Quick Note 32

Using Digi RealPort with a Digi TransPort Router

Digi Technical Support

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Contents

1 INTRODUCTION

1.1 Outline

Digi RealPort enables the creation of "virtual" serial (COM) ports on a PC or server, which can communicate over a TCP/IP network with the serial ports on compatible Digi hardware devices.

There are two components to RealPort:

1. A RealPort driver on the PC, which creates virtual COM port instances that correspond to the serial ports of the Digi device.

2. RealPort software on the Digi device to allow access to its serial ports via TCP/IP.

RealPort supports multiple connections to multiple serial ports over a single TCP/IP connection.

From the perspective of the PC, a RealPort connection to a serial port on the Digi device behaves in the same way as a directly connected serial cable between the PC and the Digi device.

This means that existing software on the PC that needs to access a device connected to the Digi's serial port can simply be configured to use the virtual COM port.

This document contains instructions for configuring Digi RealPort with a Digi TransPort router.

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 applies to:

Model: DIGI TransPort 21/41/44

Firmware versions: 5246 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 5246 and later but will work on earlier versions of firmware. Please contact tech.support@digi.com if your 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.

1.4 Version

Version	Status
1.1	Link and screenshot updates
1.0	Published

2   CONFIGURATION & SCENARIO

A RealPort connection is established between a PC running Microsoft Windows 7 and a TransPort WR44 router, so that the TransPort router's serial ports are accessible to the PC via virtual COM port instances.

In order to test the RealPort connection to WR44's physical RS232 DB9-type serial port (ASY 0), an external PSTN modem is connected to the WR44 via **crossover** serial cable. A dial-up networking (DUN) connection is configured on the PC, to use the external modem that is available via the virtual COM port to connect to the Internet.

The PSTN modem is a 3Com Courier 56k device which supports the standard Hayes AT command set.

The RS-232 (V.24) Serial Cable Wiring section of the Digi TransPort User Guide contains wiring information for the required serial cable (the crossover cable information begins at the bottom of the page). You can find the Digi TransPort User Guide for SarOS at www.digi.com/support
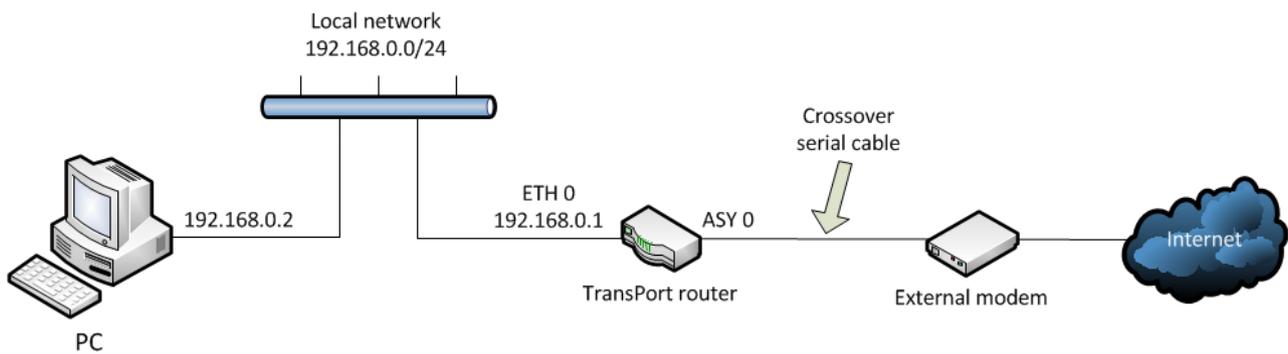
3 TRANSPORT ROUTER CONFIGURATION

3.1 Configure LAN interface

Configuration - Network > Interfaces > Ethernet > ETH 0

Configure as below, and then click **Apply**:

