Connectware™

Digi One IA RealPort Setup Guide

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Table of Contents

Chapter 3 Digi One IA RealPort Administration

Chapter 4 Hardware Information

Chapter 1 Introducing the Digi One IA RealPort

In This Chapter

This chapter provides a brief introduction to the Digi One IA RealPort. It discusses the following topics:

About the Digi One IA RealPort

Key Features

The Digi device server meets the specific requirements of the industrial automation (IA) market. It delivers simple, reliable and cost effective network connectivity for serial devices common in industrial automation applications, such as Programmable Logic Controllers (PLC), CNC/DNC (Computerized Numerical Control/Direct Numerical Control) equipment, process and quality control equipment, bar-code readers, operator displays, scales and weighing stations, printers, vision systems, and many other types of manufacturing equipment.

Digi One IA RealPort features include an industrial strength, ergonomic enclosure designed to mount on a standard DIN rail, EIA-232/422/485 switch selectability for use with virtually any device with a serial port, and expanded supply voltage range of 9-30 VDC with screw terminal connections or the industry's first powered Ethernet option (802.3af) that eliminates the need for an external power supply.

This high-performance, flexible device server includes RealPort® COM Port redirection technology, easy web-based configuration, multi-master capability and easy management through SNMP.

Flexible IA Support

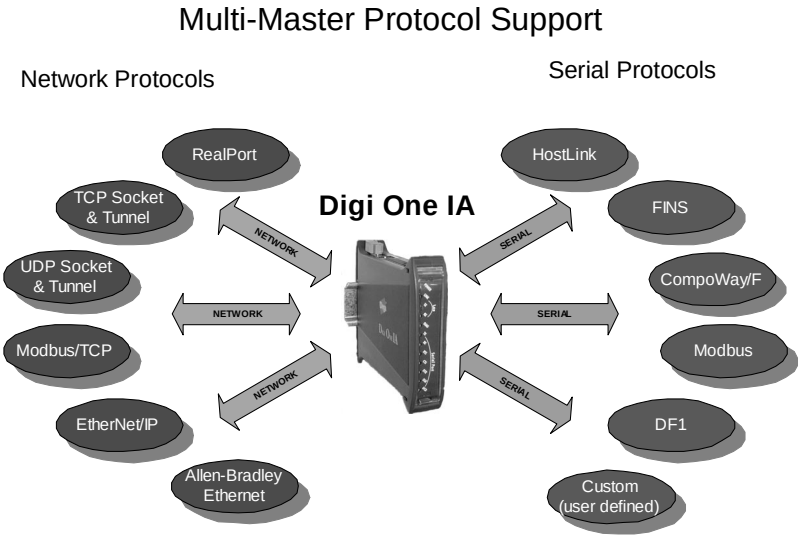
The Digi One IA RealPort's support for IA is exceedingly flexible, providing connectivity solutions in a wide variety of industrial automation environments. It supports the following:

- Multi-mastering, which means that a slave using any supported serial port protocol can be managed by multiple masters; the masters need not use the same network protocol to access the Digi One IA RealPort.
- A variety of serial-port protocols, including Modbus ASCII, Modbus RTU, DF1 Full-Duplex, DF1 Half-Duplex, Compoway/F, FINS, and Hostlink. Support extends to what Digi calls the "user-defined" protocol, which is any serial protocol that has fixed header and trailer strings that bound all message packets and where each protocol request is followed by a single response.
- Almost any other IA serial device, master or slave, as long as the device on the other side of the network can communicate using TCP sockets, UDP sockets, or

COM port redirection (using RealPort). (These configurations, however, do not support multi-mastering.)

- Several methods to encapsulate serial data across a network, including Modbus/TCP, Ethernet/IP, Allen-Bradley Ethernet, TCP Sockets, UDP Sockets, and COM Port redirection (using RealPort)

The following figure depicts serial port and network protocol support.



The following table provides a list of serial-port protocols and compatible network protocols. It also lists which protocols support multi-mastering, a feature that allows multiple masters, each of which may use a different network protocol, to manage a slave simultaneously.

