Application Note 41

Ethernet WAN Failover to Cellular/Mobile

Digi Technical Support
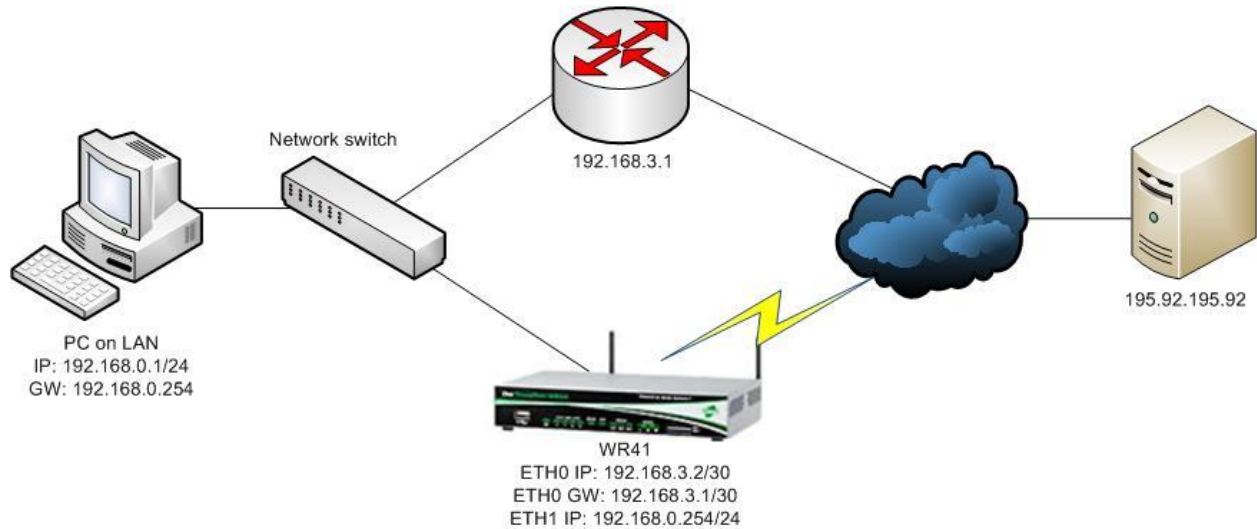
July 2016

Contents

1   INTRODUCTION

1.1   Outline

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 and configure it with basic routing functions.

This Application Note (AN) applies to:

Model: Digi Transport WR44v2

Other Compatible Models: All Digi TransPort models with 2 or more Ethernet ports.

> **NOTE**: Configuration on other TransPort models will need the changes specifically described here for the WR44v2.   For example, on a DR router, the W-WAN interface is PPP 3 not PPP 1 and changes will be required to the firewall rules, the default routes and to the actual PPP interfaces to replicate the same functionality on the DR model.   At the time of writing, this AN was tested on a WR44v2 and found to have exactly the same failover capabilities once the necessary modifications had been made. If advice is needed on any aspect of porting this AN to another device, please contact Digi Technical Support for further advice and assistance.

Firmware versions: 5.123 and later

NOTE: This AN was specifically rewritten for firmware release 5.123 and later but the original AN was tested and working with TransPorts running earlier firmware and the previous GUI. TransPorts running earlier firmware will find that the screenshots may not accurately reflect what will be seen on those older routers. Contact tech.support@digi.com if you require this document for the older GUI.

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

For the purpose of this AN, the following applies:

A working gateway device is already presumed to have been configured with a point-to-point subnet.

1.3 Corrections

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

Requests for new ANs can be sent to the same address.

2 VERSION

	Status
1.0	Published
2.0	New GUI version 5.123 onwards
2.1	Updated screenshots and instructions for new web interface, rebranding (July 2016)

3 DIGI TRANSPORT CONFIGURATION

3.1 Overview

- Configure Ethernet – Primary WAN eth 0 and Local LAN eth 1.
- Configure mobile – the backup default route will be via mobile/cellular connection.
- Configure the default routes – primary via eth 0, secondary via Mobile.
- Configure the firewall – permit traffic, interfaces out of service when failure is detected.
- Review and test – to check correct performance of the project.

3.2 Ethernet 0 Configuration

This configuration is the Ethernet subnet to the gateway router. The gateway router is assumed to be already configured with a working internet connection and LAN interface, the WR44v2 configuration here should be modified for use with your own gateway router.

