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## [Configuring WDS Wireless Distribution System with Billion 7404VGP and TP-Link WR340G](#)

If you need to extend the coverage of your wireless network without cabling between access points you can implement a Wireless Distribution Systems (WDS)

They can be tricky to get working without knowing some specific information. This information is not absolute for every kind of router configuration but it works:

- Both Routers must support WDS. Check before you buy them.
- WDS will only work using WEP wireless security (not WPA-PSK)
- The wireless channel on both routers should be set to 6
- You require the wireless interface MAC address of both Routers
- Enable DHCP on the remote router and set the default Gateway and DNS server to the LAN address of the primary router connected to the Internet

In this example the main Billion 7404VGP is connected to the internet and has a LAN IP address of 192.168.1.254. I've connected a notebooks to the remote TP-LINK and set the LAN address to 192.168.1.249 i.e in the same subnet as the billion.

From the TP link look up the MAC address of the wireless adapter and note it for insertion in the Billion. From the status page the wireless MAC address in this case is 00 25 86 CB 0B 2A

54M Wireless Router Model No.: TL-WR340G TL-WR340GD		Status	
<ul style="list-style-type: none"> <li>Status</li> <li>Basic Settings</li> <li>Quick Setup</li> <li>Network</li> <li>Wireless</li> <li>Advanced Settings</li> <li>DHCP</li> <li>Forwarding</li> <li>Security</li> <li>Static Routing</li> <li>IP &amp; MAC Binding</li> <li>Dynamic DNS</li> <li>Maintenance</li> <li>System Tools</li> </ul>		Firmware Version:	4.2.1 Build 090106 Rel.56881n
		Hardware Version:	WR340G v5 081520C2
		<b>LAN</b>	
		MAC Address:	00-25-86-CB-0B-2A
		IP Address:	192.168.1.249
		Subnet Mask:	255.255.255.0
		<b>Wireless</b>	
		Wireless Radio:	Enable
		SSID:	TP-LINK
		Channel:	6
Mode:	54Mbps (802.11g)		
MAC Address:	00-25-86-CB-0B-2A		
IP Address:	192.168.1.249		

Connect to the Billion. Set the Channel to 6 and note the AP MAC address of the billion which in this case is 00:19:db:0c:e9:bf

Under the Wireless Distribution System settings enter the MAC address of the remote TP link in the Peer WDS MAC address field

Status		Wireless	
Quick Start		Parameters	
Configuration		WLAN Service <input checked="" type="radio"/> Enable <input type="radio"/> Disable	
LAN		Mode 802.11g	
Bridge Interface		ESSID Billion-Upstairs	
Ethernet		ESSID Broadcast <input checked="" type="radio"/> Enable <input type="radio"/> Disable	
IP Alias		Regulation Domain Australia	
Ethernet Client Filter		Channel ID Channel 6 (2.437 GHz)	
Wireless		Tx PowerLevel 220	
Wireless Security		Connected true	
Wireless Client Filter		AP MAC address 00:19:db:0c:e9:bf	
Port Setting		AP Firmware Version 1.1.3.0	
DHCP Server		<b>Wireless Distribution System (WDS)</b>	
		WDS Service <input checked="" type="radio"/> Enable <input type="radio"/> Disable	
		1. Peer WDS MAC address 00:25:86:cb:0b:2a	

In the wireless security menu set the security mode to WEP, WEP authentication to shared key, WEP encryption you can choose 64 bit or 128bit – I use 64 bit for brevity. Enter a 5 character Key.

Note that the remote router does not use this security information for connecting – it is authenticated by the MAC address entered in the Peer table.

Status		Wireless Security	
Quick Start		Parameters	
Configuration		Security Mode WEP	
LAN		WEP Authentication Shared Key	
Bridge Interface		WEP Encryption <input checked="" type="radio"/> WEP64 <input type="radio"/> WEP128 ASCII	
Ethernet		Passphrase <input type="text"/> <input type="button" value="Generate"/>	
IP Alias		Default Used WEP Key 1 (1~4)	
Ethernet Client Filter		Key 1 mypwd	
Wireless		Key 2 00000	
Wireless Security		Key 3 00000	
		Key 4 00000	

Back on the TP link go to the wireless settings menu. Set the channel to 6, enable bridges and enter the MAC address of the billion noted above. Enable wireless security to WEP, Shared Key and enter a WEP Key.

<ul style="list-style-type: none"> <li>Status</li> <li>--- Basic Settings ---</li> <li>Quick Setup</li> <li>Network</li> <li>Wireless             <ul style="list-style-type: none"> <li>Wireless Settings</li> <li>MAC Filtering</li> <li>Wireless Statistics</li> </ul> </li> <li>--- Advanced Settings ---</li> <li>DHCP</li> <li>Forwarding</li> <li>Security</li> <li>Static Routing</li> <li>IP &amp; MAC Binding</li> <li>Dynamic DNS</li> <li>--- Maintenance ---</li> <li>System Tools</li> </ul>	SSID:	TP-LINK
	Region:	Australia
	Warning: Ensure you select a correct country to conform local law. Incorrect settings may cause interference.	
	Channel:	6
	Mode:	54Mbps (802.11g)
	<input checked="" type="checkbox"/> Enable Wireless Router Radio <input checked="" type="checkbox"/> Enable SSID Broadcast	
	<input checked="" type="checkbox"/> Enable Bridges	
	MAC of AP1:	00-19-DB-0C-E9-BF
	MAC of AP2:	
	MAC of AP3:	
MAC of AP4:		
MAC of AP5:		
MAC of AP6:		
<input checked="" type="checkbox"/> Enable Wireless Security		
Security Type:	WEP	
Security Option:	Shared Key	
WEP Key Format:	ASCII	
Key Selected	WEP Key	Key Type
Key 1: <input checked="" type="radio"/>	mypwd	64bit

Configure the DHCP server on the remote TP link with an IP address range which does not clash with the DHCP on the primary billion router. Configure the default Gateway and primary DNS to the IP address of the billion.

<b>54M</b> <b>Wireless Router</b> Model No.: TL-WR340G TL-WR340GD	<b>DHCP Settings</b>	
	DHCP Server:	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
	Start IP Address:	192.168.1.100
	End IP Address:	192.168.1.199
	Address Lease Time:	120 minutes (1~2880 minutes, the default value is 120)
	Default Gateway:	192.168.1.254 (optional)
	Default Domain:	(optional)
	Primary DNS:	192.168.1.254 (optional)
	Secondary DNS:	0.0.0.0 (optional)
	<input type="button" value="Save"/>	

From your wireless client connect to TP-LINK

You should be allocated an IP address from the TP link range e.g. 192.168.1.100 with a default Gateway and DNS of 192.168.1.254

Test the connection through to the billion router by pinging 192.168.1.254. This will ping the billion across the wireless bridge and you should get 4 replies.

Then test pinging an Internet address you know will respond to confirm that you can get all the way out to the Internet and that DNS is resolving.

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**Pallab Mahmud,**

thanks a ton :D

i spent the whole day in google for this. your instructions really helped me a lot. i configured my tplink adsl router [TD-W8950ND] with tplink wireless router [WR340GD].

really appreciate your post :)

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**BrendanKing,**

I'm glad it was able to help you.

Brendan

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