IA Protocol Support

Serial Port Protocol	Network Protocols	Multi-master Support
Modbus ASCII and Modbus RTU	• Modbus/TCP • TCP Sockets • UDP Sockets • RealPort COM Port redirection	Yes
DF1 Full-Duplex	• Allen-Bradley Ethernet • Ethernet/IP • TCP Sockets • UDP Sockets • RealPort COM Port redirection	Yes
DF1 Half-Duplex	• TCP Sockets • UDP Sockets • RealPort COM Port redirection	
FINS, CompoWay/F, and Hostlink	• TCP Sockets • UDP Sockets • RealPort COM Port redirection	Yes
User-defined	• TCP Sockets • UDP Sockets • RealPort COM Port redirection	Yes
Other serial-port protocols	• TCP Sockets • UDP Sockets • RealPort COM Port redirection	No

Package Contents

In addition to this manual, the package includes the following items:

- A Digi One IA RealPort
- A single loopback plug that can be used to test the port regardless of the line interface, EIA-232, EIA-422, or EIA-485. (The loopback does not work for EIA-485 half-duplex connections except when running diagnostics.)
- A DB9-to-DB9 cable that you can use to connect a PC or laptop to the serial port, enabling you to access the Digi One IA RealPort command line to configure the device
- Release notes
- The Access Resource CD, which holds the following:
  - DPA-Remote software, a utility that enables you to configure the Digi One IA RealPort with an IP address and monitor the serial port
  - RealPort software, which installs on your PC and enables you to use the device server's serial port as though it were a local serial port on your server
  - SNMP MIBs
  - Product documentation

Interpreting LEDs

Use this topic to interpret LED activity.

LED Label	Color	State	Indicates
Power	Green	On	Power detected
		Off	No power detected
Link	Red	On	No network detected
		Off	Network detected
Tx/Rx	Green	On	Network traffic
		Off	No network traffic
Diag	Red	Blinking 1-1-1	Starting the device's operating system
		Blinking 1-3-1	Starting the TFTP process
		Blinking 1-5-1	Configuration reset to factory defaults
		Steady blinking	Device seeking an IP address from a DHCP server
		Blinking 4-1-1	Problems with the operating system. Call Digi Technical support.
		Blinking 9-1-1	
Tx/Rx	Green	On	Serial port activity
		Off	No serial port activity
RTS	Green	On	RTS is on
		Off	RTS is off
CTS	Green	On	CTS is on
		Off	CTS is off
DTR	Green	On	DTR is on
		Off	DTR is off

LED Label	Color	State	Indicates
DSR	Green	On	DSR is on
		Off	DSR is off
DCD	Green	On	DCD is on
		Off	DCD is off

About the Digi One IA RealPort Documentation

About This Manual

This manual provides all the information most users need to set up the Digi One IA RealPort for industrial automation applications.

About the Digi One IA RealPort Library

In addition to this manual, the Digi One IA RealPort library consists of the following documents:

- *Digi One IA RealPort Quick Start Guide*, which is included in the Digi One IA RealPort package
- Context-sensitive online help, which can be accessed from the Digi One IA RealPort web interface
- *Digi One/PortServer TS Command Reference*, which is on the Access Resource CD, provides complete descriptions of all commands
- *Digi Port Authority - Remote Device Monitor Setup Guide*, which is on the Access Resource CD, provides information on installing and using DPA-Remote

Accessing the Access Resource CD

About the Access Resource CD

The Access Resource CD, which comes in the Digi One IA RealPort package, holds the following:

- RealPort drivers
- DPA-Remote software
- SNMP MIBS
- Product documentation

Procedure for Microsoft Windows Systems

1. Place the CD in the CD drive.
2. If autorun is not enabled, start the menu by doing the following:
   a. Choose Start > Run and then browse to the root of the CD.
   b. Choose setup.exe, which will start the menu program.
3. Use the menu to install software or view documentation.

Chapter 2 IA Profiles and Procedures

In This Chapter

Use this chapter for the following purposes:

- To identify configurations that work for your industrial automation (IA) application
- To complete configuration tasks required to use Digi One IA RealPort in an IA environment

This chapter provides the following topics:

Profiles

Procedures

Key Terms in This Chapter

Use this section to familiarize yourself with the terms used in this chapter.

Com Port Redirection
: a method of redirecting the serial data generated by a PC-based master to a slave connected to a port on a network-based Digi One IA RealPort. In this scheme, the master "thinks" that it is communicating with a device connected to a serial port on the PC system when, in fact, the data is encapsulated in network packets and transported across the network to a device connected to a serial port on the Digi device server. Many applications, written to support serial communication only, require this service in order to communicate over the Ethernet.

