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Technical Bulletin

Configuring NIC Teaming on Dell PE2900/2950 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 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® PE2900/2950 server has two on-board gigabit (GB) network interface cards (NICs). Normally, Kodak workflow software only uses one NIC to simplify the network setup and minimize support problems. NIC teaming takes advantage of both on-board NICs. This document explains how to configure NIC teaming on Dell PE2900/2950 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 non-standard network setup that has multiple internet protocol (IP) addresses and different sub-nets:

- 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 PE2900/2950, 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.

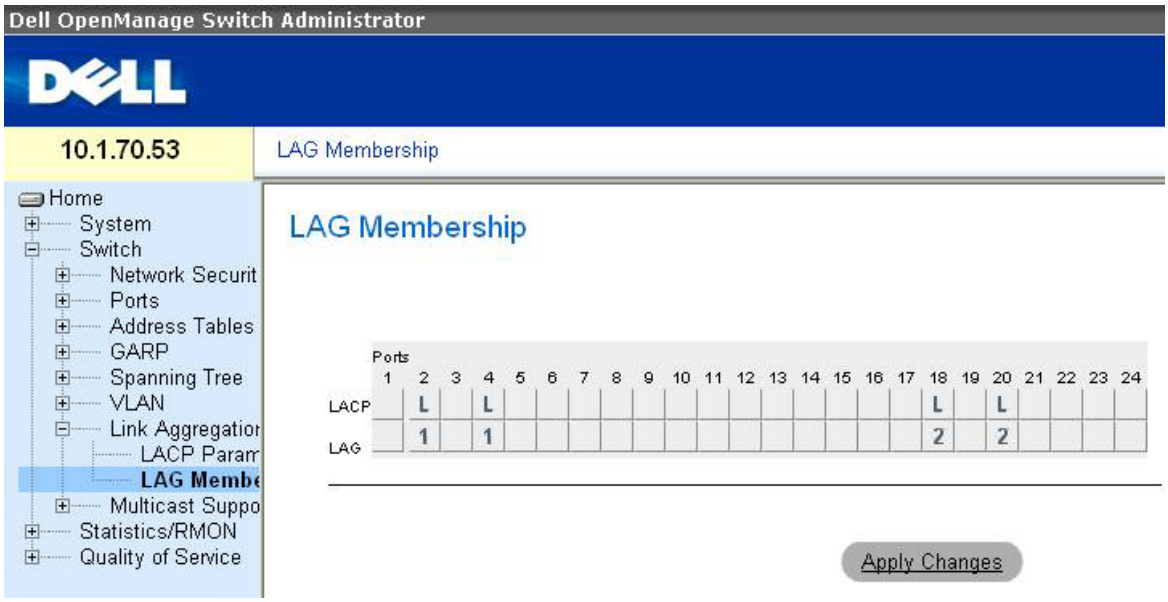
Kodak has tested teaming using only the on-board Broadcom BCM5708C NetXtreme II NICs on the PE2900/2950. No other add-in network cards have been tested.

Setup Prerequisites

To configure teaming on a PE2900/2950 server, you will need an 802.3ad-compliant network switch.

Configuring Teaming on a PE2900/2950 Server

1. Install the 802.3ad-compliant switch and connect both PE2900/2950 NIC ports to the switch. Ensure that the switch has the aggregated ports configured before configuring the ports on the server(s). The following example shows the setup for the Dell PowerConnect 5324 switch—ports 2 and 4 are aggregated for the first PE2900 server, and ports 18 and 20 are aggregated for a second PE2900 server.

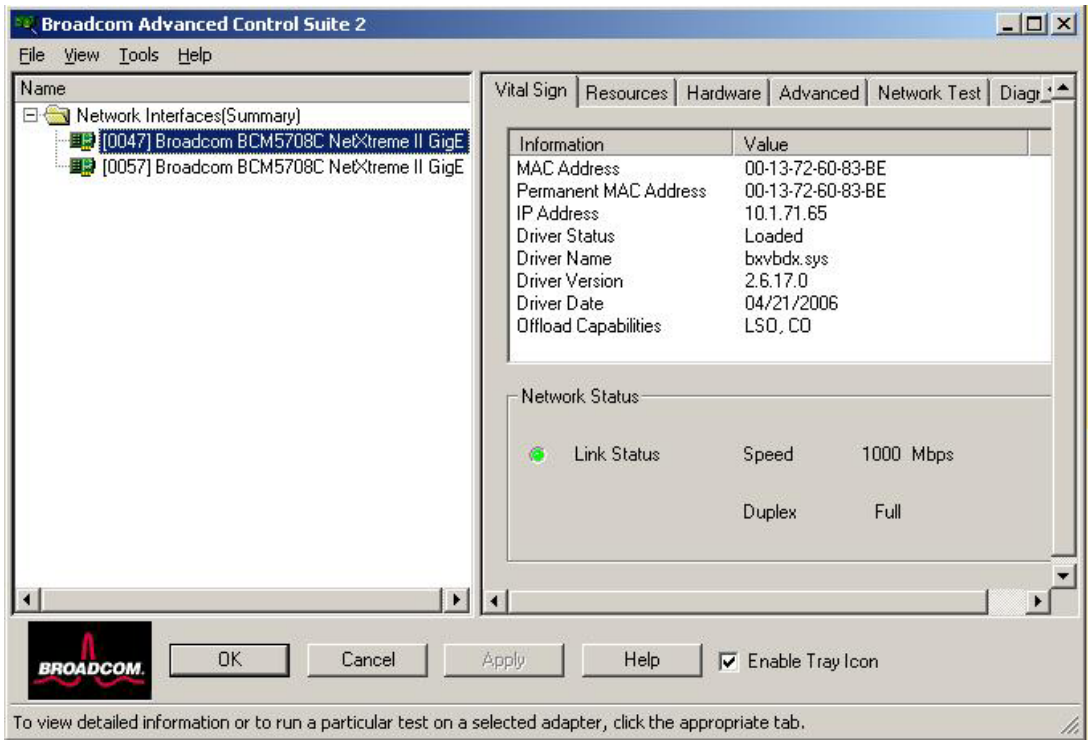


2. Enable the second NIC from the server BIOS. Select **Integrated Devices > Embedded GB NIC2**, and set to **Enable without PXE**.

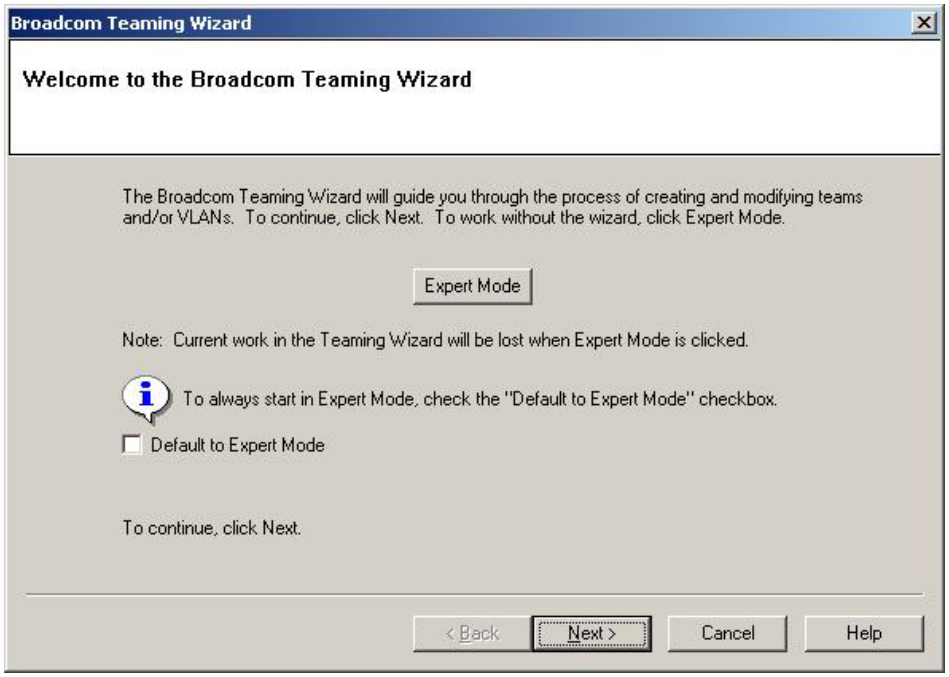
3. Start the server. A Found New Hardware message about the new NIC will appear in the System Tray.



