# **RobustVPN Cloud VPN Portal**

Easy, Secure Remote Access for PLCs and Machines

# **User Guide**

User Guide
1.00.00
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Confidential
RT_UG_RobustVPN_v.1.0.0





www.robustel.com

#### **About This Document**

This document describes the software of RobustVPN Cloud VPN Portal.

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

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# **Chapter 1. Product**

### 1.1. Overview

RobustVPN is based on a hosted web service designed to connect customer to their machines through Internet. The hosted acts as data transit platform and offer communication originated by the customers to their machines. It is intended to be used in the industrial M2M communication sector.

The key of architecture is the central server, it is needed to handle all VPN tunnels and forward the corresponding traffic from end to end.



RobustVPN Client

Remote Subnet

RobustVPN is designed with Web service, address the growing need for broadband and wireless access for remote data transmission. The RobustVPN is the full integration of network security standards by enabling VPN tunnel between the customer and remote machines.

It mainly has following features:

- Easy to connect within VPN tunnel
- Secure internet access to remote stations
- Attaching various control stations
- Connection status overview
- Multi-users and Multi-access
- Plug & Play
- Remote Configuration
- Number of Devices: up to 1000+
- Web GUI

## 1.2. Hardware Requirement

- Pentium IV or above
- 1 GHz CPU (1.5 GHz recommended)
- 1 GB RAM (2 GB recommended)
- 1 GB free disk space

### 1.3. Hardware Requirement

- O/S: Centos 6.x
- Installation Package
- Browser: IE 8.0 or above, Chrome, Firefox

### 1.4. Selection and Ordering Data

Please refer to corresponding RobusVPN datasheet.

# Chapter 2. Installation and Maintain

## 2.1. System requirement

O/S: Centos 6.x (32/64bit) or above.

### 2.2. Installation steps

- 1. Download RobustVPN-1.0.x-i686.install.
- 2. Place the RobustVPN-1.0.x-i686.install to Linux's any folder, e.g. "cd /tmp".

[root@localhost	Rlink_linux32_64]#	cp RobustVPN	-1.0.1-i686.ins	tall /tmp	
[root@localhost	Rlink_linux32_64]#	d /tmp			
[root@localhost	tmp]# ls				
					root.ig88
	pulse-ygX6n6UKmqm0	V			root.pQi2
orbit-root	RobustVPN-1.0.1-168	5.install v			root.PrTo

3. Install the RobustVPN as root, using the following command.

e.g. [root@localhost tmp]# ./ RobustVPN-1.0.x-i686.install -i

<pre>[root@localhost tmp]# ./RobustVPN-1.0.1-i686.install -i</pre>		
RobustVPN: Starting to install		
RobustVPN: Installing RobustVPN applications		
RobustVPN: Starting to create certs for remote station:	0K.	
RobustVPN: Starting to create certs for control station:	ÖK.	
RobustVPN: Unable to get public ip, replaced by eth0:	OK	
RobustVPN: Starting to install database for RobustVPN:	OK.	
RobustVPN: Starting to register system services:	OK	
iptables: Saving firewall rules to /etc/sysconfig/iptables:	OK.	
iptables: Flushing firewall rules:	OK	
iptables: Setting chains to policy ACCEPT: filter [	OK	
iptables: Unloading modules: [	OK	
iptables: Applying firewall rules: [	ÓK.	
RobustVPN: service iptables reload rules[-I]:	OK	
RobustVPN: Preparing to start RobustVPN web openvpn process		
Starting RobustVPN for Linux 1.0.1		
RobustVPN: Starting OpenVPN for remote station:	OK.	
RobustVPN: Starting OpenVPN for control station: [	OK.	
RobustVPN: Starting httpd:	OK.	
RobustVPN for Linux started.		
RobustVPN: Generate config for remote station:	OK.	
RobustVPN: Generate config for control station:	OK	
[root@localhost tmp]#		

4. Open the browser, such as Opera, Google Chrome or Firefox --> enter *https://IP address or Domain Name of server.* 

*E.g. https://172.16.1.123* 

🕈 RobustVPN -> Index +https://**172.16.1.123** 

5. Enter Username & Password as admin/admin in the new page to enter index page. Now the RobustVPN is

installed in your Linux OS.

Note: admin/admin is the default Username & Password for log in.