3.2 Configure RealPort

Configuration - Network > Interfaces > Serial > RealPort

Click the "**Enable RealPort**" checkbox, and then click **Apply**:
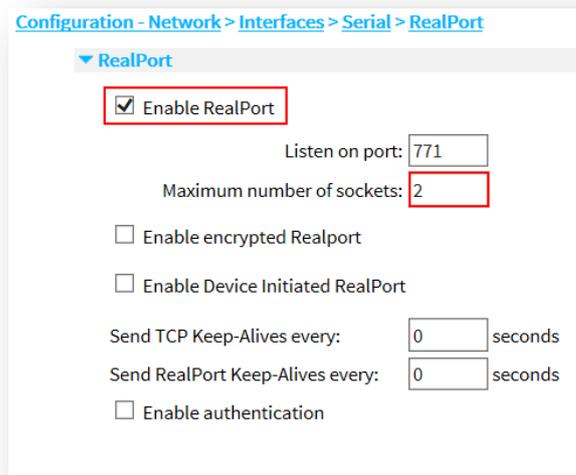
The default value for "maximum number of sockets" is 2. This will allow 1 connection, for example from a single PC to a single serial port on the TransPort router. The reason for this is that up to 2 sockets are required for each connection. If more than one simultaneous RealPort connection is needed, this parameter will need to be increased to twice the desired number of simultaneous connections.

4 COMPUTER CONFIGURATION

4.1 Configure the Computer's LAN connection

Ensure that the computer is configured with an IP address and network mask that are within the same subnet as the Ethernet interface of the TransPort router. In this example the computer is configured with a static IP address of 192.168.0.2 and a 24-bit network mask (i.e. 255.255.255.0). Alternatively the computer may be configured to obtain its network address via DHCP, from either the TransPort router itself (with DHCP server appropriately configured) or from a different device such as a separate DHCP server on the network.

4.2 Download the RealPort driver

Browse to www.digi.com then select Support > Drivers and enter "realport" (without the quotes) in the search field. Click on the "Realport" entry:
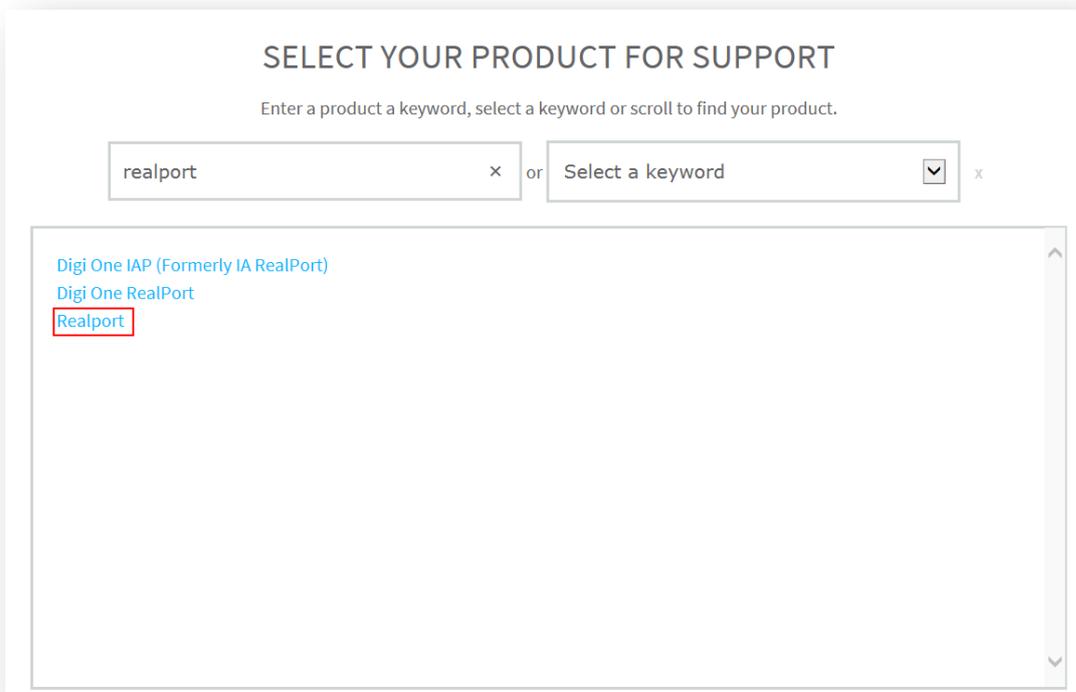
Select the computer's operating system from the drop-down list, then select the appropriate link to download the software (in this example the computer is running Microsoft Windows 7):
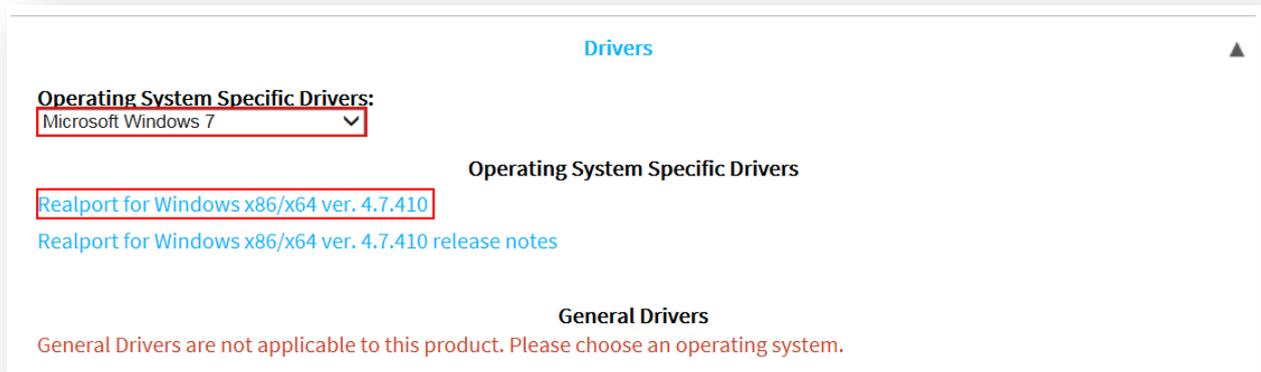
The Windows driver is provided in a zip archive. Download the zip file and then extract its contents to a directory on the computer (for example the Windows Desktop).

