WDS ON ROUTERTECH "1350A" WIRELESS FIRMWARES

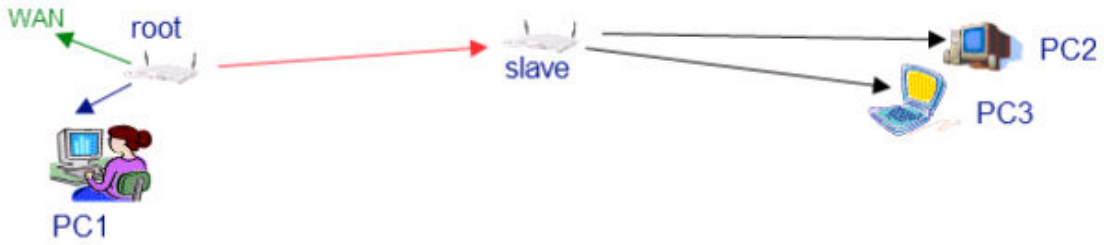
This tutorial explains how to use the *Wireless Distribution System* ("**WDS**") features of the RouterTech firmwares (v**2.97** or higher) for "**TNETW1350A**" wireless routers.

There are 3 WDS modes - "**Bridge**", "**Repeater**" and "**Crude**". This tutorial covers the "**Crude**" and "**Repeater**" modes. They seem to work well when all routers are running RouterTech. In the "**Crude**" mode, WDS connections are validated only through the wireless MAC addresses of the routers. In "**Repeater**" mode, WDS connections can be validated with a password "secret" shared between the ROOT and SLAVE access points.

This tutorial assumes that:

- **all** the routers involved have "**1350A**" (i.e., *TNETW1350A*) wireless chips, and are running RouterTech 1350A wireless firmware **v2.97 or higher**;
- there is at least one **ROOT** (or **SERVER**) wireless router (access point) that is connected to the internet, and there is at least one **SLAVE** (or **CLIENT**) wireless router (access point) that will be connected to the **ROOT** access point via WDS;
- the wireless functionality of all the routers has been enabled, properly configured, and secured with (preferably) WPA or WEP encryption. This tutorial will therefore not cover such basic wireless configuration issues;
- each of the routers involved in the process has a **uniquely different SSID** from all the others (i.e., each SSID is **completely unique**);
- you know the MAC addresses of the wireless chips in each of the routers involved in the process (shown as "*AP MAC*" in the "*Status->Product Information*" menu);
- and that the MAC addresses (wireless, DSL, ethernet) on each router are completely unique;
- you have deleted the default "*quickstart*" connection and all other ISP connections on the **SLAVE/CLIENT** routers.

WDS Topology:



In the above example, the **ROOT** router is connected to the WAN (internet). **PC1** is connecting to the internet through it. It is also connected to the **SLAVE** router via WDS. It is giving out IP addresses via DHCP to all clients connected to the **SLAVE** router. Through the **SLAVE** router, **PC2** and **PC3** can access the internet. They can also access shared resources on **PC1** (and vice versa).

Setting up a ROOT (SERVER) access point (CRUDE MODE)

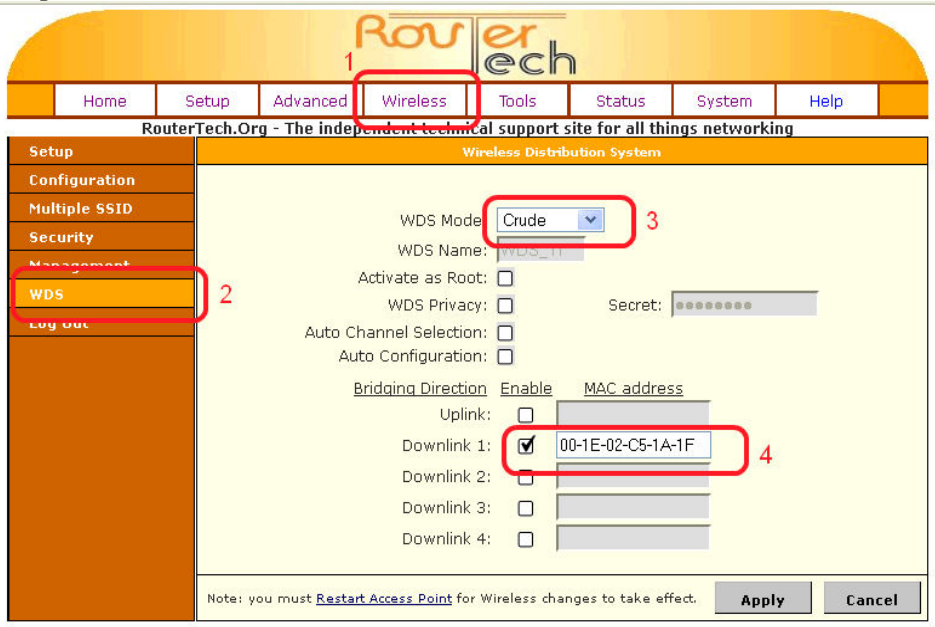
The **ROOT/SERVER** access point should be the one that is connected to the WAN (internet). Other access points (SLAVEs/CLIENTs) will connect to this device, and, through it, to the internet.

