LAN Driver / Teaming Driver
Installation Guide
(Broadcom v16.3/T7.4/BACS v16.3.6.0)

Contents

1. Preface

Thank you very much for purchasing our product.
This installation guide explains how to set up LAN Driver and Teaming Driver. Follow the instructions of this document.
BACS includes Teaming Driver. If you update BACS, Teaming Driver is also updated.

1.1. Target server

Refer to the URL below and check the target server.
http://www.58support.nec.co.jp/global/download/index.html
-> Click to model name(product name).
-> Click to "Express5800/100, SIGMABLADE Series LAN Driver (v16.3/T7.4/BACS v16.3.6.0)" in "Other update".

1.2. Target software/Optional LAN boards

The target software is the following.

Abbreviated designation	Software Production Name
Windows Server 2008 (32Bit)	Microsoft® Windows Server® 2008 Standard (32Bit) Microsoft® Windows Server® 2008 Enterprise (32Bit)
Windows Server 2008 (64Bit)	Microsoft® Windows Server® 2008 Standard (64Bit) Microsoft® Windows Server® 2008 Enterprise (64Bit)
Windows Server 2008 R2	Microsoft® Windows Server® 2008 R2 Standard Microsoft® Windows Server® 2008 R2 Enterprise

The target optional LAN boards is the following.

Model number	Production Name
N8104-128	10GBASE Adapter (SFP+/2ch)
N8104-132	Dual Port 1000BASE-T Adapter
N8104-133	Quad Port 1000BASE-T Adapter
N8104-134	1000BASE-T Adapter
N8104-135	Dual Port 1000BASE-T Riser Card
N8104-136	Dual Port 10GBASE-T Riser Card
N8104-137	Dual Port 10GBASE SFP+ Riser Card
N8104-138	1000BASE-T Adapter
N8104-141	Dual Port 1000BASE-T Riser Card
N8104-142	Dual Port 10GBASE SFP+ Riser Card
N8104-143	Dual Port 10GBASE-T Riser Card

* Above information is based on 2014/4.
Refer the Server Configuration Guide for the latest information.
The latest drivers, published on our Express5800 Support Website
* Refer to the Server Configuration Guide for correspondence Optional LAN Board.

1.3. Target version

Following BACS versions are recommended to apply this update module.
See [3 Confirmation of BACS version (P.7)] for how to check BACS version on your system.

Target version	Version after the update
12.6.13.0	16.3.6.0
15.0.30.0	
15.2.57.0	
15.5.7.0	
15.6.4.0	
15.6.28.0	
16.3.1.0	

1.4. Registration Trademark

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Broadcom, the pulse logo, Connecting everything, the Connecting everything logo, NetXtreme, Ethernet@Wirespeed, LiveLink™, and Smart Load Balancing™ are among the trademarks of Broadcom Corporation and/or its affiliates in the United States, certain other countries, and/or the EU.
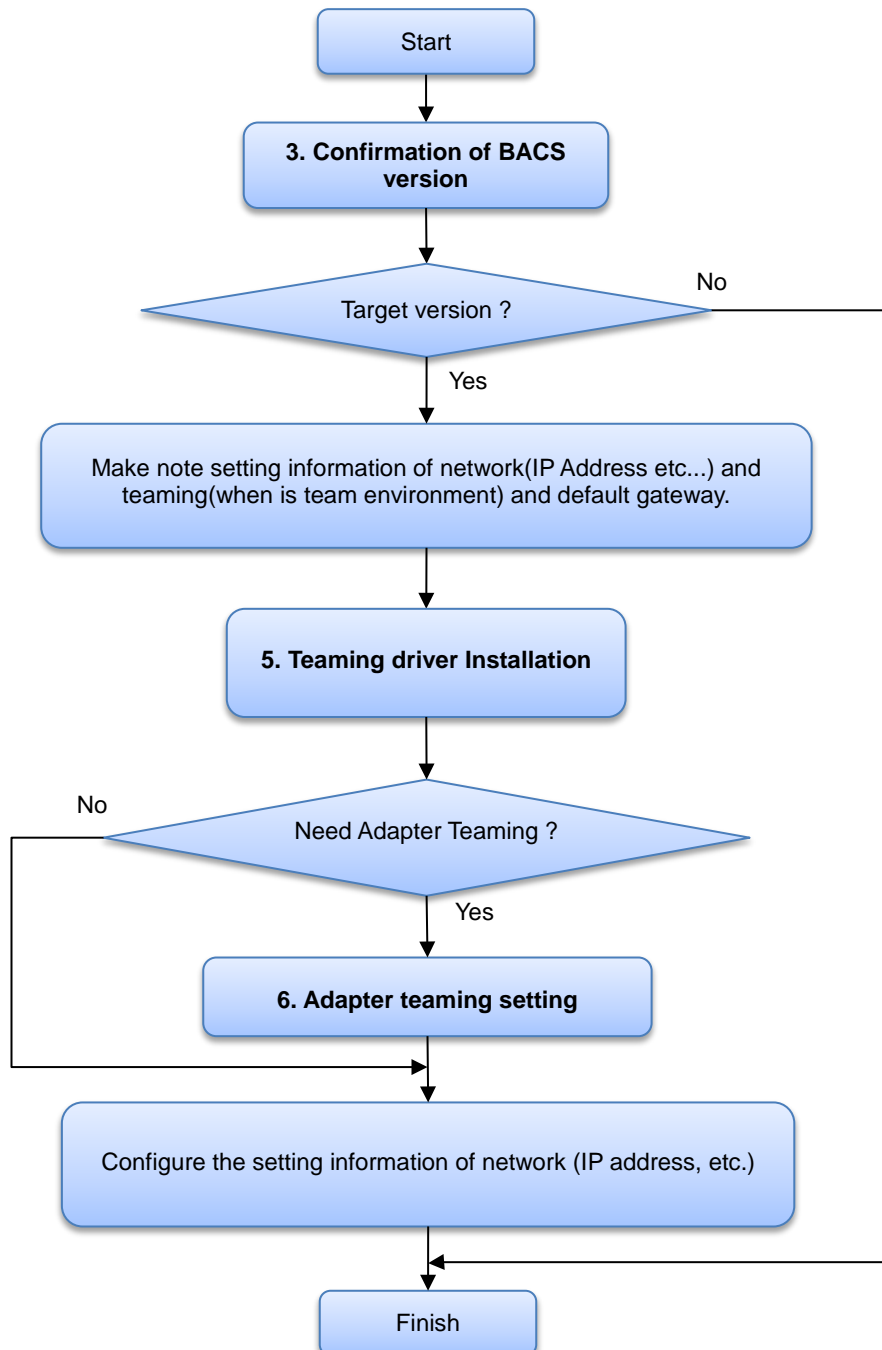* In addition, TM and a R mark are not specified in the text.
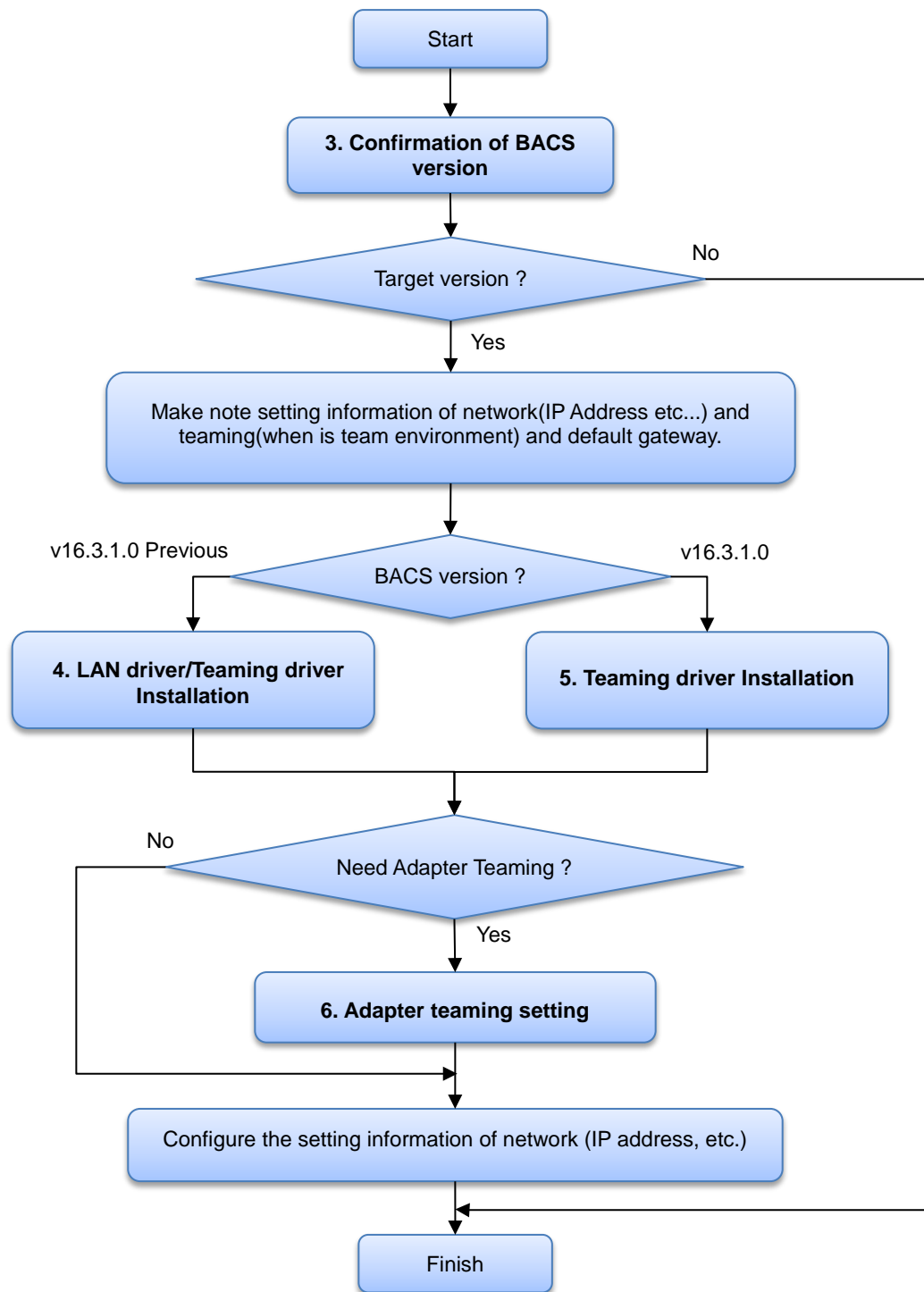
2. The flow of LAN driver installation process

