TruePort Windows User Guide

This document provides the procedure for installing and using TruePort on Windows 2000/Server 2003/XP/Vista/Server 2008.

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What is TruePort?

You use Trueport when you want to connect serial devices to a server using a Device Server rather than a multi-port serial card; it is a COM port redirector. TruePort is especially useful when you want to improve data security, as you can create an SSL/TLS connection between the TruePort host port and the Device Server, which will encrypt the data between the two points.

TruePort Full Mode vs Lite Mode

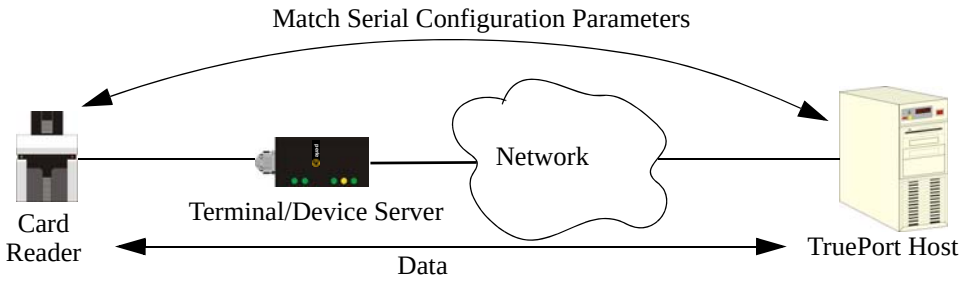
You can configure TruePort on Windows in either Full Mode or Lite Mode. When you start TruePort in Full Mode, the serial configuration parameters are set on the TruePort host. When you start TruePort in Lite Mode, the serial configuration parameters are set on the device/terminal server. On Windows, serial configuration parameters consist of bits per second (baud rate speed), data bits, parity, stop bits, and flow control. In either mode, the data is passed in raw format, although you can enable the SSL/TLS connection option to encrypt the data going through a port.

Full Mode

This mode allows complete device control and operates exactly like a directly connected serial COM port. It provides a complete COM port interface between the attached serial device and the network, providing hardware and software flow control.

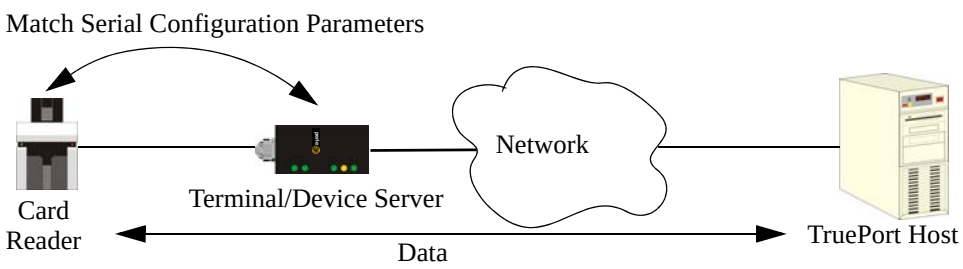
TruePort 6.1 and lower, IOLAN Device Server firmware 3.4 and lower, JetStream, and LanStream in Full Mode use the TCP protocol on the configured port and the UDP protocol on port 668 (some firewalls block UDP packets by default and might need to be reconfigured to support Full Mode communication). TruePort 6.2 and higher and IOLAN Device Server firmware 3.5 and higher do not use the UDP protocol.

The port serial configuration parameters set on the TruePort host must match the serial configuration parameters set on the device (in this example, to the Card Reader), as shown below:



Lite Mode

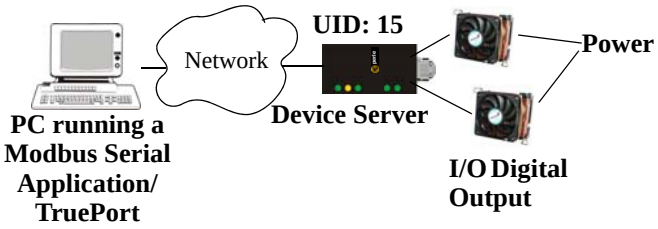
This mode provides a simple raw data interface between the device and the network. Although the port will still operate as a directly attached COM port, control signals are ignored. Lite Mode uses the TCP protocol on the configured port. In this mode, the serial communications parameters are configured on the terminal/device server and must match those configured on the device (in this example, a Card Reader), as shown below:



TruePort I/O Access Options

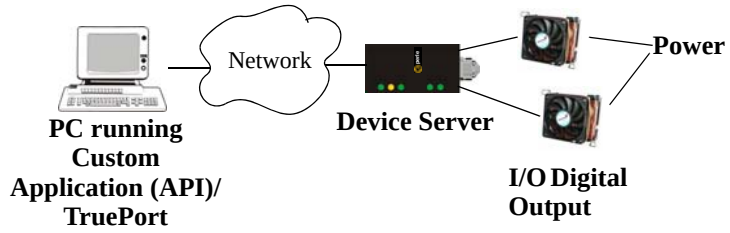
Modbus ASCII/RTU Mode

If you have a Modbus serial application running on a PC that is connected to a network, you can use TruePort as a virtual serial connection to communicate with the Device Server over the network to access I/O data. You also have the option of enabling SSL as a security option to encrypt the data that is communicated between the Device Server and the host machine (SSL/TLS must be configured on both the Device Server and in TruePort).



I/O Signal Mode

If you have a custom application that talks to a serial port, you can use TruePort as a virtual serial port to communicate with the Device Server over the network to access I/O data. You also have the option of enabling SSL as a security option to encrypt the data that is communicated between the Device Server and the host machine (SSL/TLS must be configured on both the Device Server and in TruePort).

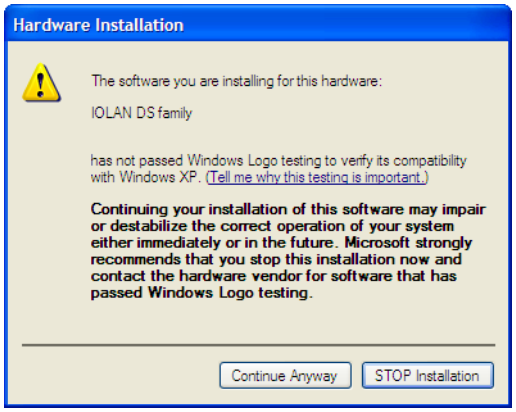


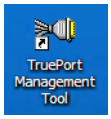
Installing TruePort on the TruePort Host

To install the TruePort software on your system, do the following:

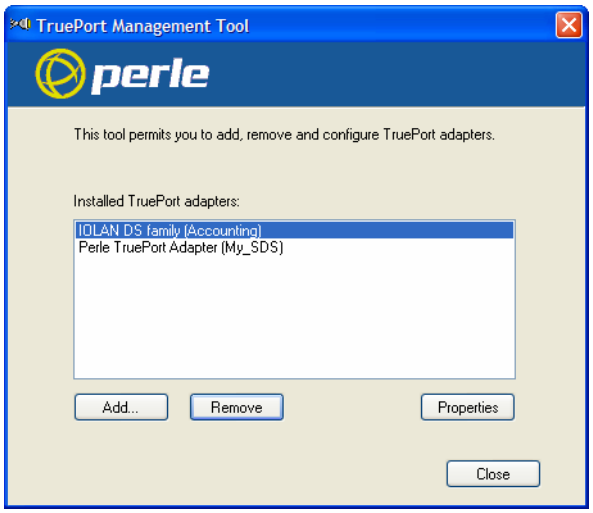
1. To get the latest TruePort release, download the appropriate TruePort installation wizard from the www.perle.com/downloads/trueport.shtml website
   - **trueport-setup-x86.exe**—32-bit Windows 2000, XP, Server 2003, Vista, or Server 2008 operating system
   - **trueport-setup-x64.exe**—64-bit Windows XP, Server 2003, Vista, or Server 2008 operating system
   - **trueport-setup-ia64.exe**—64-bit Windows Server 2003 or Server 2008 running on an Itanium processor
2. Double-click the TruePort installation wizard and follow the installation directions.