To set up WDS on the **ROOT/SERVER** router, take the following steps;

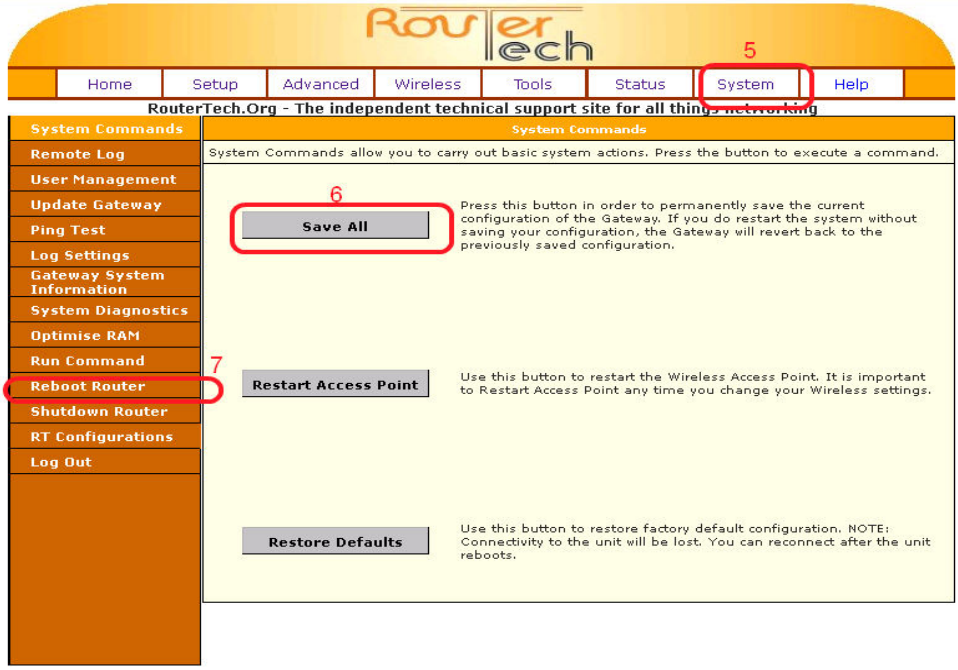
1. Click on "*Wireless*"

2. Click on "*WDS*"
3. In the "*WDS Mode*" list, select "*Crude*"
4. To create an entry for the first SLAVE/CLIENT device, tick "*Downlink 1*", insert the MAC ADDRESS of the SLAVE/CLIENT device, and then click on "*Apply*". For each additional SLAVE/CLIENT, repeat this process, selecting a new "*Downlink*" entry each time
5. Click on "*System*"
6. Click on "*Save All*"
7. Click on "*Reboot Router*", and confirm that you want to reboot the router

* The following screenshots (Screen 1 and Screen 2) provide visual references for each of these above steps.