Us	ername	
a	Imin	
Pa	ssword	
	••••	

6. After successfully login, you can see Website of RobustVPN.



7. Uninstall the RobustVPN-1.0.x-i686.install.

e.g. [root@localhost tmp]# ./ RobustVPN-1.0.x-i686.install -e

<pre>[root@localhost tmp]# ./RobustVPN-1.0.1-i686.install -e</pre>		
RobustVPN: Stoping RobustVPN process		
Stopping RobustVPN for Linux 1.0.1		
RobustVPN: Stopping OpenVPN for remote station:	OK.	
RobustVPN: Stopping OpenVPN for control station	OK.	
RobustVPN: Stopping httpd:	OK.	
RobustVPN for Linux stopped.		
RobustVPN: Starting to uninstall		
RobustVPN: Remove installed files:	OK.	
RobustVPN: Remove system service:	OK	
iptables: Saving firewall rules to /etc/sysconfig/iptables:	OK.	
iptables: Flushing firewall rules:	OK.	
iptables: Setting chains to policy ACCEPT: filter	OK.	
iptables: Unloading modules:	OK.	
iptables: Applying firewall rules:	OK	
RobustVPN: service iptables reload rules[-D]:	OK	1
[root@localhost tmp]#		

*Note:* All the RobustVPN data or services would be unavailable after software uninstallation.

8. Start/Stop RobustVPN services.

service RobustVPN start //Start all the services service RobustVPN starthttpd //Start httpd web server service RobustVPN startvpnremote //Start remote station service RobustVPN startvpncontrol //Start control station

service RobustVPN restart //Restart all the services service RobustVPN restarthttpd //Restart httpd web server service RobustVPN restartvpnremote //Restart remote station service RobustVPN restartvpncontrol //Restart control station

service RobustVPN stop //Stop all the services service RobustVPN stophttpd //Stop httpd web server service RobustVPN stopvpnremote //Stop remote station service RobustVPN stopvpncontrol //Stop control station

service RobustVPN status //Check the status of RobustVPN

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

### 3.1. Home



### 3.2. Status

This section shows basic status of RobustVPN.



Status->Basic					
Item	Description				
Start @Remote Station	Start the OpenVPN server of Remote Station.				
Stop @Remote Station	Stop the OpenVPN server of Remote Station.				
Connected Client Counts	The number of online remote routers				
@Remote Station	The number of online remote routers.				
Start @Control Station	Start the OpenVPN server of Control Station.				
Stop @Control Station	Stop the OpenVPN server of Control Station.				
Connected Client Counts	The number of online Open//DN client				
@Control Station	The number of online OpenVPN client.				
User	The logon name of current user.				
Startup Time	The startup time of RobustVPN services.				
Refresh	The button of refresh web page.				

### 3.3. Status -> Remote Station -> Current Status

This section shows the connected status of Remote Station.

<i>Robust</i> VPN							🕹 admin 🕞
Home Status Server	Adminis	tration Help					
Basic	🔅 Status -	Remote Station ->Cu	rrent Status				Q,
Remote Station	Status	Serial Number	Virtual IP	Real IP	Remote Subnet	Receive	Transmit
Current Status							
Historical Status							
<ul> <li>Control Station</li> </ul>							
Current Status							
							4
	Records per F	age 15 🔻 🛛 🕊 🧹	Page 0 of 0	>>> C		No matchi	ng results to display

Status->Remote Station->Current Status					
Item	Description	Default			
Search	User can enter characters to search specific information.	Null			
Status	The status of connection.	Null			
Serial Number	The serial number of routers.	Null			
Virtual IP	The virtual IP address of OpenVPN subnet.	Null			
Real IP	The IP address of router's WAN interface.	Null			
Remote Subnet	The remote subnet of routers.	Null			
Receive	The data statistics of receipt.	Null			
Transmit	The data statistics of Transmission.	Null			
Online Time	The online time of each connection.	Null			
Description	The description of each remote router.	Null			
Describer and Describer	Selected from "10", "20", 25", "50", user can set how many devices are	15			
Records per Page	wanted to show in one page.	12			

## **3.4.** Status -> Remote Station -> Historical Status

This section shows the historical connected status of Remote Station.

<i>Robust</i> VPN						👃 admin	•
Home Status Server	Administration	Неір					
Basic	🔅 Status ->Remote S	tation ->Historical Stat	us				Q,
<ul> <li>Remote Station</li> </ul>	Serial Number	Virtual IP	Real IP	Receive	Transmit	Online Time	
Current Status			No matching resu	ults.			
Historical Status							
<ul> <li>Control Station</li> </ul>							
Current Status							
	Records per Page 15 👻	巛 🔇   Page 0	of 0   > >>   C		No ma	atching results to (	display

Status->Remote Station->Historical Status				
Item	Description	Default		
Search	User can enter characters to search specific information.	Null		
Serial Number	The serial number of routers.	Null		
Virtual IP	The virtual IP address of OpenVPN subnet.	Null		
Real IP	The IP address of router's WAN interface.	Null		
Receive	The data statistics of receipt.	Null		
Transmit	The data statistics of Transmission.	Null		
Online Time	The online time of each connection.	Null		
Offline Time	The offline time of each connection.	Null		
Records per Page	Selected from "10", "20", 25", "50", user can set how many devices are	15		
	wanted to show in one page.	12		

### 3.5. Status -> Control Station -> Current Status

This section shows the connected status of Control Station.