   During the installation, you may get a Windows Logo message. Click **Continue Anyway** when these appear.



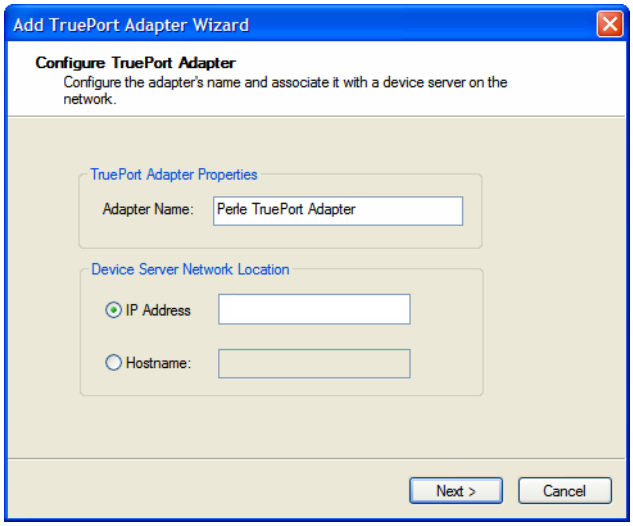


3. Double-click the TruePort Management Tool desktop icon or select **Start**, **All Programs**, **Perle**, **TruePort**, **TruePort Management Tool** from the taskbar to run the TruePort Management Tool. If you have existing TruePort adapters configured, you will get the following window; otherwise, the Add TruePort Adapter Wizard window is displayed (see next step).



Click the **Add** button to add a new TruePort adapter.

4. In the following window, you can define an easily identifiable TruePort adapter name and its network location.



Specify a name for the TruePort adapter and then the IPv4/IPv6 address or Hostname (the Hostname must be resolvable) of the Device Server it will be communicating with. Click **Next>** and follow the instructions for rest of the wizard.

Note: Windows XP, Vista, and Server 2008 Firewall Information
If you have a firewall on your network, or you are using Windows XP with Service Pack 2, Windows Vista, or Windows Server 2008, you might need to add the **`Trueport.exe`** application to the program exception list to run correctly.

Adding Additional TruePort Adapters and/or Updating Drivers

Whenever you add any additional TruePort adapters to your system, Windows might install the latest digitally signed driver in its database (depending on your Windows operating system and settings). To ensure you have the latest driver installed after you add the TruePort adapter, do one of the following:

- Click **Start**, **All Programs**, **Perle**, **TruePort**, **TruePort Update**
- Reinstall the drivers as described in ***Installing TruePort on the TruePort Host*** on page 5

Uninstalling TruePort on the TruePort Host

To uninstall the TruePort serial adapter(s), do the following:

1. Select **Start**, **All Programs**, **Perle**, **TruePort**, **Uninstall** from the taskbar.
2. Click **Yes** in the **Perle TruePort Uninstall** confirmation window.
3. Click the **Uninstall** button.

The TruePort application is now uninstalled from your system.

Configuring TruePort on a Terminal/Device Server

When you add a port, you need to configure the port(s) on the host running TruePort and you also need to configure the port(s) on the terminal server.

Server-Initiated Mode

When you configure TruePort for server-initiated mode, the terminal/device server must initiate communication to the TruePort host.

To configure a terminal/device server for server-initiated mode (which is the default mode), you need to set the **Line Service** to **TruePort** (firmware version 3.0 or higher) or **Silent Raw** and assign the port number to be the same port number configured on the TruePort host (by default, this number starts at 10000).

On the IOLAN Device Server

The following instructions provide an example of how to set up two ports the IOLAN Device Server using the CLI to TruePort. You will set the **Line Service** to **TruePort** (firmware version 3.0 or higher) or **Silent Raw** and on 1-port model you don't specify a line number.

1. Connect to the Device Server (for example, via Telnet).
2. Log in to the Device Server as the **admin** user.
3. Add the host running TruePort to the host table using the add host command as shown in the following example:

   ```
   add host hpux50 192.152.247.61
   ```

   You are now ready to configure the ports that will connect to the TruePort host.
4. To configure the ports, enter each of the following commands:

   ```
   set line 1 service silent raw windows50 10000
   set line 2 service silent raw windows50 10001
   set line 3 service silent raw windows50 10002
   set line 4 service silent raw windows50 10003
   kill line 1-4
   ```

5. At the command prompt, type **save** and press **Enter**.
6. At the command prompt, type **logout** and press **Enter**.

The configuration of Device Server's ports is now complete.

On the JetStream/LanStream

Configuring a JestStream\LanStream using the CLI is almost same as the Device Server CLI. You will set the **Line Service** to **Silent Raw**.

Client-Initiated Mode

Note: Client-Initiated mode is available on IOLAN Device Server models with firmware 3.0 or higher.

When you configure TruePort for Client-Initiated mode, the TruePort host will initiate communication with the Device Server.

To configure a Device Server for Client-Initiated mode, you need to set the **Line Service** to **TruePort**, enable the **Client Initiated** option, and assign the port number to be the same port number configured on the client initiated configured TruePort host (by default, this number starts at 10001).

The following instructions provide an example of how to set up 4 ports on a IOLAN Device Server for TruePort client initiated mode.

1. Connect to the Device Server (for example, via Telnet).
2. Log in to the Device Server as the **admin** user.
3. To configure the ports, enter each of the following commands:

```
set line 1 service trueport client-initiated on 10001
set line 2 service trueport client-initiated on 10002
set line 3 service trueport client-initiated on 10003
set line 4 service trueport client-initiated on 10004
kill line 1-4
```

4. At the command prompt, type **`save`** and press **Enter**.
5. At the command prompt, type **`logout`** and press **Enter**.

The configuration of the Device Server is now complete.

Client I/O Access Mode (I/O Models Only)

Client I/O access mode allows:

- A Modbus RTU/ASCII serial application running on a TruePort host to access Device Server I/O using Modbus commands
- A serial application running on a TruePort host to access Device Server I/O using the Perle API (see the *Utilities* chapter of your *User's Guide* for TruePort API documentation).