4.3 Install the RealPort driver

Open the directory that contains the extracted files. Double-click on **Setup.exe**:

Click "Next" when the initial window is displayed. The second window will show the IP addresses of Digi devices that are available to the PC via the TCP/IP network. Select the TransPort router (IP address 192.168.0.1 in this example) then click "Next" again.

The third window will show lots of options for the selected Digi device. The RealPort drive will automatically set the starting COM port to be the first available COM port instance on the computer. Note that a large number of virtual COM ports will be enabled by default – most of these will correspond to "internal" serial ports on the TransPort router. These settings can be left as default values – click "Finish":
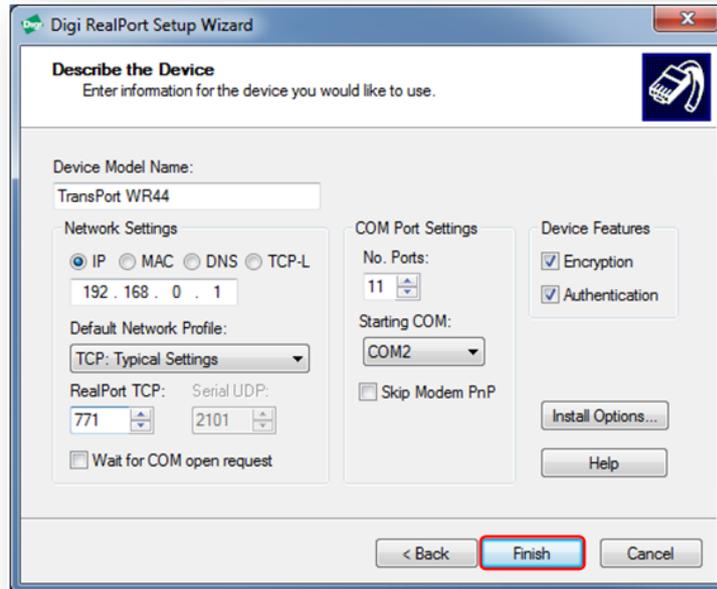
Once the software has installed, a final window will confirm that setup has completed – click "Finish".