<i>Robust</i> VPN					👗 admin 🗈
Home Status Server	Administration	Help			
Basic	🔅 Status ->Control S	tation ->Current Statu	IS		Q
Remote Station	Common Name	Virtual IP	Real IP	Online Time	
Current Status			No matching	j results.	
Historical Status					
Current Status					
	Records per Page 15 -	🔣 🖌   Page 0	of 0 📎 📎	C	No matching results to display

Status->Control Station->Current Status				
Item	Description	Default		
Search	User can enter characters to search specific information.	Null		
Common Name	The common name of OpenVPN certificates.	Null		
Virtual IP	The virtual IP address of OpenVPN subnet.	Null		
Real IP	The IP address of control station.	Null		
Online Time	The online time of each connection.	Null		
Records per Page	Selected from "10", "20", 25", "50", user can set how many devices are			
	wanted to show in one page.	15		

## 3.6. Server -> Remote Station -> OpenVPN Basic

This section shows the OpenVPN settings of Remote Station.

<i>Robust</i> VPN				🕹 admin 🕩
Home Status Server	Administration Help			
Remote Station	Server ->Remote Station ->0	OpenVPN Basic		
OpenVPN Basic	Listen:			
<ul> <li>Control Station</li> </ul>	Protocol:	UDP	1 <b>1</b>	
OpenVPN Basic	Port:	1194	\$	
OpenVPN Certificate	Interface:	tun		
	Client Subnet (Subnet/Mask):	10.8.0.0/16		
	Subnet Behind Client:	192.168.0.0/29		
	Ping Interval:	20	\$	
	Ping Restart:	120	*	
	Compression:	LZO	*	
	Encryption:	BF-CBC	1997 - 19	
	Verbose Level:	Notice	*	
	License:			
	Reboot after save:	Z Enable		
	Refresh Save			

Status->Control Station->Current Status				
Item	Description	Default		
	You can enter the IP address of cellular WAN, Ethernet WAN or			
Listen IP	Ethernet LAN. Null stands for using the active WAN link	Null		
	currently-cellular WAN or Ethernet WAN.			
Protocol	Select from "UDP" and "TCP" which depends on the application.	UDP		
Port	Set the local listening port.	1194		
Interface	Only support "tun" type of device interface for OpenVPN.	tun		
Client Subnet	Define the IP pool of OpenVPN tunnel.	10.8.0.0/16		
	Define the IP pool of R3000's DHCP server.			
Subact Dakind Client	Note: After R3000 connect to RobustVPN, RobustVPN server will push	192.168.0.0/		
Subnet Benind Client	the subnet to R3000. And R3000 will modify its DHCP settings and	29		
	restart again.			
Ping Interval	Set ping interval to check if the tunnel is active.	20		
Ding Postart	Restart to establish the OpenVPN tunnel if ping always timeout during	120		
ring -nestart	this time.	120		
Compression	Select from "None" and "LZO", Select "LZO" to use the LZO	170		
compression	compression library to compress the data stream.	LZO		
	Select from "BF-CBC", "DES-CBC", "DES-EDE3-CBC", "AES128-CBC",			
	"AES192-CBC" and "AES256-CBC".			
	BF-CBC: Uses the BF algorithm in CBC mode and 128-bit key.			
Encruption	DES-CBC: Uses the DES algorithm in CBC mode and 64-bit key.			
Encryption	DES-EDE3-CBC: Uses the 3DES algorithm in CBC mode and 192-bit key.	BF-CBC		
	AES128-CBC: Uses the AES algorithm in CBC mode and 128-bit key.			
	AES192-CBC: Uses the AES algorithm in CBC mode and 192-bit key.			
	AES256-CBC: Uses the AES algorithm in CBC mode and 256-bit key.			
Verbose Level	Select the log output level which from low to high: "ERR", "WARNING",	Notice		

	"NOTICE" and "DEBUG". The DEBUG level will output more log	
	information.	
License	The License key for paid version of RobustVPN.	Null
Reboot after save	Restart all the services of RobustVPN after modified.	Enable
Refresh	Refresh the website of RobustVPN.	Null
Save	Save the modification of RobustVPN.	Null

## 3.7. Server ->Control Station ->OpenVPN Basic

This section shows the OpenVPN settings of Control Station.

<i>Robust</i> VPN			👗 admin 🕩
Home Status Server	Administration Help		
<ul> <li>Remote Station</li> </ul>	Server ->Control Station ->C	OpenVPN Basic	
OpenVPN Basic	Listen:		
<ul> <li>Control Station</li> </ul>	Protocol:	UDP -	
OpenVPN Basic	Port:	1195 \$	
OpenVPN Certificate	Interface:	tun 💌	
	Client Subnet (Subnet/Mask):	10.88.0.0/16	
	Ping Interval:	20 🌲	
	Ping Restart:	120 🌲	
	Compression:	LZO ·	
	Encryption:	BF-CBC v	
	Verbose Level:	Notice -	
	Reboot after save:	Z Enable	
	Refresh		