Note: Client I/O Access is only available in conjunction with IOLAN Device Servers running version 3.1 or higher.

Modbus I/O Access

To configure a Device Server for Client I/O Access mode for a Modbus RTU/ASCII serial application, you need to enable **I/O TruePort Services**, enable **I/O Modbus Slave**, assign a Modbus slave UID to match the configured on the Modbus RTU serial application, and assign the port number to be the same port number configured UID on the client I/O Access configured TruePort host (by default, this number is 33816).

The following instructions provide an example of how to set up an IOLAN Device Server for TruePort I/O Access.

1. Connect to the Device Server (for example, via Telnet).
2. Log in to the Device Server as the **`admin`** user.
3. To enable the I/O TruePort service, enter following command:

```
set io trueport mode on listen 33816
```

4. To enable I/O Modbus slave, enter following command:

```
set io modbus mode on uid 1
```

5. Reboot the Device Server by entering the following command:

   ```
   reboot
   ```

   The configuration of the Device Server is now complete.

To configure the TruePort host running a Modbus ASCII serial application to access Device Server I/O, type the following command:

```
addports -client mydeviceserver:33816 -initconnect -io mb_ascii 0 0
```

The command creates a single port configured for Client I/O Access mode which will connect to host **mydeviceserver** on TCP port 33816 and will support a serial Modbus ASCII application.

Perle API I/O Access

To configure a Device Server for Client I/O Access mode for a serial application, you need to enable **I/O TruePort Services**.

The following instructions provide an example of how to set up an IOLAN Device Server for TruePort I/O Access.

1. Connect to the Device Server (for example, via Telnet).
2. Log in to the Device Server as the **admin** user.
3. To enable the I/O TruePort service, enter following command:

   ```
   set io trueport mode on listen 33816
   ```

4. Reboot the Device Server by entering the following command:

   ```
   reboot
   ```

   The configuration of the Device Server is now complete.

To configure the TruePort host running a custom serial application to access Device Server I/O, type the following command:

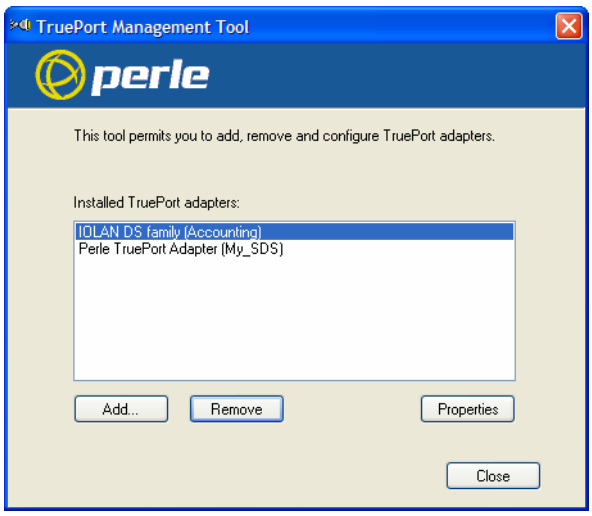
```
addports -client mydeviceserver:33816 -initconnect -io io_api 0 0
```

The command creates a single port configured for Client I/O Access mode which will connect to host **mydeviceserver** on TCP port 33816 and will support a custom serial application using the Perle API.

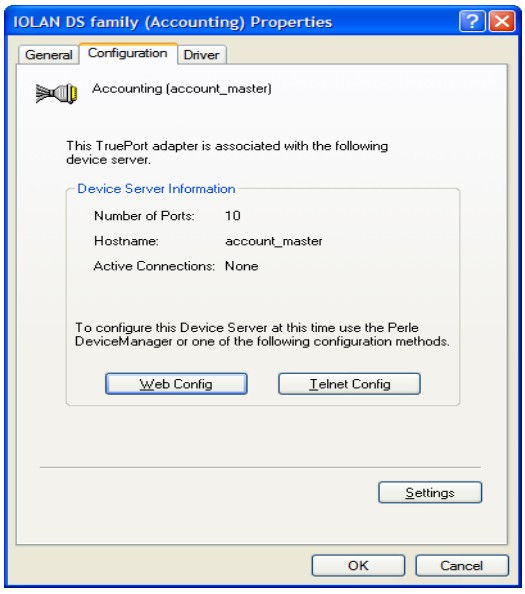
Configuring Ports on the TruePort Host

After you have configured the ports on the terminal server, you can configure the TruePort host. Do the following (you can configure a maximum of 4096 COM ports per a host with a maximum of 49 COM ports per a single TruePort adapter.

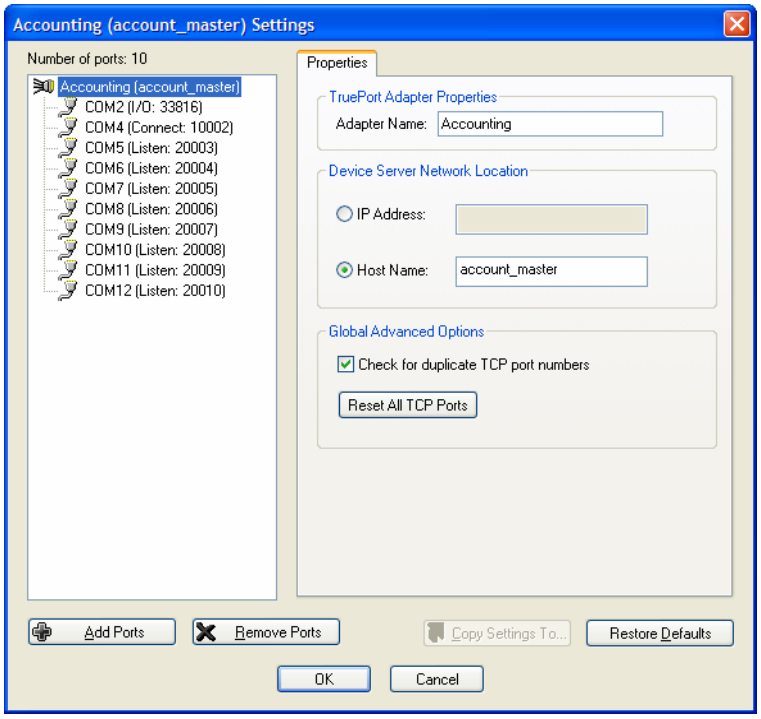
1. When you have finished the Add TruePort Adapter Wizard (launched from the TruePort Management Tool, see step 3. on page 5), select the TruePort adapter and click the **Properties** button to configure it.



2. Click the **Configuration** tab. On this window, you can connect to a terminal/device server either by HTTP or Telnet. To configure the TruePort adapter and its associated COM ports, click the **Settings** button.



