



Quick Note 042

Hotspot feature for Wi-Fi clients on Digi
TransPort.

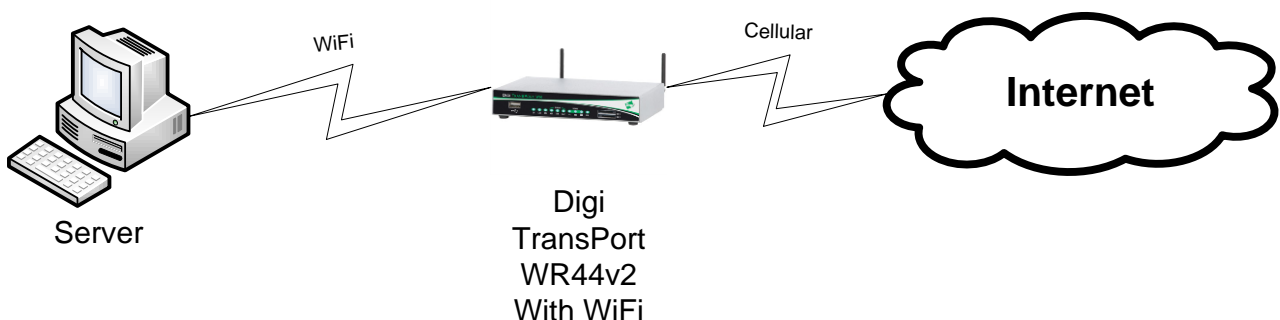
Digi Support
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1 INTRODUCTION

1.1 Outline



This document describes how to configure a Digi TransPort as a Wi-Fi Hotspot Access Point to provide Wi-Fi clients with Internet access through Cellular.

1.2 Assumptions

This guide has been written for use by technically competent personnel with a good understanding of the communications technologies used in the product and of the requirements for their specific application. It also assumes a basic ability to access and navigate a Digi TransPort router.

This application note applies only to:

Model: Digi TransPort WR41/44 with the Wi-Fi option.

Firmware versions: 5169 and later

Configuration: This document assumes that the devices are set to their factory default configurations. Most configuration commands are shown only if they differ from the factory default.

Please note: This application note has been specifically rewritten for firmware release 5169 and later and will not work on earlier versions of firmware. Please contact tech.support@digi.com if you require assistance in upgrading the firmware of the TransPort router.

1.3 Corrections

Requests for corrections or amendments to this application note are welcome and should be addressed to: tech.support@digi.com

Requests for new application notes can be sent to the same address.

2 VERSION

Version Number	Status
1.0	Published

3 CONFIGURATION

3.1 Mobile Interface Configuration

Configuration – Network > Interfaces > Mobile > Mobile Settings

Configure the Mobile settings for the SIM card to provide cellular connection to the Digi TransPort and allow Wi-Fi clients to have internet access through it.

Configuration - Network > Interfaces > Mobile

Mobile

Select a SIM to configure from the list below

Settings on this page apply to the selected SIM

SIM: 1 (PPP)

IMSI: 2080140031004134

Mobile Settings

Select the service plan and connection settings used in connecting to the mobile network.

Mobile Service Provider Settings

Use custom APN instead of built-in APN

Custom APN:

SIM PIN: (Optional)

Confirm SIM PIN:

Username: (Optional)

Password: (Optional)

Confirm Password:

Mobile Connection Settings

Re-establish connection when no data is received for a period of time

Mobile Network Settings

Enable NAT on this interface

IP address IP address and Port

Parameter	Setting	Description
SIM	1(PPP1)	SIM card slot where the SIM card is inserted
APN	Internet	APN associated with the SIM card
SIM PIN	****	SIM PIN if there is one configured, else, leave blank.
Confirm SIM PIN	****	Confirm the SIM PIN if there is one configured, else, leave blank.
Username	User	Username for the configured APN. If not required, leave blank.
Password	****	Password for configured APN username. If not required, leave blank.
Confirm Password	****	Confirm password for configured APN

		username. If not required, leave blank.
Enable NAT on this Interface	Checked	Enable NAT on the PPP1 interface (IP Address is sufficient for most configuration)

Click **Apply** and **Save** to save the settings.

3.2 Ethernet Interface Configuration

3.2.1 ETH 0 Configuration

Configuration – Network > Interfaces > Ethernet > ETH 0

The screenshot shows the configuration window for the ETH 0 interface. It includes a description field, radio buttons for DHCP and manual settings, and input fields for IP Address (192.168.1.1) and Mask (255.255.255.0). The IP and Mask fields are highlighted with a red box.