4.4 Check the virtual COM port instances

Open Device Manager on the computer. In Windows 7 press the **Start** button, type **devmgmt.msc** then press Enter. Double-click on **Ports (COM & LPT)** to expand the list. The virtual COM ports associated with the TransPort router will be shown:
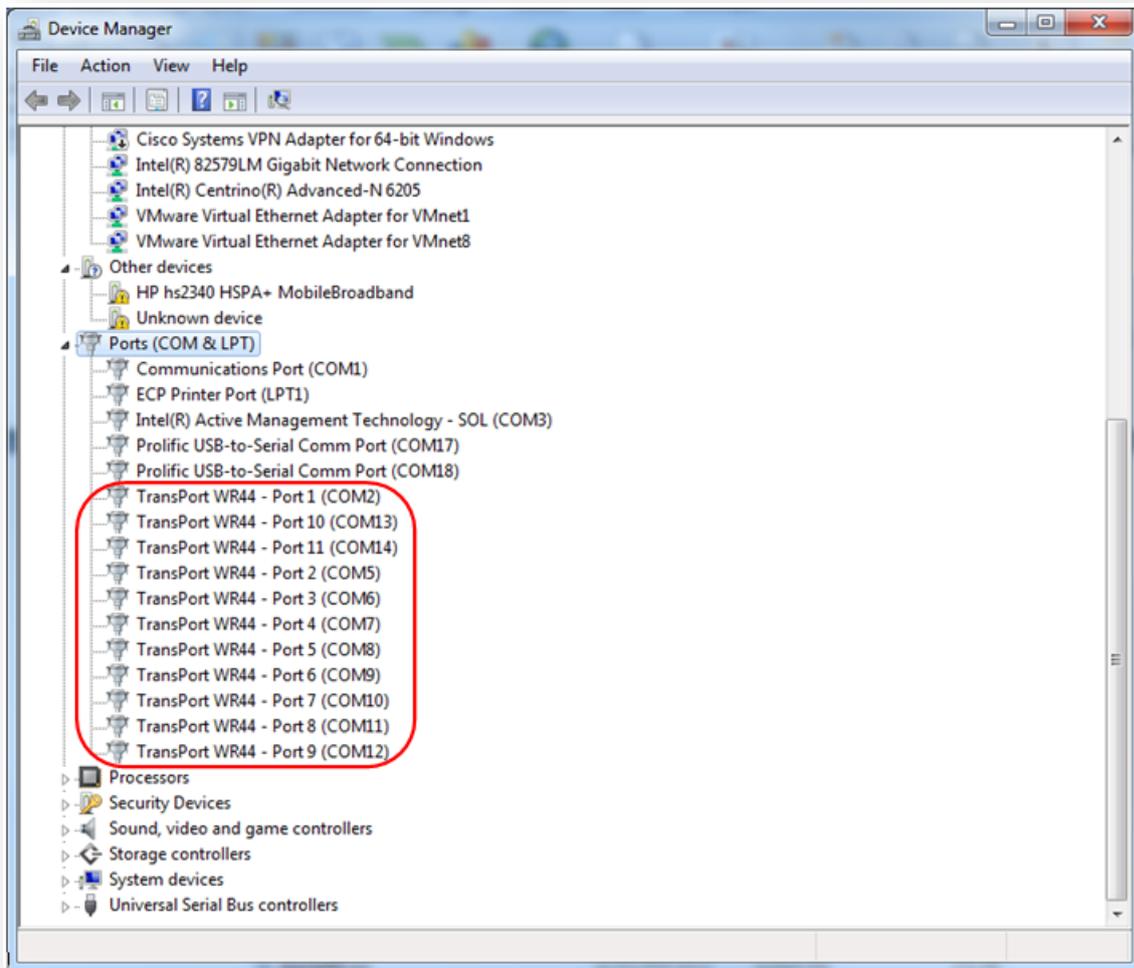
4.5   Check the RealPort connection between the computer and the external modem

The computer should be able to communicate with the external modem that is connected into the TransPort router using the first virtual COM port that was configured by the RealPort driver.