Screen 1



Screen 2

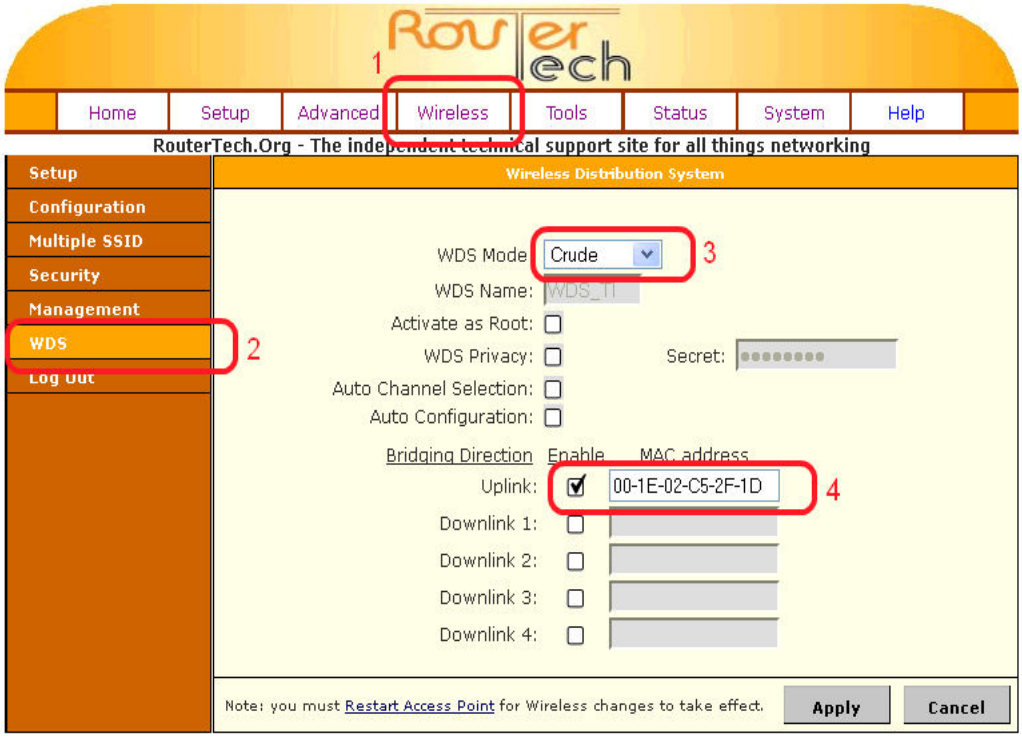
Setting up a SLAVE (CLIENT) access point (CRUDE MODE)

The routers that will act as **SLAVE**s/**CLIENT**s for the ROOT/SERVER router will access the internet through the ROOT/SERVER.

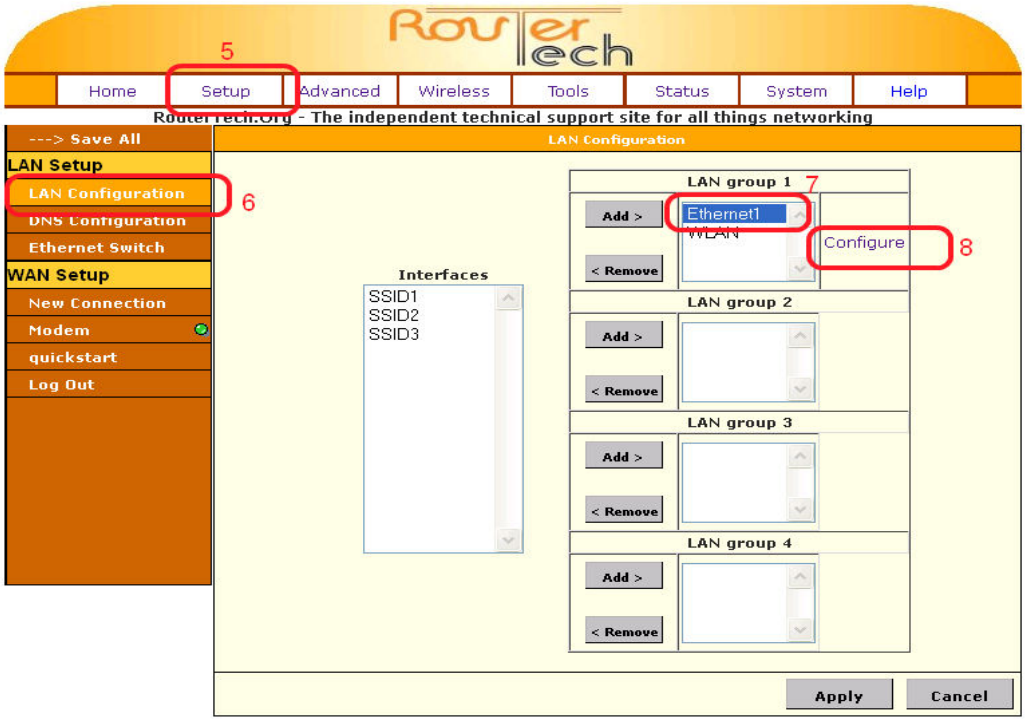
To set up WDS on a SLAVE/CLIENT router, take the following steps:

1. Click on "*Wireless*"
2. Click on "*WDS*"
3. In "*WDS Mode*", select "*Crude*"
4. To link to the ROOT/SERVER access point, tick "*Uplink*", insert the MAC ADDRESS of the ROOT/SERVER access point, and then click on "*Apply*".
5. Click on "*Setup*"
6. Click on "*LAN Configuration*"
7. Click on "*Ethernet 1*"
8. Click on "*Configure*"
9. Tick "*Use the following Static IP address*", and, in the "*IP Address*" box, type the IP address that you wish to use to connect to the **SLAVE/CLIENT** access point. It must be within the same IP range as the **ROOT/SERVER** (e.g., 192.168.1.x), but should NOT be 192.168.1.1 (which is the IP address of the **ROOT/SERVER**). In the example screenshots below, an IP address of *192.168.1.180* was selected
10. Tick "*Server and Relay Off*", and then click on "*Apply*".
11. Click on "*System*"
12. Click on "*Save All*"
13. Click on "*Reboot Router*", and confirm that you want to reboot the router