Navigate to **Configuration - Network > Interfaces > Ethernet > ETH 0** and enter the values below.

Click the **Apply** button.

Parameter	Setting	Description
Description	<Description of Interface>	Use something here that will be meaningful to your setup e.g. "Test WAN 44v2"
IP Address	192.168.3.2	Ethernet 0 IP Address
Mask	255.255.255.252	Ethernet 0 Subnet Mask
Gateway	192.168.3.1	Eth 0 Gateway address

Parameter	Setting	Description
Port Isolate / Hub mode	Port Isolate	Confirm the device is in Port Isolate mode, otherwise switch to Port Isolate mode
Take this interface out of service after <n> seconds when the link is lost	1	To enable fast failover if the cable is removed
Enable NAT on this interface	Ticked + IP address	Reveals options for NAT mode select either IP address or IP address and port
Enable Bridge on this interface	Unticked	If the device has Wi-Fi – then we will want to bridge to the LAN interface ETH 1
Generate Ping packets on this interface	Ticked	This option will reveal the settings for ping generation on this interface
Send <n> byte pings…	0	Size of ICMP packet to send
…to IP host…	<IP to ping>	Valid IP address to ping for link up/down testing
…every <n> seconds	10	Interval in hours, minutes and seconds for the test pings to be sent
Only Send Pings when this Ethernet interface is "In Service"	Ticked	This will allow the firewall to control the pings sent to recover the interface when connectivity is working again

3.3   Ethernet 1 Configuration

This is the LAN interface configuration for this implementation, so this interface is configured with the LAN gateway IP address used by clients.   In this example, no DHCP server has been setup but this can be easily added to the configuration.   It is presumed for this example that the clients on the LAN are configured with a static IP address in the range allocated to this interface and will use the ETH 1 address as their network gateway address.   The subnet mask for this network is 255.255.255.0

Navigate to **Configuration - Network > Interfaces > Ethernet > ETH 1**

Click the **Apply** button.

Parameter	Setting	Description
Description	<Description of Interface>	Use something here that will be meaningful to your setup e.g. "Test LAN 44v2"
IP Address	192.168.0.254	Ethernet 1 IP Address
Mask	255.255.255.0	Ethernet 1 Subnet Mask

Mobile Interface Configuration

If a SIM PIN is required for the mobile connection then enter this also here. Otherwise, for most implementations, only the APN will need to be entered. Upon navigating to the Mobile Settings configuration page, input the appropriate settings and then click the **Apply** button.

Navigate to **Configuration - Network > Interfaces > Mobile**

NOTE: In this environment, there was no need to enter a PIN for the SIM or a username and password for the connection. If a SIM PIN, username and password is required, it would be entered on this configuration page.

Parameter	Setting	Description
Settings on this page apply to the selected SIM	SIM: 1 (PPP 1)	
Mobile Settings		
Service Plan / APN:	<Enter APN>	Enter your ISP's APN value here. **NOTE**: "internet" is only used as an example

On the WR44v2, the wireless WAN interface is PPP 1. On other platforms such as the DR64 this will be PPP 3.

Navigate to **Configuration - Network > Interfaces > Advanced > PPP 0 – 9 > PPP 1 > Advanced**

Click the **Apply** button.

Parameter	Setting	Description
Enable "Always On" mode of this interface	Not ticked	Disable "Always on" mode
Generate Ping packets on this interface	Ticked	Reveals auto ping options
Send <n> byte	1	Size of ICMP packet to send

pings...		
...to IP host...	<IP to ping>	Valid IP address to ping for link up/down testing.
...every <n> **seconds**	10	Interval in hours, minutes and seconds for the test pings to be sent
Only send Pings when this interface is "In Service"	Ticked	Pings will only be sent when the PPP interface is active

3.4 Default Route 0 Configuration

Change the Default Route from the (default) PPP 1 interface to Eth 0. The mobile interface (PPP 1) will be deactivated whenever this interface is in service.

Navigate to **Configuration - Network > IP Routing/Forwarding > Static Routes > Default Route 0**

Configuration - Network > IP Routing/Forwarding > Static Routes > Default Route 0
▼ Default Route 0

Description: [   ]

Default route via
Gateway: [192.168.3.1]
Interface: [Ethernet ▼] [0]
Use PPP sub-configuration: [0]
Metric: [1]

Click the **Apply** button.

