Advanced Driver Configuration

Reference Guide

Pleora
Technologies

Driver Installation Tool

Network adapters

Location	MAC	Driver	Description
PCI bus 2, device 12, function 0	00-0e-0c-70-d3-d7	eBUS Optimal Driver	Intel(R) PRO/1000 MT Desktop Ada...
PCI bus 2, device 11, function 0	00-0e-0c-a2-38-4c	Intel Pro/1000 Netwo...	Intel(R) PRO/1000 GT Desktop Ada...
PCI bus 2, device 5, function 0	00-11-d8-dc-54-76	NIC driver	Marvell Yukon 88E8001/8003/8010 ...

Configure...

Available eBUS Components

GigE Vision Protocol Driver
iPORT Protocol Driver

Update Drivers...   Exit

...real-time image transfer and control at full GigE rates

Ver 1.1

Contents

Introduction

This reference guide describes how to configure advanced driver settings for your eBUS™, iPORT™, and Intel drivers. For an overview of the entire setup procedure, including a simplified driver installation procedure, see the *eBUS Quick Start Guide*.

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Fine-tuning your driver with configuration settings

Some drivers have configuration settings that let you modify the behavior of your driver.

In this section:

Accessing the configuration settings

Some drivers include a DLL that adds one or more tabs to the Windows Properties dialog.

To access the configuration settings using Windows XP:

1. From the Windows Start menu, select **Start** > **Control Panel**.
    The **Control Panel** folder appears.
2. Open the **System** shortcut.
    The **System Properties** dialog appears.
3. Select the **Hardware** tab.
4. In the **Device Manager** pane, click **Device Manager**.
    The **Device Manager** dialog appears.
5. Right-click your adapter and select Properties. (Your adapter may be listed under **PRO/1000 Grabber Devices** or **Network adapters**.)
    The **Intel PRO/1000 Adapter Properties** dialog appears. Your driver may include a **Settings** tab and/or an **Advanced** tab.

Configuring your Intel PRO/1000 driver

Intel PRO/1000 network drivers can be configured, but the parameters differ by model. To see the parameter descriptions for your particular model of network adapter, go to Intel's website at www.intel.com/support/network/adapter/.

Configuring the iPORT High-Performance IP Device Driver

You can configure a variety of settings for your iPORT High-Performance IP Device Driver using the **Settings** tab and **Advanced** tab.
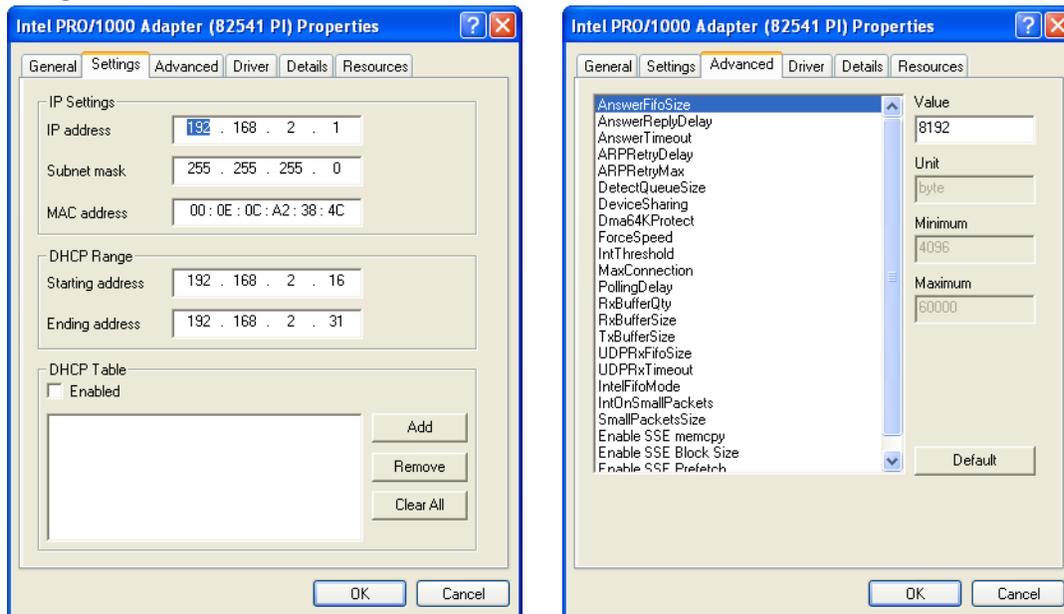
The dialog for changing the settings includes the maximum, minimum, and default values, as well as the units of each parameter.

