

Teaming Function for Intel NIC

User's Guide



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Chapter 1 Overview

1.1 Express teaming

Express teaming is a quick way to group all of the ports on a multi-port adapter into a Receive Load Balancing (RLB) team. It will team all ports on the adapter.

1.2 Advanced Network Services (ANS) Teaming

Advanced Network Services (ANS) Teaming, a feature of the Advanced Network Services component, lets you take advantage of multiple adapters in a system by grouping them together. ANS teaming can use features like fault tolerance and load balancing to increase throughput and reliability.



Chapter 2 Environment Preparation

2.1 Installing Intel Network Drivers and PROSet utility

1. Launch **Intel PRO Network Connections** software installation guide, and then select **Install Drivers**.



2. While installing driver, select **Install: Drivers, Intel PROSet and Advanced Network Services**.

Setup Options	(intol)
Select the program features you want installed.	Interv
Install:	
C Drivers only	
C Drivers and Intel(R) PROSet for Windows* Device Manage	er
• Drivers, Intel PROSet, and <u>A</u> dvanced Network Services	
Feature Description - Drivers for all wired Intel PRO Network Connections	
- Custom device property pages and diagnostics	
 Advanced Network Services software for teaming and V 	LANs



Chapter 3 Setting up Teaming

3.1 Express Teaming

Express Teaming can be found on the Teaming tab of NIC's property in Windows Device Manager. To create an express team, select **Express: Team all ports on this adapter** in **Teaming** tab:



When an Express Team is created, only the initiator port remains visible. All other member ports are hidden.



Note: Do not uninstall an Express Team by right-clicking on it in device manager. Uninstall Express Teams only through adapter properties.



3.2 Advanced Network Services Teaming

1. To create a advanced network services team, select **Team with other adapters** in **Teaming** tab:

📕 Device Manager 1	intel(R) PRO/10	00 EB Netw	ork Connection	with I/O Acce	elerati <mark>? ×</mark>	-OX
<u>File Action View</u>	Driver	Details	Resources	Power M	anagement	
$\leftarrow \rightarrow \mathbb{R} \mathbb{C}$	General	Link	Advanced	Teaming	VLANs	
ASUS-110Y5KRi Computer Disk drives Display ada DVD/CD-RC Floppy disk Human Inte	Teaming option	Adapter Te ns: team this ada : Team all po	eaming apter orts on this adapter			*
DE ATA/A	• Team w	ith other ada	pters			
⊕	Team		\searrow	<u>N</u> ew Te	eam	
⊡	No tea	ıms available	Ŧ	Eroper	ties	
== Intel(R] == Intel(R]	Team with oth	ner adapters				
⊕ ♥ Ports (COM ⊕ ♥ Processors ⊕ ♥ SCSI and R	Allows you t increased ba	o group two andwidth and ormation, see	to eight adapter po d/or fault tolerance. e the ANS Teaming	orts together for Overview.	. 🖻	
⊕					-	
🕀 🖨 Universal S	- X-					
			[OK	Cancel	

2. Specify a name for the team:

New Team Wizard		×
	Welcome to the Intel(R) PRO Adapter New Team Wizard	
196	Specify a name for the team:	
	Advanced Networking Services (ANS) team names are limited to 48 characters. Team names must be unique within the system.	*
	The team name can be changed after the team is created by using the Modify button on the Setting tab of the team properties dialog.	
		7
	< <u>B</u> ack <u>N</u> ext > Cance	



3. Select the adapter to be included in the team:

New Team Wizard



4. Select the ANS Teaming Mode:

New Team Wizard		×
	Select a team mode: Adapter Fault Tolerance Adaptive Load Balancing Static Link Aggregation IEEE 802.3ad Dynamic Link Aggregation Switch Fault Tolerance	
	Advanced Networking Services (ANS) Team Types • Adapter Fault Tolerance • Adaptive Load Balancing • Static Link Aggregation • IEEE 802.3ad Dynamic Link Aggregation • Switch Fault Tolerance • Motes	
	< <u>B</u> ack <u>Next</u> Cano	;el



- Please refer to Chapter 4 for team types' introduction.
- Mixing Intel PRO/100 and Intel PRO/10GbE adapters in a team is not supported.
- ANS teaming cannot coexist with Express Teaming on multi-port adapters. If the ports on a multi-port adapter are grouped into an Express team, none of the ports on the adapter are available for ANS teaming.





5. Click Finish, team configuring process will start:





Chapter 4 ANS Teaming Modes

4.1 Adapter Fault Tolerance (AFT)

Adapter Fault Tolerance provides automatic redundancy for a server's network connection. If the primary adapter fails, the secondary adapter takes over. This teaming mode works with any hub or switch, and all team members must be connected to the same device.

4.2 Adaptive Load Balancing (ALB)

Adaptive Load Balancing provides load balancing of transmit traffic and adapter fault tolerance. This teaming mode works with any switch.

4.3 Static Link Aggregation

This mode includes adapter fault tolerance and load balancing (only routed protocols). All adapters in a Link Aggregation team running in static mode must run at the same speed and must be connected to a Static Link Aggregation capable switch.

4.4 IEEE 802.3ad Dynamic Link Aggregation

IEEE 802.3ad Dynamic Link Aggregation creates one or more teams using Dynamic Link Aggregation with mixed-speed adapters. This teaming mode requires a switch that fully supports the IEEE 802.3ad standard.

4.5 Switch Fault Tolerance (SFT)

Switch Fault Tolerance provides failover between two adapters connected to separate switches. Switch Fault Tolerance supports two adapters per team. Spanning Tree Protocol (STP) must be enabled when you create a team in SFT mode. This teaming mode works with any switch or hub.



Reference

Chapter 1

Intel Corporation: <u>www.intel.com</u>

Chapter 3

Intel Corporation: <u>www.intel.com</u>

Chapter 4

Intel Corporation: <u>www.intel.com</u>

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