4. Stop all software that is running on the PE2900/2950 and double-click the **Broadcom Advanced Control Suite 2** icon in the System Tray shown in the previous screen capture. The following window appears.

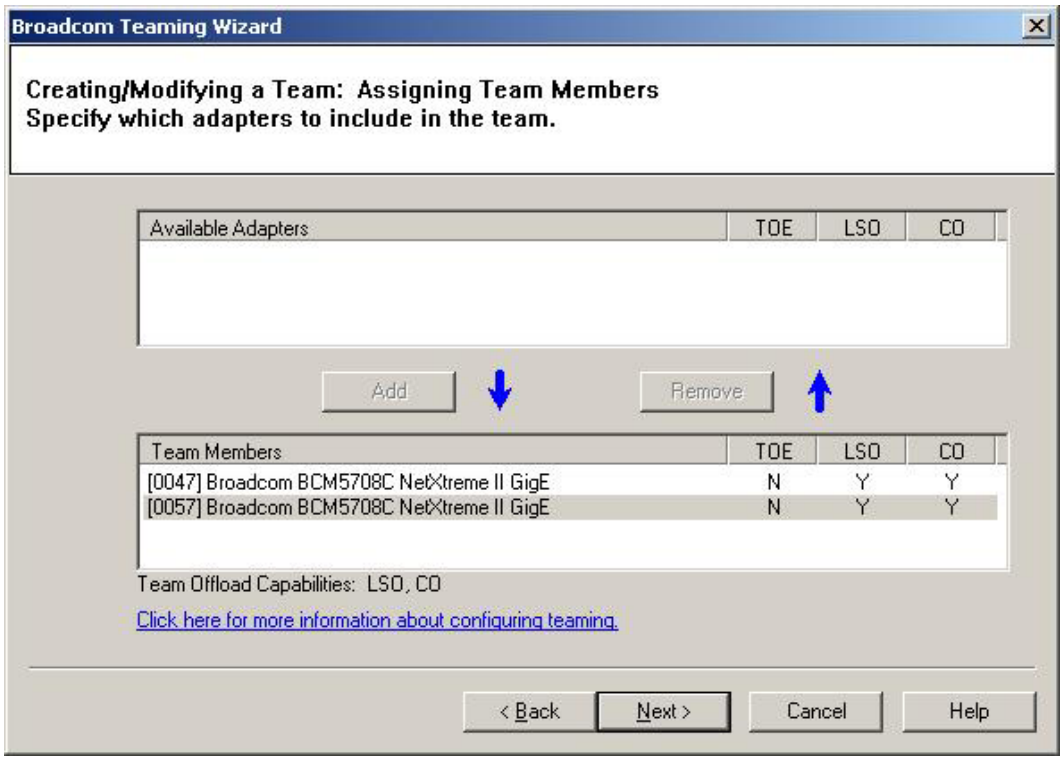


5. From the top menu bar, select **Tools > Configure a Team** to start the Broadcom Teaming Wizard.



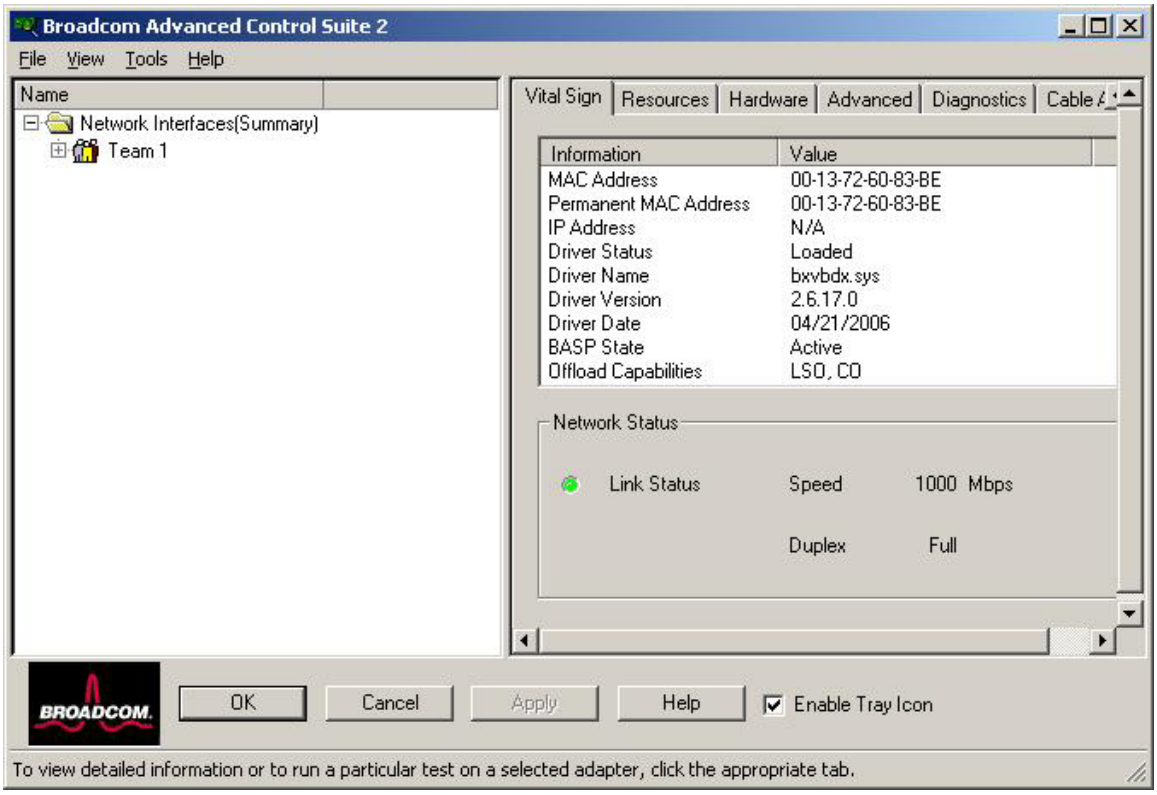
6. Click **Next** and follow the Wizard prompts:

   - Team name: **Team 1** (default)
   - Team type: **802.3ad Link Aggregation using Link Aggregation Control Protocol (LACP)**
   - Verify that the network switch is properly configured and connected to the server and click **OK**.
   - Move both NICs from **Available Adapters** to **Team Members**, as shown in the following window:

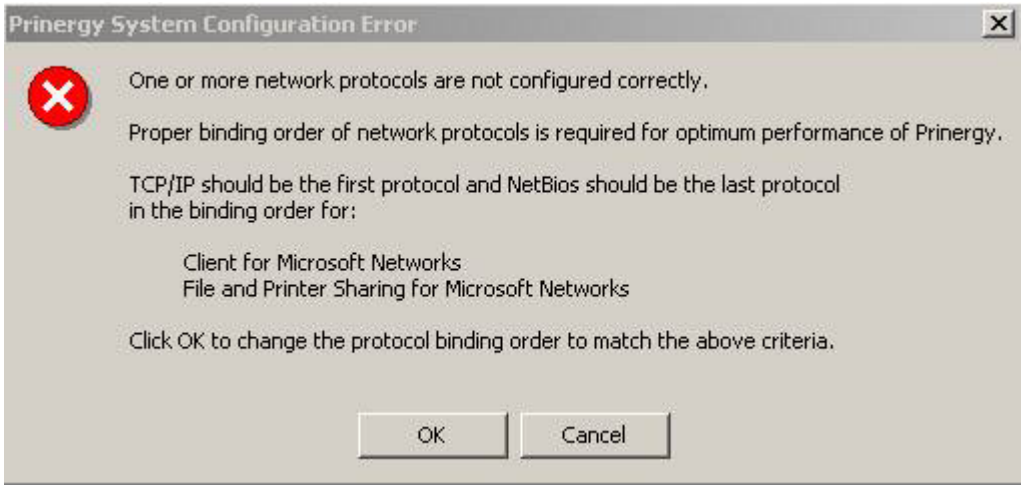


- When prompted to **Create a VLAN**, click **No**.
- Select **Commit changes and return to Broadcom Advanced Control Suite 2** and click **OK**.
- Verify that the network switch is properly configured and connected to the server and click **OK**.

7. The NIC team has been created and the Broadcom Advanced Control Suite 2 window changes:



8. If the server is a Prinergy primary or secondary (including render stations), on start-up Prinergy must set up the network protocols for the new (teamed) network adapter. When Prinergy System Configuration Error messages appear, as shown in the following example, click **OK** to continue and complete the process, and then restart the server.



About Kodak Graphic Communications Group (GCG)

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