NOTE!   Some of the parameters can dramatically change the behavior of your iPORT High-Performance IP Device Driver. The default values typically work well for most systems.

iPORT High-Performance IP Device Driver parameters

AnswerFifoSize
The size of an internal answer buffer. (Bytes)

AnswerReplyDelay
The wait time between sending a command and trying to retrieve a reply. (Milliseconds)

AnswerTimeout
The time to wait for a command reply. (Milliseconds)

ARPRetryDelay
The time between two ARP requests. (Milliseconds)

ARPRetryMax
The maximum number of ARP requests. (Numeric)

DetectQueueSize
The maximum number of detection requests that the iPORT High-Performance IP Device Driver can buffer. (Numeric)

DeviceSharing
When enabled (value of **1**), the IP Engine can be shared by more than one application. (Boolean)

Dma64KProtect
When enabled (value of **1**), the iPORT High-Performance IP Device Driver stores buffers larger than 4K in contiguous memory pages of 4K each. This parameter is useful for motherboards with chipsets that have trouble with direct memory access (DMA) to the second 4K page. Enabling this mode may correct problems with corrupted images or Windows crashes. (Boolean)

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ForceSpeed

The link speed between the network adapter and IP Engine. The possible values are:

0

Auto-detect

1

10 Mb/s

2

100 Mb/s

3

1,000 Mb/s

IntThreshold

The level of fullness of the buffer that causes the network adapter to send an interrupt to the PC.

0

Interrupt when buffer hits 50%. Best for legacy PCs or embedded computers with limited resources.

1

Interrupt when buffer hits 75%.

2

Interrupt when buffer hits 87.5%. Best for medium and high-end PCs.

MaxConnection

The maximum number of simultaneous connections to IP engines. (Numeric)

PollingDelay

The time to wait between polling. When the host PC is monitoring for a change, it polls the IP Engine. However, most of the time, the IP Engine sends changes in the form of an interrupt packet. See **IntOnSmallPackets**. (Milliseconds)

RxBufferQty

The number of reception buffers. (Numeric)

RxBufferSize

The size of a reception buffer. For example, if a packet is 3000 bytes long and **RxBufferSize** is smaller, the packet will be discarded. (Bytes)

TxBufferSize

The size of a transmission buffer. See **RxBufferSize**. (Bytes)

UDPRxFifoSize

The size of the internal buffer for receiving packets when using the iPORT SDK CySocketUDP class. (Bytes)

UDPRxTimeout

The maximum time that the iPORT High-Performance IP Device Driver waits for a packet when using the iPORT SDK CySocketUDP class. (Milliseconds)

IntelFifoMode

An iPORT Hydra-specific parameter that specifies how the PRO/1000's internal FIFO is configured. Available values include:

0

Most of the FIFO is assigned to the incoming data.

1

The FIFO is configured equally for both outgoing and incoming data.

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2

   Most of the FIFO is assigned to the outgoing data.

IntOnSmallPackets

   When enabled (value of **1**), the network adapter generates an interrupt if it receives a packet of a size equal to or smaller than the **SmallPacketSize** parameter. Enabling this parameter is useful for optimizing serial data communications.

   When disabled (value of **0**), the iPORT High-Performance IP Device Driver waits until a timeout occurs before handling the packet (reducing CPU usage but slowing serial communications). (Boolean)

NOTE!   Intel PRO/1000 network adapters with the 82544 chipset don't support small packet interrupts.

SmallPacketsSize

   The maximum size of a small packet (used in conjunction with the **IntOnSmallPackets** parameter).

   Packets that are smaller than this setting cause the network adapter to generate an interrupt to ensure that small packets don't sit indefinitely in the queue. Small packets typically contain command acknowledgements and interrupt requests from the IP Engine. (Bytes)

Manually installing your drivers

In some cases, you may want to manually install your drivers. Generally, using the eBUS Driver Installation Tool is faster, easier, and more reliable. To automatically install your drivers using the eBUS Driver Installation Tool, see the *eBUS Quick Start Guide*.

The procedure described below is for a Windows XP and is as generic as possible. However, Windows has many variants and the exact procedure for accomplishing various system-level tasks can vary dramatically. In some cases, subtle Windows settings may prevent installation or cause Windows to proceed automatically. If you encounter difficulty, consult your IT department.

Some drivers work in conjunction with the regular NIC driver; some don't. If you require both drivers, you must install them sequentially. To learn which drivers use a regular NIC driver, see the *eBUS Quick Start Guide*. Before uninstalling any drivers, you should find and choose the driver(s) you wish to install.

In this section:

Manually finding available drivers

Pleora's drivers have an `inf` extension and are located in the subdirectories within the `Pleora Technologies Inc` directory. The following procedure finds and lists all the drivers. For details about these files, see the *iPORT Run-Time Library Distribution Reference Guide*.