The flow of LAN driver installation process.
The installation process is executed by the following flow.

- **Target server for Server Blades**

```
                            ┌─────────────┐
                            │    Start    │
                            └──────┬──────┘
                                   ↓
                       ┌───────────────────────┐
                       │  3. Confirmation of   │
                       │      BACS version     │
                       └───────────┬───────────┘
                                   ↓
                          ◇ Target version ?  ◇ ───── No ──────┐
                                   │                            │
                                  Yes                           │
                                   ↓                            │
              ┌───────────────────────────────────────┐        │
              │ Make note setting information of        │        │
              │ network(IP Address etc...) and          │        │
              │ teaming(when is team environment) and   │        │
              │ default gateway.                        │        │
              └───────────────────┬───────────────────┘        │
                                   ↓                            │
                       ┌───────────────────────┐                │
                       │ 5. Teaming driver      │                │
                       │    Installation        │                │
                       └───────────┬───────────┘                │
                                   ↓                            │
           No ───── ◇  Need Adapter Teaming ?  ◇                │
            │                      │                            │
            │                     Yes                           │
            │                      ↓                            │
            │          ┌───────────────────────┐                │
            │          │ 6. Adapter teaming     │                │
            │          │    setting             │                │
            │          └───────────┬───────────┘                │
            └──────────────────────┤                            │
                                   ↓                            │
              ┌───────────────────────────────────────┐        │
              │ Configure the setting information of    │        │
              │ network (IP address, etc.)              │        │
              └───────────────────┬───────────────────┘        │
                                   ↓←───────────────────────────┘
                            ┌─────────────┐
                            │   Finish    │
                            └─────────────┘
```

● **Target server other than Server Blades**

```
                        ┌──────────────┐
                        │    Start     │
                        └──────┬───────┘
                               │
                        ┌──────▼───────┐
                        │ 3. Confirmation of BACS │
                        │      version            │
                        └──────┬───────┘
                               │
                          ◇ Target version ?  ──── No ───┐
                               │ Yes                      │
                  ┌────────────▼──────────────┐           │
                  │ Make note setting information of      │
                  │ network(IP Address etc...) and        │
                  │ teaming(when is team environment)      │
                  │ and default gateway.                   │
                  └────────────┬──────────────┘           │
                               │                           │
        v16.3.1.0 Previous  ◇ BACS version ?  v16.3.1.0    │
              ┌──────────┘       └──────────┐              │
   ┌──────────▼─────────┐       ┌───────────▼──────────┐   │
   │ 4. LAN driver/     │       │ 5. Teaming driver    │   │
   │ Teaming driver     │       │ Installation         │   │
   │ Installation       │       │                      │   │
   └──────────┬─────────┘       └───────────┬──────────┘   │
              └────────────┬────────────────┘              │
                           │                               │
      No ──────────── ◇ Need Adapter Teaming ?             │
       │                   │ Yes                           │
       │         ┌─────────▼──────────┐                    │
       │         │ 6. Adapter teaming │                    │
       │         │ setting            │                    │
       │         └─────────┬──────────┘                    │
       └─────────┬─────────┘                               │
                 │                                         │
      ┌──────────▼─────────────────────┐                  │
      │ Configure the setting          │                  │
      │ information of network          │                  │
      │ (IP address, etc.)              │                  │
      └──────────┬─────────────────────┘                  │
                 └────────────┬──────────────◄────────────┘
                        ┌──────▼───────┐
                        │    Finish    │
                        └──────────────┘
```

3. Confirmation of BACS version

Check the BACS version by the procedure below.