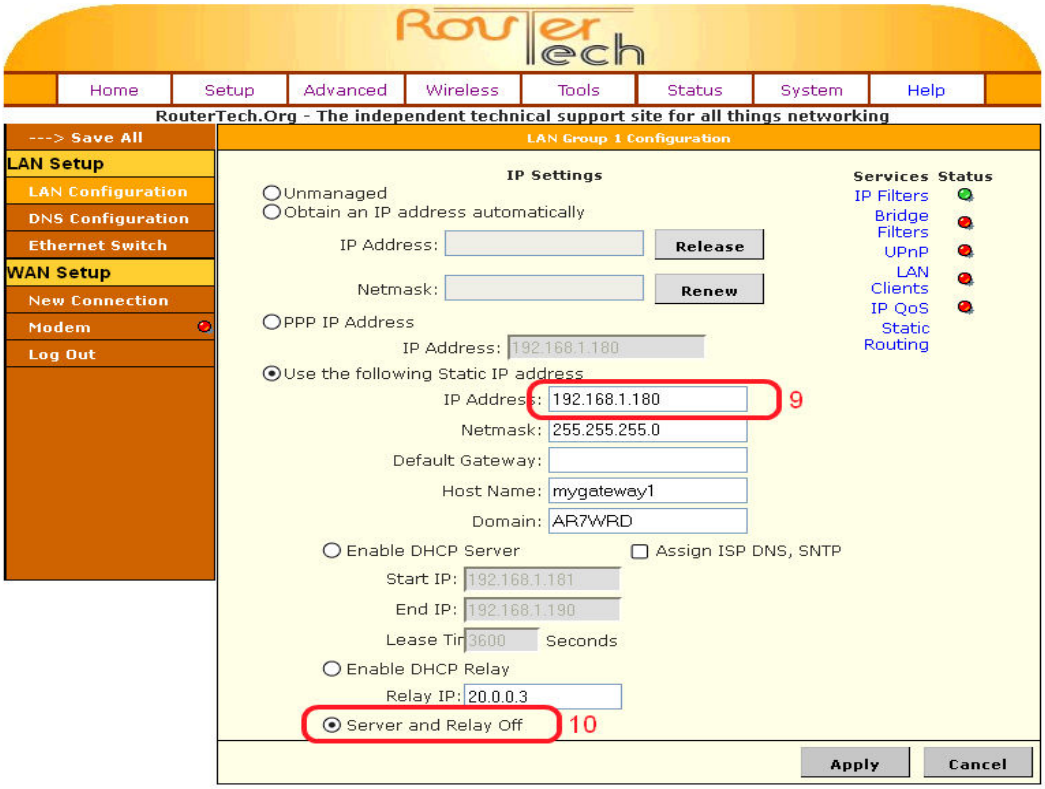
* The following screenshots (Screens 3-6) provide visual references for each of these above steps.



Screen 3



Screen 4



Screen 5

Screen 6

------- End of Tutorial for CRUDE mode ------

THE TUTORIAL FOR "REPEATER" MODE FOLLOWS ...