Parameter	Setting	Description
IP Address	192.168.1.1	IP Address of the Router's ETH 0 interface
Mask	255.255.255.0	Subnet Mask of the Router's ETH 0 interface

3.2.2 ETH 12 Logical Interface Configuration

Logical Interface Ethernet 12 will be used for Wi-Fi clients.

Configuration – Network > Interfaces > Ethernet > ETH 12

The screenshot shows the configuration page for the ETH 12 logical interface. It includes a description field, radio buttons for DHCP and manual settings, and input fields for IP Address (10.10.10.1) and Mask (255.255.255.0). The IP and Mask fields are highlighted with a red box.

Parameter	Setting	Description
IP Address	10.10.10.1	IP Address of the Router's ETH 12 logical interface
Mask	255.255.255.0	Subnet Mask of the Router's ETH 12 logical interface

Configuration – Network > Interfaces > Ethernet > ETH 12 > Advanced

Configure the port to « **Port Isolate mode** »

The screenshot shows the Advanced configuration page for the ETH 12 logical interface. It displays the current mode as 'Hub mode' and a button labeled 'Switch to Port Isolate mode'. Below this, there is an 'Ethernet Hub group' field with the value '0'. The 'Switch to Port Isolate mode' button is highlighted with a red box.

Parameter	Setting	Description
Switch to Port Isolate mode	Click	In Port Isolate mode the router will only respond to its Ethernet IP address on physical port. This port will be bridged to the Wi-Fi instance.

Click **Apply** and **Save** to save the settings.

You must reboot for this change to take effect

3.3 DHCP “Wi-Fi Only” Configuration for ETH 12

In this example, the Digi TransPort router will have a dedicated DHCP server for Wi-Fi clients only.

Configuration – Network > DHCP Server > Logical Ethernet Interfaces > DHCP Server for Ethernet 12

▼ DHCP Server for Ethernet 12

Enable DHCP Server

IP Addresses: 10.10.10.100 to 10.10.10.200

Mask: 255.255.255.0

Gateway: 10.10.10.1

DNS Server: 10.10.10.1

Secondary DNS Server: 8.8.8.8

Domain Name: wifi.digi.com

Lease Duration: 14 days 0 hrs 0 mins

Wait for 0 milliseconds before sending DHCP offer reply

Only send offers to Wi-Fi clients

DHCP Relay

Forward DHCP requests to:

▶ **Advanced**

▶ **Advanced DHCP Options**

Apply

Parameter	Setting	Description
Enable DHCP Server	Checked	Enable DHCP Server for this interface
IP Addresses	10.10.10.100 – 10.10.10.200	Start and End of DHCP Range
Mask	255.255.255.0	DHCP Server Subnet mask for this interface. This must match the settings of Ethernet 12
Gateway	10.10.10.1	Gateway address. This must match ETH 12 address
DNS Server	10.10.10.1	Primary DNS Server, by default the TransPort will act as a DNS Server. This must match ETH 12 Address.
Secondary DNS Server	8.8.8.8	Set a Secondary DNS Server if required (in this example, Google’s public DNS Server)
Domain Name	*	Set the domain name to be used by the

		Wi-Fi clients.
Only send offers to Wi-Fi clients	Checked	Select this option to only send DHCP offers on this interface to Wi-Fi clients.

3.4 Wi-Fi Interface Configuration

3.4.1 Wi-Fi Global Settings Configuration

Configuration – Network > Interfaces > Wi-Fi > Global Wi-Fi Settings

Global Wi-Fi Settings

Country: France

Remote management access: Disable management

Network Mode: B/G/

Channel: Aut

Antenna: Auto

▶ Advanced

▶ Wi-Fi Hotspot

▶ Wi-Fi Filtering

Apply

Parameter	Setting	Description
Country	<Chose>	Select the Country where the device is used
Remote management access	Disable management	Do not allow Wi-Fi clients to log into the device and manage it
Network Mode	B/G/N	Chose which network mode to use
Channel	Auto	Let the router chose the best channel to use
Antenna	Auto	Use both Antennas for Wi-Fi

3.4.2 Wi-Fi Node 0 Configuration

Configuration – Network > Interfaces > Wi-Fi > Wi-Fi Node 0

Wi-Fi Node 0 - TransPort Hotspot

Enable this Wi-Fi interface

Description: TransPort Hotspot
 SSID: Hotspot
 Mode: Access Point

In order to send data to and from this Wi-Fi interface, it must be bridged with at least one Ethernet interface
 This Wi-Fi interface is a member of Bridge instance 1 and therefore bridged to the following interfaces