Important	**Logon the system by administrator account for execute the operation below.**

1. Double-click the [Broadcom Control Suite 3] icon or [Broadcom Control Suite 4] icon on the Control Panel window.
   Broadcom Advanced Control Suite starts.

2. Select the menu of [Help] and check a version shown on the window.
   [Help] -> [About]
   or
   [Help] -> [About BACS]
   This version is BACS version. Following image is example of [Broadcom Advanced Control Suite 4].
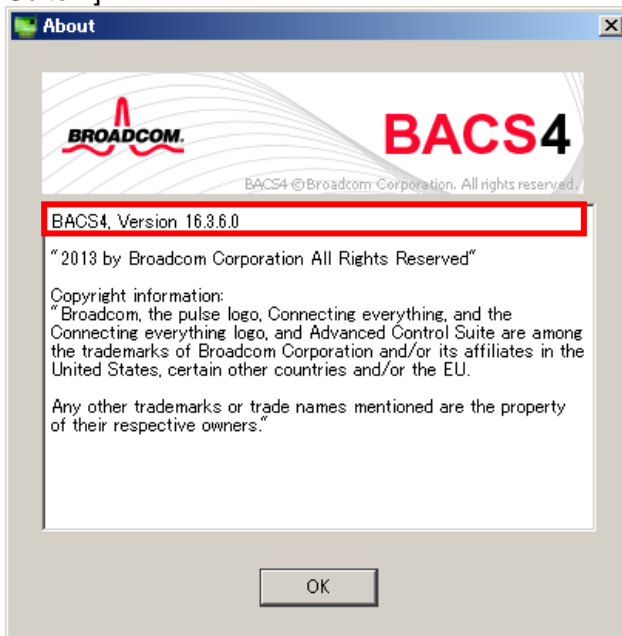
4. LAN driver/Teaming driver Installation

This section describes how to update LAN driver/Teaming driver.
See [7 Notice (P.33)] about notices of installing before starting installing.

Important	**Logon the system by administrator account for execute the operation below.**

4.1. Installation preparation

1. Refer to the URL below and Download the **421987-B01_xxxxxx.zip** (xxxxxx is an expression of arbitrary numbers).
   http://www.58support.nec.co.jp/global/download/index.html
   -> Click to model name(product name).
     -> Click to "Express5800/100, SIGMABLADE Series LAN Driver (v16.3/T7.4/BACS v16.3.6.0)" in "Other update".

2. Create a **temp** folder directly under the system drive.
   (e.g., **C:\temp**)

3. Unzip **421987-B01_xxxxxx.zip**, copy the **BCOM163** folder in the **temp** folder.
   (e.g., **C:\temp\BCOM163**)

4.2. Procedure for deleting existing team

This section describes how to delete existing team
Follow the instructions of this section.

Important	・Logon the system by administrator account for execute the operation below. ・Make note setting information of network(IP Address etc...) and teaming(when is team environment) and default gateway. ・If Hyper-V virtual adapter bound, remove the Hyper-V bound first before remove the team. ・If deleting team, you must operate on [Broadcom Advanced Control Suite 3] or [Broadcom Advanced Control Suite 4]. You must not operate on [Device Manager].

✓ **If using the BACS version 12.6.13.0**

1. Double-click the **Broadcom Control Suite 3** icon on the Control Panel window. **Broadcom Advanced Control Suite 3** starts.

2. Click Team Management from the left menu, right-click the team name under Teams, and then select Delete Team from the short-cut menu.
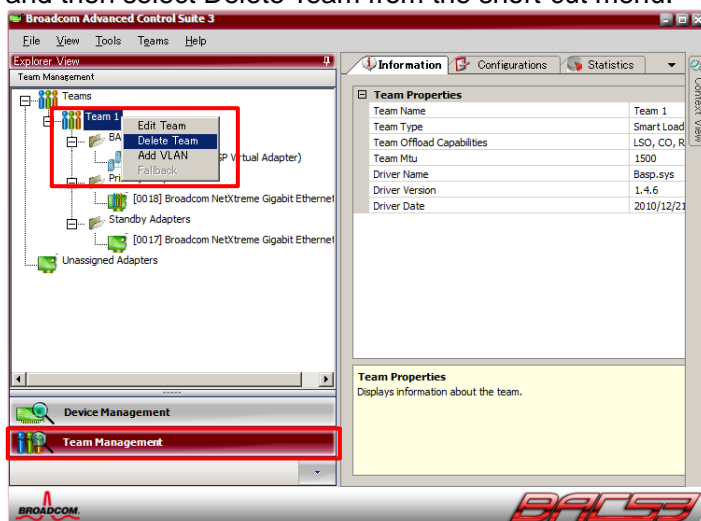
Note	When the message below appears, select [Yes]. "The selected team will be deleted from system. Do you want to proceed? NOTE: Applying the changes will temporarily interrupt the network connection. The process may take several minutes and the connection will resume afterwards."

3. Finish the **Broadcom Advanced Control Suite 3**.

✓ **If using other version of BACS**

1. Double-click the **Broadcom Control Suite 4** icon on the Control Panel window.
    Broadcom Advanced Control Suite 4 starts.

2. Set a **Filter** in a **TEAM VIEW**, right-click the adapter to be used for the team, and then
    select **Delete Team** from the short-cut menu.
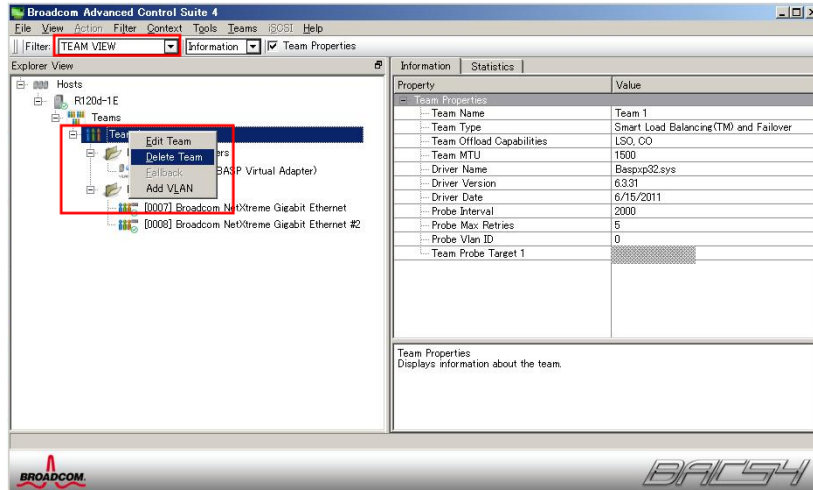
Note	When the message below appears, select [Yes]. "The selected team will be deleted from system. Do you want to proceed? NOTE: Applying the changes will temporarily interrupt the network connection. The process may take several minutes and the connection will resume afterwards."

3. Finish the **Broadcom Advanced Control Suite 4**.

4.3. Uninstall existing teaming driver

This section describes how to uninstall existing teaming driver.
Follow the instructions of this section.

Important	・ **Logon the system by administrator account for execute the operation below.** ・ **If teams exists, see [4.2 Procedure for deleting existing team (P.9)] and delete existing team before uninstalling existing teaming driver.**

1. Open [Program and Function].
   [Start] -> [Control Panel] -> [Program and Function]

2. Point to the "Broadcom Management Programs" in the list, right click and point to [Uninstall].
   Continue the installation according to the popup message.