IA
: abbreviation for industrial automation

master (or protocol master)
: the host or IA device that initiates all communication with a protocol slave

multi-master
: any configuration in which more than one master simultaneously communicates with a slave

protocol request
: a message generated by the master and sent to the slave that requests information or issues a command

protocol response
: a message generated by the slave in response to a protocol request from the master

slave (or protocol slave)
: the device that responds to requests from the master

TCP socket (or TCP socket service)
: type of network service that uses TCP to ensure reliability. When this manual discusses TCP sockets, it means that IA protocol messages are encapsulated in network packets and transported across the network using a standard network service. Many applications support connections to devices using TCP socket.

TCP tunnel
: TCP socket connection in which a master is connected to the serial port of one

Digi One IA RealPort and a slave to the serial port of another Digi One IA RealPort

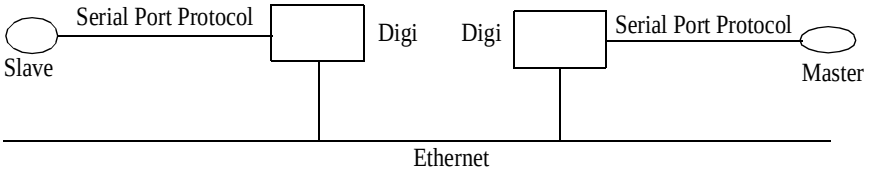
UDP sockets (or UDP socket service)
: similar to TCP socket service (discussed above) except that the UDP protocol is used instead of TCP, which means that the reliability service TCP performs is not provided. Advantages of UDP socket service are slightly less protocol overhead and support for multicasting. Some applications support connections to devices using TCP socket.

UDP tunnel
: a UDP socket configuration in which a master is connected to the serial port of one Digi One IA RealPort and a slave to the serial port of another Digi One IA RealPort.

Serial Tunnel: Master and Slave Connected to Digi Ports

About This Profile

Use this profile to connect a protocol master to the serial port of one Digi One IA RealPort and the protocol slave (or slaves) to the serial port of another Digi One IA RealPort. This profile, which is often called a serial tunnel, is applicable to environments that use most IA serial port protocols and to multi-master environments as well. The network is completely transparent to the serial devices, which means they do not have to be reconfigured.



Configuration Options

The serial port connections must be configured to meet the requirements of the attached device, which can be Modbus ASCII, Modbus RTU, DF1 Full-Duplex, DF1 Half-Duplex, Omron Hostlink, Omron FINS, and Omron CompoWay/F. It can also be a serial port protocol that meets Digi's definition of a "user defined" protocol, that is, one that has fixed header and trailer strings that bound all message packets and where each protocol request is followed by a single response.

For the network connection, Digi recommends TCP sockets, which works regardless of the serial port protocol specified and provides an efficient and reliable network service. Another option is UDP sockets, which also works with all the serial port protocols, although it lacks TCP socket reliability. For Modbus devices, Modbus/TCP is an option, and for DF1 Full-Duplex devices, Allen Bradley Ethernet and Ethernet/IP are options.

Locating Setup Information: Slave Side

See "Configuring a Serial-Connected Slave: Generic Procedure" on page 26.

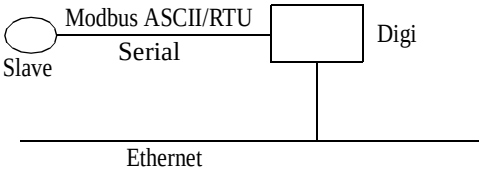
Locating Setup Information: Master Side

- To configure TCP socket or UDP socket communication, see "Configuring a Serial-Connected Master: TCP/UDP Sockets" on page 27.
- To configure any of the other network communication protocols, see "Configuring a Serial-Connected Master: Generic Procedure" on page 26.

Modbus Profile: Serial-Connected Slave

About This Profile

Use this profile to connect a slave device (or devices) using Modbus RTU or Modbus ASCII. This profile is applicable to environments in which multiple masters will control the slave or slaves.



Configuration Options

The serial port connection must be configured for the protocol required by the slave, in this case Modbus RTU or Modbus ASCII.

