Network		SIM1	SIM2	
Route	Status:	Not inserted	Ready	
VPN	Network Provider Type	e: Auto 🔽	china-mobile 💙	
Services	APN:		3gnet	
Event/Log	Username:			
Configuration	Password:			
Sonngaradon	Dialup No.:		*99***1#	
Link Management	PIN code request:	Set PIN Code	Set PIN Code	
Cellular WAN	Connection Made			E
Ethernet			3	
Serial	Connection Mode:	Always online 🛛 🚩		
USB	Redial Interval (s):	30		
NAT/DMZ	Max Retries:	3		
Firewall	Dual SIM Policy			
IP Routing	Main SIM Card:	SIM1 🗸		
DynDNS	Switch to backup S	IM card when connection fails		
IPsec	Switch to backup S	IM card when roaming is detecte	ed	
OpenVPN	Switch to backup S	IM card when data limit is excee	ded	
GRE	Switch hark Main S	IM card after timeout		~
L2TP				Apply Cancel
пптп	<b>∼</b>			
	Copyright	© 2013 Robustel Technologies. All	rights reserved.	

7. Go to tab "Configuration"--> "RobustLink" --> enter server (RobustLink) address and local port in the item "Server Address" and "Port". If you want set a login password for RobustLink, go to item "Password", enter a password which is preseted in the RobustLink. For example, if RobustLink set password "1234", we need to enter "1234" in here --> click "Apply" --> click "Save" --> click "Reboot".

QoS		RobustLink	
IP Routing			
DynDNS		RobustLink Settings	
IPsec		Enable RobustLink	
OpenVPN		Server Address: 113. 113. 49. 201	
GRE		Port: 31000	
L2TP		Password:	
РРТР			
SNMP			
VRRP			
AT over IP			
Phone Book	E		
SMS			
Reboot			
RobustLink			
Syslog			
Event			
USR LED			
Administration			
	Ψ.	Appiy	Cancel
		Copyright © 2013 Robustel Technologies. All rights reserved.	

Note:

- Server Address: This address is RobustLink's IP address, which should be a public IP address or URL. For example, 113.113.49.201, the address of USB dongle we use for test in this document.
- Port: This port number is the local port number of Agent Server (default port number is 31000), and then

enter this number in this field.

If Agent Server's port number is changed to another port number basing on the real application, 11021 for example, please enter 11021 in this field. Then go to xampp folder and find out file "RobustLink\_start.bat" -> right click and select "edit" --> change line 7th "RobustLink.exe" to "RobustLink.exe -p 11021" --> save.

- **Password:** Enter the password which set in the RobustLink. Please refer to section **3.3 CONFIGURATION** -> Basic Setting -> Device Login Password.
- 8. If R3000 login RobustLink successfully, it will show the following diagram.

HOME	HOME CONFIGURATION ADMINISTRATION HELP									
Records	per page:	25 💌					Search:			
Index	Status	Device ID 🔶	Device Type 🔶	IMEI 🔶	RSSI	IP Address 🔶	Version	Region	Sync	Details
1	<ul> <li>Image: A second s</li></ul>	139983585705	R3000	357789045177448	24	10.200.10.252	1.01.00			

