Quick Note 28

Digi TransPort Simultaneous Wi-Fi Access Point and Client Mode Setup

Contents

1   DOCUMENT VERSION

Version Number	Status
1.0	Initial release – 2012-May-15

2 INTRO TO DIGI TRANSPORT WI-FI ACCESS POINT AND CLIENT MODE

The Digi TransPort family of routers can be setup to work as a Wi-Fi Access Point (AP), and also work in Client mode to connect into an existing Wi-Fi network. These features can be setup to run independently on the TransPort, or setup to run simultaneously in both modes. There are 3 models of the Digi TransPort that support these Wi-Fi capabilities:

- Digi TransPort WR41
- Digi TransPort WR44
- Digi TransPort DR64

More product information on the Digi TransPort can be found at www.digi.com.

NOTE: If simultaneous configuration of both AP and Client mode is not needed, please refer to the respective Quick Notes (QN) for independent configuration of these options. QN22 would be used for AP configuration, and QN23 would be used for Client mode configuration.

3 WI-FI CLIENT MODE SETUP

The following instructions describe how to configure the Digi TransPort to act as a Wi-Fi client:

NOTE: Use the below screenshot as a reference for steps 1-6

1) Log into the WebUI, and navigate to **Configuration - Network > Interfaces > Wi-Fi > Global Wi-Fi Settings**.

2) Set the **Country** that the device will be used in.

3) Set the **Network Mode** to either B/G or A, depending on the type needed.

4) Configure the **Channel** to match the channel that is being used by the Access Point the TransPort's client will be connecting to.

NOTE: For both Access Point and Client mode to work simultaneously, the same channel must be used by both modes and must be hard coded in the setup. **DO NOT** use the "auto" option that is listed by default.

5) **(Optional)** Configure the **Remote management access** option to restrict management access over the WiFi connection.

6) Click **Apply** and **Save** the changes.

NOTE: Use the below screenshot as a reference for steps 7-15

7) Navigate to **Configuration - Network > Interfaces > Wi-Fi > Wi-Fi 0**.

Digi TransPort Simultaneous Wi-Fi Access Point and Client Mode Setup

8) **Check** the box for **Enable this Wi-Fi interface** if it is not already checked.

9) **(Optional)** Add a **Description** for the connection.

10) Fill in the **SSID** of the AP the TransPort needs to connect to.

11) For the **Mode** option, choose **Client**.

12) The Wi-Fi client is required to be bound to an Ethernet instance for the client mode to work properly. Bind this to an unused Ethernet interface, such as Ethernet 1, or even better use a logical Ethernet interface so all the physical Ethernet interfaces on the TransPort remain available to use by wired hosts. The logical interface number will vary depending on the platform in use, but the number is easily determined by browsing to **Configuration - Network > Interfaces > Ethernet > Logical Ethernet Interfaces,** and selecting the first available logical interface.

13) For the **Wi-Fi Security** options, match the appropriate security settings for the AP that the TransPort is connecting to.

14) Depending on the Wi-Fi Security selected in step 13, additional menu options will be displayed for the Pre-Shared Key (PSK) or certificate configuration. Fill in the required information to allow the TransPort to connect to the other AP.

15) Click **Apply** and **Save** the changes.

16) Navigate to **Configuration - Network > Interfaces > Ethernet > ETH x**.

NOTE: The Ethernet interface that you will navigate to must match the Ethernet interface you bound the Wi-Fi client to in step 12. This example is using ETH 1 of the TransPort.

17) Either configure a static IP address that is in the correct subnet and outside of the other Access Point's configured DHCP pool, or configure this interface to use DHCP to acquire an IP address automatically from the other AP. See the screenshot below for reference:

Digi TransPort Simultaneous Wi-Fi Access Point and Client Mode Setup

NOTE: Use the below screenshot as a reference for steps 18-20

18) Click on the **Advanced** link on the current Ethernet settings page. Configure the **Ethernet Hub Group** number to a different group than what is being used by the other Ethernet interfaces (by default, all interfaces are in group 0). This example will use group 1 for this interface.