3. The **Properties** tab displays configuration options for the TruePort Adapter.



Configure the TruePort adapter Network Settings:

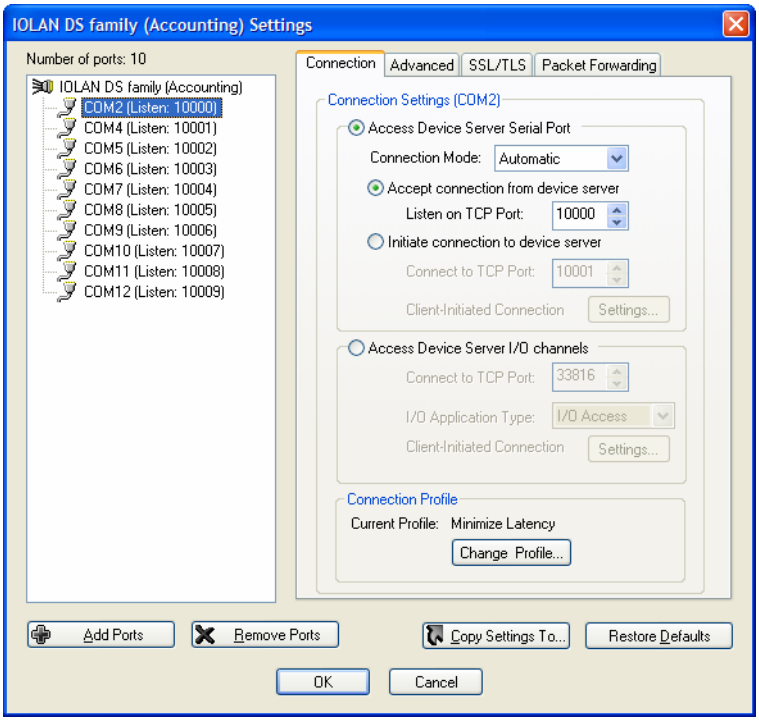
- **Adapter Name**—Enter a name for the TruePort adapter to make it easier to recognize.
- **IP Address—**Enter the IPv4 or IPv6 address of the terminal/device server that will be associated with this TruePort adapter on the network.
- **Host Name**—Enter the host name of the terminal/device server that will be associated with this TruePort adapter on the network. Note: the host name must be resolvable for this option to work (for example, by a DNS lookup).
- **Check for duplication TCP ports**—When enabled, displays an error message when there are duplicate TCP port numbers assigned to different COM ports.
- **Reset all TCP Ports**—Click this button to reset the TCP port numbers of all configured ports. Note: this does not reset any parameter values other than the TCP port numbers back to their default values.

Configuring the COM Port Connection

To access the COM port settings:

1. Click the adapter in the TruePort Management Tool and click the **Properties** button.
2. In the adapter Properties window, click the **Configuration** tab and then click the **Settings** button.
3. Click the COM port you want to configure.

As you configure the COM ports, the COM port label will change to reflect the configuration.



Access Device Server Serial Port

Select this option if you are accessing a serial device connected to the Device Server's serial port.

Select the appropriate **Connection Mode**:

- **Full Mode**—All serial configuration and control is driven by the TruePort host and serial application.
- **Lite Mode**—Serial port parameters are configured on the terminal/device server. COM port settings on the TruePort host are ignored. Set this mode if the associated serial port on the Device Server is configured for multihost.
- **Automatic**—Automatically selects either Full or Lite Mode.

Note: All versions of the JetStream 4000 and 8500, LanStream 2000, and IOLAN software support TruePort Full Mode operation. The JetStream 6x series software version must be 4.03 or greater.

After you have configured the appropriate **Connection Mode**, you need to determine how the connection is going to be initiated:

- **Accept Connection from device server**—The Device Server initiates the connection to the TruePort host. You must configure the port that TruePort will listen on for an incoming TCP connection from the Device Server.
- **Initiate Connection to device server**—The TruePort host initiates the connection to the Device Server. You must configure the port that TruePort will use to initiate the TCP connection to the Device Server.
- **Client-Initiated Connection**—Click this button to configure connection options when the TruePort host is initiating the connection to the Device Server. See ***Client-Initiated Connection Settings*** on page 15 for an explanation of the client-initiated connection options.

Access Device Server I/O Channels

Select this option when you are using TruePort to communicate to a Device Server I/O model with a Modbus program or the Perle API.

Specify the **TCP Port** that will be used to make the connection (this must match the **Listening Port** specified in the Device Server for I/O TruePort in the Global Settings--the default is 33816).

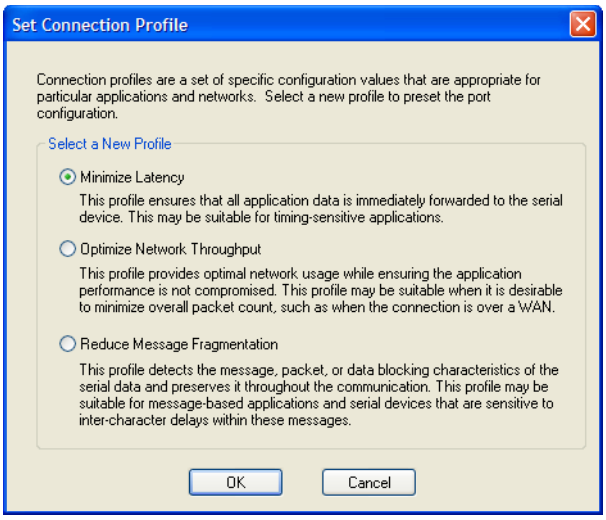
Select the **I/O Application Type**:

- **I/O Access**—TruePort is acting as a virtual COM port for an application using the Perle API.
- **Modbus ASCII**—TruePort is acting as a virtual COM port for a Modbus ASCII program.
- **Modbus RTU—**TruePort is acting as a virtual COM port for a Modbus RTU program.
- **Client-Initiated Connection**—Click this button to configure the connection options. See ***Client-Initiated Connection Settings*** on page 15 for an explanation of the client-initiated connection options.

Connection Profile Settings

A set of predefined connection profiles have been defined to make it easier to achieve the correct configuration for common TCP connection requirements.

To access the connection profile settings for a COM port, click the **Change Profile** button on the **Configuration** tab.



Specify one of the following optimization modes:

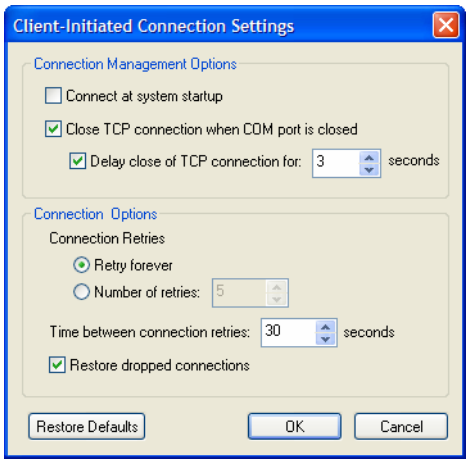
- **Minimize Latency**—This option ensures that all application data is immediately forwarded to the serial device. Select this option for timing-sensitive applications.
- **Optimize Network Throughput**—This option provides optimal network usage while ensuring that the application performance is not compromised. Select this option when you want to minimize overall packet count, such as when the connection is over a WAN.
- **Reduce Message Fragmentation**—This option detects the message, packet, or data blocking characteristics of the serial data and preserves it throughout the communication. Select this option for message-based applications or serial devices that are sensitive to inter-character delays within these messages.