Status->Control Station->Current Status				
Item	Description	Default		
Liston ID	You can enter the IP address of current WAN interface, Null means	INS		
LISTELLIN	server listen all the interface of RobustVPN.	null		
Protocol	Select from "UDP" and "TCP" which depends on the application.	UDP		
Port	Set the local listening port.	1195		
Interface	Only support "tun" type of device interface for OpenVPN.	tun		
Client Subnet	Define the IP pool of OpenVPN tunnel.	10.88.0.0/16		
Ping Interval	Set ping interval to check if the tunnel is active.	20		
Ding Dectort	Restart to establish the OpenVPN tunnel if ping always timeout during	120		
Ping -Restart	this time.	120		
Compression	Select from "None" and "LZO", Select "LZO" to use the LZO compression	170		
	library to compress the data stream.	120		
Encryption	Select from "BF-CBC", "DES-CBC", "DES-EDE3-CBC", "AES128-CBC",			
	"AES192-CBC" and "AES256-CBC".	RF-CRC		

	DE CDC. Uses the DE classifiers in CDC mode and 120 bit law			
	BF-CBC: Uses the BF algorithm in CBC mode and 128-bit key.			
	DES-CBC: Uses the DES algorithm in CBC mode and 64-bit key.			
	DES-EDE3-CBC: Uses the 3DES algorithm in CBC mode and 192-bit key.			
	AES128-CBC: Uses the AES algorithm in CBC mode and 128-bit key.			
	AES192-CBC: Uses the AES algorithm in CBC mode and 192-bit key.			
	AES256-CBC: Uses the AES algorithm in CBC mode and 256-bit key.			
	Select the log output level which from low to high: "ERR", "WARNING",			
Verbose Level	"NOTICE" and "DEBUG". The DEBUG level will output more log	NOTICE		
	information.			
Reboot after save	Restart all the services of RobustVPN after modified.	Enable		
Refresh	Refresh the website of RobustVPN.	Null		
Save	Save the modification of RobustVPN.	Null		

# 3.8. Server -> Control Station -> OpenVPN Certificate

This section shows how to generate OpenVPN Certificate of Control Station.

RobustVPN		🕹 admin 🕩
Home Status Server	Administration Help	
<ul> <li>Remote Station</li> <li>OpenVPN Basic</li> <li>Control Station</li> <li>OpenVPN Basic</li> <li>OpenVPN Certificate</li> </ul>	Server ->Control Station ->OpenVPN Certificate          Create & Download         Common Name:         Create & Download	

Status->Control Station->Current Status				
Item	Description	Default		
Common Name	The common name of x.509 certificates.	Null		
Create & Download	Create the x.509 certificate for control station and download from	NUU		
	RobustVPN.	Null		

# 3.9. Administration -> User Management

<i>Robust</i> VPN					👗 admin 🕒
Home Status Server	Administration	Help			
<ul> <li>Administration</li> </ul>	Administration ->L	Jser Management		Add Remove	Edit
User Management	Username	Privilege	Registration Time	Last Login	
Event/Log	1 admin	administrator	2014-07-02 09:01:41	2014-07-02 09:04:03	
	Records per Page 15 *	Page 1	of 1 🔊 🔊 C		Displaying 1 - 1 of 1
	Records per Page 15 *	Page 1	of 1 2 22 C		Displaying 1 - 1 of 1

This section allows user to add, remove or edit the list of user account.

Administration->User Management				
Item	Description	Default		
Add	Click this button to add a new account.	Null		
Remove	Click this button to delete the selected account.	Null		
Edit	Click this button to edit a new account.	Null		
Search	User can enter characters to search specific information.	Null		
Username	The username of current account.	Null		
Privilege	The privilege of current account.	Null		
<b>Registration Time</b>	The registration of current account.	Null		
Last Login	The last login time of current account.	Null		
Records per Page	Selected from "10", "20", 25", "50", user can set how many devices are wanted to show in one page.	15		

#### Add/Edit User account on new window.

Add User	8
User Name:* Password:* Confirm Password:*	
Privilege:	administrator 👻
	OK Cancel

Administration->User Management->Add/Edit				
Item Description				
User Name	The username of new account.	Null		
Password	Set password of new account.	Null		
Confirm Password	Confirm password of new account.	Null		
Privilege	There are three access level of privilege: "administrator", "user" and "readonly".	administrator		

# 3.10. Administration -> Event/Log

This section allows user to check the system log.





Administration->Event/Log				
Item	Description	Default		
Remove All	Remove all log items.	Null		
Search	User can enter characters to search specific information.	Null		
Username	The username of current account.	Null		
Operation Type	The type of operation with current account.	Null		
Operation Time	The time of operation.	Null		
Description	The description of operation.	Null		
RT_UG_RobustVPN_v.1.0.0	22.07.2014	19 / 34		

Records per Page	Selected from "10", "20", 25", "50", user can set how many devices are	15
Necolus per l'age	wanted to show in one page.	10

## 3.11. Administration -> Tools

This section shows how to use Ping to check the connection between RobustVPN and Control/Remote stations.