The network connection usually does not require configuration. The only exception is if the master requires COM port redirection. In this case, the master is an application that resides on a PC, such as a Microsoft Windows system, and communicates only with devices on COM ports.

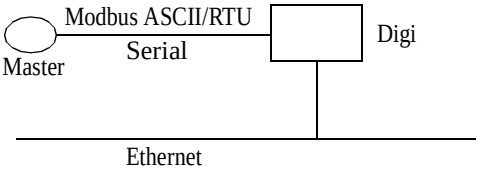
Locating Setup Information

- To configure the serial port for Modbus ASCII or Modbus RTU, see "Configuring a Serial-Connected Slave: Generic Procedure" on page 26.
- To setup a PC and the Digi One IA RealPort for COM port redirection using RealPort, see "Setting Up COM Port Redirection" on page 30.

Modbus Profile: Serial-Connected Master

About This Profile

Use this profile to connect a master device using Modbus RTU or Modbus ASCII to the serial port of the Digi One IA RealPort.



Configuration Options

The serial port connection must be configured for the protocol required by the master, in this case Modbus RTU or Modbus ASCII. If the remote slave supports TCP socket communication, which is the case if the remote slave is connected to another Digi One IA RealPort, Digi recommends this option. Modbus/TCP is the other supported network option. This master can be configured to control up to 8 slaves.

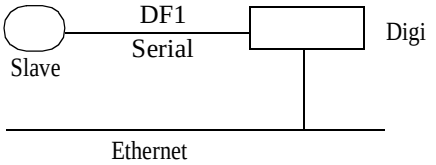
Locating Setup Information

- To configure the port for Modbus ASCII or Modbus RTU and the network for TCP socket communication, see "Configuring a Serial-Connected Master: TCP/UDP Sockets" on page 27.
- To configure the port for Modbus ASCII or Modbus RTU and the network for Modbus/TCP, see "Configuring a Serial-Connected Master: Generic Procedure" on page 26.

DF1 Profile: Serial-Connected Slave

About This Profile

Use this profile to connect a slave device (or devices if multiple slaves are connected) using DF1 Full-Duplex and DF1 Half-Duplex protocols.



Configuration Options

The serial port connection must be configured for the protocol required by the slave, in this case DF1 Full-Duplex or DF1 Half-Duplex.

The network connection usually does not require configuration. The only exception is if the master requires COM port redirection. In this case, the master is an application that resides on a PC, such as a Microsoft Windows system, and communicates only with devices on COM ports.

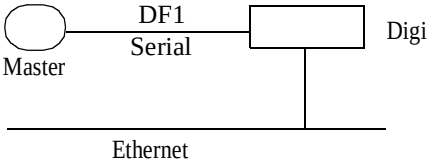
Locating Setup Information

- To configure the serial port of the Digi One IA RealPort for DF1 Full-Duplex or DF1 Half-Duplex, see "Configuring a Serial-Connected Slave: Generic Procedure" on page 26.
- To setup a PC and the Digi One IA RealPort for COM port redirection using RealPort, see "Setting Up COM Port Redirection" on page 30.

DF1 Profile: Serial-Connected Master

About This Profile

Use this profile to connect a master device using DF1 Full-Duplex and DF1 Half-Duplex protocols to the serial port.



Configuration Options

The serial port connection must be configured for the protocol required by the master, in this case DF1 Full-Duplex or DF1 Half-Duplex. If the remote slave supports TCP socket communication, which is the case if the remote slave is connected to another Digi One IA RealPort, Digi recommends this option. For DF1 Full-Duplex users, Allen Bradley Ethernet and Ethernet/IP are other supported network options.

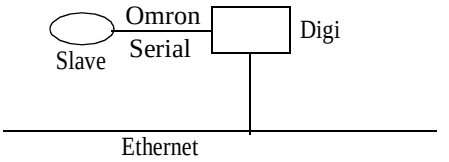
Locating Setup Information

- To configure the port for DF1 Full-Duplex or DF1 Half-Duplex and the network for TCP socket communication, see "Configuring a Serial-Connected Master: TCP/UDP Sockets" on page 27.
- To configure the port for DF1 Full-Duplex and the network for Allen Bradley Ethernet or Ethernet IP, see "Configuring a Serial-Connected Master: Generic Procedure" on page 26.