3. Indicate the popup message for restart the system, and click [OK].

4. Execute an [4.4 Uninstall existing LAN driver (P.11)] without restarting the system.

4.4. Uninstall existing LAN driver

This section describes how to uninstall existing LAN driver.
Follow the instructions of this section.

Important	・ **Logon the system by administrator account for execute the operation below.** ・ **If you don't have the network configuration specification, memo the network configuration information(IP addresses etc…) before uninstalling existing LAN driver.** ・ **If you have been binding Hyper-V Virtual Switch, unbind the Hyper-V Virtual Switch before uninstalling existing LAN driver.**

1. Open [Program and Function] or [Add or Remove Programs].
   [Start] -> [Control Panel] -> [Program and Function]

2. Point to the " Broadcom Gigabit Integrated Controller " in the list, right click and point to [Uninstall].
   Continue the uninstallation according to the popup message.

3. Point to the " Broadcom NetXtreme II Driver Installer " in the list, right click and point to [Uninstall].
   Continue the uninstallation according to the popup message.

4. Indicate the popup message for restart the system, and click [Yes].
   Restart the system automatically.

4.5. Install new LAN driver/Teaming driver

This section describes how to install new LAN driver/Teaming driver.
Follow the instructions of this section.

Important	**Logon the system by administrator account for execute the operation below.**

1. Enter the following command at the command prompt, and then specify the drive letter of System Drive (usually C drive).
   (*Use the files prepared at [4.1 Installation preparation (P.8)].)

   ➢ Windows Server 2008 (32Bit)
      "cd C:\temp\BCOM163\LAN\WS2008x86\"

   ➢ Windows Server 2008 (64Bit)
      "cd C:\temp\BCOM163\LAN\WS2008x64\"

   ➢ Windows Server 2008 R2
      "cd C:\temp\BCOM163\LAN\WS2008R2\"

2. Enter the following, and then press <Enter> key.
   "INSTALL.bat"

3. When the following message appears, restart the system.

   Installation Completed!

4. Perform [3 Confirmation of BACS version (P.7)].
   And check that the BACS version is 16.3.6.0.

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4.6. Setting up LAN drivers
This section describes how to setup LAN driver parameters.

Important	・ **Logon the system by administrator account for execute the operation below.** ・ **After changing parameters of the LAN driver, restart the system.**

4.6.1. Setting up common
(1) Setting link speed

Important	・ **The transfer rate and duplex mode of the network adapter must be the same as those of the switching hub.** ・ **Using N8104-128/136/137/142/143 default speed duplex (10Gb Full), there is no problem using switch with [Autonegotiation] speed duplex.**

Follow the procedure below to specify the transfer rate and duplex mode.
1. Open the Device Manager.

2. Expand Network Adapters, and then double-click the name of the network adapter you want to set.
   The properties of the network adapter will be displayed.

3. Select the Advanced tab, and then set the Speed & Duplex values to the same as those of the switching hub.

4. Click [OK] in the Network Adapter Properties dialog box.

(2) Flow Control
   It is necessary to set the Flow Control parameter of the network adapter matching to the connected network equipment (switching hub etc.).
   Please set Flow Control parameter by the following procedures.

Note	Server Adapter and link partner must be configured by the same value. - Auto ： Autonegotiation *Only 10G network controller - Disabled ： Disabled - Rx & Tx Enabled ： Receive & Transmit Enabled - Rx Enabled ： Receive Enabled - Tx Enabled ： Transmit Enabled

1. Open [Control Panel].

2. Open [Administrative Tools] -> [Computer Management] -> [Device Manager].

3. Open [Device Manager] -> [Network Adapter] -> [the setting target adapter] and right click to open the [Properties].

4. Open [Advanced] tab and click [Flow Control] to show [Value].

5. The value can be configures by the down-arrow button.

(3) Jumbo Frame (Jumbo Packet, Jumbo Mtu)
    It is necessary to set the Jumbo Frame parameter of the network adapter matching to the connected network equipment (switching hub etc.).
    Please set Jumbo Packet parameter by the following procedures.

Important	・ **If N8104-128/134 Flow Control is configure to not Disabled, NEC recommends the following value, N8104-128, less than 4000byte , N8104-134, less than 7000byte.** ・ **Set all Jumbo Frame to the same value to all adapters that composes the team.**

1. Open [Control Panel].

2. Open [Administrative Tools] -> [Computer Management] -> [Device Manager].

3. Open [Device Manager] -> [Network Adapter] -> [the setting target adapter] and right click to open the [Properties].

4. Open [Advanced] tab and click [Jumbo Packet] or [Jumbo Mtu] to show [Value].

5. Change the value by the up-arrow button or down-arrow button. And click [OK].

4.6.2. Setting up Optional LAN boards
This section describes setting procedures needed on each LAN boards.

(1) Using N8104-128
   Using N8104-128 with the server, iSCSI Offload Engine must be disabled.
   Follow the procedure below to set it.

1. Double-click the **Broadcom Control Suite 4** icon on the Control Panel window.
   Broadcom Advanced Control Suite 4 starts.

2. Set **Filter** to **ALL VIEW**, select **Broadcom BCM57711 NetXtreme II 10 GigE # xx** under
   Explorer View the **Adapter xx (BCM57711 xx) - Port x**.

3. Tab on **Configurations** at the right side screen and then expand **Resource
   Reservations**.

4. Click the [Configure] button on the **Click the button to configure**.
   The **Hardware and Resource Configuration Wizard** appears.

5. Remove a checkmark from [iSCSI] under **Protocols**, if checked.
   Select [Next], and then click the [Apply] button.

6. When the following message appears, click [OK].

   > Applying the changes will temporarily interrupt the network connection.
   > The process may take several minutes and the connection will resume
   > afterwards.
   > Do you want to continue?

7. Complete steps 2 to 6 for each N8104-128 network adapter.
   Then, close the **Broadcom Advanced Control Suite 4**.

(2) Using N8104-132/133/135/138/141
This following procedure execution is indispensable when using N8104-132/133/135/138/141 or when the following conditions are fulfilled.

- ✓ Added the optional LAN boards.
- ✓ Changed the mounting position of the optional LAN boards.
- ✓ Replaced the optional LAN boards.

1. Replaced the optional LAN boards.
   (*Use the files prepared at [4.1 Installation preparation (P.8)].)

   ➢ Windows Server 2008 (32Bit)
      C:\temp\BCOM162\LAN\WS2008x86\lan\pgdyavd_Disable.vbs

   ➢ Windows Server 2008 (64Bit)
      C:\temp\BCOM162\LAN\WS2008x64\lan\pgdyavd_Disable.vbs

   ➢ Windows Server 2008 R2
      C:\temp\BCOM162\LAN\WS2008R2\lan\pgdyavd_Disable.vbs

2. When the following message appears, click [OK].

Configuration Completed [Option:PopUp RLV Disabled(Action:Done)] Reboot the system

Tips	If it shows Action:Non is already set.