<i>Robust</i> VPN			👃 admin 🕩
Home Status Server	Administration Help		
Home Status Server  Administration User Management Event/Log Tools	Administration     Help       Administration -> Tools       Ping       Ping IP address:       Number of requests:       5       Timeout (s):       Stop	÷	

Administration->Tools				
Item	Description	Default		
Ping IP address	Enter the ping destination IP address or domain name.	Null		
Number of requests	Specify the number of ping requests.5			
Timeout(s)	Specify timeout of ping request.			
Stop	Click this button to stop ping request.	Null		
Start	Click this button to start ping request, and the log will be displayed in the			
Start	follow box.	Null		

## 3.12. Help -> About

This section shows the information of RobutVPN.

obustVPN	👗 admin
Home Status Server	Administration Help
About	RobustVPN
erms Of Service	Overview
Jser Guide	Version: 1.0.1
	RobustVPN is based on a hosted web service designed to connect customer their machines through Internet. The hosted acts as data transit platform and offer communication originated by the customers to their machines. It is intended to be used in the industrial M2M communication sector. The key of architecture is the central server, it is needed to handle all VPN tunnels and forward the corresponding traffic from end to end. It has the following features:
	1. Easy to connect within VPN tunnel;     2. Secure internet access to remote stations;     3. Attaching various control stations;
	4. Connection status overview;     5. Multi-users and Multi-access;     6. Plug & Play;     7. Remote Configuration;
	8. Number of Devices:up to 1000+; 9. Web GUI;
	Instructions
	System ID: 0007181a
	RobustVPN have two version, one is trial version and the other is paid version. The trial version only supports five client connections. The paid version has no limitation to number of client connections. If you want to use RobustVPN without limitation, you

# 3.13. Help -> Terms Of Service

This section shows terms of services.

<i>Robust</i> VPN	👗 admin 🕩
Home Status Server	Administration Help
Home Status Server About Terms Of Service User Guide	Administration       Help         Terms Of Service         Welcome to use RobustVPN         Thanks for using our products and services ("Services"). The Services are provided by Guangzhou Robustel Technologies Co.,Ltd. ("Robustel").         By using our Services, you are agreeing to these terms. Please read them carefully.         Our Services are very diverse, so sometimes additional terms or product requirements (including age requirements) may apply.         Additional terms will be available with the relevant Services, and those additional terms become part of your agreement with us if you use those Services.         Using our Services         You must follow any policies made available to you within the Services or try to access them using a method other than the interface and the instructions that we provide. You may use our Services only as permitted by law, including applicable export and
	re-export control laws and regulations. We may suspend or stop providing our Services to you if you do not comply with our terms or policies or if we are investigating suspected misconduct. Using our Services does not give you ownership of any intellectual property rights in our Services or the content you access. You may not use content from our Services unless you obtain permission from its owner or are otherwise permitted by law. These terms do not grant you the right to use any branding or logos used in our Services. Don't remove, obscure, or alter any legal notices displayed in or along with our Services. Our Services display some content that is not Robustel's. This content is the sole responsibility of the entity that makes it available. We may review content to determine whether it is illegal or violates our policies, and we may remove or refuse to display content that

## 3.14. Help -> User Guide

This section shows the User Guide of RobustVPN.



# Chapter 4. Examples

## 4.1. Application Diagram for Introduction



- 1. R3000\_Standard/Lite/NU works as RobustVPN Client with any IP which can access to Internet.
- 2. RobustVPN works as Central VPN Server with fixed public IP or dynamic IP with domain name.
- 3. For Control Station site, PC or other devices which support OpenVPN client, that establish OpenVPN connection to RobustVPN and access the subnet behind R3000s via tunnel.

### 4.2. Link R3000 to RobustVPN

### 4.2.1. Configure Link Management

1. Install antenna, insert two SIM cards to R3000 -> power on R3000 and login R3000's Web GUI page.



2. Please check the firmware version is v1.01.16 or above. RobustVPN is available in newer firmware.

Ro	Router Information						
	Device Model:	R3000-4L					
	Serial Number:	00300513100056					
	Device Name:	Cellular Router					
	Firmware Version:	1.01.16					
	Hardware Version:	1.01.02					
	Kernel Version:	2.6.39-6					
	Radio Module Type:	MC7710					

#### 3. Browse to "Configuration"-> "Link Management".

A1111104	-	Link Management		10.0
System				
Network		Link Management Settings		
Route		Primary Interface:	Cellular 🔻	
VPN		Backup Interface:	None 🔻	
Services	E	ICMP Detection Primary Server:	8. 8. 8. 8	
Event/Log		ICMP Detection Secondary Server:	8. 8. 4. 4	
		ICMP Detection Interval (s):	30	
onfiguration		ICMP Detection Timeout (s):	3	
Link Management		ICMP Detection Retries:	5	
Cellular WAN		Reset The Interface	4 <del></del>	
Ethernet		*It is recommended to use an ICMP detect	tion server to keep router always online.	
WiFi		*The ICMP detection increases the reliability	ty and also cost data traffic.	
Serial		*DNS example: Google DNS Server 8.8.8.8	3 and 8.8.4.4	

- 4. Browse to "Configuration"-> "Cellular WAN"-> "ISP Profile".
- Click "Add" to enter the APN (Access Point Name) and Dialup No. for each ISP.
- If required please enter Username and Password in the appropriate fields.
- Click "Apply".