9. If click any place of Index 1, it will show the status information of R3000.

HOME	CONFI	GURA	ATION ADM	IINISTRA	TION	HELP						
Records	per page:	25	<b>~</b>						Search:			
Index	Status	I	Device ID 🔶	Device	Type 🔶	IMEI	RSSI	IP Address 🔶	Version	Region	Sync	Details
1	<ul> <li>Image: A set of the set of the</li></ul>	139	9983585705	R300	)0	357789045177448	24	10.200.10.252	1.01.00			^
D	evice ID:		13998358	5705								
De	vice Type:		R3000	I								
	IMEI:		3577890451	.77448								
	IMSI:		4600791481	.74440								
	RSSI:		24									
R	legister:		Registered Ro	adming								
0	perator:		46000	I								
	Cell ID:		62DC									
SM	IS Center:											
ToTal	SIM Numbe	er:	1									=
Current	t SIM Numb	oer:	SIM2									
IP	Address:		10.200.10	.252								
	DNS1:		221.179.3	38.7								
	DNS2:		120.196.1	65.7								
On	iline Time:		373									
Tran	ismit State	:	0									
Sen	id Packets:		0									
Recie	eve Packets	5:	0									
(	CRC32:		3340456	709								
Sta	rtup Time:		2013-06-15 1	7:10:16								
Mod	dule Type:		EM770	N								
Modu	ule Version	:	11.126.10.	31.00								~
Records	from 1 to :	1 (To	tal: 1)		i=L+	@ 2012 Debudel To -to -t			F	irst Prev	1 N	ext Last

## 4.3.2. Forward data from R3000 to RobustLink

1. Before forwarding data from R3000 via RobustLink, please check section *4.3.1* **Connect to RobustLink**, configure settings such as "Cellular WAN" and "Portal" to confirm R3000 can successfully connect to RobustLink. After that,

go to tab "Configuration" --> "Serial" --> "RS232" --> "Protocol Settings" --> "Protocol", select "**Transparent Over Rlink**". Other settings such as "Interval Timeout" and "Serial Port Settings" stay default --> click "Apply" --> click "Save" --> click "Reboot".

Robuste				• Save	• Reboot	• Logout	• English 💌
						Log	ged in as: admin
Status	R\$232	RS485					
System	Serial Port Settings						
Network	Baudrate:	1	15200 🔽				
Route	Data bit:	8	~				
VPN	Parity:	N	one 🔽				
Services	Stop bit:	1	~				
Event/Log	Flow control:	N	one 💌				
Configuration	Protocol Settings						
Link Management	Protocol:	Т	ransparent Over Rlink 🏻	~			
Cellular WAN	Interval Timeout	(1*10ms): 10	D				
Ethernet							
Serial							
DI/DO							
USB							
NAT/DMZ							
Firewall							
IP Routing							
DynDNS							
IPsec							
OpenVPN							
GRE							
L2TP							
PPTP							-
SNMP					_		
						Apply	Cancel
	Cop	yright © 2013 Rob	ustel Technologies. All right	s reserved.			

2. Open RobustLink, go to tab "Home", confirm R3000 (device number is 300513060001) has logged in RobustLink.

HOME	CONF	IGURATION ADMI	NISTRATION	HELP							
Records per page: 25 💌 Search:											
Index	Status	Device ID 🔶	Device Type+	IMEI 🔶	RSSI	IP Address 🔶	Version 🔶	Region	Sync	De	
1	<ul> <li>Image: A second s</li></ul>	300513060001	R3000	357789045177448	23	10.143.22.144	1.01.00				
2	×	1097167457505	M1000_ProV2		0					<u>C</u> c	
3	×	1097178433233	M1000_ProV2		0					Co	

3. Go to tab "CONFIGURATION" --> "Basic Settings" --> click "Enable Data Forwarding"--> click "Apply" to activate these settings.

HOME CONFIGURATION	ADMINISTRATION HELP
AS Configuration	Agent-Server Link Checked for Devices
Data Forwarding	Device Login Password:
Batch Configuration	
	Forward Data By Modbus Address (Modbus TCP)
	Enable Safe Login
	Configuration successfully applied.

4. Go to tab "CONFIGURATION"--> "Data Forwarding".

HOME CONFIGURATION	ADMINISTRATIC	DN HELP				
AS Configuration	Device Da	ta Forwarding Setting				
Data Forwarding	Records p	er page: 25 💌		Search:		
	Index	Device ID	Port÷	Modbus Start Addr 🔶	Modbus End Addr 🔶	
Batch Configuration	1	300513060001	0	0	0	
XML	2	1097167457505	0	0	0	
	3	1097178433233	0	0	0	

5. Click any place of Index 1, show details of Data Forwarding information. Set an idle port number, for example 22222. Then click "Apply".