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5. Teaming driver Installation

This section describes how to update Teaming driver only.
See [7 Notice (P.33)] about notices of updating.

Important	**Logon the system by administrator account for execute the operation below.**

Note	-Target server for Server Blades Follow the instructions of this section. -Target server other than Server Blades If you have been using BACS version 16.3.10 on your system, follow the instructions of this section. If you have been using other version of BACS, follow the instructions of [4 LAN driver/Teaming driver Installation (P.8)] for updating both LAN driver and Teaming driver.

5.1. Installation preparation

1. Refer to the URL below and Download the **421987-B01_xxxxxx.zip** (xxxxxx is an expression of arbitrary numbers).
   http://www.58support.nec.co.jp/global/download/index.html
      -> Click to model name(product name).
        -> Click to "Express5800/100, SIGMABLADE Series LAN Driver (v16.3/T7.4/BACS v16.3.6.0)" in "Other update".

2. Create a **temp** folder directly under the system drive.
   (e.g., **C:\temp**)

3. Unzip **421987-B01_xxxxxx.zip**, copy the **BACS1636** folder in the **temp** folder.
   (e.g., **C:\temp\BACS1636**)

5.2. Procedure for deleting existing team

This section describes how to delete existing team.
Follow the instructions of this section.

<table>
<tr><td>Important</td><td>・ Logon the system by administrator account for execute the operation below.
・ Make note setting information of network(IP Address etc...) and teaming(when is team environment) and default gateway.
・ If Hyper-V virtual adapter bound, remove the Hyper-V bound first before remove the team.
・ If deleting team, you must operate on [Broadcom Advanced Control Suite 4]. You must not operate on [Device Manager].</td></tr>
</table>

1. Double-click the **Broadcom Control Suite 4** icon on the Control Panel window.
   Broadcom Advanced Control Suite 4 starts.

2. Set a **Filter** in a **TEAM VIEW**, right-click the adapter to be used for the team, and then select **Delete Team** from the short-cut menu.

<table>
<tr><td>Note</td><td>When the message below appears, select [Yes].
"The selected team will be deleted from system. Do you want to proceed?
 NOTE: Applying the changes will temporarily interrupt the network connection.
The process may take several minutes and the connection will resume afterwards."</td></tr>
</table>

3. Finish the **Broadcom Advanced Control Suite 4**.

5.3. Uninstall existing teaming driver

This section describes how to uninstall existing teaming driver.
Follow the instructions of this section.

Important	・**Logon the system by administrator account for execute the operation below.** ・**If teams exists, see [5.2 Procedure for deleting existing team (P.18)] and delete existing team before uninstalling existing teaming driver.**

1. Open [Program and Function].
   [Start] -> [Control Panel] -> [Program and Function]

2. Point to the "Broadcom Management Programs" in the list, right click and point to [Uninstall].
   Continue the installation according to the popup message.

3. Indicate the popup message for restart the system, and click [OK].

4. Restart the system.

5.4. Install new Teaming driver

This section describes how to install new Teaming driver.
Follow the instructions of this section.

Important	**Logon the system by administrator account for execute the operation below.**

1. Enter the following command at the command prompt, and then specify the drive letter of System Drive (usually C drive).
    (*Use the files prepared at [5.1 Installation preparation (P.17)].)

    ➢ Windows Server 2008 (32Bit)
       "cd C:\temp\BACS1636\LAN\WS2008x86\"

    ➢ Windows Server 2008 (64Bit)
       "cd C:\temp\BACS1636\LAN\WS2008x64\"

    ➢ Windows Server 2008 R2
       "cd C:\temp\BACS1636\LAN\WS2008R2\"

2. Enter the following, and then press <Enter> key.
    "INSTALL.bat"

3. When the following message appears, restart the system.

Installation Completed!

4. Perform [3 Confirmation of BACS version (P.7)].
    And check that the BACS version is 16.3.6.0.

6. Adapter teaming setting

This section describes setting procedures about adapter teaming.
Follow the instructions of this section.

Important	・ **Logon the system by administrator account for execute the operation below.**
	・ **When using Smart Load Balancing and Failover (without Standby Member), be sure to setup LiveLink at creation of team.**
	  When using Smart Load Balancing and Failover (with Standby Member), setup for LiveLink is not essential.
	・ **For remove an adapter teaming, refer to [6.4 Procedure for deleting team (P.31)]. Please verify the following notification for remove an adapters teaming.**
	  - **Once an adapter teaming is configured, before replace Mother board or optional LAN boards, removed the adapter teaming first.**
	  - **If team existed, remove the team first. And if Hyper-V virtual adapter bound, remove the Hyper-V bound first before remove the team.**
	・ **Be sure to specify the same Jumbo Mtu (Jumbo Packet) setting to all the adapters that compose a team.**
	・ **Do not configure the Teaming on Adapter which using iSCSI function.**

6.1. About Team Type

You can create three types of load balance teams:

> **Smart Load Balance and Failover (Without standby adapter)**
> **All adapters composes in this team will participates to the communication.**
> **When interference is generated, other adapters that compose the team will continue communicating.**
> **When the adapter that has caused interference recovers, it returns to the team, and it participates in the communication again.**

> **Smart Load Balancing (Auto-Fallback Disable) (With standby adapters)**
> **All adapters composes in this team accept standby member will participates to the communication.**
> **When interference is generated, standby members that compose the team will continue communicating.**
> **When the adapter that has caused interference recovers, it returns to the team, and continue with standby status.**

> **FEC/GEC Generic Trunking**
> **The combination of multiple adapters into a single channel to provide greater bandwidth.**

Important	・ **LiveLink is not available for this team mode.** ・ **FEC/GEC modes requires switch support.**

6.2. About LiveLink

LiveLink is a feature of BASP (Broadcom Advanced Server Program, BASP is the Broadcom teaming software for the Windows family of operating systems.) that is available only for the Smart Load Balancing type of teaming. The purpose of LiveLink is to detect link loss beyond the switch and to route traffic only through team members that have a LiveLink. This function is accomplished though the teaming software. The teaming software periodically probes (issues a link packet from each team member) one or more specified target network device(s). The probe target(s) responds when it receives the link packet. If a team member does not detect the response within a specified amount of time, this indicates that the link has been lost, and the teaming software discontinues passing traffic through that team member. Later, if that team member begins to detect a response from a probe target, this indicates that the link has been restored, and the teaming software automatically resumes passing traffic through that team member. LiveLink works only with TCP/IP

6.3. Setting up team

Important	For available combination of LAN port, see the Installation guide attached to each server.

Tips	To edit a team, right-click on the BACS team, and then select Edit Team. Then refer to step 3 to edit the team.

1. Double-click the **Broadcom Control Suite 4** icon on the Control Panel window.
   Broadcom Advanced Control Suite 4 starts.