You can also define the packet forwarding rules based on the packet definition or the frame definition (see ***Configuring Packet Forwarding*** on page 17 for more information).

Client-Initiated Connection Settings

You can configure how client-initiated connections behave.

To access the client-initiated settings for a COM port, enable the **Initiate Connection to device server** option on the **Configuration** tab and click the **Settings** button.



Connection Management Options

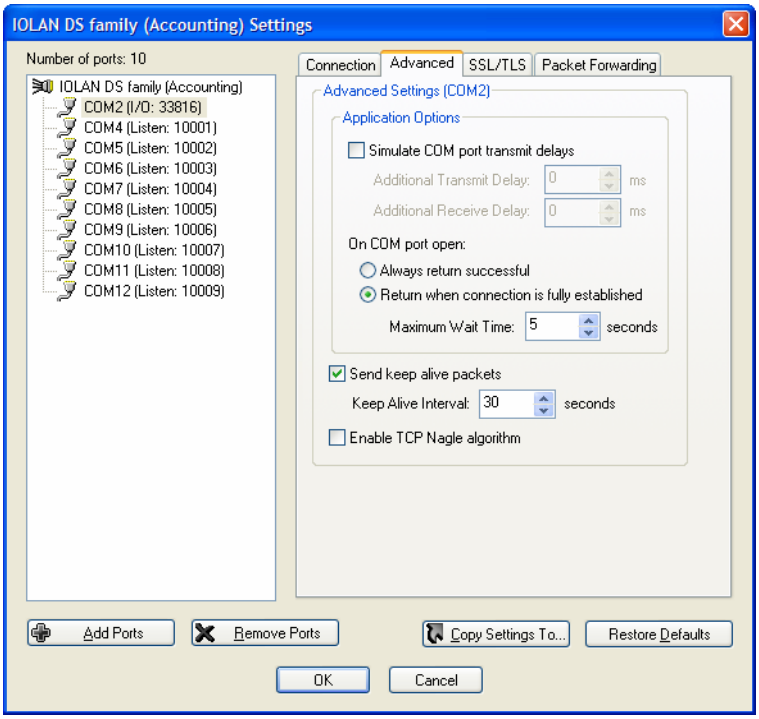
- **Connect at system startup**—When enabled, the TruePort host will try to connect to the Device Server when the TruePort service starts, as opposed to waiting for the application to open the serial port before initiating the connection to the Device Server.
- **Close TCP connection when COM port is closed**—When enabled, closes the TCP connection when the serial application closes the COM port, otherwise, the TCP connection remains open even after the serial application has closed the COM port.
- **Delay close of TCP connection for**—Specifies the amount of time, in seconds, to wait after the application closes the serial port, before the TCP connection is closed to avoid bringing the TCP connection down and up if the application is closing and opening the COM port often. The default is 3 seconds. Valid values are 1-65535.

Connection Options

- **Retry forever**—The TruePort host will continue to attempt to reconnect to the Device Server.
- **Number of retries**—Specifies the number of additional retry attempts for a client-initiated connection, beyond the first attempt. Valid values are 0-255. The default is 5 retries.
- **Time between connection retries**—Specifies the number of seconds between TCP connection retries after a client-initiated connection failure. Valid values are 1-255. The default is 30 seconds.
- **Restore dropped connections**—When enabled, the TruePort host will attempt to reconnect to the Device Server after an existing TCP connection is dropped.

Configuring Advanced COM Port Settings

In the adapter Settings window, click on the COM port you want to configure and then click on the **Advanced** tab.



Application Options

You can select **Simulate COM port transmit delays** to control the read/write delay time. Enabling this option will cause the TruePort application to delay returns to an application that is doing a write to the COM port. The delay will approximate the time it would have taken to transmit the data if it was being written to a real serial port. If you just enable this option without changing the zero value of the other options, a write delay will be created based on the serial device's baud rate.

- **Additional Transmit Delay**—This delay, in milliseconds (ms), is added to the calculated serial delay, based on the configured baud rate, to compensate for additional delays introduced by the network. Valid values are 0-9999 ms. The default is **0** ms.
- **Additional Receive Delay**—This delay, in milliseconds (ms), is added to the Windows communication delay. Valid values are 0-9999 ms. The default is **0** ms.

Depending on the requirements of your serial application, you can specify the response to the serial application when the COM port is opened.

- **Always return successful**—Opens the serial port without waiting, even if there is no network connection, and doesn't give an error. Any written data is discarded if the TruePort connection is not fully established.
- **Return when connection is fully established**—Waits up to the specified time, in seconds, for the TruePort connection to be fully established. The TruePort connection is fully established when:
  - The TCP connection between the terminal/device server and the TruePort host is up.
  - The SSL/TLS negotiation succeeds (if used).
  - The TruePort Full mode protocol negotiation succeeds (if used).

  If a timeout occurs before a network connection is established, an error is returned. Valid values are 1-65535. The default is 5 seconds.

Other Advanced Settings that you can configure are:

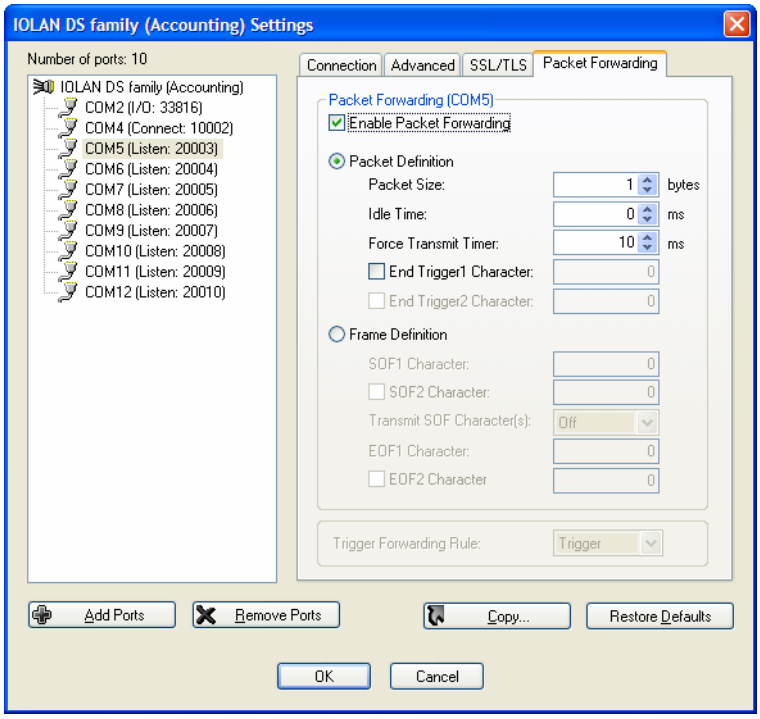
- **Send keep alive packets**—Enable this option if you want to test if the TCP connection is still up when no data has been sent for a while by sending keep-alive messages to the Device Server.
- **Keep Alive Interval**—Specifies the number of seconds to wait on an idle connection before sending a keep-alive message. The default is **30** seconds. If no response to the keep alive is received from the device server then the TCP connection is closed.
- **Enable TCP Nagle algorithm**—When you enable the Nagle Algorithm, the number of small packets sent by TruePort across the network is reduced. The default is enabled.