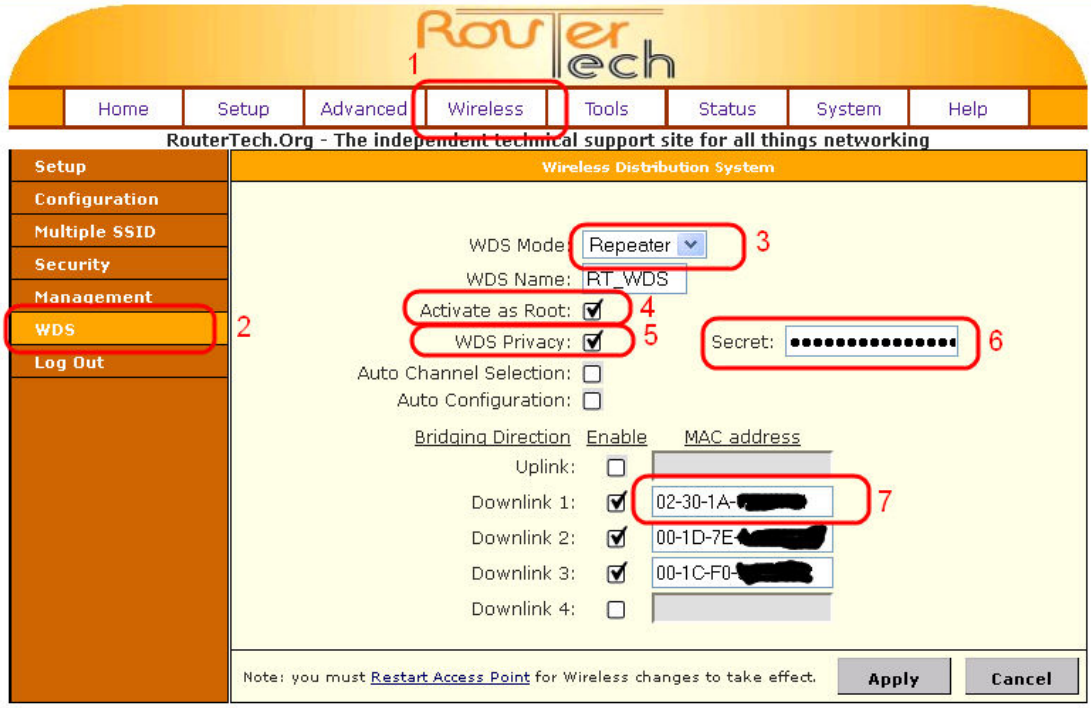
Setting up a ROOT (SERVER) access point (REPEATER MODE)

The **ROOT/SERVER** access point should be the one that is connected to the WAN (internet). Other access points (SLAVEs/CLIENTs) will connect to this device, and, through it, to the internet.

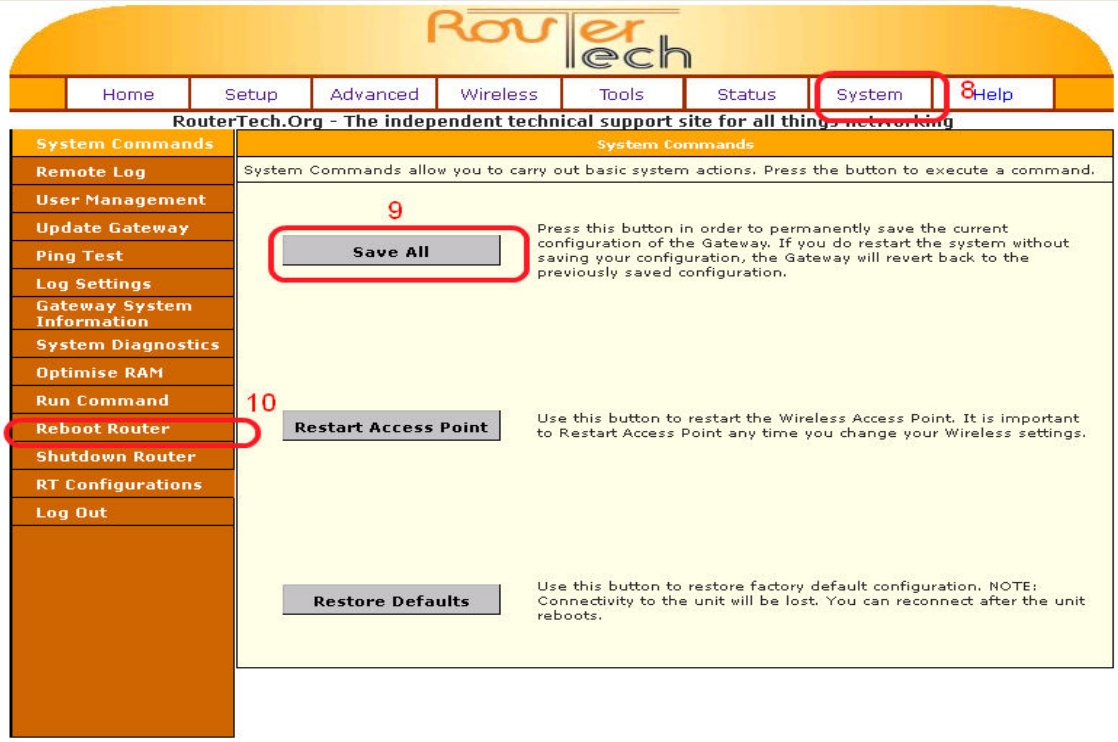
To set up WDS on the **ROOT/SERVER** router, take the following steps;

1. Click on "*Wireless*"
2. Click on "*WDS*"
3. In the "*WDS Mode*" list, select "*Repeater*"
4. Tick "*Activate as Root*"
5. Tick "*WDS Privacy*"
6. Enter a password in the box labelled "*Secret*" – you must also enter exactly the same password in the SLAVE/CLIENT access points
7. To create an entry for the first SLAVE/CLIENT device, tick "*Downlink 1*", insert the MAC ADDRESS of the SLAVE/CLIENT device, and then click on "*Apply*". For each additional SLAVE/CLIENT, repeat this process, selecting a new "*Downlink*" entry each time
8. Click on "*System*"
9. Click on "*Save All*"
10. Click on "*Reboot Router*", and confirm that you want to reboot the router

* The following screenshots (Screen 1 and Screen 2) provide visual references for each of these above steps.