2. Set a **Filter** in a **TEAM VIEW**, right-click the adapter to be used for the team, and then select
   [**Create a Team**] from the short-cut menu.
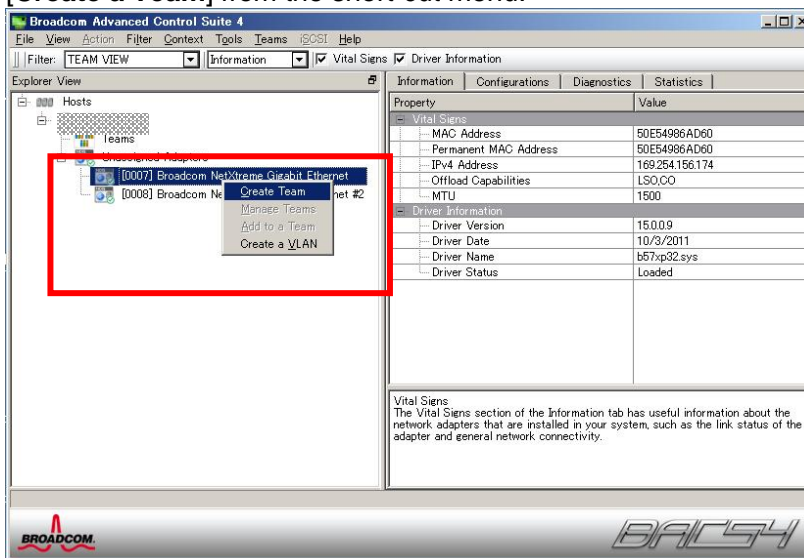
The **Broadcom Teaming wizard** appears.

3. Click [Next].
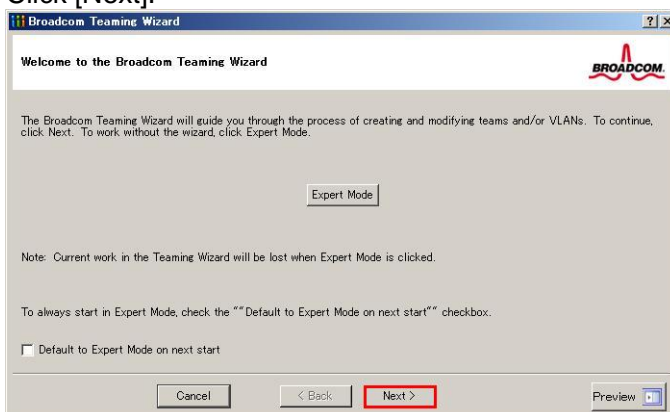
Important	Do not use Expert Mode for non-support.

4. Enter any name into the team name entry column, and then click [Next].

5. Team Type select the type of team you want to create, and then click [Next].

Note	・When the **FEC/GEC Generic Trunking selected**. 　The following message will appears, select [OK]. 　"Verify that the network switch connected to the team members is configured correctly 　for the team type." ・When using Hyper-V, check to "Enable HyperV Mode".

6. Select the adapters that compose the team, click [Add] to add them to the **Team Members** area, and then click [Next].

Note	When selecting **FEC/GEC Generic Trunking,** skip to step 15.

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7. Proceed according to your desired team type.
   ● **Smart Load Balancing and Failover(without Standby Member)**
      I. Select **Do not configure a standby member**.
      II. Click [Next].
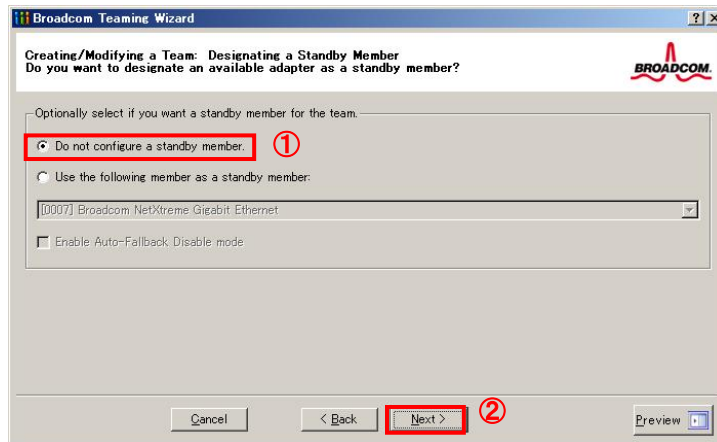
   ● **Smart Load Balancing (Auto-Fallback Disable)(with Standby Member)**
      I. Select **Use the following member as a standby member**.
      II. Select the adapter that is to be a standby member from the drop-down list.
      III. Select **Enable Auto-Fallback Disable mode**.
      IV. Click [NEXT].
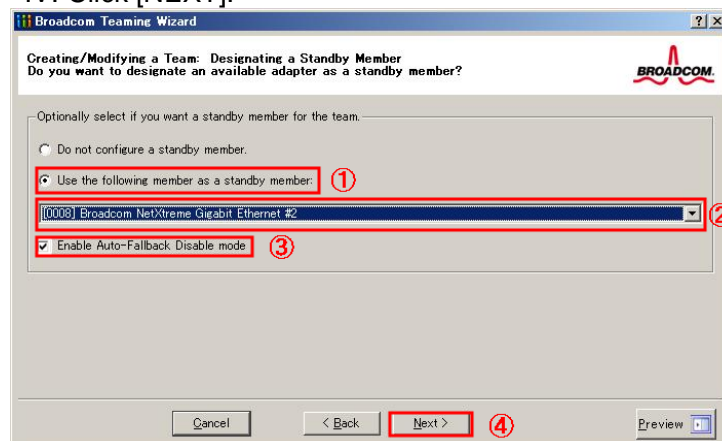
| Important | ・ **Enable Auto-Fallback Disable mode is cleared while editing the team. Select it again.**
・ **Always select the Enable Auto-Failback Disable mode.** |

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8. When configure LiveLink, select **Yes** and click [Next] and go to step 9.
   When LiveLink is unnecessary, select **No** and click [Next] and then go to step 15.
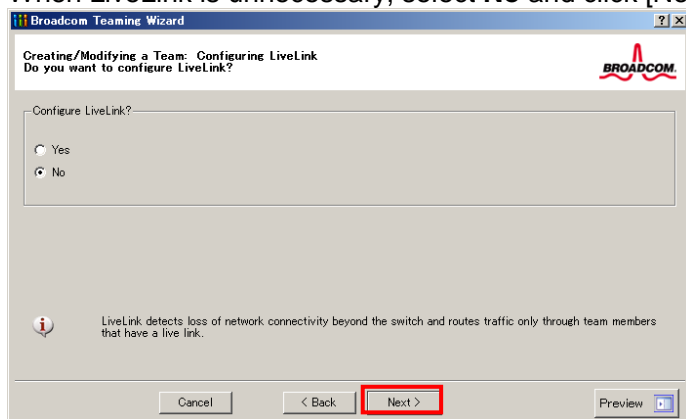
9. You can use the default setting for **Probe interval** and **Probe maximum retries**. If you change these values, select a value from each drop-down list, click the target probe (**Probe Target *xx***), and then click [Edit Target IP Address…].
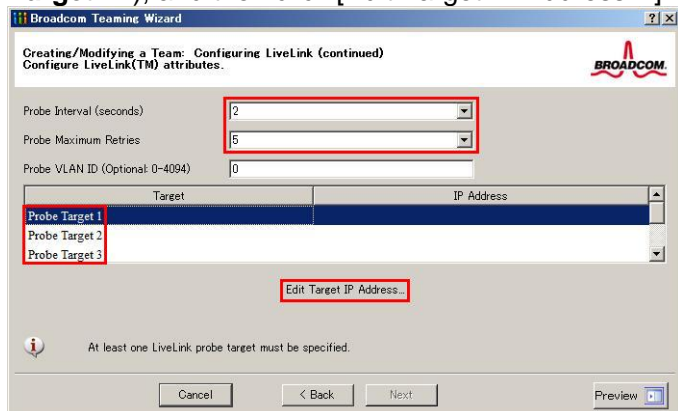
Tips	・The setting range of Probe interval (link packet transmission interval) is 1 to 60(units: seconds). ・The setting range of Probe maximum retries (link packet retry count) is 1 to 10(times). ・Switching a path upon detection of a communication path error by LiveLink takes (Probe maximum retries + 1) x Probe interval (seconds) at maximum. If detects that a link is down, failover occurs immediately after the link goes down. It takes the time specified for Probe interval (seconds) to recover from the link going down. ・When using Tagged VLAN, input VLAN ID to "Probe VLAN ID".

10. In the **Target *xx*** text box, enter the IP address of the alive monitoring server, and then click [OK].
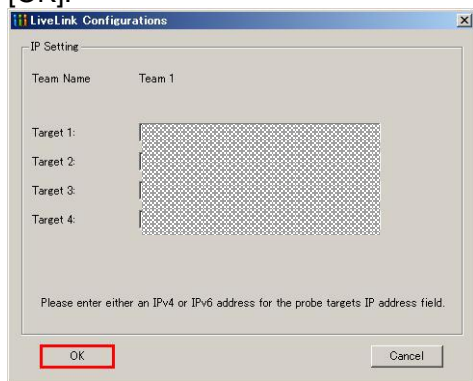
	Important	・ **Target xx must be the same broadcast domain as that specified for the data communication IP and LiveLink communication IP (described in step 13). Specify an IP address that exists on the network and with which communication is possible.** ・ **If communication with the IP address specified in Target xx is not possible, the team will also be unable to communicate. It is therefore recommended that you specify multiple IP addresses using Probe Target. Up to four IP addresses can be specified.**

11. Click [Next].
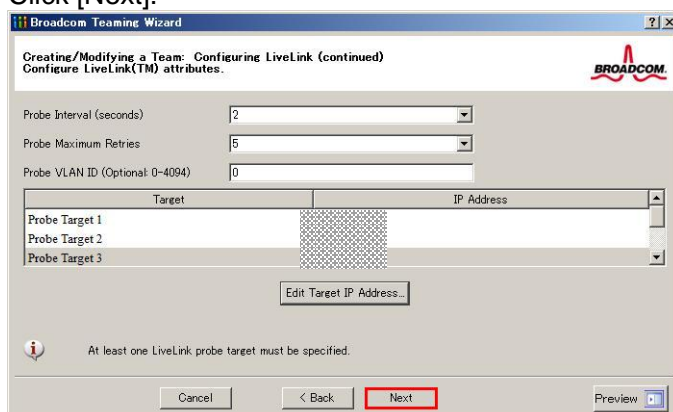
12. Select an adapter from the **Team Members** area, and then click [Edit Member IP Address…].

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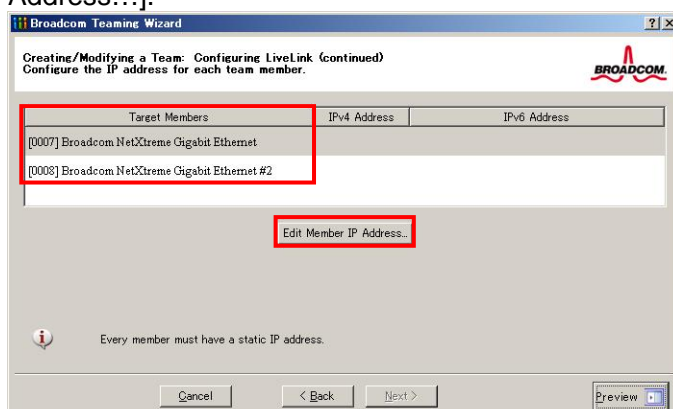
13. Enter the IP address used for LiveLink communication, and then click [OK].
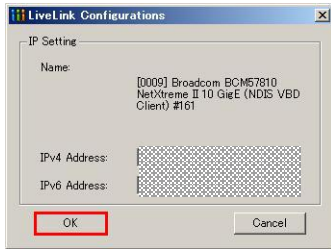
Important	・**Be sure to specify an IP address for LiveLink communication for all the adapters that compose the team. The address specified here is the IP address for LiveLink communication. Specify a different IP address for data communication.** ・**For Target xx, specify an IP address that is unique on the network and with which communication is possible.**

14. Click [Next].
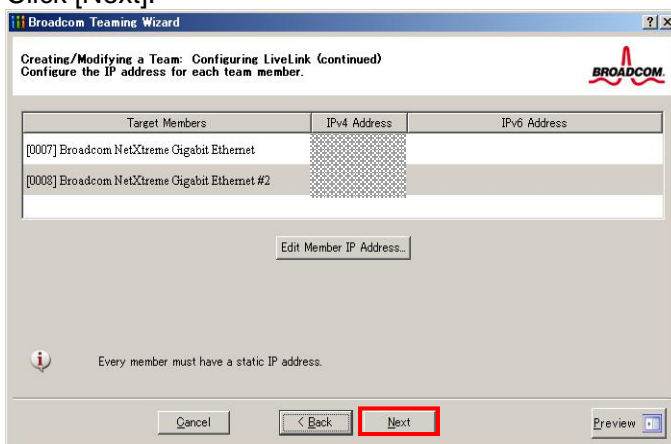
15. Make sure that **Skip manage VLAN** is selected under **Manage VLAN**, and then click [Next]. It is an example of if you do not want to use the **VLAN**.

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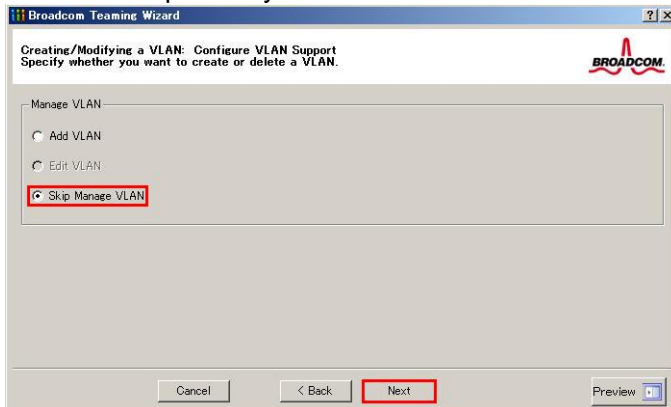
16. Make sure that **Commit changes to system and Exit the wizard** is selected under **Commit changes**, and then click [Finish].
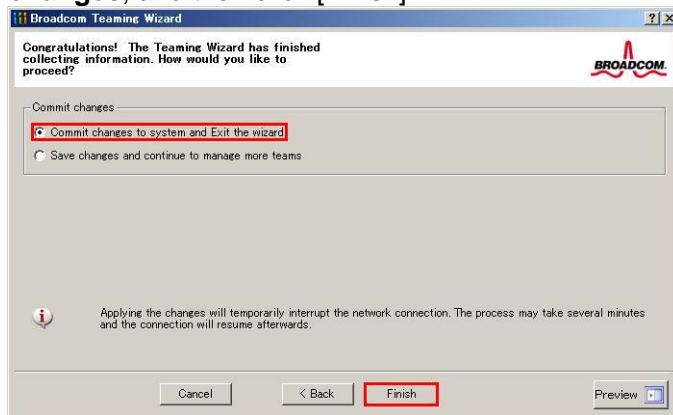
Note	When the message below appears, select [Yes]. "Applying the changes will temporarily interrupt the network connection. The process may take several minutes and the connection will resume afterwards. Do you want to continue?"
Tips	After creating a team, if the teaming adapter displays like the following image, perform steps 8 through 14 again and correct the LiveLink settings. There will displayed as the following when all network adapter which configure team link down. Please confirm the adapter is link up.
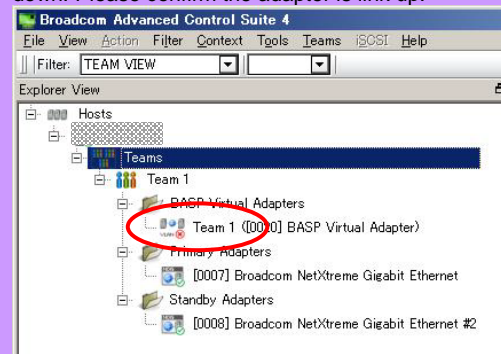
17. Restart the system.

18. After the system starts, follow step 1 to start **Broadcom Control Suite**(Double-click the [Broadcom Control Suite] from [Control Panel]) and confirm that a team has been created. Confirm the team settings on the **Information** window to the right.

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● **Smart Load Balancing and Failover(without Standby Member)**

● **Smart Load Balancing (Auto-Fallback Disable)(with Standby Member)**

● **FEC/GEC Generic Trunking**

19. Refer the network configuration specification or your memo, set the network configuration to the teaming adapter.

20. If you have been binding Hyper-V Virtual Switch before updating, bind the Hyper-V Virtual Switch to teaming adapter.
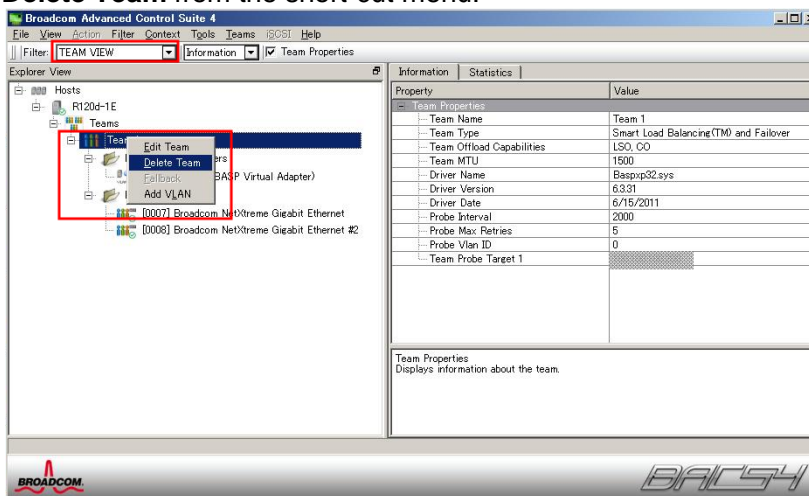
6.4. Procedure for deleting team

This section describes how to delete team.
Follow the instructions of this section.

Important	・ **Logon the system by administrator account for execute the operation below.** ・ **Make note setting information of network(IP Address etc...) and teaming(when is team environment) and default gateway.** ・ **If Hyper-V virtual adapter bound, remove the Hyper-V bound first before remove the team.** ・ **If deleting team, you must operate on [Broadcom Advanced Control Suite 4]. You must not operate on [Device Manager].**

1. Double-click the **Broadcom Control Suite 4** icon on the Control Panel window.
   Broadcom Advanced Control Suite 4 starts.

2. Set a **Filter** in a **TEAM VIEW**, right-click the adapter to be used for the team, and then select **Delete Team** from the short-cut menu.

Note	When the message below appears, select [Yes]. "The selected team will be deleted from system. Do you want to proceed? NOTE: Applying the changes will temporarily interrupt the network connection. The process may take several minutes and the connection will resume afterwards."

3. Double-click to the following file.
   (*Use the files prepared at [4.1 Installation preparation (P.8)] or [5.1 Installation preparation (P.17)].)

   ➢ Windows Server 2008 (32Bit)
     C:\temp\xxxxxx\LAN\WS2008x86\lan\AddLVlanStats.vbs

   ➢ Windows Server 2008 (64Bit)
     C:\temp\xxxxxx \LAN\WS2008x64\lan\AddLVlanStats.vbs

   ➢ Windows Server 2008 R2
     C:\temp\xxxxxx\LAN\WS2008R2\lan\AddLVlanStats.vbs

   ※**xxxxxx** is 「BCOM163」 or 「BACS1636」

4. When the following message appears, click [OK].

Registry Addition Completed, Reboot the system

5. Finish the **Broadcom Advanced Control Suite 4** and restart the system.

7. Notice

This section describes notice of LAN driver. Read the following notes or information before installing.

7.1. About the operation by remote desktop

To Operation that has been described to this document, log on to the system from a local console using an administrator account.
Remotely changing the settings by using the operating system's remote desktop feature is not supported.

7.2. About the figure affixed to the end of the adapter name

The figure affixed to the end of the adapter name might be displayed by a large figure of two digits or more. There is no problem in the quality and operation as the network communication.

Example : Broadcom BCM57711 NetXtreme II 10 GigE (NDIS VBD Client) #54
          Broadcom BCM57810 NetXtreme II 10 GigE (NDIS VBD Client) #297

7.3. Windows Server 2008 R2 Error Log

If install the LAN driver to the N8104-134.
The following log may be registered.
This error does not affect system operation.

Source	l2nd
Type	Error
ID	24
Description	Broadcom BCM5709C: Network controller failed to exchange interface with the bus driver.

7.4. Windows Server 2008 (32Bit)/(64Bit) Error Log

The following error log occurs in Windows Server 2008(32BIT/64BIT) Service Pack1, SNP enabled.
This error does not affect system operation.
Update to Service Pack2 when using SNP.

Source	ebdrv
Type	Error
ID	15
Description	um_bdrv.c xxxx (chain_cnt >= pdev->interrupt_info.dynamic_affinity_rss_chain_cnt) : An assertion happened. Please note provider of this module.

7.5. Communication performance of an optional LAN board is degraded

If the setting of Flow Control of the N8104-128/134 is not Disabled,
NEC recommends that below setting,
N8104-128 is less 4000byte than the value of the (Jumbo Frame),
N8104-134 is less 7000byte than the value of the (Jumbo Frame).

7.6. About Wake On LAN (WOL)

Wake On LAN (WOL) is only supported on standard network adapters.