HOME CONFIGURATION	ADMINISTRATION	HELP				
AS Configuration	Device Data Form	arding Setting				
Data Forwarding	Records ner nage	: 25 💌			Search:	
	Index	Device ID	- Port-	Modbus Start (	Addr	Modbus End Addr
Batch Configuration						0
XML	Data Forwardin	)		×		0
	Device ID:		3005130600	001		0
	Port:		22222			0
	Modburg Stor	- Addr(1, 947);	0			0
	Moubus star	Auur(1-247).	U			0
	Modbus End	Addr(1-247):	0			
			Apply	Cancel		
	Records from 1 to	6 (Total: 6)			First	Prev 1 Next Last

Note: Now RobustLink agent has become a TCP server, IP address is 113.113.49.201, local port number is 22222.

6. Run Hercules (download via link <u>http://www.hw-group.com/products/hercules/index\_en.html</u>) --> go to tab "TCP Client" --> enter IP address and Port number of above TCP server which has been created in RobustLink --> click "Connect". If succeed to connect to the TCP Server, in this document, it will show up message "Connecting to 113.113.49.201 ...

Connected to 113.113.49.201".

😵 Hercules SETUP utility by HW-group.com	
UDP Setup   Serial TCP Client   TCP Server   UDP   Test Mode   About	t
Received/Sent data	
Connecting to 113.113.49.201 Connected to 113.113.49.201	Module IP         Port €           113.113.49.201         22222
	Ping X Disconnect
	TEA authorization TEA key 1: 01020304 3: 090A0B0C 2: 05060708 4: 0D0E0F10 Authorization code
	PortStore test NVT disable Received test data
	J Redirect to UDP
	HEX Send HEX Send HEX Send HEX Send HEX Send HEX Send

Run *Terminal exe* (download via link <u>https://www.box.com/s/67a68jraki9k1r0lijuz</u>) --> select the same serial port settings of R3000: COM 1, Baud Rate 115200, Data Bits 8, Parity none, Stop Bits 1, Handshaking none --> click "Connect" --> enter characters like "123456" --> click "Send".

🦼 Terminal v1.9b - 20030716 - by Br@y++	
COM Port         Baud rate           Disconnect         © COM1         © 600         © 9600         © 56000           Disconnect         © COM2         © 1200         © 14400         © 57600           About         © COM4         © 2400         © 19200         © 115200           Quit         © COM6         © 4800         © 38400         © 256000	Data bits     Parity     Stop Bits     Handshaking       C 5     © none     © 1     © none       C 6     C even     C 1.5     C XON/XOFF       C 7     C mark     C 2     C RTS/CTS + XON/XO       © 8     C space     C 2     C RTS on TX
Auto Dis/Connect Set font Time CR=LF RxE	lox Clear 27 🚖 ASCII table
Receive     ○     Counter     ○     HE       CLEAR     Reset Counter     ○     ◆     Counter = 0     ○     Strip	X ngStartLog StopLog  Dec 🔽 Hex 🖵 Bin
Transmit           CLEAR         DTR         SET         CLR         RTS         SET         CLR	CR=CR+LF SendFile
123456	CHEMEDOLI
123456	Transmit Macros       ✓       M1       1000       ✓       M2       1000       ✓       M3       1000
Connected	

8. Check *Hercules*, if data "123456" shows up, that means RobustLink succeed to forward data "123456" sent from R3000.

😵 Hercules SEIUP utility by HW-group.com	
Secure Setup utility by HU-group.com           UDP Setup Serial TCP Client TCP Server UDP Test Mode About           Received/Sent data           Connecting to 113.113.49.201           Connected to 113.113.49.201           123456	Image: Constraint of the second s
	NVT disable     Received test data
Send	
	Send Send Send Hercules SETUP atility Version 3.2.5

