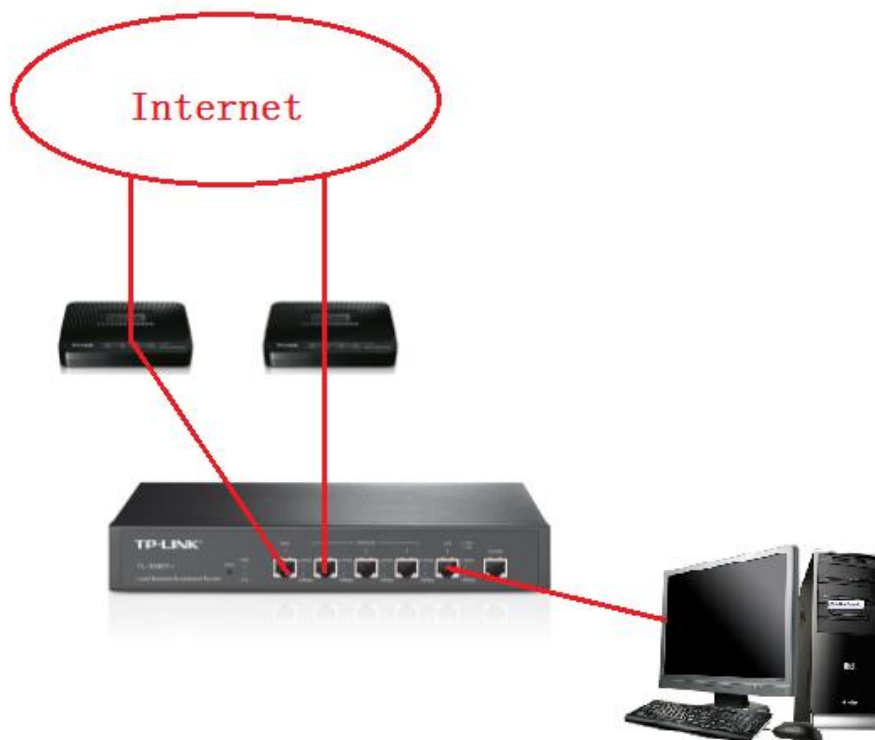


## How to setup Load Balance to aggregate several WAN links together

The Load-Balance routers have more than one WAN port, you can use two or more WAN links to create an enhanced bandwidth output. You may ask: How to aggregate several WAN links into one channel and enjoy the total bandwidth? For example, you have a 4M ADSL line and a 12M ADSL line, the TP-LINK load balance router could help you bind two WAN links into an enhanced 16M channel, how to do that?

With a load balance router (We use TL-R480T+ as example), two ADSL modems, a managed PC, here we go to the detail configuration:

**Step 1** Firstly we set up the physical topology, connect one ADSL modem to each WAN port of TL-R480T+, then connect your computer to the LAN port, make sure the two ADSL links can work properly and have access to the Internet:



**Step 2** We configure the WAN port parameters, dial up PPPoE connection and succeed in establishing a stable PPPoE link, then we setup Upstream and Downstream bandwidth for each link, note that you should fill in the value truly based on your ADSL bandwidth (You could consult your Internet Service Provider for the bandwidth information). As in the pictures below, for 12M ADSL link, we set 12288Kbps for downstream bandwidth and 512Kbps for upstream; For 4M ADSL link, we set 4096Kbps for downstream bandwidth and 128Kbps for upstream:

Note: 1M=1024Kbps

TL-R480T+ WAN Mode WAN1 WAN2

PPPoE Settings

Connection Type: PPPoE/Russian PPPoE

PPPoE Connection:

Account Name: 075501008334@163.gd  
Password: \*\*\*\*\*  
Active Mode:  
 Manual  
 Always-on  
 Time-based  
Active Time: 0 : 0 (HH:MM) -- 24 : 0 (HH:MM)  
 PPPoE Advanced Settings  
Keep Alive Interval: 0 (0-120 second, 0 for not sending)  
Keep Alive Retry Times: 30 (1-30)  
MTU: 1480 (576-1492)  
Static IP: 0.0.0.0 (Optional)  
Service Name: (Fill in only when required)  
Primary DNS: 0.0.0.0  
Secondary DNS: 0.0.0.0 (Optional)