Interface		
Ethernet	12	Delete
Ethernet		Add

Hide SSID
 Enable station isolation

Click [here](#) to assign a timeband to this interface

Wi-Fi Security

Use the following security on this Wi-Fi interface:

None WEP WPA-PSK WPA2-PSK WPA-802.1X WPA2-802.1X

Network Scanning

Apply

Parameter	Setting	Description
Enable this Wi-Fi interface	Checked	Enable Wi-Fi Node 0 interface
Description	TransPort Hotspot	Enter a description for this interface
SSID	Hotspot	SSID used for the hotspot and for clients to connect
Mode	Access Point	Wi-Fi mode for this interface
This Wi-Fi interface is a member of Bridge instance	1	Select the Bridge Instance 1 which contains Ethernet 12
Interface	Ethernet 12	Bridge this Wi-Fi interface with Ethernet 12
Enable station isolation	Checked	Station isolation will prevent wi-fi clients connected on the hotspot to communicate and be isolated.
Wi-Fi Security	None	Open SSID with No Security (for testing purposes, we recommend using security such as WPA2 or Radius)

Click **Apply** and **Save** to save the settings.

3.4.3 Wi-Fi Hotspot Configuration

Configuration – Network > Interfaces > Wi-Fi > Global Wi-Fi Settings > Wi-Fi Hotspot

Parameter	Setting	Description
Enable Wi-Fi Hotspot on Wi-Fi Node 0	DNS Redirect Mode	DNS Redirect Mode will result in the Transport intercepting any DNS queries and return its own address instead of the real address. HTTP Redirect Mode will authorise DNS queries to external server but web requests will be redirected to the router hotspot page prior to allow general network access
Splashscreen filename	Default (hotspot.asp)	Splashscreen web page file name to be used when clients connects the first time
Each client can connect for	1 hrs	Time to allow clients to connect to before forcing a reconnection
Hostname	www.digi.com	Optional : Allow domains exceptions (up to 4) that you wish to provide unrestricted access to (Clients connected and visiting this domain will not be required to accept the terms or authenticate on the hotspot splash screen page)

Click **Apply** and **Save** to save the settings.

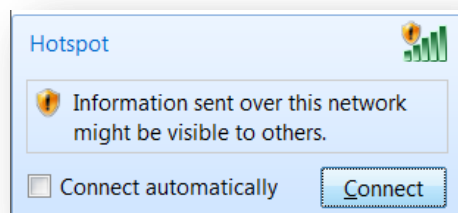
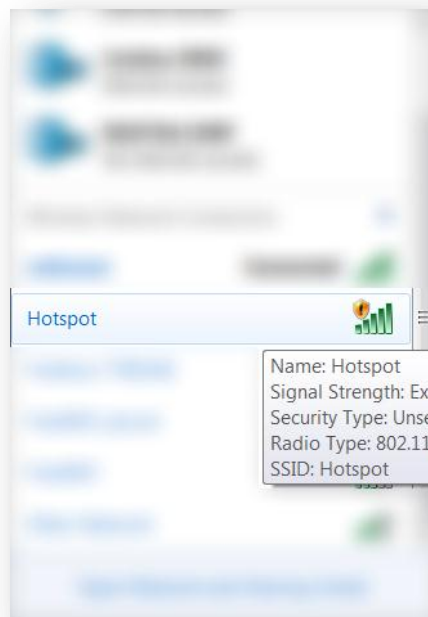
4 TESTING