Parameter	Setting	Description
Gateway	192.168.3.1	Ethernet Gateway address
Interface	Ethernet 0	Eth 0 to be selected as the default interface

Navigate to **Configuration - Network > IP Routing/Forwarding > Static Routes > Default Route 0 > Advanced**

Configuration - Network > IP Routing/Forwarding > Static Routes > Default Route 0

▼ Advanced

Use metric 1 when the interface is down

☐ Use this route only if the source IP address of the packet matches

IP Address: [   ]
Mask: [   ]

☑ Include this route in RIP advertisements

☐ Make PPP 0 interface use the alternative idle timeout when this route becomes available

Wait for 0 seconds after power up before allowing this route to activate the interface

If the interface is configured for "dial on demand"
Mark this route as "Out Of Service" if the interface fails to connect after 0 consecutive attempts
If the interface fails to connect, try again in 0 seconds
☐ Deactivate the interface after it successfully connects
Do not allow this interface to be activated by this route for 10 seconds after last activation attempt

☐ Only queue one packet whilst waiting for the interface to connect

When this route becomes available, deactivate the following interfaces
[PPP ▾] [1] after [0] seconds
[None ▾] [0] after [0] seconds

When this route becomes unavailable, deactivate the following interfaces
[None ▾] [0] after [0] seconds
[None ▾] [0] after [0] seconds

When this route becomes unavailable, remove the "Out Of Service" state on [None ▾] [0]

☐ Keep this route in service for [0] seconds after OOS state is cleared

Assign this route to recovery group: [0]

Click the **Apply** button.

Parameter	Setting	Description
When this route becomes available, deactivate the following interfaces	PPP 1	Select PPP 1 as the interface to deactivate

3.5 Default Route 1 Configuration

This interface will be configured as an on demand interface, which will stop the router from sending unnecessary traffic to test the interface connectivity when the interface is not in service. Where data bandwidth is charged, this will keep transferred data on the wireless WAN link to a minimum.

Navigate to **Configuration - Network > IP Routing/Forwarding > Static Routes > Default Route 1**

Configuration - Network > IP Routing/Forwarding > Static Routes > Default Route 1
▼ Default Route 1

Description:

Default route via
Gateway:
Interface: PPP ▼ 1
Use PPP sub-configuration: 0
Metric: 1

Click the **Apply** button.

Parameter	Setting	Description
Interface	PPP 1	Selects PPP 1 as the next available default route

3.6 Firewall Configuration

The firewall rules needed for this AN are very simple. There are only two rules to add:

1. The first rule will enable the monitoring of the ICMP traffic exiting the Ethernet 0 interface. If the ICMP traffic fails then this interface will be taken out of service and the recovery ping process will verify when the test host is responding to test traffic again.

2. The second rule will enable the monitoring of the ICMP traffic exiting the PPP 1 interface. If the traffic fails then this interface will be taken out of service, the PPP interface is deactivated then re-activated in attempt to get the PPP connection working again. If this rule is activated there will be a short interruption to service whilst a working network connection is established.

The default firewall rule set included in a production device will by default allow all outgoing traffic and restrict incoming traffic.   You may want to filter more traffic than this using the extensive capabilities of the TransPort firewall. Please refer to the TransPort User Guide for more details on what the firewall can do for you.

Navigate to **Configuration - Security > Firewall**

NOTE: Clicking the "Insert" button will insert the rule just ABOVE.

Click the "Insert" button and type (or copy/paste) the following rule:

pass out break end on eth 0 proto icmp from addr-eth 0 to 195.92.195.92 icmp-type echo inspect-state oos 10 t=3 c=3 d=3 r=ping,3,3

Click "OK" to add the ETH 0 rule that's just above.

Next, click the "Insert" button and type (or copy/paste) the following rule:

pass out break end on ppp 1 proto icmp from addr-ppp 1 to 195.92.195.92 icmp-type echo inspect-state oos 10 t=5 c=3 d=3

Click "OK" to add the PPP 1 rule that's just above. You should now have 2 of the 3 rules added.

Click the "Insert" button and type (or copy/paste) the following rule:

pass break end

Click "OK" to add the final rule that's just above.

