

# Windows Server® 2019

## NIC Teaming (LBFO) Setup Guide

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## Introduction

This document provides for setup information of Windows Server 2019 NIC Teaming on Express5800 Series servers.

### Latest editions

This document was created based on the information available at the time of its creation. The screen images, messages and procedures may differ from the actual screens, messages and procedures. Substitute as appropriate when content has been modified.

The most recent version of this document, as well as other related documents, is also available for download from the following website.

<http://www.58support.nec.co.jp/global/download/w2019/index.html>

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## Setup of Windows Server 2019 NIC Teaming (LBFO)

Set up the network adapter teaming feature as shown below.

### ■ Launching the NIC teaming setup tool

1. Launch Server Manager.
2. Select **Local Server**.
3. In the Properties window, click **Enable** or **Disable** for **NIC teaming**.  
The NIC teaming setup tool will launch.

**NOTE** : The NIC teaming setup tool can also be launched by opening the **Run** dialog box, typing <lbfoadmin /server .>, and then pressing the <Enter> key.

### ■ Creating a team

Create a team by using the NIC teaming setup tool.

1. In the **Servers** section, select the name of the server to set up.  
If there is only one server connected, the name of the server is selected automatically.
2. In the **Teams** section, under **Tasks**, select **New Team**. The **New Team** wizard then starts.
3. Type the name of the team to create, and then select the network adapter to include in the team from the **Member adapters** list.
4. Click **Additional properties**.
5. Specify the required settings, and then click **OK**.

#### Teaming mode

Static Teaming	Configures static aggregation between the NIC and switches.
Switch Independent	Configures teaming on the NIC side without depending on the switch settings.
LACP	Configures dynamic aggregation between the NIC and switches.

#### Load balancing mode

Address Hash	Distributes the load based on IP addresses and port numbers.
Hyper-V Port	Distributes the load to each of the virtual switch ports used by the virtual machines.
Dynamic	<ul style="list-style-type: none"><li>● Distributes the load based on IP addresses and port numbers in sending.</li><li>● Distributes the load same to "Hyper-V Port" in receiving.</li></ul>

#### Standby adapter

Select one adapter to be set to standby mode from the adapters in the team.

Setting all adapters to active mode is also possible.

#### Primary team interface

Any VLAN ID can be specified for the primary team interface.

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## ■ Removing a team

Remove a team by using the NIC teaming setup tool.

1. In the **Servers** section, select the name of the server to set up.  
If there is only one server connected, the name of the server is selected automatically.
2. In the **Teams** section, select the team to remove.
3. In the **Teams** section, under **Tasks**, select **Delete**.
4. The message box to confirm appears, then click **Delete team**.

## ■ Notes and restrictions

- NIC teaming on a guest OS is not supported.
- Teaming of Virtual NICs on the host OS is not supported in the Hyper-V environment.
- When STP (Spanning Tree Protocol) is enabled on network switch ports to which network adapters of the team are connected, network communications may be disrupted. Disable STP, or configure "PortFast" or "EdgePort" to the ports.  
\* About setting the network switch of the connection destination, see the manual of the network switch.
- All NICs in a team must connect to the same subnet through a network switch.
- Teaming of different speed NICs is not supported.
- Teaming of different vendor's NICs is not supported.
- When teaming is configured in a Network Load Balancing(NLB) environment, you should select multicast mode on the NLB cluster.
- When a team is removed, the following error message may be logged in the system event log. You can safely ignore this error message.

Level	Error
Source	Microsoft-Windows-NDIS
Event ID	10317
Task Category	PnP
Description	Miniport Microsoft Network Adapter Multiplexor Driver, {xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx}, had event Network Interface deleted while PNP Device still exists. Note that this event is provided for informational purpose and might not be an error always (Eg: In case of vSwitch which was recently un-installed or a LBFO team was removed)

- In a Windows Server Failover Cluster environment, heartbeat interruption or failover may occur if you configure Active-Standby teaming. To avoid this, you should configure multiple NICs in Active Mode in a team so that all the NICs do not fail simultaneously.

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- In a Hyper-V environment, the following warning message may appear when a teaming adapter is bound to a virtual switch.

There is no problem for the operation unless this message is output multiple times at one time.

Level	Warning
Source	Microsoft-Windows-MsLbfoSysEvtProvider
Event ID	16945
Description	MAC conflict: A port on the virtual switch has the same MAC as one of the underlying team members on Team Nic Microsoft Network Adapter Multiplexor Driver

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**Document Revision History**

Date	Revision No.	Notes
Feb 28, 2019	1	The first edition