Omron Family Profile: Serial-Connected Slave

About This Profile

Use this profile to connect a slave device (or devices) using one of the Omron serial port protocols, Hostlink, FINS, or CompoWay/F.



Configuration Options

The serial port connection must be configured for the protocol required by the slave, Hostlink, FINS, or CompoWay/F.

The network connection usually does not require configuration. The only exception is if the master requires COM port redirection. In this case, the master is an application that resides on a PC, such as a Microsoft Windows system, and communicates only with devices on COM ports.

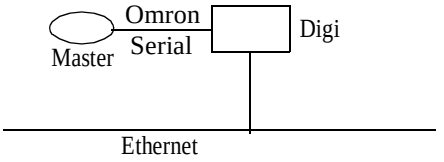
Locating Setup Information

- To configure the serial port of the Digi One IA RealPort for any of the Omron protocols, see "Configuring a Serial-Connected Slave: Generic Procedure" on page 26.
- To setup a PC and the Digi One IA RealPort for COM port redirection using RealPort, see "Setting Up COM Port Redirection" on page 30.

Omron Family Profile: Serial-Connected Master

About This Profile

Use this profile if you want to connect a master device to the serial port using one of the Omron serial port protocols, Hostlink, FINS, or CompoWay/F.



Configuration Options

The serial port connection must be configured for the protocol required by the master, in this case Hostlink, FINS, or CompoWay/F. If the remote slave supports TCP socket communication, which includes a slave connected to another Digi One IA RealPort, Digi recommends this network option. UDP Sockets is another supported network option.

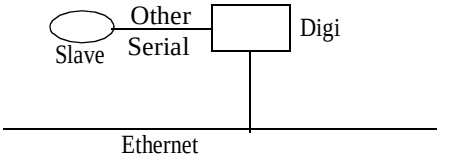
Locating Setup Information

To configure the port for one of the Omron protocols and the network for TCP or UDP socket communication, see "Configuring a Serial-Connected Master: TCP/ UDP Sockets" on page 27.

Other Serial Port Protocol Profile: Serial-Connected Slave

About This Profile

Use this profile if you want to connect a slave device to the serial port using any IA serial port protocol not previously discussed.



Configuration Options

In this configuration, you do not set up the port of the Digi One IA RealPort for an IA protocol. If you plan to use RealPort for COM port redirection, you simply set up the port for RealPort. If you plan to have the master access the Digi One IA RealPort using TCP or UDP sockets, you simply configure the standard serial port parameters required by the attached slave, such as line speed, number of data bits, and parity scheme. No special network configuration is required in either case.

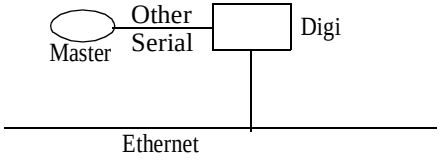
Locating Setup Information

- To set up the Digi One IA RealPort for RealPort, see "Setting Up COM Port Redirection" on page 30.
- To set up the port for an “unsupported” IA protocol, see "Configuring a Serial-Connected Slave: Other IA Protocol" on page 28.

Other Serial Port Protocol Profile: Serial-Connected Master

About This Profile

Use this profile if you want to connect a master device to the serial port using any IA serial port protocol not previously discussed.



Configuration Options

In this configuration, you do not set up the port of the Digi One IA RealPort for an IA protocol. You simply configure the standard serial port parameters required by the attached master, such as line speed, number of data bits, and parity scheme and then configure the port for autoconnection.

Locating Setup Information

See "Configuring a Serial-Connected Master: Other IA Protocol" on page 29.

Configuring a Serial-Connected Slave: Generic Procedure

About This Procedure

Use this procedure when a protocol slave is connected to the serial port of the Digi One IA RealPort. Use it except when the associated master requires COM port redirection. (See "Setting Up COM Port Redirection" on page 30 for information.)

Procedure

1. Access the web interface by entering the Digi One IA RealPort IP address in a browser's URL window.
2. Log in to the Digi One IA RealPort as `root`. The default password is `dbps`.
3. From the main menu, choose Setup Wizards > Industrial Protocols.
4. Use the wizard to complete configuration tasks. Here are some tips:
   - Choose the serial port protocol required by the slave that is connected to the serial port.
   - Choose Slave as the device type.
   - Any number of network masters can communicate with the slave.