In this example (please see previous screenshot) this is COM 2.

Ensure that a terminal emulator program in installed on the computer. Freely available programs include:

Tera Term

PuTTY

Load the terminal emulator program on the computer, configure it to connect to the first RealPort virtual COM port (in this example COM 2) and ensure the following settings are enabled:

- Baud rate: **115200**
- Data: **8 bits**
- Parity: **None**
- Stop: **1 bit**
- Flow control: **None** or **Off**

Issue the command **ati5** – if the RealPort connection to the modem is available, the terminal window on the computer should display information returned by the modem, for example:

4.6 Install a modem driver

Ensure that the virtual COM port is not in use – for example close the terminal emulator program that was used in the previous step, to ensure that the COM port is available when installing the modem.

Install a driver for the external modem on the computer. In Windows 7 press the **Start** button, select **Control Panel** then click on **Phone and Modem**.

Select **Modems**, click **Add...** then click **Next**:
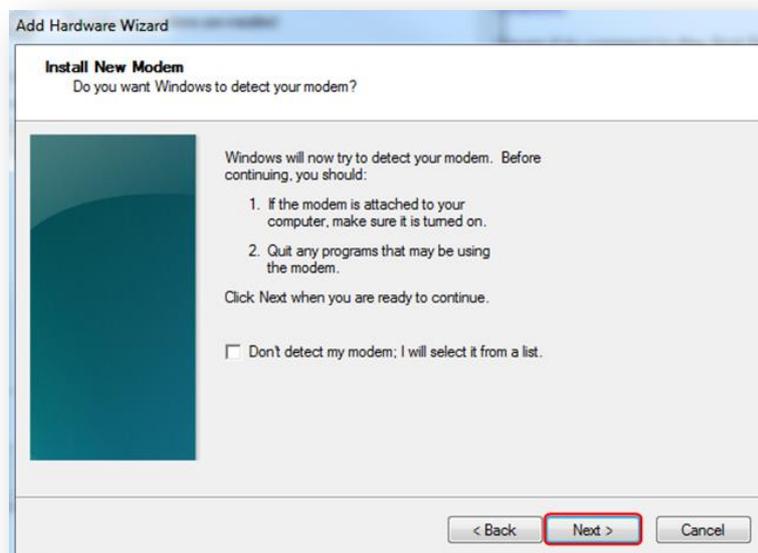
If Windows is not able to automatically detect the modem and install the necessary driver, it may be necessary to select a "standard modem type" driver that is included in Windows, or it may be necessary to download a specific driver from the website of the modem manufacturer.

If Windows is able to detect the modem then a window will confirm that set up was successful – click **Finish**.

The new modem will be listed in the original modem properties window. Check that the type of modem and the COM port are correct, and then click **OK**:
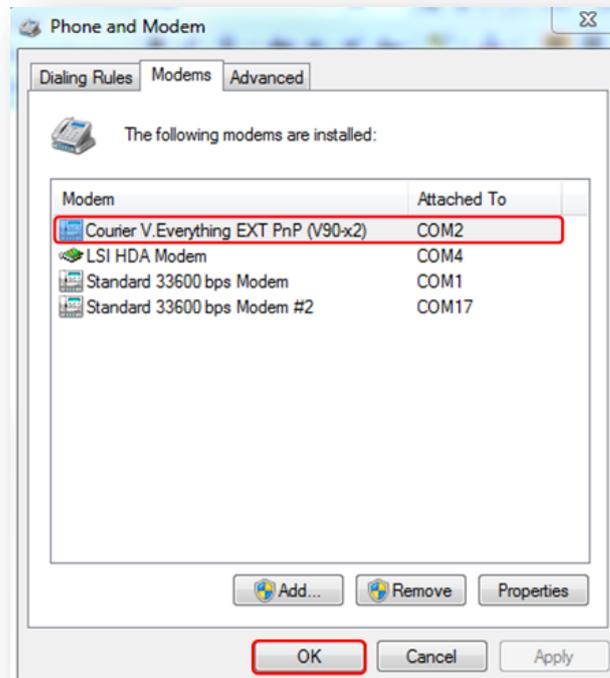
4.7 Create a Windows DUN connection