Screen 1 (this example creates entries for 3 clients)



Screen 2

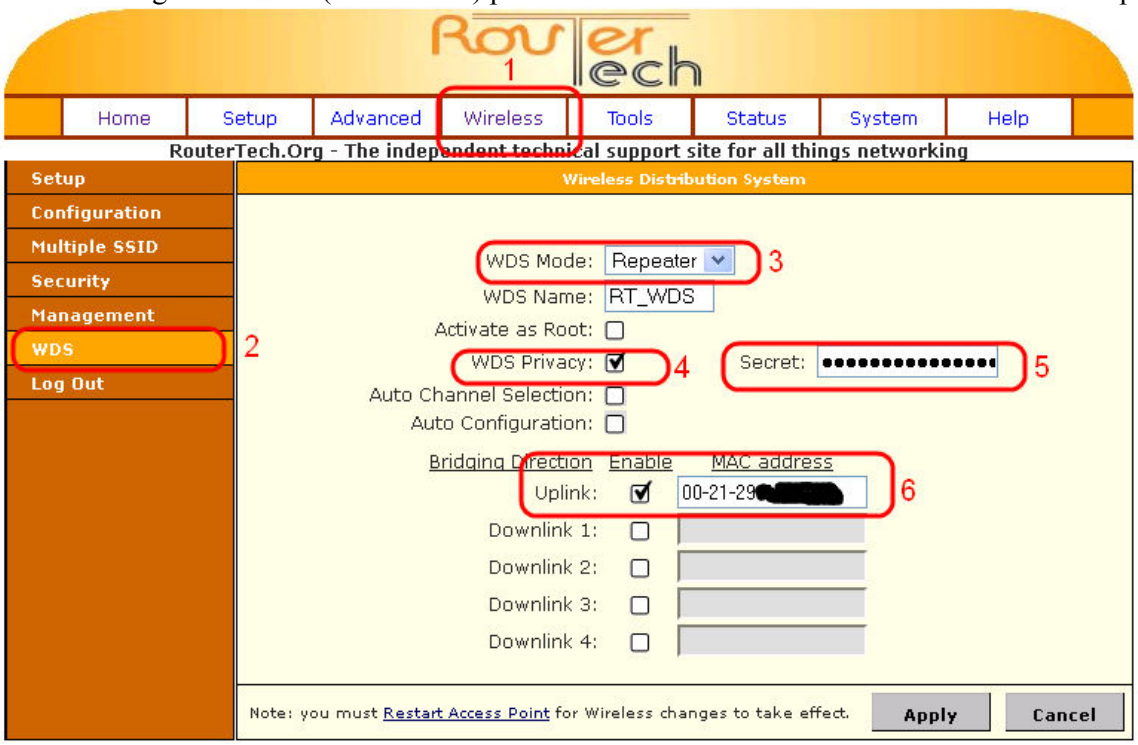
Setting up a SLAVE (CLIENT) access point (REPEATER MODE)

The routers that will act as **SLAVE**s/**CLIENT**s for the ROOT/SERVER router will access the internet through the ROOT/SERVER.

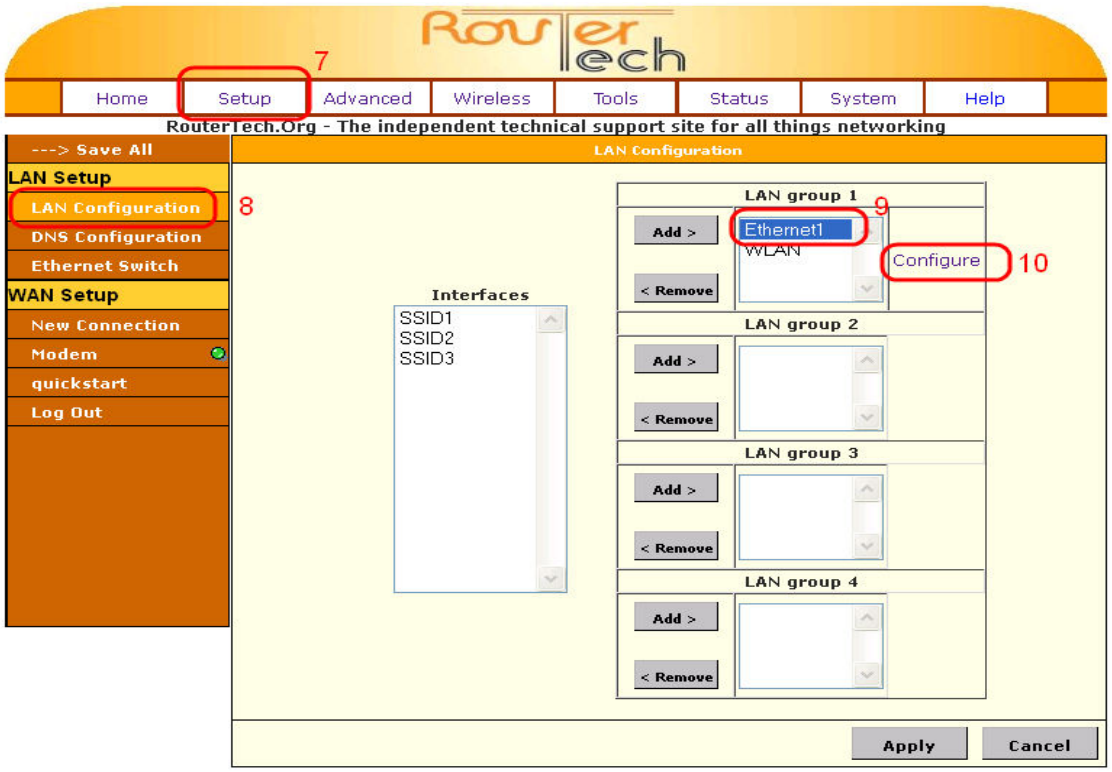
To set up WDS on a SLAVE/CLIENT router, take the following steps:

1. Click on "*Wireless*"
2. Click on "*WDS*"
3. In "*WDS Mode*", select "*Repeater*"
4. Tick "*WDS Privacy*"
5. Enter a password in the box labelled "*Secret*" – this must be exactly the same password that was entered in the ROOT/SERVER access point
6. To complete the link to the ROOT/SERVER access point, tick "*Uplink*", insert the MAC ADDRESS of the ROOT/SERVER access point, and then click on "*Apply*".
7. Click on "*Setup*"
8. Click on "*LAN Configuration*"
9. Click on "*Ethernet 1*"
10. Click on "*Configure*"
11. Tick "*Use the following Static IP address*", and, in the "*IP Address*" box, type the IP address that you wish to use to connect to the **SLAVE/CLIENT** access point. It must be within the same IP range as the **ROOT/SERVER** (e.g., 192.168.1.x), but should NOT be 192.168.1.1 (which is the IP address of the **ROOT/SERVER**). In the example screenshots below, an IP address of *192.168.1.180* was selected
12. Tick "*Server and Relay Off*", and then click on "*Apply*".
13. Click on "*System*"
14. Click on "*Save All*"
15. Click on "*Reboot Router*", and confirm that you want to reboot the router

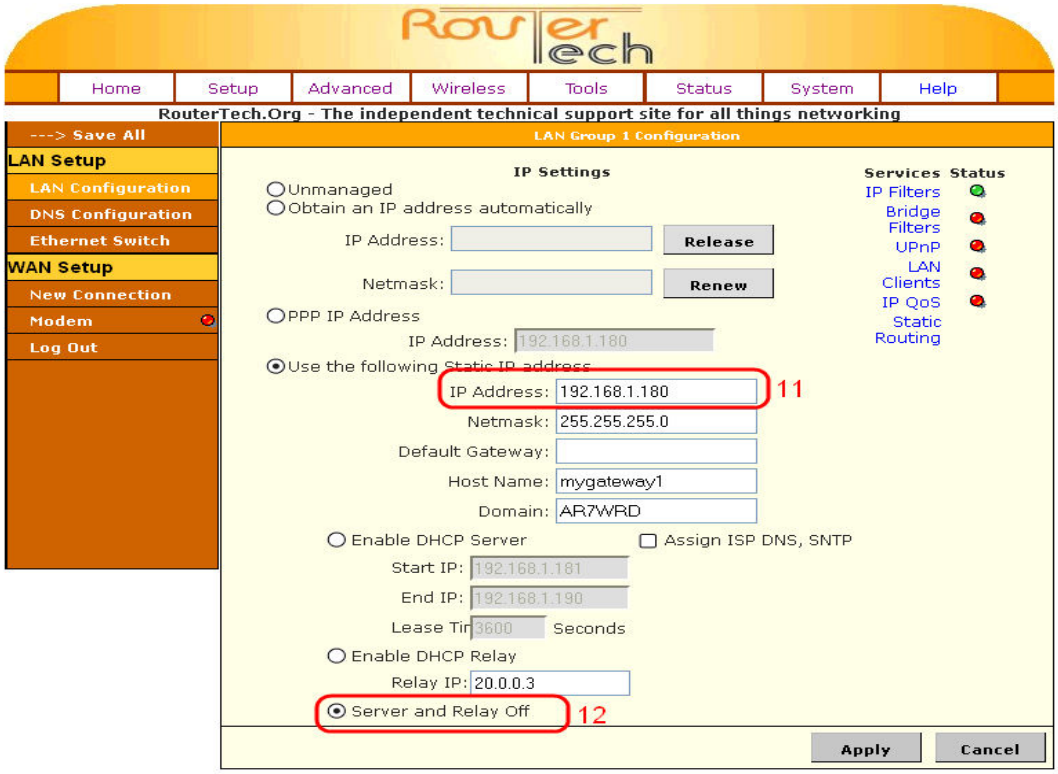
* The following screenshots (Screens 3-6) provide visual references for each of these above steps.