Be sure to click the "Save" button, to write the firewall rules to the fw.txt file on the router's FLASH.

The firewall configuration should look like this:

Scroll down to the Firewall configuration page to the Interface list and tick the boxes to enable the firewall on ETH 0 and PPP 1:

Click the **Apply** button to enable the firewall on those two interfaces.

NOTE: The IP address that is used in this environment for sending test pings to is not guaranteed to reply, so you should choose an IP address within your ISP's or a public IP address that you own and have control of.

3.7   Save Configuration

Save the configuration to retain the config after reboot.
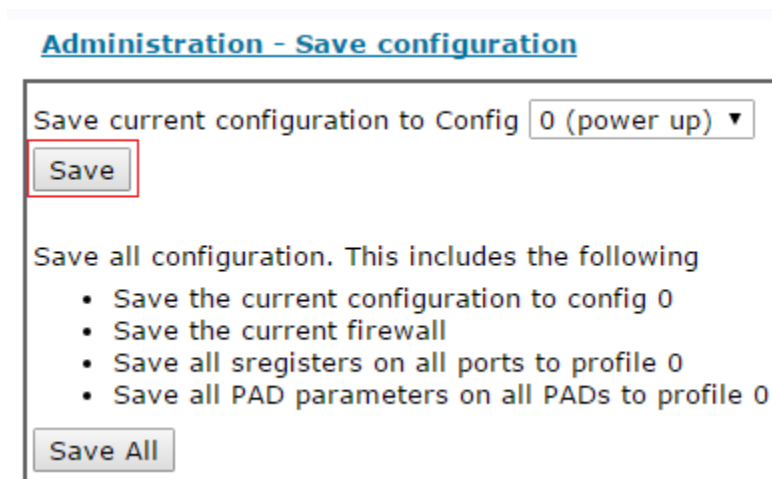
4 TESTING

From a device on the LAN configured on eth 1 (192.168.0.1), ping a public address. This can be the same address as used for the connectivity testing or any other address known to respond on both connections.

```
route print
     Destination        Gateway    Metric   Protocol  Idx Interface  Status
--------------------------------------------------------------------------
   192.168.0.0/24   192.168.0.254      1      Local     -    ETH 1      UP
   192.168.3.0/30     192.168.3.2      1      Local     -    ETH 0      UP

      0.0.0.0/0                         2      Static    0    ETH 0      UP
      0.0.0.0/0                         3      Static    1    PPP 1     DOWN
```