9. Enter characters "Hello" in *Hercules* --> click "Send".

😵 Hercules SETUP utility by HW-group.com	
UDP Setup   Serial TCP Client   TCP Server   UDP   Test Mode   About	
Received/Sent data Connecting to 113.113.49.201 Connected to 113.113.49.201 123456Hello	TCP       Port         113.113.49.201       22222         Ping       ✗ Disconnect         TEA authorization       TEA key         1: 01020304       3: 090A0B0C         2: 05060708       4: 0D0E0F10         Authorization code       Image: Code code
	PortStore test NVT disable Received test data Redirect to UDP
Send	
	Send HUDgroup.com Send Hercules SETUP stility Version 3.2.5

10. Check *Terminal.exe,* if data "Hello" shows up, that means RobustLink succeed to forward data "Hello" which is sent from Control Center.

🦼 Terminal v1.9b - 20030716 - by Br€y++
Connect         COM Port         Baud rate         Data bits         Parity         Stop Bits         Handshaking           Disconnect         C DM1         C 600         9600         56000         C 5         C none         C none <td< td=""></td<>
CLEAR Reset Counter 0 Counter = 0 String StartLog StopLog Dec V Hex Bin
Hello
Transmit           CLEAR         DTR         SET         CLR         CLR         CR=CR+LF         Send File
123456 CEEXend
123456
Connected //

# **Chapter 5. Troubleshooting**

## 5.1. Troubleshooting for installing RobustLink

This section will help user to find out solutions when encounter problems in the process of installing RobustLink. For Windows XP system, pals check as follow the steps below.

1. Check if file xampp.rar has been extracted to computer's root directory. For example, if you extract xampp.rar to C hard dish, it should show the following diagram.



2. Normally port number of Apache is 80 or 443; port number of MySQL is 3306. If these ports have been used by other services, when you click "Start" to start Apache, error information will show up in red. There are two methods to solve above issue: one is to close those services, and the other is to change the port numbers of Apache and MySQL. We suggest user use the first method.

🔀 ХАПРР (	Control P	anel v3.1.0	Beta 6 [Co	mpiled: S	eptember	20th 2012	: 1	
8	XA	MPP Contr	ol Panel v3	.1.0 Bet	a 6			🥜 Config
Modules Service	Module	PID(s)	Port(s)	Actions				🔘 Netstat
×	Apache			Start	Admin	Config	Logs	🔳 Shell
×	MySQL			Start	Admin	Config	Logs	🔁 Explorer
×	FileZilla			Start	Admin	Config	Logs	👳 Services
	Mercury			Start	Admin	Config	Logs	🔞 Help
×	Tomcat			Start	Admin	Config	Logs	Quit
11:28:40	[Apache]	Status chang	e detected: ru	ınning				<u>^</u>
11:28:41	[Apache]	Status chang	e detected: st	opped				
11:20:41	[Apache]	This may be	due to a block	xpectedry. ed port. m	issing der	endencies.		
11:28:41	[Apache]	improper pri	vileges, a cra	ash, or a s	hutdown by	another m	ethod.	
11:28:41	[Apache]	che] Check the "/xampp/apache/logs/error.log" file						
11:28:41	[Apache]	and the Wind	ows Event View	er for mor	e clues			
								~

- 3. Go to these steps to close those services who occupy port number "80", "443", "3306".
  - Click "Start" --> click "Run" --> enter "cmd" and click "OK" --> enter "netstat -ano". In the follow screenshot we can find out PID 3424 has occupied port 80 and 443.