4.1 Connecting to the Hotspot from a Computer

Under Windows 7/8, Click on the Wi-Fi icon in the task bar



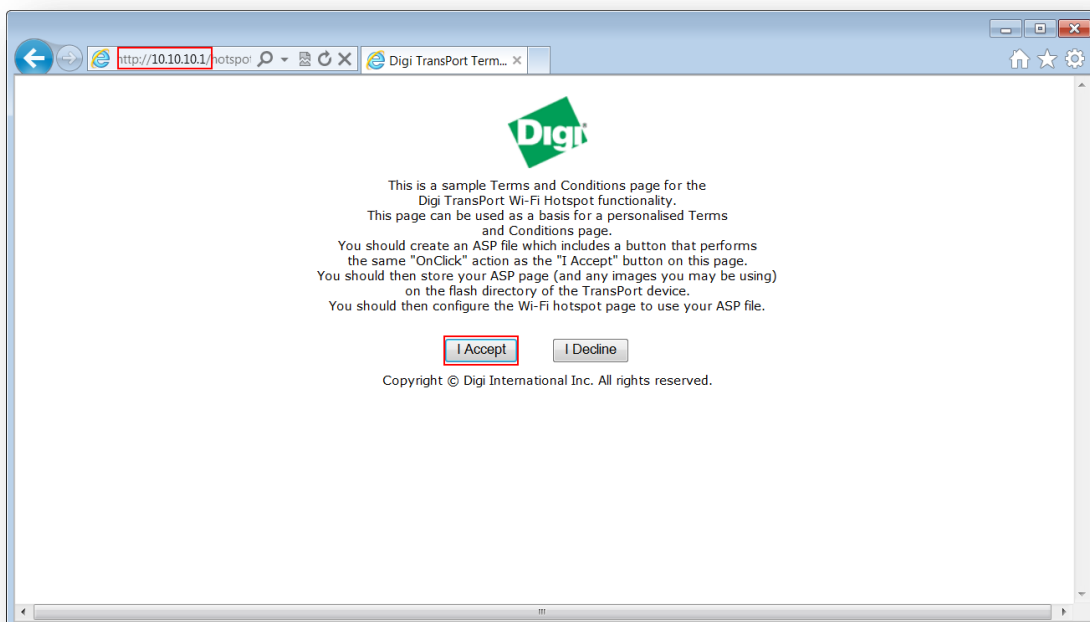
This should bring the Wireless network Connection menu. The “Hotspot” SSID should appear with “No Security”. Select it and click **Connect** to connect to the Hotspot.



Opening a web browser to one of the Hotspot's exceptions will display the page directly (like <http://www.digi.com> in our example)



However, opening a web browser to any other domain will prompt the user to accept terms and conditions from the standard hotspot.asp page. This page can be customized or replaced by another page of your choosing and selected like show in section [3.4.3](#)



Upon clicking on **Accept**, the web page will redirect to the right site.

4.2 Checking Wi-Fi connection status

4.2.1 Web GUI

You can check the number of connected clients and their status on the Wi-Fi management page.

Management – Network Status > Interfaces > Wi-Fi

Module Detected: Yes (168C:002A)
Admin Status: Up
Operational Status: Up
Channel Mode: B/G/N
Channel: 1
MAC Address: 04:f0:21:0a:59:03

Bytes Received: 1080233 Bytes Sent: 1797928
Packets Received: 12066 Packets Sent: 9286
Receive Errors: 229 Transmit Errors: 31
Received Packets Dropped: 0

Number of Connected Wi-Fi Clients: 1

Node	Wi-Fi Node	RSSI	Flags	Power Save	Mode	Neg. Rates (Mbps)	TX Rate (Mbps)	RX Rate (Mbps)	Capability Info
8c:70:8c:70:8c:70	0	42	ERP,	Awake	N	6.5, 13.0, 19.5, 26.0, 39.0, 52.0, 58.5, 65.0, 13.0, 26.0, 39.0, 52.0, 78.0, 104.0, 117.0, 130.0	130.0	130.0	ESS, Short Preamble, Short Slottime, Disconnect

[Disconnect All Clients](#)

Number of Access Point Connections: 0

[Refresh](#)

You can also check the DHCP status for clients under the DHCP Status page

▼ DHCP Status

IP address	Hostname	Lease time left (mins)
192.168.1.100		19288
192.168.1.101		19452
10.10.10.100	DOR	20149

[Clear DHCP Entries](#)

4.2.2 Command Line (CLI)

The command **wificonn** will display all the Wi-Fi clients connected and their status

```
Number of connected clients: 1
Number of client mode connections: 0

1 Node 8c:70:8c:70:8c:70
  Wi-Fi node : 0
  RSSI      : 42
  Flags     : ERP
  Power Save : Awake
  Mode      : N
  Neg. Rates : 6.5 13.0 19.5 26.0 39.0 52.0 58.5 65.0 13.0 26.0 39.0 52.0
78.0 104.0 117.0 130.0 Mbps
```

```
TX Rate      : 117.0 Mbps
RX Rate      : 130.0 Mbps
Cap. Info    : ESS Short_Preamble Short_Slottime
HT Cap.      : GREENFIELD SHORTGI20 RXSTBC(1) AMSDU(7935)
Channel      : 1
```

OK

The command **dhcp 12 status** will display the DHCP Server status of Interface ETH 12

```
Entry: IP [192.168.1.100], hostname [], MAC [00:10:49:31:27:a8], expiry 19282
(mins)
Entry: IP [192.168.1.101], hostname [], MAC [00:40:9d:4a:1d:4c], expiry 19446
(mins)
Entry: IP [10.10.10.100], hostname [DOR], MAC [8c:70:8c:70:8c:70], expiry 20143
(mins)
OK
```