Configuring SSL/TLS

See ***Configuring SSL/TLS*** on page 25 for configuration information.

Configuring Packet Forwarding

The Packet Forwarding feature allows you to control how the data coming from a serial device is packetized before forwarding the packet onto the LAN network.



Configure the following parameters:

Enable Packet Forwarding — Check this box if you want to enable Packet Forwarding for this port.

Packet Definition — This section allows you to set a variety of packet definition options. The first criteria that is met causes the packet to be transmitted. For example, if you set a **Force Transmit Timer** of **1000** ms and a **Packet Size** of **100** bytes, whichever criteria is met first is what will cause the packet to be transmitted.

Packet Size — The number of byte that must be written by the application before the packet is transmitted to the network. A value of zero (0) ignores this parameter. Valid values are 0-1024 bytes. The default is 0.

Idle Time	The amount of time, in milliseconds, that must elapse between characters before the packet is transmitted to the network. A value of zero (0) ignores this parameter. Valid values are 0-65535 ms. The default is 0.
Force Transmit Timer	When the specified amount of time, in milliseconds, elapses after the first character is written by the application, the packet is transmitted. A value of zero (0) ignores this parameter. Valid values are 0-65535 ms. The default is 0.
End Trigger1 Character	When enabled, specifies the character that when written by the application will define when the packet is ready for transmission. The content of the packet is based on the Trigger Forwarding Rule. Valid values are in hex 0-FF. The default is 0.
End Trigger2 Character	When enabled, creates a sequence of characters that must be written by the application to specify when the packet is ready for transmission (if the End Trigger1 character is not immediately followed by the End Trigger2 character, TruePort waits for another End Trigger1 character to start the End Trigger1/End Trigger2 character sequence). The content of the packet is based on the Trigger Forwarding Rule. Valid values are in hex 0-FF. The default is 0.
Frame Definition	This section allows you to control the frame that is transmitted by defining the start and end of frame character(s). If the internal buffer (1024 bytes) is full before the EOF character(s) are received, the packet will be transmitted and the EOF character(s) search will continue. The default frame definition is SOF=00 and EOF=00.
SOF1 Character	When enabled, the Start of Frame character defines the first character of the frame, any character(s) received before the Start of Frame character is ignored. Valid values are in hex 0-FF. The default is 0.
SOF2 Character	When enabled, creates a sequence of characters that must be received to create the start of the frame (if the SOF1 character is not immediately followed by the SOF2 character, TruePort waits for another SOF1 character to start the SOF1/SOF2 character sequence). Valid values are in hex 0-FF. The default is 0.
Transmit SOF Character(s)	When enabled, the SOF1 or SOF1/SOF2 characters will be transmitted with the frame. If not enabled, the SOF1 or SOF1/SOF2 characters will be stripped from the transmission.
EOF1 Character	Specifies the End of Frame character, which defines when the frame is ready to be transmitted. The content of the frame is based on the Trigger Forwarding Rule. Valid values are in hex 0-FF. The default is 0.
EOF2 Character	When enabled, creates a sequence of characters that must be received to define the end of the frame (if the EOF1 character is not immediately followed by the EOF2 character, TruePort waits for another EOF1 character to start the EOF1/EOF2 character sequence), which defines when the frame is ready to be transmitted. The content of the frame is based on the Trigger Forwarding Rule. Valid values are in hex 0-FF. The default is 0.

Trigger Forwarding Rule

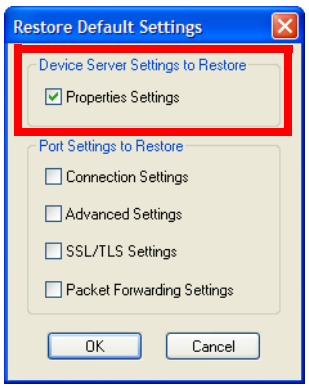
Determines what is included in the Frame (based on the EOF1 or EOF1/EOF2) or Packet (based on Trigger1 or Trigger1/Trigger2). Choose one of the following options:

- **Strip-Trigger**—Strips out the EOF1, EOF1/EOF2, Trigger1, or Trigger1/Trigger2, depending on your settings.
- **Trigger**—Includes the EOF1, EOF1/EOF2, Trigger1, or Trigger1/Trigger2, depending on your settings.
- **Trigger+1**—Includes the EOF1, EOF1/EOF2, Trigger1, or Trigger1/Trigger2, depending on your settings, plus the first byte that follows the trigger.
- **Trigger+2**—Includes the EOF1, EOF1/EOF2, Trigger1, or Trigger1/Trigger2, depending on your settings, plus the next two bytes received after the trigger.

Restoring TruePort Adapter Defaults

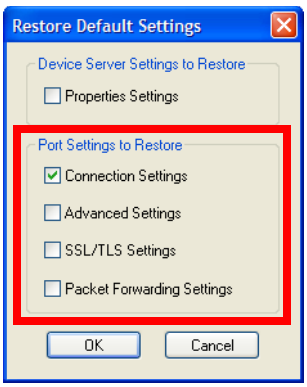
You can restore the TruePort Adapter defaults by either:

- Selecting the TruePort Adapter and then clicking the **Restore Defaults** button.
- Selecting any COM port and then clicking the **Restore Defaults** button. Enable the **Property Settings** option and then click **OK**.



Restoring COM Port Defaults

You can restore any or all of the default settings on a COM port by selecting the COM port and clicking the Restore Defaults button.



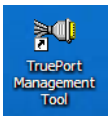
Enable/disable any of the following settings:

- **Connection Settings**—Resets all the parameters on the **Connection** tab to their default settings.
- **Advanced Settings**—Resets all the parameters on the **Advanced** tab to their default settings.
- **SSL/TLS Settings**—Resets all the parameters on the **SSL/TLS** tab to their default settings.
- **Packet Forwarding Settings**—Resets all the parameters on the **Packet Forwarding** tab to their default settings.

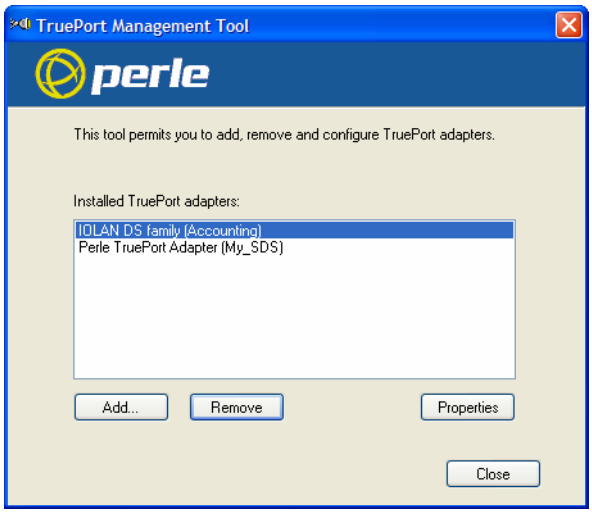
When you have enabled the settings to want to restore to their default settings, click **OK**.