Docum	ents and Settings A	dministrator>netstat -an	0	
tive C	Connections			
Proto	Local Address	Foreign Address	State	PID
TCP	0.0.0.0:80	0.0.0.0:0	LISTENING	3424
TCP	0.0.0.0:135	0.0.0.0:0	LISTENING	168
TCP	0.0.0.0:443	0.0.0:0	LISTENING	3424
TCP	0.0.0.0:3389	0.0.0.0:0	LISTENING	1984
TCP	0.0.0.0:9916	0.0.0:0	LISTENING	608

Open "Tab Manager" (also you can use shortcut keys: Shift+Ctrl+Esc), click "Process" --> click "View" -->select "Select Columns" --> enable "PID (Process Identifier)" --> click "OK".

Select Columns	
Select the columns that will a of the Task Manager.	ppear on the Process page
🔽 Image Name	📃 Page Faults Delta
PID (Process Identifier)	Virtual Memory Size
🗹 CPU Usage	Paged Pool
CPU Time	Non-paged Pool
🗹 Memory Usage	Base Priority
📃 Memory Usage Delta	Handle Count
📃 Peak Memory Usage	Thread Count
Page Faults	GDI Objects
USER Objects	I/O Writes
🔲 I/O Reads	I/O Write Bytes
I/O Read Bytes	I/O Other
📃 Session ID	I/O Other Bytes
🗹 User Name	
	OK Cancel

Look for PID 3424. In this document, we find service Skype.exe has occupied port 80 and 443. Select "Skype.exe", Click "End Process" to end service Skype.exe.

firefox exe	5052	Administrator	00
vmware-unity-	3684	Administrator	00
conime.exe	3496	Administrator	00
Skype, exe	3424	Administrator	00
winword, exe	2736	Administrator	00
vmware.exe	2448	Administrator	00
plugin-contai	2300	Administrator	00
RdfSnap. exe	2208	Administrator	00
svchost. exe	1984	SYSTEM	00
ctfmon.exe	1912	Administrator	00
lsass.exe	1724	SYSTEM	00
services.exe	1696	SYSTEM	00
explorer.exe	1596	Administrator	00
Foxmail.exe	1528	Administrator	00
vmware-tray.exe	1516	Administrator	00

4. If you do not want to close the service which occupies port 80, 443, or 3306, we can change these port numbers of Apache and MySQL to others. For example, change port 80 to 8080 and change 443 to 4433. Please do

following steps to modify these port numbers.

- If xampp.rar extracted to C hard dish, please try to find file: httpd.conf via route C:\xampp\apache\conf and file: httpd-ssl.conf via route C:\xampp\apache\conf\extra. You can select notepad to open these two files.
- > Open httpd.conf, search "Listen 80", then change "80" to "8080" (or other idle port numbers) --> Save;
- > Open httpd-ssl.conf, search "Listen 443", then change "443" to "4433" (or other idle port numbers) -->Save;
- After above modification, please add the port number at the end of IP address. For example, enter: http://127.0.0.1:8080 in the address bar
- 5. Click "Start" to start both "Apache" and "MySQL" again.

冠 хапрр (	Control P	anel <b>v</b> 3.1.(	)Beta 6 [Co	ompiled: S	eptember	20th 2012	2 ]	
8	ХА	MPP Con	trol Panel v3	3.1.0 Beta	a 6			Config
<ul> <li>Modules</li> <li>Service</li> </ul>	Module	PID(s)	Port(s)	Actions				🔘 Netstat
×	Apache			Start	Admin	Config	Logs	🗾 Shell
×	MySQL			Start	Admin	Config	Logs	🔁 Explorer
×	FileZilla			Start	Admin	Config	Logs	👳 Services
	Mercury			Start	Admin	Config	Logs	😣 Help
×	Tomcat			Start	Admin	Config	Logs	Quit
17:02:43	[main]	Running wi	th Administrato	r rights -	good!			<u>^</u>
17:02:43	[main]	XAMPP Inst	allation Direct	ory: "d:\xa	mpp∖″			
17:02:43	[main]	Checking f	or prerequisite	S				
17:02:43	[main]	Initializi	ng Modules					
17:02:43	[main]	Starting Cl	heck-Timer					
17:02:43	[main]	Control Pa	nel Ready					