To manually find available drivers:

1. Using an instance of Windows Explorer (not Internet Explorer) open the default Pleora directory. Typically, the directory is located at `C:\Program Files\Pleora Technologies Inc`.
2. Right-click the directory and select **Search**.
    The **Search Results** dialog appears.

3. In left-hand pane, type `*.inf` in the **All of part of the file name** box, and click **Search**.
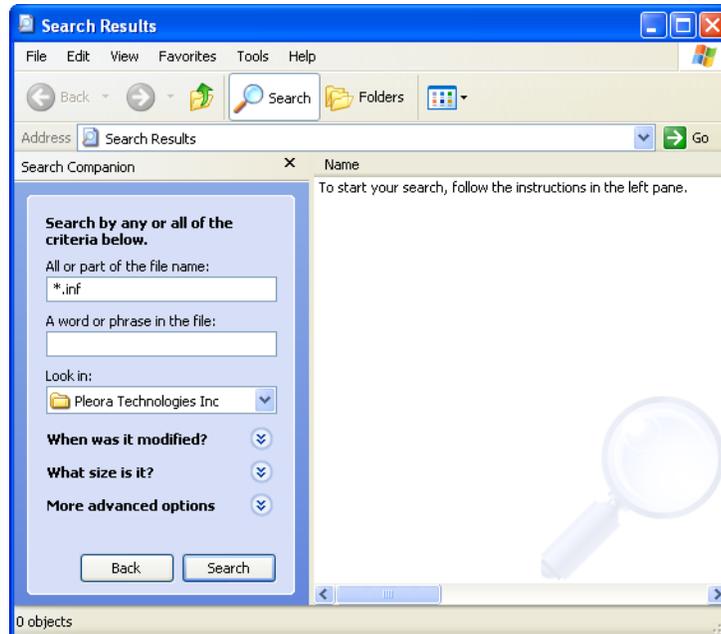
The list of available drivers appears in the right hand pane.

Manually uninstalling drivers

If your network adapter has any drivers attached to it, you must uninstall them. The Windows Device Manager may display multiple entries for the same adapter; discerning multiple adapters can be confusing.

To manually uninstall your drivers:

1. From the Windows Start menu, select **Start** > **Control Panel** > **System** icon > **Hardware** tab. In the **Device Manager** pane, click **Device Manager**.
   The Device Manager dialog appears.
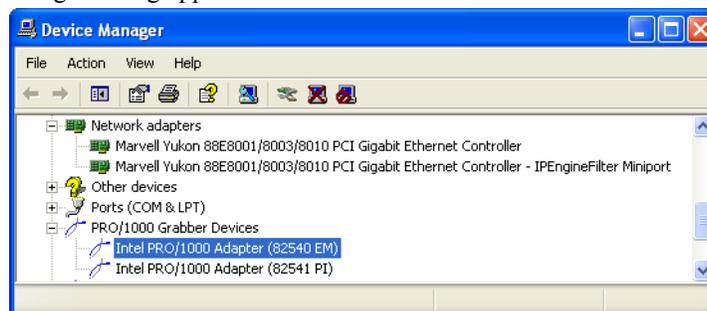
2. Right-click your network adapter and select **Uninstall**. Your network adapters may be listed under **Network adapters** or **PRO/1000 Grabber Devices**.
3. If warnings appear, allow the uninstall to proceed (i.e. click **OK**).
   Your driver is now uninstalled.

Manually installing drivers

To manually install your drivers:

1. Open the Device Manager dialog (see "Manually uninstalling drivers" on page 14.)

2. Right-click any icon and select **Scan for hardware changes**.
The **Found New Hardware Wizard** appears.

3. Select **Install from a list or specific location (Advanced)** and click **Next**.
4. Select **Don't search. I will choose the driver to install.** and click **Next**.
5. Click **Have Disk**.
The **Install From Disk** dialog appears.
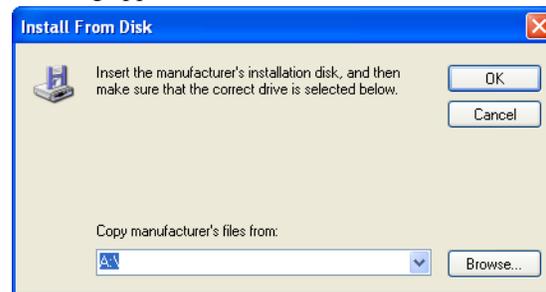
6. Click **Browse**.
The **Locate File** dialog appears.
7. Select your file from among the drivers you found in "Manually finding available drivers" on page 13, and click **Open**.
8. Proceed with the installation, accepting warnings as required.
Your driver is now installed.

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Technical support

For additional help, see the "Technical support" section in the *eBUS Quick Start Guide.*

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