Configuring a Serial-Connected Master: Generic Procedure

About This Procedure

Use this procedure when a protocol master is connected to the serial port of the Digi One IA RealPort. Use it except when the master requires TCP socket or UDP socket communication. (See "Configuring a Serial-Connected Master: TCP/UDP Sockets" on page 27 for information.)

Procedure

1. Access the web interface by entering the Digi One IA RealPort IP address in a browser's URL window.
2. Log in to the Digi One IA RealPort as `root`. The default password is `dbps`.
3. From the main menu, choose Setup Wizards > Industrial Protocols.
4. Use the wizard to complete configuration tasks. Here are some tips:

- Choose the serial port protocol required by the master.
- Choose Master as the device type.
- Configure up to 8 network slaves.

Configuring a Serial-Connected Master: TCP/UDP Sockets

About This Procedure

Use this procedure in the following situations:

- When a protocol master using one of the supported serial port protocols (Modbus ASCII, Modbus RTU, DF1 Full-Duplex, DF1 Half-Duplex, FINS, Hostlink, CompoWay/F or a protocol that meets Digi's definition of a "user-defined" protocol) is connected to the serial port
- When the master requires TCP or UDP sockets for network communication

Procedure

1. Access the web interface by entering the Digi One IA RealPort IP address in a browser's URL window.
2. Log in to the Digi One IA RealPort as `root`. The default password is `dbps`.
3. From the main menu, choose Setup Wizards > Industrial Protocols.
4. Use the wizard to complete configuration tasks. Here are some tips:
   - Choose the serial port protocol required by the master.
   - Choose Master as the device type.
   - Configure up to 8 network slaves.
   - Change the default socket number only if required.

Configuring a Serial-Connected Slave: Other IA Protocol

About This Procedure

Use this procedure in the following situations:

- When the device connected to the serial port is a slave that is using a "non-supported" serial-port protocol, that is, the serial port protocol is not Modbus ASCII, Modbus RTU, DF1 Half-Duplex, DF1 Full-Duplex, FINS, Hostlink, CompoWay/F, or a protocol that meets the definition of a "user-defined" protocol
- When you do not want to set up the Digi One IA RealPort for RealPort COM Port redirection
- When multiple masters will not be communicating with this slave

Procedure

1. Access the web interface by entering the Digi One IA RealPort IP address in a browser's URL window.
2. Log in to the Digi One IA RealPort as `root`. The default password is `dbps`.
3. From the main menu, choose Configure > Port.
4. From the Port configuration screen, set the Device type to Printer, adjust other serial port communication parameters as required by the connected slave, and then choose Submit.
5. Choose Advanced, check Binary Mode and then choose Submit.

Configuring a Serial-Connected Master: Other IA Protocol

About This Procedure

Use this procedure when the device connected to the serial port is a master that is using a "non-supported" serial-port protocol, that is, the serial port protocol is not Modbus ASCII, Modbus RTU, DF1 Half-Duplex, DF1 Full-Duplex, FINS, Hostlink, CompoWay/F, or a protocol that meets the definition of a "user-defined" protocol.

Procedure

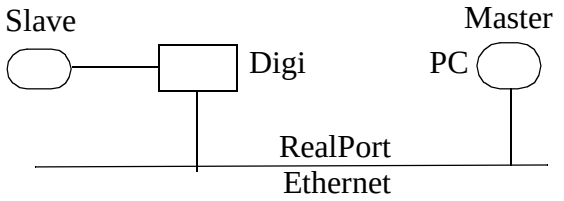
1. Access the web interface by entering the Digi One IA RealPort IP address in a browser's URL window.
2. Log in to the Digi One IA RealPort as `root`. The default password is `dbps`.
3. From the main menu, choose Configure > Port.
4. From the Port configuration screen, set the Device type to Modem In, adjust other serial port communication parameters as required by the connected master, then choose Submit.

   Note: The Terminal type field does not matter.
5. If you want to configure the port to launch an automatic connection to the slave, do the following:
   a. Choose Advanced.
   b. Choose Enable Autoconnect
   c. Specify the IP address of the slave.
   d. Specify a TCP port to use for this connection. If this is a connection to another Digi One IA RealPort, use 2101 as the TCP port number.
   e. If you want the autoconnection to launch immediately, choose Force DCD.
   f. Choose Binary Mode.
   g. If you want to enable UDP sockets (instead of TCP sockets), choose UDP Serial, use the online help for information on completing configuration task.
   h. When you complete configuration, choose Submit.