Note: Usually APN, Username, Password and Dialup No. are provided by ISP accordingly.

Status		Basic Ad	dvanced	ISP Profile			1010
Configuration	ISP F	Profile List					
Link Management		ISP	APN	Username	Password	Dialup No.	
Cellular WAN		china-mobile	3gnet			*99***1#	x
Ethernet						Add	
WiFi							

- 5. Browse to "Configuration"-> "Cellular WAN"-> "Basic".
- In region "**Cellular Settings**". Click the drop-down box of "Network Provider Type" of both SIM cards and select the correct "ISP" that you configure in "Configuration"-> "Cellular WAN"-> "ISP Profile".
- If required please enter PIN number for SIM1 and SIM 2 in "PIN Type".
- In region "**Connection Mode**". Click the drop-down box of "Connection Mode" to select the connection mode accordingly. "Always Online" mode is selected in this Application Note.
- Click "Apply".

Status	Adva Basic Adva	anced ISP Profile	
System	Cellular Settings		
Network		SIM1	SIM2
Route	Status:	Ready	Not inserted
VPN	Network Provider Type:	china-mobile 💌	Auto 👻
Services	APN:	3gnet	
Event/Log	Username:		
Configuration	Password:		
Link Management	Dialup No.:	*99***1#	
Cellular WAN	PIN Type:	None 🔻	None 🔻
Ethernet	Connection Mode		
Serial	Connection Mode:	Always Online	•
DI/DO	Redial Interval (s):	30	
USB	Max Retries:	3	

- 6. Browse to "Configuration"-> "RobustVPN".
- In region "Server Address", enter the IP address or Domain Name of RobustVPN server.
- 443 is the default HTTPS Port of RobustVPN.
- Username & Password is the account state of RobustVPN.
- Click "Apply"->"Save"->"Reboot".

РРТР	RobustVPN	
SNMP		
VRRP	RobustVPN Connection Settings	
AT over IP	Enable RobustVPN	
Phone Book	Server Address: 172. 16. 1. 123	
SMS	HTTPS Port: 443	
Reboot	Username: admin	
Portal	Password:	
Syslog	RobustVPN Status	
Event	Status: Disconnected	
USR LED	Local IP:	
RobustVPN	Remote IP:	
Administration	Connect Time:	
Profile	RobustVPN reset, stop and clear	
Tools	Reset RobustVPN	

### 4.2.2. Check the status of RobustVPN connection

1. Browse to "Configuration"-> "RobustVPN"-> "RobustVPN Status".

GRE	*	RobustVPN		
L2TP		PohustVDN Connection Sot	tinas	
РРТР			lings	
	_	Enable RobustVPN		
/RRD	-	Server Address:	172. 16. 1. 123	
	-	HTTPS Port:	443	
AT over IP		Username:	admin	
Phone Book		- ·	aumin	
SMS		Password:	••••	
Reboot	F	RobustVPN Status		
Portal		Status:	Connected	
Syslog	_	Local IP:	10.8.0.6	
Event		Remote IP:	10.8.0.5	
USR LED		Connect Time:	0 day 00:01:27	
RobustVPN	F	RobustVPN reset, stop and	clear	
dministration	≡	Reset RobustVPN		

- 2. Browse to "Configuration"-> "Ethernet"-> "Eth1".
- RobustVPN will push new DHCP settings to R3000 automatically, according the pre-set at RobustVPN.
   E.g. Server-> Remote Station-> OpenVPN Basic

Client Subnet (Subnet/Mask):	10.8.0.0/16
Subnet Behind Client:	192.168.0.0/29

- /29 equal to 255.255.255.248.
- The host bits occupy 3 bit, so  $2^3 = 8$  IP address for each subnet, but 8 2 = 6 IP address are available for subnet.
- This R3000 start with 192.168.0.1, the next RobustVPN client would start with 192.168.0.9 and so on.

ernet	Eth0	Eth1	VLAN	
	LAN Interface			
	IP Address:	192.168	3. 0. 1	
	NetMask:	255.255	5. 255. 248	
	MTU:	1500		
	Media Type:	Auto-n	egotiation 👻	
	Multiple ID Address			
	Multiple IP Address			
	IP Add	iress	NetMask	
	E		Add	
	DHCP Server			
	Enable DHCP Ser	ver		
	IP Pool Start:	192.168	3. 0. 2	
	IP Pool End:	192.168	3.0.6	
	NetMask:	255.258	5.255.248	
	Lease Time(min):	60		
er IP	Primary DNS Server:	192.168	3. 0. 1	
ne Book	Secondary DNS Serv	er:		
	Windows Name Serv	ver: 192.168	3. 0. 1	

Note: If R3000 fail to connect with RobustVPN, Please synchronize the time with RobustVPN server firstly because the validity of OpenVPN certificate is basic on RobustVPN' timestamp.