Create a DUN connection on the computer. In Windows 7 press the **Start** button, select **Control Panel** then click on **Networking and Sharing Center**.

Select **Set up a new connection or network**, then **Set up a dial-up connection** and click **Next**.

Select the modem that was installed in the previous step:
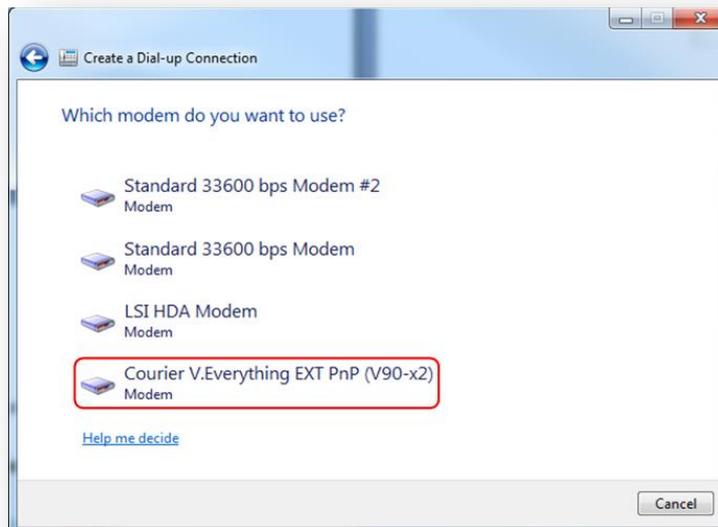
Enter the phone number, username and password provided by the ISP, optionally edit the connection name, and then click **Connect**:
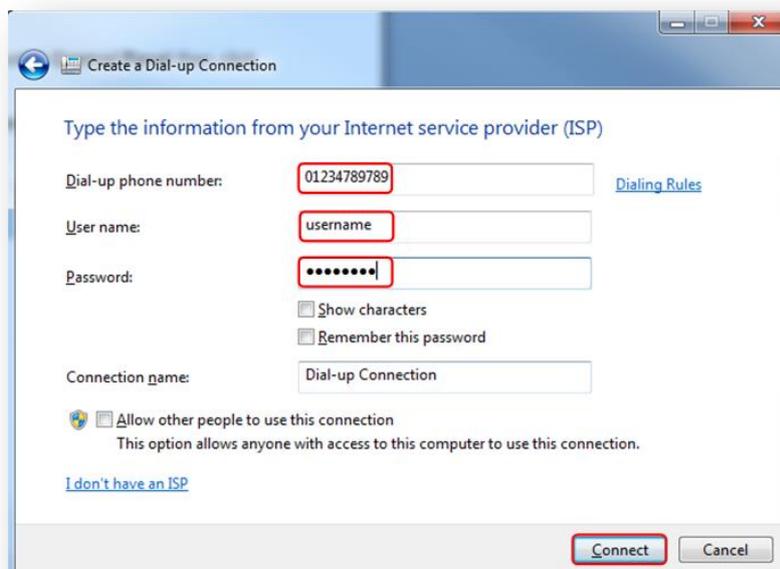
5 TESTING

5.1 Check the RealPort connection on the TransPort router

Management - Network Status > Interfaces > Serial > RealPort

5.2 Check the DUN connection to the Internet on the PC

In addition to browsing to a public website on the computer to check Internet connectivity, the connection can be verified from the Windows command prompt by pinging a public address or hostname, for example www.google.com: