Kodak Graphic Communications Canada Company
3700 Gilmore Way
Burnaby, B.C., Canada
V5G 4M1
Tel: 1.604.451.2700
Fax: 1.604.437.9891

Request support: http://graphics.kodak.com
ecentral.creo.com

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Technical bulletin

Configuring NIC Teaming on Dell PE2800 Servers

Overview

This document describes configurations that have worked successfully during Kodak internal lab testing, however Kodak assumes no responsibility for ensuring they will work successfully at customer sites.

Kodak cannot guarantee that network interface card (NIC) teaming will work in all cases for the following reasons:

- Kodak assumes no responsibility for a customer's LAN.
- It is not possible to test all possible LAN and network switch combinations.

The Dell® PE2800 server has two on-board gigabit (GB) NICs. Normally, only one NIC is used with Prinergy® workflow management software to simplify the network setup and minimize support problems. This document explains how to configure NIC teaming on Dell PE2800 servers using the IEEE 802.3ad link aggregation standard.

Teaming

Teaming is the use of link aggregation technology to improve network performance by combining two or more NICs into a single virtual network adapter. This combination delivers the advantages of dual gigabit NICs without having to support a nonstandard network setup that has multiple internet protocol (IP) addresses and different subnets:

- Link aggregation combines multiple NICs into one virtual high-speed signal that shares the same IP address.
- Link aggregation provides more robustness—if one of the ports fails, network traffic is redirected to the remaining ports.

For the PE2800 server, teaming of the on-board NICs allows maximum network bandwidth to increase to 2 GB/sec, and better tolerance of port failures. Installation is simple, inexpensive, and transparent to the system or software. For more information about teaming and link aggregation, search for "802.ad" on the Internet.

Kodak has tested teaming using only the on-board NICs on the PE2800. No other servers or add-in network cards have been tested. Teaming brings little value to smaller servers, because they do not have sufficient power to saturate a single 1 GB/sec NIC. Only a PE2800 file server (for example, a Prinergy tertiary server) is likely to have the bandwidth requirements that can take full advantage of 2 GB/sec performance. Prinergy primary or secondary servers that are not hosting jobs will experience little benefit from more than 1 GB/sec network bandwidth (of course these ranges may vary, depending on your setup).

Setup Prerequisites

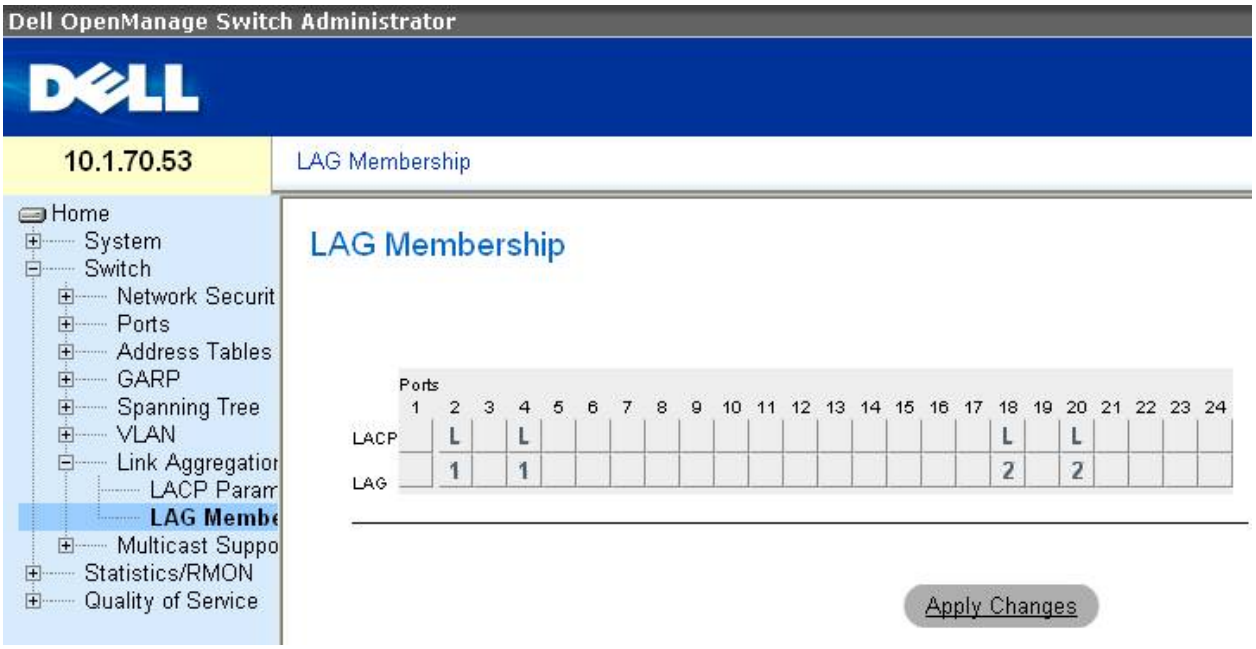
To configure teaming on a PE2800 server, you need:

- the latest network driver from Intel
- an 802.3ad compliant network switch

You can download the Microsoft® Windows® 2000, Windows 2003, and Windows XP network driver **PRO2KXP.exe** from the Intel® Internet site, Support and Downloads area. A Dell PowerConnect 5324 switch (24-port GB) was used during Kodak lab testing.

Configuring Teaming on a PE2800 Server

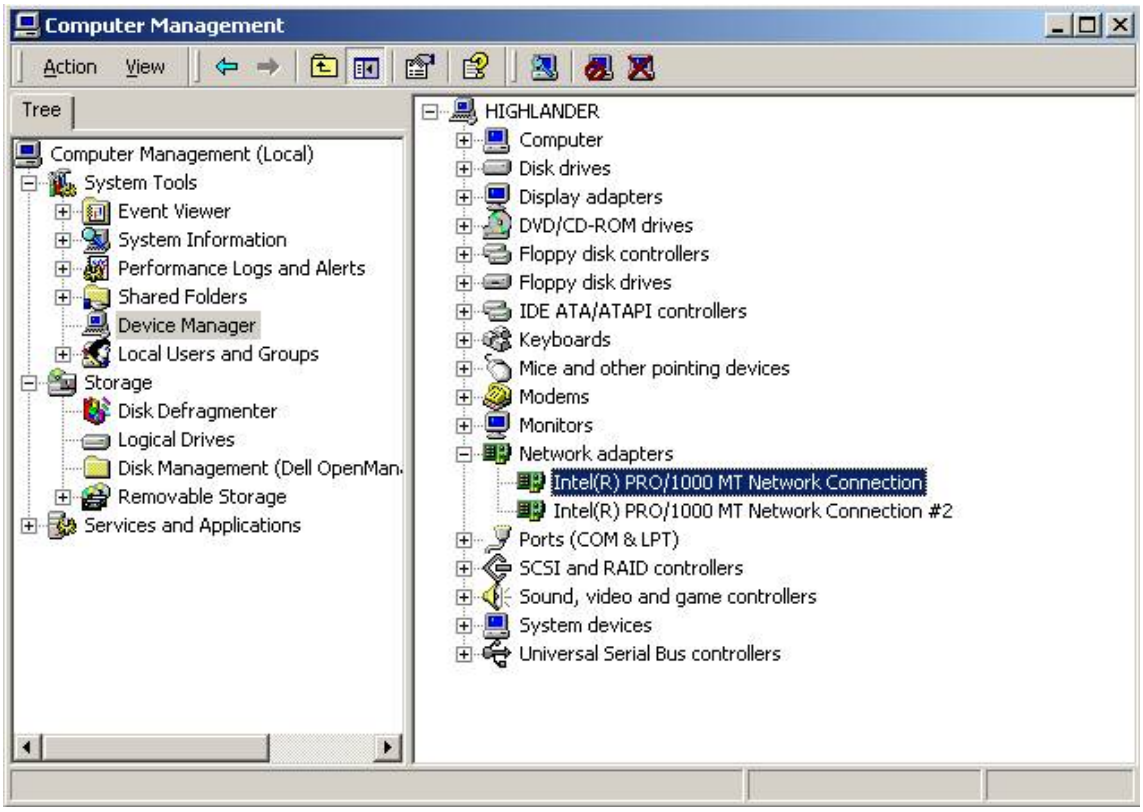
1. Install the 802.3ad-compliant switch and connect both PE2800 NIC ports to the switch. Ensure that the switch has the aggregated ports configured before configuring the ports on the server(s). The example below shows the setup for the PowerConnect 5324 switch (ports 2 and 4 are aggregated for the first PE2800 server, and ports 18 and 20 are aggregated for the second PE2800 server).



2. Enable the second NIC from the server BIOS. Select **Integrated Devices > Embedded GB NIC2**, and set to **Enable without PXE**.

3. After starting the server, shut down all software on the PE2800 and install the latest Intel **PRO2KXP.exe** driver.

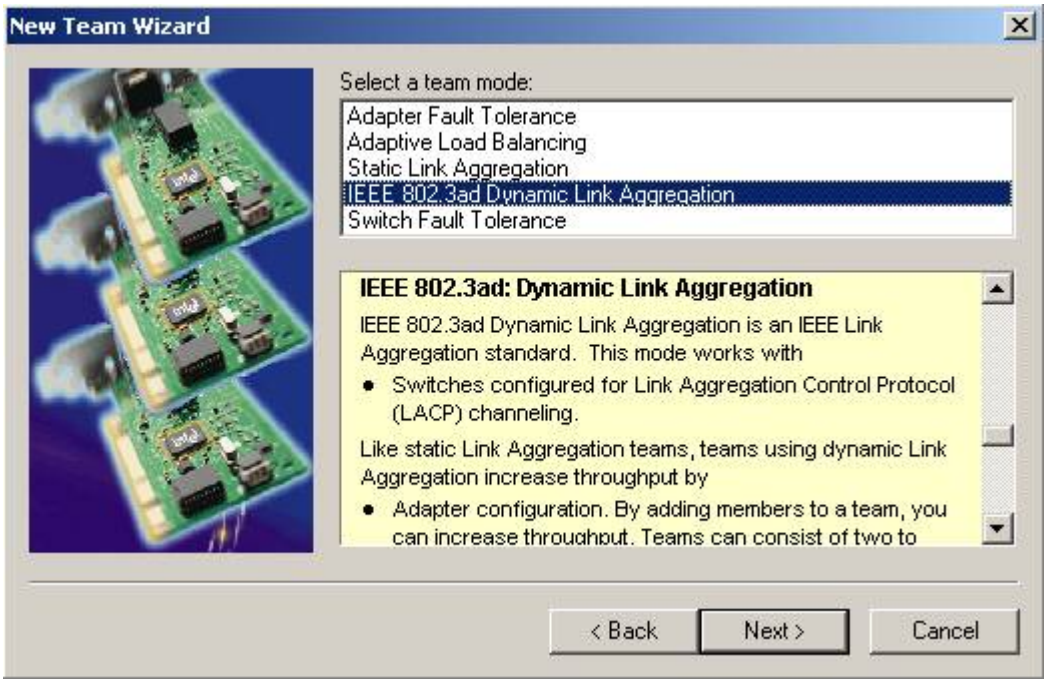
4. Select **C:\My Computer\Manage\Device Manager\Network adapters**. Double-click the first network adapter and select the **Teaming** tab. In the following example, **Intel(R) PRO/10000 MT Network Connection** is selected.