# 4.3. Settings of Control Station

### 4.3.1. OpenVPN Installation on Windows

This step should be done on a PC that will be used to establish OpenVPN tunnel with RobustVPN server. The download is available from: <u>http://openvpn.net/index.php</u>

1. Download the release of the Windows installer. Run the installation program.



2. License Agreement.

n OpenVPN 2.2.2 Setup	
Please review the license terms before installing Open	VPN 2.2.2 .
Press Page Down to see the rest of the agreement.	
GNU GENERAL PUBLIC LICENSE Version 2, June 1991	Â
Copyright (C) 1989, 1991 Free Software Foundation, Inc. 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.	
Preamble	
The licenses for most software are designed to take away your	-
If you accept the terms of the agreement, click I Agree to continue. You must accept agreement to install OpenVPN 2.2.2 .	ot the
< Back I Agree	Cancel

#### 3. Select all the options by default.

n OpenVPN 2.2.2 Setup	
n PENVPN a	ioose Components hoose which features of OpenVPN 2.2.2 you want to install.
Select the components to insta service if it is running. All DLLs	ll/upgrade. Stop any OpenVPN processes or the OpenVPN are installed locally.
Select components to install:	OpenVPN User-Space Components     OpenVPN GUI     OpenVPN RSA Certificate Management Scripts     OpenVPN Service     OpenVPN File Associations     OpenSL DLLs     OpenSL DLLs
Space required: 3.3MB	Description Position your mouse over a component to see its description,
Nullsoft Install System v2.46	< Back Next > Cancel

4. Select the installation path. Save in default Destination Folder.

OpenVPN 2.2.2 Setup	
<b>OPENVPN</b>	Choose Install Location Choose the folder in which to install OpenVPN 2.2.2.
Setup will install OpenVPN 2 Browse and select another	.2.2 in the following folder. To install in a different folder, click folder. Click Install to start the installation.
Destination Folder	PN Browse
Space required: 3.3MB Space available: 14.2GB	
Nullsoft Install System v2.46 –	< Back Install Cancel

5. The installation schedule.

OpenVPN 2.2.2 Setup	
<b>OPENVPN</b>	Installing Please wait while OpenVPN 2.2.2 is being installed.
Previous Service REMOVE (	if exists)
Previous Service REMOVE	(if exists)
Nullsoft Install System v2.46 -	<pre></pre>

6. Agree to install the TAP-Win32 network adapter.



7. The installation will be completed.

Installation Complete	
PENVPN Setup was completed successfully.	
Completed	
Create shortcut: C:\ProgramData\Microsoft\Windows\Start Menu\Programs\C	)nen\/P
Create shortcut: C:\//sers\Public\Deskton\OpenVPN G/II.lnk	penn
Create shortcut: C:\ProgramData\Microsoft\Windows\Start Menu\Programs\C	penVP
Create shortcut: C: \ProgramData \Microsoft \Windows \Start Menu \Programs \C	penVP
Create shortcut: C:\ProgramData\Microsoft\Windows\Start Menu\Programs\C	penVP
Created uninstaller: C:\Program Files\OpenVPN\Uninstall.exe	
Completed	-
soft Install System v2.46	
	1

8. Click "Finish" button and complete the installation.

OpenVPN 2.2.2 Setup	
	Completing the OpenVPN 2.2.2 Setup Wizard OpenVPN 2.2.2 has been installed on your computer. Click Finish to close this wizard. It show Readme
	< Back Finish Cancel

# 4.3.2. Create the certificates from RobustVPN

1. Login to RobutVPN management website. *E.g. https://172.16.1.123* 



2. Open page of OpenVPN certificate. Enter the common name of x.509 certificate.

RobustVPN	
Home Status Server	Administration Help
<ul> <li>Remote Station</li> <li>OpenVPN Basic</li> <li>Control Station</li> <li>OpenVPN Basic</li> </ul>	Server ->Control Station ->OpenVPN Certificate          Create & Download         Common Name:       client001         Create & Download
OpenVPN Certificate	

Note: Each certificate can be only used by one device at the same time, if more than one devices use the same certificate for RobustVPN, the connection is unstable and drop all the time.

