



InRouter 600

APPLICATION GUIDE FOR INTERFACE LINK BACKUP

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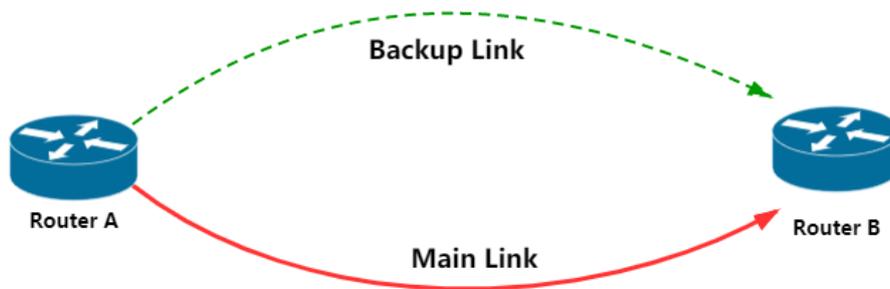
InHand Networks
Global Leader in Industrial IoT

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1. Abstract

This application guide shows how to configure IR600 doing the link backup.



In a network environment with multiple switches or routers, the network is not always steady. Therefore, a backup link needs to be considered. When the main link is down sometime, the router A is required to switch to the backup link automatically. In this way, the stability of the network could be improved.

2. Configuration

For IR600, there are two choices for the link backup: WAN and Dialup. You can choose either WAN or Dialup as your main link and correspondingly, the other one is chosen as the backup link.

Before starting the configuration, please confirm that the SIM card is active and the phone number is known.

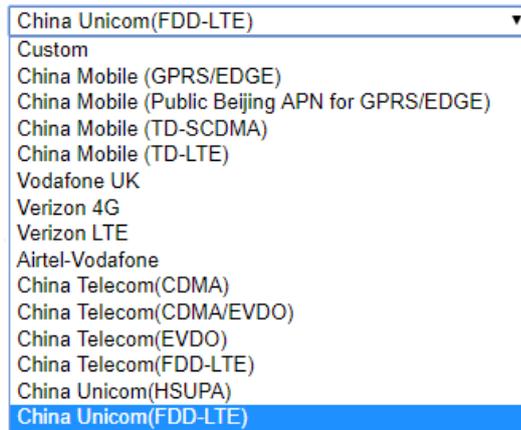
2.1 Click **Networks** → **Dialup**, enable **Dialup**

Dialup

Enable	<input checked="" type="checkbox"/>
Time schedule	ALL Schedule Management
Shared Connection(NAT)	<input checked="" type="checkbox"/>
Default Route	<input checked="" type="checkbox"/>
Network Provider (ISP)	China Unicom(FDD-LTE) Manage
Network Select Type	Auto
Connection Mode	Always Online
Redial Interval	30 Seconds
Show Advanced Options	<input type="checkbox"/>

Apply Cancel

2.2 Select your **Network Provider (ISP)**



If there is no suitable choice for you, please select **Custom**.

Network Provider (ISP)	Custom	Manage
APN	uninet	
Access Number	*99***1#	
Username	gprs	
Password	

Then, fill in the corresponding information of your SIM card.

2.3 Select a suitable **Connection Mode** as **Always Online**

Connection Mode	Always Online
Redial Interval	Always Online
Show Advanced Options	Connect On Demand
	Manual

2.4 Click **Apply**

2.5 Click **Networks** → **WAN**, select the **WAN Type**

There are four selections for **Type**: **Static IP**, **Dynamic Address (DHCP)**, **ADSL Dialup (PPPoE)** and **Disabled** (default value). Here Dynamic Address is used for guiding explanation.

Type	Dynamic Address (DHCP)	
Shared Connection(NAT)	Static IP	
Default Route	Dynamic Address (DHCP)	
MAC Address	ADSL Dialup (PPPoE)	
	Disabled	
	00:10:00:00:00:00	Default Clone

2.5.1 **Static IP** is used for special servers or computers with dedicated Internet access.

WAN

Type:

Shared Connection(NAT):

Default Route:

MAC Address:

IP Address:

Netmask:

Gateway:

MTU:

Multi-IP Settings

IP Address	Netmask	Description
<input type="text"/>	<input type="text"/>	<input type="text"/>

Check your static IP information. Usually they are shown automatically, if not, please fill in the information manually.

You can also set max. 8 multi-IP addresses. Fill the IP information in the blocks and click **Add** then.

2.5.2 ADSL Dialup is used for dialup Internet accessing.

WAN

Type:

Shared Connection(NAT):

Default Route:

MAC Address:

MTU:

ADSL Dialup (PPPoE) Settings

Username:

Password:

Static IP:

IP Address:

Peer Address:

Connection Mode:

Show Advanced Options:

Fill in your Dialup **Username** and **Password**. If you need Static IP as well, enable **Static IP**. Then fill in your **IP Address** and **Peer Address**.

2.5.3 If there is no specific requirement, please select **Dynamic Address**.

WAN

Type:

Shared Connection(NAT):

Default Route:

MAC Address:

MTU:

2.6 Never forget to click **Apply!**

2.7 Click **Networks** → **Link Backup**, enable **Link Backup**

Link Backup	
Enable	<input checked="" type="checkbox"/>
Main Link	WAN
ICMP Detection Server	61.139.2.69
ICMP Detection Interval	10 Seconds
ICMP Detection Timeout	3 Seconds
ICMP Detection Retries	3
Backup Link	Dialup
Backup Mode	Hot Backup

Apply Cancel

2.8 Select **Main Link** and **Backup Link**

Normally, WAN is used as the main link and the dialup is used as backup link. However, they can be exchanged as well.