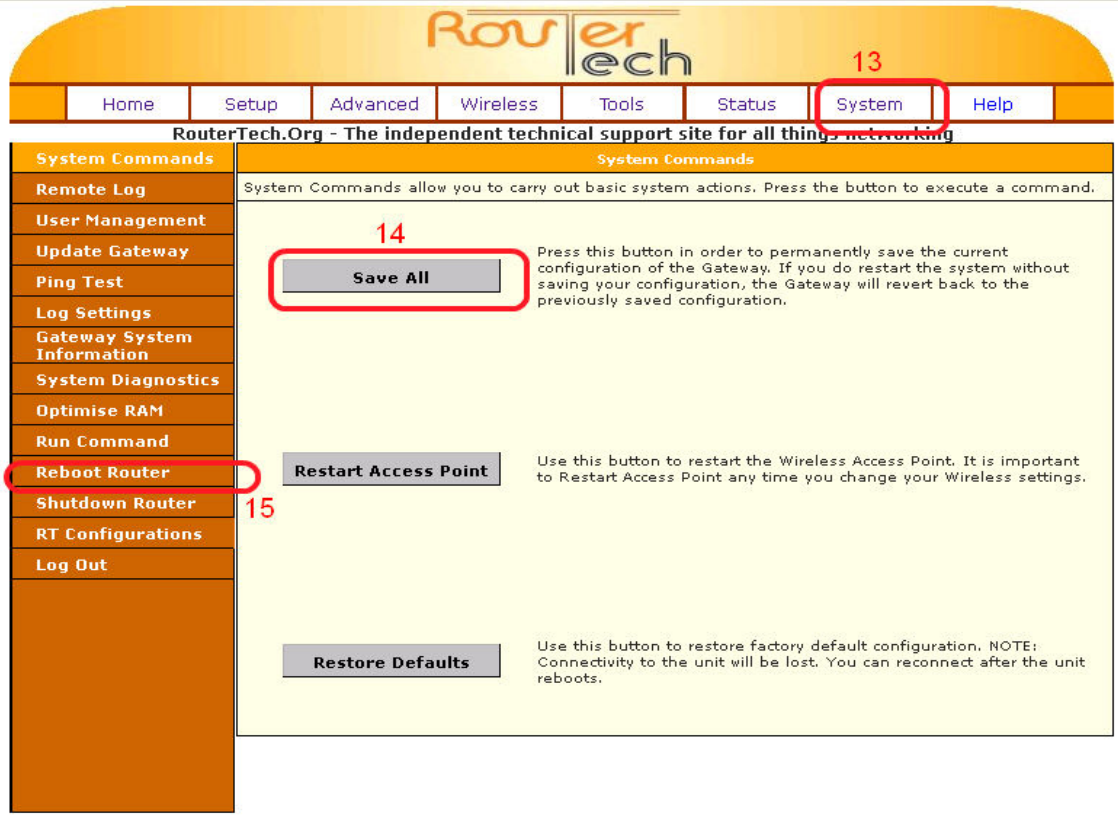
Screen 3



Screen 4



Screen 5



Screen 6

DISCLAIMER

While the steps outlined in the above tutorial work fine in our tests, your mileage may vary. This tutorial is supplied **WITHOUT ANY WARRANTIES WHATSOEVER**. You follow the instructions in this tutorial **ENTIRELY AT YOUR OWN PERIL**. If they work for you, fine. If your router ends up getting fried, then do not complain.

If these terms are not acceptable to you, then please close this document immediately, and **DO NOT FOLLOW THESE INSTRUCTIONS**.

Revision 1.1, 18 September 2011 (for RouterTech firmware v2.97 or higher)