3. Save the certificates and un-compress this file on your PC.



### 4.3.3. Running the OpenVPN software in Windows OS

1. Copy the certificates to the OpenVPN software directory.

Path: C:\Program Files\OpenVPN\config

			-	
🚱 🗢 📕 « Local Di	isk (C:) ▶ Program Files ▶ Oper	nVPN 🕨 config 🔷 🔻	Search config	٩
Organize 🔻 Include i	in library	Burn New folder	:== :==	• 🔲 🔞
☆ Favorites	Name	Date modified	Туре S	ize
🧮 Desktop	🔄 ca.crt	2014/7/2 13:39	Security Certificate	2 KB
🗼 Downloads	🔄 client001.crt	2014/7/2 13:39	Security Certificate	4 KB
🔚 Recent Places	client001.key	2014/7/2 13:39	KEY File	1 KB
	🕥 client001.ovpn	2014/7/2 13:39	OpenVPN Config	1 KB
潯 Libraries				
Documents				
J Music				

2. Run the OpenVPN software.



3. You could check the OpenVPN icon in the system tray.



4. Double click the icon, when the OpenVPN client001 has successfully started, the icon will turn green and prompt a notification with the assigned IP address.



Note: After connected to RobustVPN, RobustVPN will re-direct clients' gateway to RobustVPN. It means that default traffic (without specify routing) would forward to RobustVPN.

### 4.3.4. Testing from Local PC to RobustVPN Clients

1. Check the remote connections status.

Basic	0	Status ->	Remote Station ->C	urrent Status		Q		
Remote Station		Status	Serial Number	Virtual IP	Real IP	Remote Subnet	Receive	
Current Status	1	<b>o</b>	00300513070020	10.8.0.10	172.16.12.4	iroute 192.168.0.8 255.255.255.248	6KB	
Historical Status	2	0	00300513100056	10.8.0.6	172.16.0.2	iroute 192.168.0.0 255.255.255.248	11KB	
Control Station     Current Status							-	
UG_RobustVPN_v.1.0.0				22.07.2014	Ļ		32 / 3	

2. Check the Control Station status.

Home Status Server	1	Administration	Help			
Basic	٥	Status ->Control S	tation ->Current Stat	tus		Q
<ul> <li>Remote Station</li> </ul>	_	Common Name	Virtual IP	Real IP	Online Time	
Current Status	1	client001	10.88.0.6	172.16.1.40	2014-07-05 16:56:07	
Historical Status						-
<ul> <li>Control Station</li> </ul>						
Current Status						

3. Testing the connection from Local PC to RobustVPN clients, make Local PC access the subnet behind R3000s.



Administrator: C:\Windows\system32\cmd.exe
C: \Users \Ben>ping 192.168.0.1
Pinging 192.168.0.1 with 32 bytes of data:
Reply from 192.168.0.1: bytes=32 time=6ms ITL=63
Reply from 192.168.0.1: bytes=32 time=6ms ITL=63
Reply from 192.168.0.1: bytes=32 time=5ms ITL=63
Ping statistics for 192.168.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli=seconds:
Minimum = 4ms, Maximum = 6ms, Average = 4ms
C: \Users \Ben>ping 192.168.0.9
Pinging 192.168.0.9: bytes=32 time=5ms ITL=63
Reply from 192.168.0.9: bytes=32 time=5ms ITL=63
Reply for 192.168.0.9: bytes=32 time=5ms ITL=63
Reply for

# **Chapter 5. Import License key of RobustVPN**

### 5.1. Overview of license key

RobustVPN have two versions, one is trial version and the other is paid version. The trial version only supports five client connections. The paid version has no limitation to number of client connections. If you want to use RobustVPN without limitation, you will need to register for this software.

### 5.2. Register for RobustVPN

#### 1. Check the System ID on *Help ->About*.

Instructions
System ID: 0007181a
RobustVPN have two version, one is trial version and the other is paid version. The trial version only supports five client connections. The paid version has no limitation to number of client connections. If you want to use RobustVPN without limitation, you will need to register for this software, the following steps :
<ol> <li>Offer the System ID to us, we will according to your System ID to generate a License Key;</li> <li>Enter the License Key in RobustVPN page, then save and reboot. Path: Server-&gt; Remote Station-&gt; OpenVPN Basic</li> </ol>

2. Offer the System ID to our sales, we will according to your System ID to generate a License Key. E.g.

#### System ID: 0007181a

#### License key: 68BB896715913B99B8A8CE2EABA86876

3. Enter the License Key in RobustVPN, then click "Save". Path: Server-> Remote Station-> OpenVPN Basic

Listen:			
Protocol:	UDP	~	
Port:	1194	\$	
Interface:	tun	-	
Client Subnet (Subnet/Mask):	10.8.0.0/16		
Subnet Behind Client:	192.168.0.0/29		
Ping Interval:	20	-	
Ping Restart:	120	\$	
Compression:	LZO	*	
Encryption:	BF-CBC	*	
Verbose Level:	Notice	~	
License:	68BB896715913B99B8A8CE	2EABA86876	
Reboot after save:	🗹 Enable		