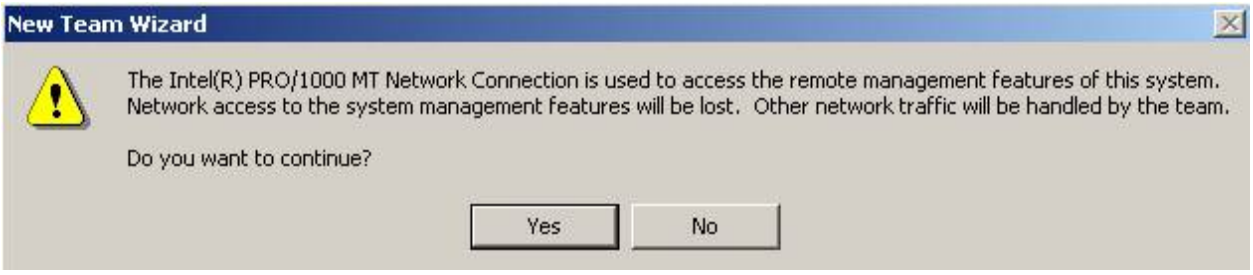
5. On the Teaming tab, select **Team with other adapters** and click **New Team**. Select **Team#0** and click **Next**. Select both network adapters and click **Next**.



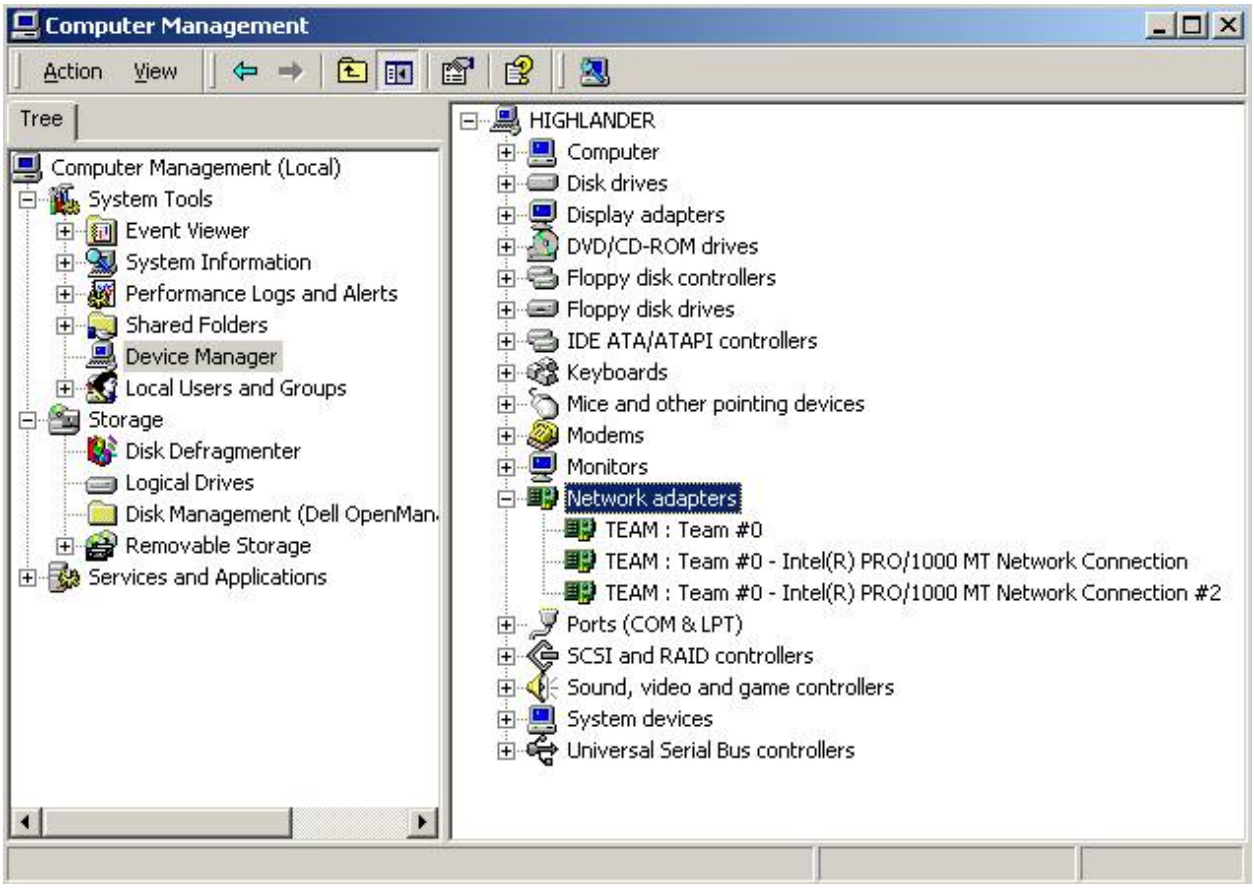
6. Select **IEEE 802.3ad Dynamic Link Aggregation** and click **Next** and then click **Finish**. It will take a minute for the teaming feature to be set up.