5 CONFIGURATION FILES

Digi TransPort WR44v2

```
wifi 0 country "France"
wifi 0 chanmode "bgn"
wifi 0 hotspot_lifetime 60
wifinode 0 descr "TransPort Hotspot"
wifinode 0 ssid "Hotspot"
wifinode 0 hotspot 2
wifinode 0 isolation ON
wifinode 0 bridge_inst 1
eth 0 IPaddr "192.168.1.44"
eth 0 gateway "192.168.1.1"
eth 12 IPaddr "10.10.10.1"
eth 12 bridge ON
eth 12 bridge_inst 1
addp 0 enable ON
lapb 0 ans OFF
lapb 0 tinact 120
lapb 1 tinact 120
lapb 3 dtemode 0
lapb 4 dtemode 0
lapb 5 dtemode 0
lapb 6 dtemode 0
gps 0 asy_add 1
gps 0 gpson ON
ip 0 cidr ON
def_route 0 ll_ent "ppp"
def_route 0 ll_add 1
hshosts 0 host "www.digi.com"
dhcp 0 IPmin "192.168.1.100"
dhcp 0 respdelms 500
dhcp 0 mask "255.255.255.0"
dhcp 0 gateway "192.168.1.1"
dhcp 0 DNS "192.168.1.1"
dhcp 12 IPmin "10.10.10.100"
dhcp 12 IPrange 101
dhcp 12 wifionly ON
```

```

dhcp 12 mask "255.255.255.0"
dhcp 12 gateway "10.10.10.1"
dhcp 12 DNS "10.10.10.1"
dhcp 12 DNS2 "8.8.8.8"
dhcp 12 domain "wifi.digi.com"
ppp 0 timeout 300
ppp 1 name "W-WAN"
ppp 1 phonenum "*98*5#"
ppp 1 username "orange"
ppp 1 epassword "Ny13VEJJ"
ppp 1 IPaddr "0.0.0.0"
ppp 1 timeout 0
ppp 1 do_nat 2
ppp 1 use_modem 1
ppp 1 aodion 1
ppp 1 autoassert 1
ppp 1 ipanon ON
ppp 1 r_chap OFF
ppp 3 name "DSL"
ppp 3 lliface "AAL"
ppp 3 username "Enter ADSL Username"
ppp 3 r_addr OFF
ppp 3 IPaddr "0.0.0.0"
ppp 3 l_addr ON
ppp 3 timeout 0
ppp 3 do_nat 2
ppp 3 aodion 1
ppp 3 autoassert 1
ppp 3 immoos ON
ppp 3 echo 10
ppp 3 echodropcnt 5
ppp 3 l_pap OFF
ppp 3 l_chap OFF
ppp 3 defpak 16
ppp 4 defpak 16
modemcc 0 info_asy_add 7
modemcc 0 apn "internet"
modemcc 0 epin "aG8mCg=="
modemcc 0 link_retries 10
modemcc 0 stat_retries 30
modemcc 0 sms_interval 1
modemcc 0 sms_access 1
modemcc 0 sms_concat 0
modemcc 0 apn_2 "none"
modemcc 0 link_retries_2 10
modemcc 0 stat_retries_2 30
modemcc 0 sms_interval_2 1
modemcc 0 sms_access_2 1
ana 0 anon ON
ana 0 llon ON
ana 0 lapdon 0
ana 0 asyon 1
ana 0 logsize 45
cmd 0 unitid "ss%s>"
cmd 0 cmdnua "99"
cmd 0 hostname "digi.router"
cmd 0 asyled_mode 2
cmd 0 tremto 1200
cmd 0 rcihttp ON
cmd 1 autocmd "ats31=7"
cmd 1 gpson ON
cmd 4 cmd_processor OFF
user 0 access 0
user 1 name "username"

```

```
user 1 epassword "KD5lSVJDVVg="
user 1 access 0
user 2 access 0
user 3 access 0
user 4 access 0
user 5 access 0
user 6 access 0
user 7 access 0
user 8 access 0
user 9 access 0
local 0 transaccess 2
sslsvr 0 certfile "cert01.pem"
sslsvr 0 keyfile "privrsa.pem"
ssh 0 hostkey1 "privSSH.pem"
ssh 0 nb_listen 5
ssh 0 v1 OFF
cloud 0 ssl ON

Power Up Profile: 0
OK
```