The TransPort Analyser trace below shows that traffic is routing out of Eth 0, the default route. An ICMP echo reply (ping response) arrives from the source 192.168.0.1 on Eth 1 (the LAN interface) is sent out of Eth 0 to the gateway and a response is returned.

```
  -----   8-6-2011  16:39:43.710   -------
  45 00 00 26 00 03 00 00 F9 01 7A 0F C0 A8 00 63    E.........z.À¨.c
  C3 5C C3 5C 08 00 78 E5 A2 C6 00 03 01 78 00 00    Ã.Ã...xå¢Æ...x..
  00 01 86 4B 54 8C 00 00 00 00 00 00 00 00 00 00    ..†KTŒ..........
  00 00 1C 80 7B F5                                   ...€.õ

  IP (In) From REM TO LOC      IFACE: ETH 1
  45               IP Ver:      4
                   Hdr Len:     20
  00               TOS:         Routine
                   Delay:       Normal
                   Throughput:  Normal
                   Reliability: Normal
  00 26            Length:      38
  00 03            ID:          3
  00 00            Frag Offset: 0
                   Congestion:  Normal
                                May Fragment
                                Last Fragment
  F9               TTL:         249
  01               Proto:       ICMP
  7A 0F            Checksum:    31247
  C0 A8 00 63      Src IP:      192.168.0.99
  C3 5C C3 5C      Dst IP:      195.92.195.92
  ICMP:
  08               Type:        ECHO REQ
  00               Code:        0
  78 E5            Checksum:    58744
  ----------
-----   8-6-2011  16:39:43.720   -------
45 00 00 26 00 03 00 00 F8 01 78 70 C0 A8 03 02    E.........xpÀ¨..
C3 5C C3 5C 08 00 78 E5 A2 C6 00 03 01 78 00 00    Ã.Ã...xå¢Æ...x..
00 01 86 4B 54 8C                                   ..†KTŒ
```

```
IP (Final) From LOC TO REM     IFACE: ETH 0
45               IP Ver:       4
                 Hdr Len:      20
00               TOS:          Routine
                 Delay:        Normal
                 Throughput:   Normal
                 Reliability:  Normal
00 26            Length:       38
00 03            ID:           3
00 00            Frag Offset:  0
                 Congestion:   Normal
                               May Fragment
                               Last Fragment
F8               TTL:          248
01               Proto:        ICMP
78 70            Checksum:     30832
C0 A8 03 02      Src IP:       192.168.3.2
C3 5C C3 5C      Dst IP:       195.92.195.92
ICMP:
08               Type:         ECHO REQ
00               Code:         0
78 E5            Checksum:     58744
----------
   -----   8-6-2011  16:39:43.840   -------
   45 00 00 26 C8 B7 00 00 27 01 80 BC C3 5C C3 5C     E...È.....€¼Ã.Ã.
   C0 A8 03 02 00 00 80 E5 A2 C6 00 03 01 78 00 00     À¨....€å¢Æ...x..
   00 01 86 4B 54 8C 00 00 00 00 00 00 00 00 00 00     ..†KTŒ..........
   00 00 6B 21 FF FD                                   ..k...

   IP (In) From REM TO LOC        IFACE: ETH 0
   45               IP Ver:       4
                    Hdr Len:      20
   00               TOS:          Routine
                    Delay:        Normal
                    Throughput:   Normal
                    Reliability:  Normal
   00 26            Length:       38
   C8 B7            ID:           51383
   00 00            Frag Offset:  0
                    Congestion:   Normal
                                  May Fragment
                                  Last Fragment
   27               TTL:          39
   01               Proto:        ICMP
   80 BC            Checksum:     32956
   C3 5C C3 5C      Src IP:       195.92.195.92
   C0 A8 03 02      Dst IP:       192.168.3.2
   ICMP:
   00               Type:         ECHO REPLY
   00               Code:         0
   80 E5            Checksum:     58752
   ----------
----- 8-6-2011  16:39:43.840   -------
```

```
45 00 00 26 C8 B7 00 00 25 01 85 5B C3 5C C3 5C      E...È.....….Ã.Ã.
C0 A8 00 63 00 00 80 E5 A2 C6 00 03 01 78 00 00      À¨.c..€å¢Æ...x..
00 01 86 4B 54 8C                                    ..†KTŒ


IP (Final) From LOC TO REM      IFACE: ETH 1
45              IP Ver:         4
                Hdr Len:        20
00              TOS:            Routine
                Delay:          Normal
                Throughput:     Normal
                Reliability:    Normal
00 26           Length:         38
C8 B7           ID:             51383
00 00           Frag Offset:    0
                Congestion:     Normal
                                May Fragment
                                Last Fragment
25              TTL:            37
01              Proto:          ICMP
85 5B           Checksum:       34139
C3 5C C3 5C     Src IP:         195.92.195.92
C0 A8 00 63     Dst IP:         192.168.0.99
ICMP:
00              Type:           ECHO REPLY
00              Code:           0
80 E5           Checksum:       58752
----------
```

Blocking ICMP on the Ethernet gateway router results the default route 0 (Eth 0) being taken out of service and the message below ("Default Route 0 Out Of Service,Firewall") being created in the Event Log:

```
16:45:53, 08 Jun 2011,PPP 1 up                                        <<<
16:45:51, 08 Jun 2011,PPP 1 Start IPCP
16:45:51, 08 Jun 2011,PPP 1 Start AUTHENTICATE
16:45:51, 08 Jun 2011,PPP 1 Start LCP
16:45:50, 08 Jun 2011,PPP 1 Start
16:45:50, 08 Jun 2011,Modem connected on asy 5
16:45:50, 08 Jun 2011,Modem dialing on asy 5 #:*98*1#
16:45:50, 08 Jun 2011,IP Act_Rq to PPP 1-0: s_ip[192.168.0.99] d_ip[195.92.195.92]
16:44:58, 08 Jun 2011,Default Route 0 Out Of Service,Firewall     <<<
16:44:58, 08 Jun 2011,ETH 0 Out Of Service,Firewall
```