7. When the New Team Wizard dialog box appears, click **Yes** to continue.

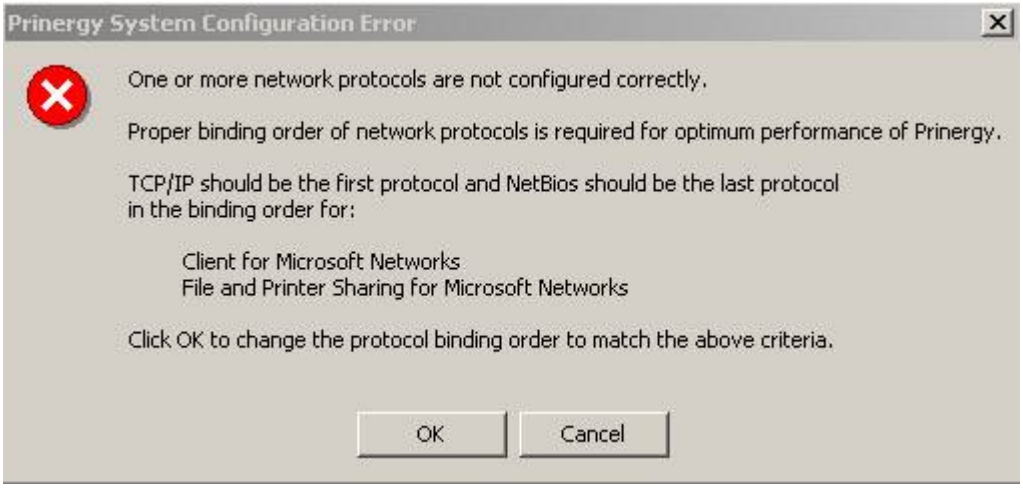


8. Ensure that the teamed adapters have been set up. Select **C:\My Computer\Manage\Device Manager\Network adapters**. The teamed adapters and individual adapters should be displayed in the Computer Management window.



9. Restart the server.

10. If this is a primary or secondary server (including render stations), on start-up Prinergy must set up the network protocols for the new (teamed) network adapter. The Prinergy System Configuration Error dialog box will appear. Click **OK** to continue and complete the process.



About Kodak Graphic Communications Group (GCG)

The leading provider of graphic communications solutions worldwide, Kodak's Graphic Communications Group (GCG) offers image capture systems; professional color, copydot, and high-speed document scanning systems; inkjet printing and proofing systems; workflow and color management software; thermal imaging devices for film, plates, and proofs; high-quality proofing media, printing plates, and recording film; on-demand color and black-and-white printing systems; data storage products; and professional services. Creo joined the GCG in June 2005, when it became a wholly owned subsidiary of Kodak. With corporate headquarters located in Rochester, N.Y., Kodak (NYSE: EK) had sales of $13.5 billion in 2004 and is committed to a digitally oriented growth strategy.

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