2.9 Add **ICMP Detection Server**

Here we need a public IP address for detection. The detection address needs to keep static, so that the router can confirm the main link is down or not.

For example, if we set the detection address as one dynamic address of WAN. After the main link recovering, it might get a new IP address. However, the detection address does not change. Therefore, the router will not detect the main link and keep using the backup link.

2.10 Click **Apply**

3. Test and Verify

3.1 Click Status → Network Connections

At the beginning, both WAN and Dialup are connected. The reason is that IR600 uses hot backup.

Click **Disconnect** under the Dialup part.

WAN		Dialup	
MAC Address	00:18:05:0E:5D:5A	Connection Type	Dialup
Connection Type	Dynamic Address (DHCP)	IP Address	0.0.0.0
IP Address	10.5.11.25	Netmask	0.0.0.0
Netmask	255.255.255.0	Gateway	0.0.0.0
Gateway	10.5.11.1	DNS	0.0.0.0
DNS	183.221.253.100	MTU	1500
MTU	1500	Status	Disconnected
Status	Connected	Connection time	
Connection time	0 day, 01:58:06	<input type="button" value="Connect"/> <input type="button" value="Disconnect"/>	
Remaining Lease	0 day, 22:01:54		
<input type="button" value="Renew"/> <input type="button" value="Release"/>			

3.2 Click **Release** under the WAN part

You can also remove the WAN wire. After waiting a few seconds, the Dialup shows connected.

WAN		Dialup	
MAC Address	00:18:05:0E:5D:5A	Connection Type	Dialup
Connection Type	Dynamic Address (DHCP)	IP Address	10.180.57.128
IP Address	0.0.0.0	Netmask	255.255.255.0
Netmask	0.0.0.0	Gateway	10.180.57.1
Gateway	0.0.0.0	DNS	119.6.6.6,202.102.128.68
DNS	0.0.0.0	MTU	1500
MTU	1500	Status	Connected
Status	Disconnected	Connection time	0 day, 00:00:53
Connection time		<input type="button" value="Connect"/> <input type="button" value="Disconnect"/>	
Remaining Lease	0 day, 00:00:00		
<input type="button" value="Renew"/> <input type="button" value="Release"/>			

3.3 Click **Tools** → **Traceroute**

Traceroute can show the way the packets access to the destination address.

Traceroute

Host:

Maximum Hops:

Timeout: Seconds

Protocol:

Expert Options:

```

1 10.5.11.1 (10.5.11.1) 1.160 ms 0.760 ms 0.640 ms
2 117.175.169.1 (117.175.169.1) 5.300 ms 4.860 ms 4.740 ms
3 221.182.42.125 (221.182.42.125) 2.520 ms 5.340 ms 221.182.42.129 (221.182.42.129) 4.840 ms
4 223.87.26.33 (223.87.26.33) 5.360 ms 223.87.26.29 (223.87.26.29) 2.640 ms 4.940 ms
5 223.87.26.49 (223.87.26.49) 5.880 ms 6.240 ms 223.87.26.45 (223.87.26.45) 5.140 ms
6 221.183.19.41 (221.183.19.41) 5.740 ms 221.183.19.45 (221.183.19.45) 56.980 ms 10.540 ms
7 * * * *
8 * * * *
9 202.97.95.45 (202.97.95.45) 7.240 ms 202.97.95.69 (202.97.95.69) 5.620 ms 7.360 ms
10 171.208.199.190 (171.208.199.190) 5.660 ms 171.208.199.186 (171.208.199.186) 11.780 ms 110.188.6.94 (110.188.6.94) 7.900 ms
11 61.139.113.58 (61.139.113.58) 7.400 ms 61.139.113.54 (61.139.113.54) 6.780 ms 4.400 ms
12 ns.sc.cninfo.net (61.139.2.69) 4.880 ms 6.560 ms 5.320 ms

```

When the WAN interface is connected, it shows the packets going through the Gate 1 (10.5.11.1) and Gate 2 (117.175.169.1).

Traceroute 

Host

Maximum Hops

Timeout Seconds

Protocol

Expert Options

```

1 * * *
2 119.4.251.182 (119.4.251.182) 137.340 ms 187.080 ms 129.580 ms
3 * * *
4 * 101.206.165.137 (101.206.165.137) 349.340 ms 237.180 ms
5 119.6.197.253 (119.6.197.253) 199.860 ms 119.6.197.205 (119.6.197.205) 407.360 ms 119.6.197.253 (119.6.197.253) 246.760 ms
6 219.158.107.22 (219.158.107.22) 189.840 ms 219.158.24.174 (219.158.24.174) 397.040 ms 219.158.110.38 (219.158.110.38) 197.300 ms
7 202.97.14.49 (202.97.14.49) 397.120 ms 197.200 ms 169.500 ms
8 202.97.95.37 (202.97.95.37) 139.680 ms * 202.97.95.41 (202.97.95.41) 1353.320 ms
9 110.188.6.6 (110.188.6.6) 2326.920 ms 171.208.199.234 (171.208.199.234) 197.140 ms 171.208.199.214 (171.208.199.214) 167.140 ms
10 61.139.113.54 (61.139.113.54) 376.980 ms 61.139.113.58 (61.139.113.58) 169.040 ms 61.139.113.54 (61.139.113.54) 199.100 ms
11 ns.chininfo.net (61.139.2.69) 189.780 ms 168.820 ms 129.580 ms

```

When the main link is disconnected, Gate 2 changes to 101.206.164.9.

Both the two traceroute show the packets can access the detection address (61.139.2.69).

Contact Us

Add: 3900 Jermantown Rd., Suite 150, Fairfax, VA 22030 USA

E-mail: support@inhandnetworks.com

T: +1 (703) 348-2988

URL: www.inhandnetworks.com



InHand Website