Setting Up COM Port Redirection

About These Procedures

Use these procedures when a slave is connected to the serial port of the Digi One IA RealPort and the master, which must be an application residing on a Microsoft Windows system, requires COM port redirection.



Setup Tasks: An Overview

To enable Com port redirection--which requires that RealPort software be running on the same PC as the master application--complete the following tasks:

1. Configure the serial port for RealPort.

   See "Procedure: Configuring the Serial Port for RealPort" on page 31.

2. Install RealPort software on a host system.

   See one of the following:
   - "Procedure: Installing and Configuring RealPort Software on Windows 2000" on page 31
   - "Procedure: Installing and Configuring RealPort Software on Windows NT" on page 32

3. Configure the port on the RealPort PC.

   See the PC’s documentation for information on configuring serial ports.

Procedure: Configuring the Serial Port for RealPort

Use this topic for information on configuring the Digi One IA RealPort serial port.

1. Access the Digi One IA RealPort configuration from a web browser by entering the device's IP address in the browser's URL window.
2. Log on to the Digi One IA RealPort as the `root` user as shown. The default password is `dbps`.
3. Do one of the following:
   - If the slave is using a supported serial port protocol, (A) Choose Port from the main menu. (B) Set the Device type to IA. (C) Choose Submit.
   - If the slave is not using a supported serial port protocol, (A) Choose Setup Wizards > RealPort (B) Use the wizard to complete configuration.

Procedure: Installing and Configuring RealPort Software on Windows 2000

Use this topic for information on installing and configuring RealPort software on a Microsoft Windows 2000 system.

1. Put the Access Resource CD in the CD drive.

   If autorun is enabled, the CD menu program appears. Shut the menu program down; you cannot install the RealPort software using the menu.
2. From the Start menu, choose Settings > Control Panel > Add/Remove Hardware > Next.
3. Choose Add/Troubleshoot a device > Next.

   The system searches for the device. When it determines that it cannot find the device, it displays a list of devices.
4. Choose Add a new device > Next.
5. Choose No, I want to select the hardware from a list > Next.
6. Choose Multi-port serial adapters > Next.
7. Select Have Disk.
8. Select Browse and navigate to the CD.

9. Navigate to the driver, which is in the following directory:

   \drivers\windows\w2k\realport

10. Select either of the files in the directory and then choose Open.
11. Choose OK.
12. Choose Digi One IA and then Next > Next.
13. If the Digital Signatures Not Found screen appears, choose Yes.
14. Use the Add Digi RealPort wizard and the associated help text to configure the RealPort driver with the IP address and TCP port number used by the Digi One IA RealPort.
15. Follow the prompts to complete configuration of the RealPort driver.

Procedure: Installing and Configuring RealPort Software on Windows NT

Use this topic for information on installing and configuring RealPort on a Windows NT system.

1. Put the Access Resource CD in the CD drive.

   The CD menu program appears.

2. Choose Microsoft Windows NT as the operating system, Digi One as the hardware, and RealPort as the software.
3. Choose Install Software and then follow the prompts to complete installation and configuration. Use the online help for assistance.

Chapter 3 Digi One IA RealPort Administration

In This Chapter

This chapter provides information on administering the Digi One IA RealPort. It consists of the following topics:

Logging In As the Administrator

Use this topic to log in as the administrator or `root` user, which is required to perform most administrative tasks.

1. At the Login prompt, enter the user name for the administrator, which is `root`.
2. At the password prompt, enter the root password. The default password is `dbps`, which will work unless the root password has been changed.

Upgrading the Firmware

This topic describes how to upgrade the Digi One IA RealPort firmware, which can be done from the web interface using the HTTP or TFTP protocol.

Web Interface: HTTP Procedure

Use this section to upgrade the firmware using the web interface.

1. Download a copy of the firmware.
2. Access the web interface by entering the Digi One IA RealPort IP address in a browser's URL window.
3. Log in to the Digi One IA RealPort as `root`.

   The default password is `dbps`.
4. From the main menu, choose Admin > HTTP Upgrade.
5. Navigate to the firmware and then choose Submit.