The output from route print below shows that Eth 0 is now out of service (OOS) and PPP 1 is up.   PPP 1 can be seen in the Event Log extract above as up ("PPP 1 up").

```
route print
      Destination          Gateway    Metric    Protocol  Idx Interface  Status
--------------------------------------------------------------------------------
    10.138.69.107/32    10.138.69.107      1       Local    -     PPP 1      UP
     192.168.0.0/24     192.168.0.254      1       Local    -     ETH 1      UP
     192.168.3.0/30       192.168.3.2      -       Local    -     ETH 0     OOS

         0.0.0.0/0                         3      Static    1     PPP 1      UP
         0.0.0.0/0                         -      Static    0     ETH 0     OOS
```

The ping is now sent out of the PPP 1 interface and again is returned to the requesting device on 192.168.0.99.

```
    -----    8-6-2011  16:45:51.220   -------
   45 00 00 26 00 07 00 00 F9 01 7A 0B C0 A8 00 63     E.........z.À¨.c
   C3 5C C3 5C 08 00 57 AE 52 56 00 07 02 78 00 00     Ã.Ã...W®RV...x..
   00 01 86 4B C5 2F 00 00 00 00 00 00 00 00 00 00     ..†KÅ...........
   00 00 7A 85 D8 B2                                   ..z…Ø²

   IP (In) From REM TO LOC        IFACE: ETH 1
   45                IP Ver:      4
                     Hdr Len:     20
   00                TOS:         Routine
                     Delay:       Normal
                     Throughput:  Normal
                     Reliability: Normal
   00 26             Length:      38
   00 07             ID:          7
   00 00             Frag Offset: 0
                     Congestion:  Normal
                                  May Fragment
                                  Last Fragment
   F9                TTL:         249
   01                Proto:       ICMP
   7A 0B             Checksum:    31243
   C0 A8 00 63       Src IP:      192.168.0.99
   C3 5C C3 5C       Dst IP:      195.92.195.92
   ICMP:
   08                Type:        ECHO REQ
   00                Code:        0
   57 AE             Checksum:    44631
   ----------
-----    8-6-2011  16:45:53.840   -------
45 00 00 26 00 07 00 00 F8 01 EC 21 0A 8A 45 6B     E.........ì..ŠEk
C3 5C C3 5C 08 00 57 AE 52 56 00 07 02 78 00 00     Ã.Ã...W®RV...x..
00 01 86 4B C5 2F                                   ..†KÅ.

IP (Final) From LOC TO REM      IFACE: PPP 1
45                IP Ver:        4
                  Hdr Len:       20
00                TOS:           Routine
```

```
                  Delay:          Normal
                  Throughput:     Normal
                  Reliability:    Normal
00 26             Length:         38
00 07             ID:             7
00 00             Frag Offset:    0
                  Congestion:     Normal
                                  May Fragment
                                  Last Fragment
F8                TTL:            248
01                Proto:          ICMP
EC 21             Checksum:       60449
0A 8A 45 6B       Src IP:         10.138.69.107
C3 5C C3 5C       Dst IP:         195.92.195.92
ICMP:
08                Type:           ECHO REQ
00                Code:           0
57 AE             Checksum:       44631
  -----   8-6-2011  16:45:54.070   -------
  45 00 00 26 3D B5 00 00 37 01 6F 74 C3 5C C3 5C      E.......7.otÃ.Ã.
  0A 8A 45 6B 00 00 5F AE 52 56 00 07 02 78 00 00      .ŠEk...®RV...x..
  00 01 86 4B C5 2F                                    ..†KÅ.

  IP (In) From REM TO LOC        IFACE: PPP 1
  45                IP Ver:         4
                    Hdr Len:        20
  00                TOS:            Routine
                    Delay:          Normal
                    Throughput:     Normal
                    Reliability:    Normal
  00 26             Length:         38
  3D B5             ID:             15797
  00 00             Frag Offset:    0
                    Congestion:     Normal
                                    May Fragment
                                    Last Fragment
  37                TTL:            55
  01                Proto:          ICMP
  6F 74             Checksum:       28532
  C3 5C C3 5C       Src IP:         195.92.195.92
  0A 8A 45 6B       Dst IP:         10.138.69.107
  ICMP:
  00                Type:           ECHO REPLY
  00                Code:           0
  5F AE             Checksum:       44639
  ----------
----- 8-6-2011  16:45:54.070   -------
45 00 00 26 3D B5 00 00 35 01 00 5E C3 5C C3 5C      E.......5...Ã.Ã.
C0 A8 00 63 00 00 5F AE 52 56 00 07 02 78 00 00      À¨.c...®RV...x..
00 01 86 4B C5 2F                                    ..†KÅ.

IP (Final) From LOC TO REM      IFACE: ETH 1
45                IP Ver:         4
                  Hdr Len:        20
```

```
00              TOS:          Routine
                Delay:        Normal
                Throughput:   Normal
                Reliability:  Normal
00 26           Length:       38
3D B5           ID:           15797
00 00           Frag Offset:  0
                Congestion:   Normal
                              May Fragment
                              Last Fragment
35              TTL:          53
01              Proto:        ICMP
00 5E           Checksum:     94
C3 5C C3 5C     Src IP:       195.92.195.92
C0 A8 00 63     Dst IP:       192.168.0.99
ICMP:
00              Type:         ECHO REPLY
00              Code:         0
5F AE           Checksum:     44639
```