Deleting a TruePort Adapter on the TruePort Host

To remove a TruePort serial adapter(s), do the following:



1. Double-click the TruePort Management Tool desktop icon or select **Start**, **All Programs**, **Perle**, **TruePort**, **TruePort Management Tool** from the taskbar to activate the TruePort Device Management Tool.
2. Highlight the TruePort adapter you want to remove.



3. Click the **Remove** button.

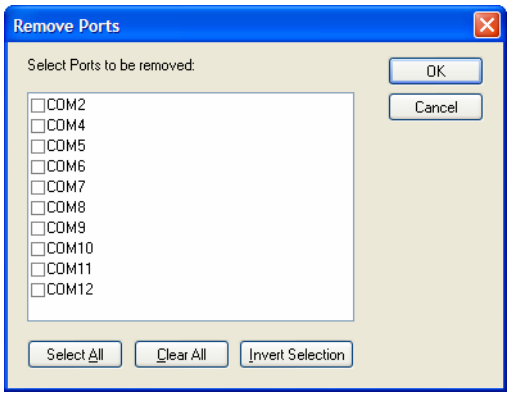
4. Click the **Yes** button to verify that you want to remove the device.

The TruePort serial adapter is now uninstalled from your system.

Deleting a COM Port on the TruePort Host

To delete a COM port on the TruePort host, do the following:

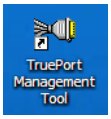
1. Double-click the TruePort Management Tool desktop icon or select **Start**, **All Programs**, **Perle**, **TruePort**, **TruePort Management Tool** from the taskbar to activate the TruePort Device Management Tool.
2. Select the TruePort adapter that has the COM port you want to delete and then click the **Properties** button.
3. Click the **Configuration** tab and then click the **Settings** button.
4. Click the **Remove Ports** button to display the Remove Ports window.



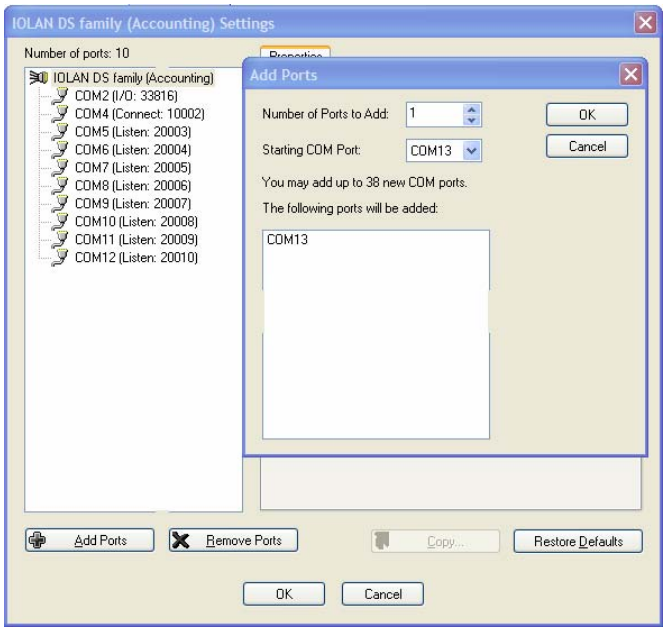
5. Check the COM port(s) you want to delete and click **OK**. You can also delete all the COM ports by clicking the **Select All** button and then **OK**. You must also click **OK** on the main Settings window to actually delete the COM ports.

Adding COM Ports on the TruePort Host

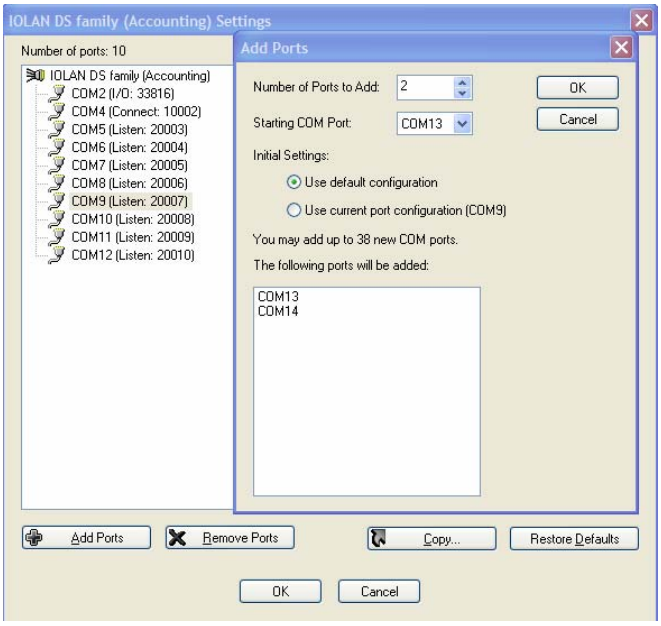
To add COM ports on the TruePort host, do the following:



1. Double-click the TruePort Management Tool desktop icon or select **Start**, **All Programs**, **Perle**, **TruePort**, **TruePort Management Tool** from the taskbar to activate the TruePort Device Management Tool.
2. Select the TruePort adapter that has the COM port you want to delete and then click the **Properties** button.
3. Click the **Configuration** tab and then click the **Settings** button.
4. If you click the **Add Ports** button when the TruePort adapter is selected, you will get the following:



If you click on one of the established ports and click the **Add Ports** button, you will see the following (notice that **COM9** is selected):



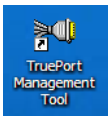
5. Specify the number of ports you want to add. If you selected a COM port before you clicked the **Add Ports** button, you can choose to create the new COM ports with the default COM port settings or with the settings already configured for the selected COM port.
6. Select the starting COM port (COM1 to COM4096). Any COM port(s) being used by other applications will not be shown in the drop-down list of COM ports.
7. Click **OK** to add the specified COM ports.

Note: If the installed TruePort driver is an unsigned driver, you may have to click through the Hardware Wizard for every TruePort COM port configured in your system. If you are adding a large number of ports, we recommend clicking **Start**, **All Programs**, **Perle**, **TruePort**, **TruePort Update** to avoid clicking through the Hardware Wizard for each TruePort COM port.

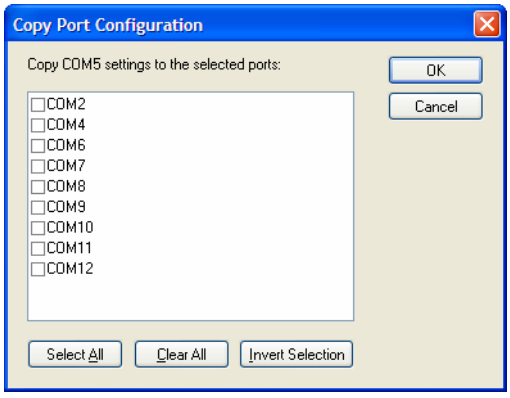
This will automatically add and update all added COM ports with the currently installed TruePort driver (this may take several minutes, depending on how many COM ports you are adding).