   When the Digi One IA RealPort determines that the firmware image is valid, it prompts you to reboot.
6. Reboot the device.

Web Interface: TFTP Procedure

1. Download a copy of the firmware to a server running TFTP.
2. Access the web interface by entering the Digi One IA RealPort IP address in a browser's URL window.
3. Log in to the Digi One IA RealPort as `root`.

   The default password is `dbps`.
4. From the main menu, choose Admin > TFTP Upgrade.
5. Enter the firmware image name and the IP address of the TFTP server.
6. Choose Submit.

   When the Digi One IA RealPort determines that the firmware image is valid, it prompts you to reboot.
7. Reboot the device by choosing Reboot > Continue.

Command Line

If you want to use the command line for this procedure, use the boot command. See the Digi One/PortServer TS Command Reference for more information.

Resetting the Configuration to Defaults

This section describes how to reset Digi One IA RealPort to configuration defaults. If reset to defaults, all changes previously entered will be lost.

Web Interface Procedure

1. Access the web interface by entering the Digi One IA RealPort IP address in a browser's URL window.
2. Log in to the Digi One IA RealPort as `root`.

   The default password is dbps.
3. From the main menu, choose Admin > Reset Config.
4. Choose Continue to reset the configuration.

Command Line

If you want to use the command line for this procedure, use the revert and the boot commands. See the Digi One/PortServer TS Command Reference for more information.

Hardware Procedure

1. Use a pen, the point of a paper clip, or some other device to press and hold the recessed button (located on the side with the Ethernet connection).
2. While holding down the button, power on the Digi One IA RealPort.
3. When a 1-5-1 LED pattern is displayed, release the button.

   The device boots up and the configuration is restored to defaults.

Chapter 4 Hardware Information

In This Chapter

This chapter provides the following topics:

Specifications

Use this topic for information on Digi One IA RealPort specifications.

DC Power Requirements	
Main power connector	9 to 30 VDC
Ethernet power option	30 to 60 VDC
Environmental	
Ambient temperature	0 to 60 degrees C
Relative humidity	5 to 90% non-condensing
Mechanical	
Width	101 mm
Height	22.5 mm
Depth	120 mm

Regulatory Information

FCC Part 15 Class A

Radio Frequency Interference (RFI) (FCC 15.105)

This equipment has been tested and found to comply with the limits for Class A digital devices pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Labeling Requirements (FCC 15.19)

This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Modifications (FCC 15.21)

Changes or modifications to this equipment not expressly approved by Digi may void the user's authority to operate this equipment.

Cables (FCC 15.27)

Shielded cables *must* be used to remain within the Class A limitations.

Electromagnetic Emissions

- EN55022 Class A
- EN61000-6-2
- VCCI
- AS/NZS 3548

Product Safety

- UL 60950
- EN60950

Safety Considerations and Warnings

Follow the warnings and guidelines below to ensure safe operation of your Digi One IA RealPort.

- Do not attempt to service the power supply that comes with Digi One IA RealPort. This sealed unit contains no user-serviceable parts or adjustments. Do not open or tamper with the power supply.
- Carefully inspect the work area in which the Digi One IA RealPort will be located to ensure against hazards such as damp floors, ungrounded power extension cords, and missing ground connections.
- Before operating Digi One IA RealPort, ensure that external power sources comply with the requirements listed in the specifications. If you are not sure of the type of power source, contact your dealer or power company.
- Ensure that the ampere rating of all equipment plugged into wall outlets does not exceed the capacity of the outlet.
- If you require an extension cord, ensure that the ampere rating of all equipment plugged into the extension cord does not exceed the ampere rating of the cord.
- If Digi One IA RealPort is exposed to moisture or condensation, disconnect it from the power source immediately and obtain service assistance.
- If Digi One IA RealPort exhibits unexpected behavior, such as smoking or becoming extremely hot, disconnect it from power sources immediately and then obtain service assistance.
- Ensure that the cover is secure on completion of installation to reduce safety

hazards.

Environmental Considerations and Cautions

The following is a list of environmental considerations that will ensure safe and efficient operation of your Digi device.

- Do not position the Digi device near high-powered radio transmitters or electrical equipment, such as electrical motors or air conditioners. Interference from electrical equipment can cause intermittent failures.
- Do not install the device in areas where condensation, water, or other liquids may be present. These may cause safety hazards and equipment failure.