The gateway router is then configured to allow ICMP. The WR44v2 detects the pings are successful and re-activates default route 0. The Event Log shows that the WR44v2 activated default route 0 (Eth 0) and disconnected PPP 1.

```
16:57:05, 08 Jun 2011,Modem disconnected on asy 5,Normal Breakdown
16:57:03, 08 Jun 2011,PPP 1 down                              <<<
16:57:03, 08 Jun 2011,Default Route 0 Available,Recovery       <<<
16:57:03, 08 Jun 2011,ETH 0 Available,Recovery
16:57:03, 08 Jun 2011,ETH 0 Recovery Completed,PING            <<<
```

5   FIRMWARE VERSION

Firmware version 5.2.15.4 was most recently used to re-test this project, and screenshots were updated at this time (revision 2.1 of this AN) to reflect the current GUI.

6 CONFIGURATION FILE

6.1 WR44v2 Configuration File

This is the config.dao file used for the purpose of this AN:

```
eth 0 descr "Test WAN 44v2"
eth 0 IPaddr "192.168.3.2"
eth 0 mask "255.255.255.252"
eth 0 gateway "192.168.3.1"
eth 0 do_nat 1
eth 0 firewall ON
eth 0 pingip "8.8.8.8"
eth 0 pingint 10
eth 0 pingis ON
eth 0 linkdeact 1
eth 1 descr "Test LAN 44v2"
eth 1 IPaddr "192.168.0.254"
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
ip 0 cidr ON
def_route 0 ll_ent "ETH"
def_route 0 deact_ent "PPP"
def_route 0 deact_add 1
def_route 1 ll_ent "PPP"
def_route 1 ll_add 1
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"
ppp 0 timeout 300
ppp 1 name "W-WAN (HSPA 3G)"
ppp 1 phonenum "*98*1#"
ppp 1 username "username"
ppp 1 epassword "KD5lSVJDVVg="
ppp 1 IPaddr "0.0.0.0"
ppp 1 timeout 0
ppp 1 firewall ON
ppp 1 use_modem 1
ppp 1 pingip "8.8.8.8"
ppp 1 pingint 10
ppp 1 pingsiz 1
ppp 1 pingis ON
ppp 1 r_chap OFF
ppp 3 defpak 16
ppp 4 defpak 16
```

```
modemcc 0 info_asy_add 7
modemcc 0 init_str "+CGQREQ=1"
modemcc 0 init_str1 "+CGQMIN=1"
modemcc 0 apn "internet"
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 init_str_2 "+CGQREQ=1"
modemcc 0 init_str1_2 "+CGQMIN=1"
modemcc 0 apn_2 "Your.APN.goes.here"
modemcc 0 link_retries_2 10
modemcc 0 stat_retries_2 30
ana 0 anon OFF
ana 0 l1on OFF
ana 0 lapdon 0
cmd 0 unitid "ss%s>"
cmd 0 cmdnua "99"
cmd 0 hostname "digi.router"
cmd 0 asyled_mode 2
cmd 0 tremto 1200
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
wifinode 0 enabled OFF
wifinode 0 ssid "digi.router.SN:%s"
```