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Intel(R) LAN Driver 82579, I217, and I218 Link Negotiation Process Parameter Change Utility for Windows

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File name: LinkNegProc.exe

Version: 1.0.0.0

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Status: Latest

Size: 0.04 MB

Language: English

Operating Systems: Windows 7 * , Windows 8, 32-bit* , Windows 8, 64-bit* , Windows 8.1, 32-bit* , Windows 8.1, 64-bit* , Windows Server 2008 R2* , Windows Server 2012 R2* , Windows Server 2012*

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Detailed Description

This utility can be used to work around an issue where the Intel® 82579 Ethernet Controller, Intel(R) Ethernet Connection I217, or Intel(R) Ethernet Connection I218 might put itself into 100 Mbps half duplex mode when configured for 100 Mbps full duplex mode. This can happen when the link partner generates voltage variations over the Ethernet cable that appear to the Ethernet Controller as an advertisement to use half duplex communication.

Background

The Intel® LAN Driver 82579, I217, and I218 uses "selective advertisement" to negotiate a speed and duplex setting. For example, if the network connection is configured for 100 Mbps and full-duplex mode, that is the capability advertised to the link partner. If the link partner advertises a different set of capabilities, the Intel® LAN Driver 82579, I217, and I218 may accept the offer. This method works in most cases and usually avoids mismatches that can occur when two sides of a connection are forced to different settings.

However, the Intel® LAN Driver 82579, I217, and I218 network connection may not establish the link properly with certain switch ports that generate voltage variations on the cable that can be mistaken by the Intel® LAN Driver 82579, I217, and I218 as advertising a 100 Mbps, half-duplex mode auto-negotiation offer. If the Intel® LAN Driver 82579, I217, and I218 network connection is configured for 100 Mbps, full duplex, it will still start by attempting to auto-negotiate. If it interprets the voltage variations as a 100 Mbps, half-duplex offer, it will accept that offer and configure the interface for half-duplex, resulting in a duplex mismatch between the link partners.

At this time, the only known example of these voltage variations occurs when connected to a Cisco* Ethernet switch that features Cisco's proprietary Power over Ethernet (PoE) standard introduced by Cisco prior to the establishment of IEEE 802.3af-2003* or IEEE 802.3at-2009* industry standards.

Available Workarounds

The following workarounds help to avoid this situation:

1. Configure both the Intel® LAN Driver 82579, I217, and I218 and the link partner for "auto-negotiate" instead of "forced." Auto negotiation is the default setting for most devices.
2. Disable PoE on the switch port.
3. For Windows*, make a Windows registry change either manually, by a script, or using this utility. This registry key change disables the selective advertisement feature of the Intel® LAN Driver 82579, I217, and I218 and causes it to revert to the original forced method when setting speed and duplex modes.

The following is the registry key information needed to make the change manually or for user-developed tools or scripts:

Registry Key: [REG_SZ] "LinkNegotiationProcess", with the following values:

- 1 = Auto-negotiate link. This is the default value.
- 2 = Force link speed for 10/100 Mbps link speeds. This is the value to use as a workaround for the duplex mismatch issue.

Utility Information

This utility configures the driver to either force the speed and duplex or auto-negotiate with the link partner if the selected link speed is 10Mbps or 100Mbps.

RUNNING LinkNegProc

LinkNegProc must be run with one parameter as follows:

LinkNegProc <option>

<option> is one of the following:

AUTO - configures the driver to auto-negotiate with the link partner if the selected

link speed is 10Mbps or 100Mbps

FORCED - configures the driver to force the Speed and Duplex if the selected

link speed is 10Mbps or 100Mbps

<option> may optionally be preceded by a '-' or '/' character.

NOTES:

* LinkNegProc must be run with administrator rights under operating systems that require such rights to update the system registry.

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* LinkNegProc updates the system registry only for Intel(R) LAN Driver 82579, I217 and I218 Gigabit Network Connection adapters. Other Intel network adapters are not affected by this applet.

* If the Link Negotiation Process driver parameter (LinkNegotiationProcess) is not already present in the registry, it will be added.

* If there are no supported Intel adapters or all drivers are already configured to use the <option> setting, no changes are made to the registry.

* The new Link Negotiation Process setting will not take effect until the adapter driver is stopped and restarted. This may require the system to be rebooted depending on the version of Windows.

* Running LinkNegProc with no parameters will display a usage message box that requires the user to press the OK button to exit the utility. No user input is required if IntModeration is run with one of the supported parameters.

PROGRAM EXIT CODES:

LinkNegProc returns the following exit codes:

CODE NAME:	VALUE:
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SUCCESSFUL	0
FAILURE	1

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Intel® 82579, I217 and I218 Gigabit Ethernet Controller

This download is valid for the product(s) listed below.

Intel® 82579 Gigabit Ethernet Controller

Intel® Ethernet Connection I217-LM

Intel® Ethernet Connection I217-V

Intel® Ethernet Connection I218-LM

Intel® Ethernet Connection I218-V