Secondary Connection:  
Connection Type: Disable

Upstream Bandwidth: 512 Kbps  
Downstream Bandwidth: 12288 Kbps

TL-R480T+ WAN Mode WAN1 WAN2

PPPoE Settings

Connection Type: PPPoE/Russian PPPoE

PPPoE Connection:

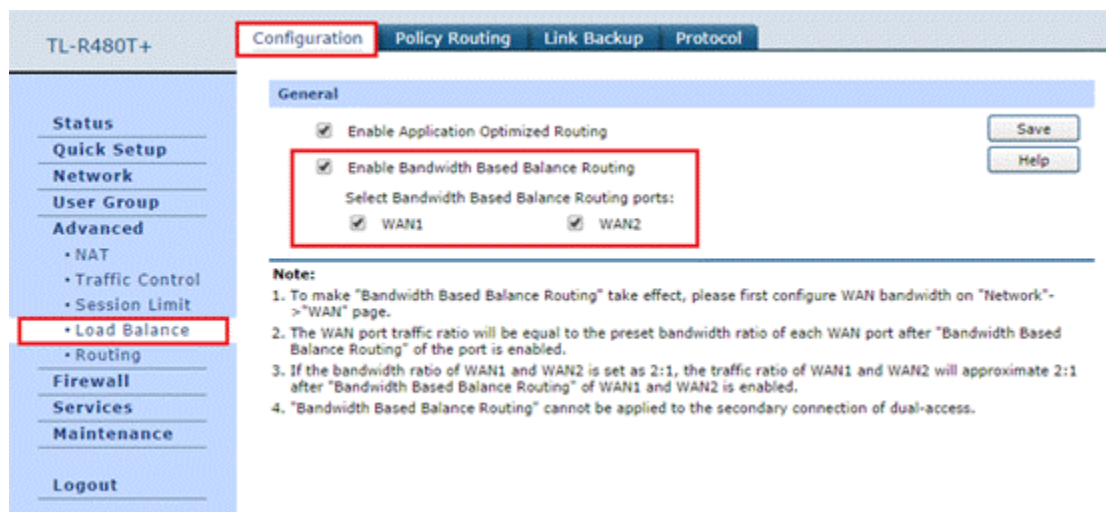
Account Name: sz26502769@163.gd  
Password: \*\*\*\*\*  
Active Mode:  
 Manual  
 Always-on  
 Time-based  
Active Time: 0 : 0 (HH:MM) -- 24 : 0 (HH:MM)  
 PPPoE Advanced Settings  
Keep Alive Interval: 0 (0-120 second, 0 for not sending)  
Keep Alive Retry Times: 30 (1-30)  
MTU: 1480 (576-1492)  
Static IP: 0.0.0.0 (Optional)  
Service Name: (Fill in only when required)  
Primary DNS: 0.0.0.0  
Secondary DNS: 0.0.0.0 (Optional)

Secondary Connection:  
Connection Type: Disable

Upstream Bandwidth: 128 Kbps  
Downstream Bandwidth: 4096 Kbps

**Step 3** In the main menu "Advanced"---"Load Balance"---"General", here we check the "Enable bandwidth based balance routing", select all the WAN ports that you want to

join the load balance.



So far we have complete the whole configuration, yes it's very simple that only needs 3 steps. Then we use a P2P download software to download a software, after the speed is stable, we could see the downloading speed has reached 2MB/s +, that means we have succeeded to aggregate two WAN links together!



#### Note:

##### 1. Why a 2MB/s + speed indicates the aggregation is done?

As we know, the bandwidth has the format of X bit/s, most of download software use Byte/s as its real speed format, 1 Byte= 8 bits, so if we want to transfer bandwidth to its real downloading speed, we could calculate that 16Mbps/8=2MBps, so a 2MB/s downloading speed indicates 16M bandwidth.

##### 2. Why we use a P2P download software to validate the aggregation?

We can use any multi-connection applications to test the aggregation. When load balance is turned on, the router will allocate connections to different WAN ports according to the bandwidth you set, so the more connections are established, the better load balance will take effect. Imagine that an application only has 2-3 connections (Even just 1!), there will be not enough connections for router to load balance, so obviously the result will be not accurate, the aggregation process may be failed.

For this reason, we strongly recommend using popular P2P software which is used by majority of people and could establish many connections to enhance the effect of load balance.