Copying COM Port Settings on the TruePort Host

If you have multiple COM ports that will need the same or very similar configuration settings, you can configure one COM and then copy its settings to other COM ports by doing the following:



1. Double-click the TruePort Management Tool desktop icon or select **Start**, **All Programs**, **Perle**, **TruePort**, **TruePort Management Tool** from the taskbar to activate the TruePort Device Management Tool.
2. Select the TruePort adapter that has the COM port you want to delete and then click the **Properties** button.
3. Click the **Configuration** tab and then click the **Settings** button.
4. Select that COM port with the configured settings and click the **Copy Settings To** button.

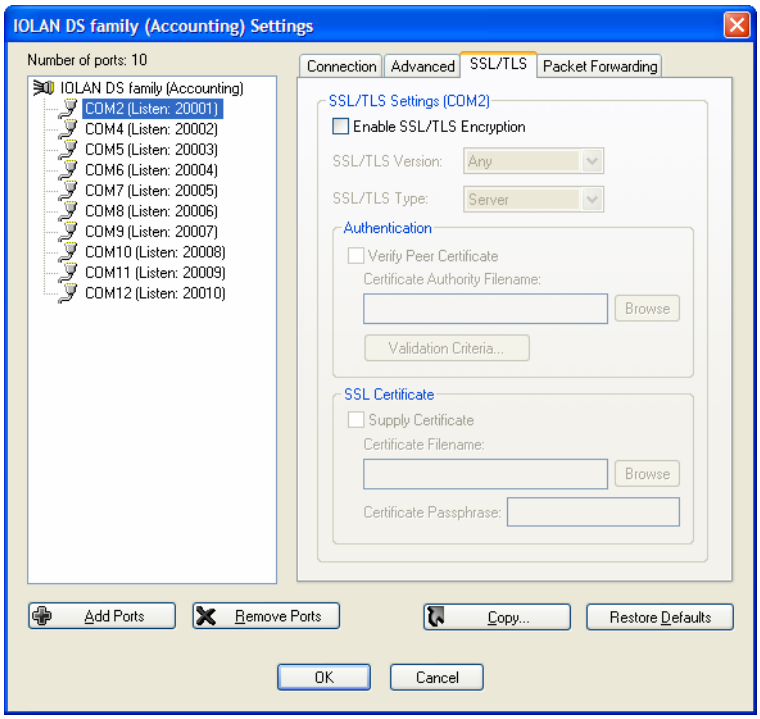


5. Select the COM port(s) you want to copy the settings to and then click **OK**.

Configuring SSL/TLS

The SSL/TLS feature is designed to work with the IOLAN SDS, SCS, and STS Device Server models. When TruePort is used with the Device Server, the cipher specified by the Device Server will be used for the TruePort connection. Also, if the Device Server is set for **SSL/TLS Type Server**, then you need to set the TruePort **SSL/TLS Type** to **Client**, and vise versa.

SSL/TLS Configuration Information



The following section provides more information about the SSL/TLS configuration parameters:

Enable SSL/TLS Encryption
Check this box if you want to encrypt the data via SSL/TLS between the TruePort host and the Device Server.

SSL/TLS Version
Specify whether you want to use:

- **Any**—The TruePort service will try a TLSv1 connection first. If that fails, it will try an SSLv3 connection. If that fails, it will try an SSLv2 connection.
- **TLSv1**—The connection will use only TLSv1.
- **SSLv3**—The connection will use only SSLv3.

SSL/TLS Type
Specify whether the TruePort service will act as an SSL/TLS client or server.

Verify Peer Certificate
The certificate received from the peer will be verified against the CA list, along with any values entered in the validation criteria, for an SSL connection; any fields left blank will not be validated against the peer certificate.

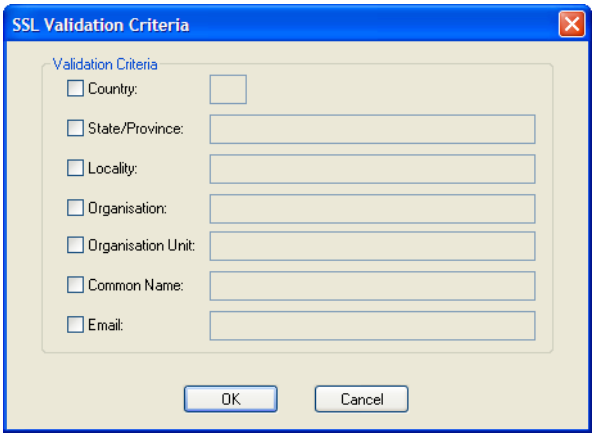
Certificate Authority Filename
The full path and file name of the CA (certificate authority) file.

Supply Certificate Check this box if you need to specify the path and file name of the certificate file.

Certificate Filename The full path and file name of the certificate file.

Certificate Passphrase If you encrypted the private key with a passphrase when it was created, you will need to enter it here to have a successful SSL/TLS connection.

The following section describes the SSL validation criteria.



Note: The values that you enter here are case sensitive, so the peer certificate must match exactly or the connection will fail.

Country A two character country code; for example, US.

State/Province Up to a 128 character entry for the state/province; for example, IL.

Locality Up to a 128 character entry for the location; for example, a city.

Organisation Up to a 64 character entry for the organisation; for example, Acme Software.

Organisation Unit Up to a 64 character entry for the unit in the organisation; for example, Payroll.

Common Name Up to a 64 character entry for common name; for example, the host name or fully qualified domain name.

Email Up to a 64 character entry for an email address; for example, acct@anycompany.com.

SSL/TLS Support Files

When you enable the SSL/TLS option for a port, you need to make sure the TruePort host and Device Server have the appropriate support files: certificates/private keys and/or the CA list file. The IOLAN CD-ROM contains a self-signed RSA certificate named **`samplecert.pem`**. The **`samplecert.pem`** file can be used for both the certificate file on the SSL/TLS server and the CA list file on the SSL/TLS client.

TruePort Port Configured as SSL/TLS Server

When the TruePort port is configured as an SSL/TLS server, the SSL/TLS private key and certificate is required for all key exchange methods except ADH (Anonymous Diffie-Hellman). The private key needs to be appended to the certificate file, to create one certificate/private key file. This certificate/private key file then becomes the TruePort certificate. Copy the TruePort certificate file to the directory you specified in the SSL/TLS configuration.

If the TruePort SSL/TLS server is configured to verify an SSL client, a CA list file is also required. The CA list file is a certificate, or list of certificates, of the Certificate Authorities (CA) who created and signed the peer certificates.

TruePort Port Configured as SSL/TLS Client

When the TruePort port is configured as an SSL/TLS client and peer verification is configured, a CA list file is required. The CA list file is a certificate, or list of certificates, of the Certificate Authorities (CA) who created and signed the peer certificates (the peer certificate(s) must be downloaded to the Device Server). This CA list file should be copied to the TruePort host directory specified in the SSL/TLS configuration.