19) The Wi-Fi client interface will be used to route IP traffic, so NAT will need to be enabled as well. **Check** the box for **Enable NAT on this interface**, and also enable the **IP address and Port** option.

20) Click **Apply** and **Save** the changes.

NOTE: For the next section that covers Access Point configuration, make sure to note the Channel and Encryption type that was used for the Client mode in the previous steps. These will be needed for the AP configuration.

4 WI-FI ACCESS POINT MODE SETUP

The following instructions describe how to configure the Digi TransPort to work as an Access Point (AP):

NOTE: This section assumes that the Wi-Fi Client has been configured previously.

NOTE: Use the below screenshot as a reference for steps 1-9

1) Log into the WebUI, and navigate to **Configuration - Network > Wi-Fi > Wi-Fi 1**.

2) **Check** the box for **Enable this Wi-Fi interface** if it's not enabled already.

3) **(Optional)** Add a **Description** for the connection.

4) Fill in the **SSID** that will be used by the TransPort's AP mode. This should be different from the SSID that is being used for the Client Mode (Wi-Fi 0) connection.

5) For the **Mode** option, choose **Access Point**.

6) The Wi-Fi Access Point is **required** to be bound to an Ethernet instance for the AP mode to work properly. Bind this to an unused Ethernet interface, such as Ethernet 0, or even better use a logical Ethernet interface so all the physical Ethernet interfaces on the router remain available to use by wired hosts. The logical interface number will vary depending on the platform in use, but the number is easily determined by browsing to **Configuration - Network > Interfaces > Ethernet > Logical Ethernet Interfaces**, and selecting the first available logical interface.

7) The **Wi-Fi Security** options for the Access Point will need to use the same encryption type (i.e. – WEP, WPA/WPA2) as the Wi-Fi 0 (Client mode) settings, or no encryption at all.

NOTE: When configuring Access Point mode and Client Mode to run simultaneously, both the Wi-Fi 0 & Wi-Fi 1 must use the same security method. For example, if the TransPort's Client mode is configured to use WPA2-PSK security, the TransPort's Access Point must also be configured as WPA2-PSK, or 'None'. The PSK can (and should) be different for the AP configuration and the Client Mode configuration.

8) Depending on the Wi-Fi Security selected in step 7, additional menu options will be displayed for the Pre-Shared Key (PSK) or RADIUS server configuration. Fill in the required information to allow clients to connect to the TransPort's Access Point.

9) Click **Apply** and **Save** the changes.

5 WI-FI-TO-CELLULAR FAILOVER

The following section describes how to configure the Digi TransPort to use the Wi-Fi Client connection as the primary default route, and failover to Cellular for backup if the client connection is disconnected.

NOTE: **Use the below screenshot as a reference for steps 1-4**

1) Log into the WebUI, and navigate to **Configuration > Network > IP Routing/Forwarding > Static Routes > Default Route 0**.

2) Change the **Interface** to Ethernet 1 (or whichever Ethernet instance is configured for the Wi-Fi Client).

Digi TransPort Simultaneous Wi-Fi Access Point and Client Mode Setup

3) Navigate to **Configuration > IP Routing/Forwarding > Static Routes > Default Route 1**.

4) Change the **Interface** to PPP 1 (DR64 uses PPP 3 instead), and set the **Metric** to a higher number than what is used with Default Route 0, such as 3 in this example.

NOTE: The failover that was configured above will not actively monitor traffic over the WAN interfaces to determine if a route is no longer working. It will only failover if the TransPort's Wi-Fi Client loses a connection to the AP it's connecting to. The TransPort's firewall can perform traffic monitoring and bring interfaces Out Of Service (OOS) if traffic cannot flow through an interface. Please refer to the TransPort's manual on page 474 for more information on using the Firewall, or Application Note 41 (AN41) found on the Support website.

6 MORE INFORMATION

For Digi hardware issues or questions:

- Digi Technical support: http://www.digi.com/support/ or +1 952-912-3456 (USA) or +44 1943 605055 (UK)
- Digi Sales: 952-912-3444 opt. 2 (USA) or +44 1943 605055 (UK)
- Product info: www.digi.com