



NIC Teaming Tool (Gen1) for Wyse 5070 thin client

Configuration Guide

Dell Engineering
January 2019

Revisions

Version	Date	Description
1.0	January 2019	Initial release

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1 Introduction

This document provides the information on how to use **Realtek Ethernet CLI (Command-Line Interface) Tool - 8169DiagV2.exe**, to create NIC Team on Wyse 5070 thin clients running Windows 10 IoT Enterprise operating systems.



2 NIC Teaming

NIC Teaming, also known as Load Balancing/Failover (LBFO), enables you to combine multiple Ethernet adapters and behave as a single logical NIC. If your Wyse 5070 thin client has dual RJ45 ports, you can create the NIC Team to group two ethernet adapters in a system for fault tolerance and load balancing to increase throughput and reliability.

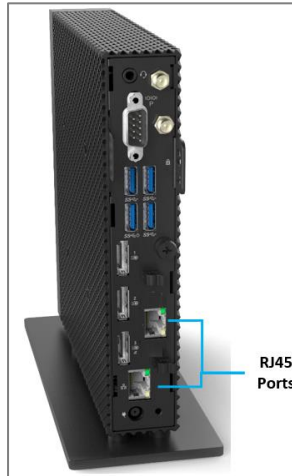


Figure 1 Wyse 5070 with Dual RJ45

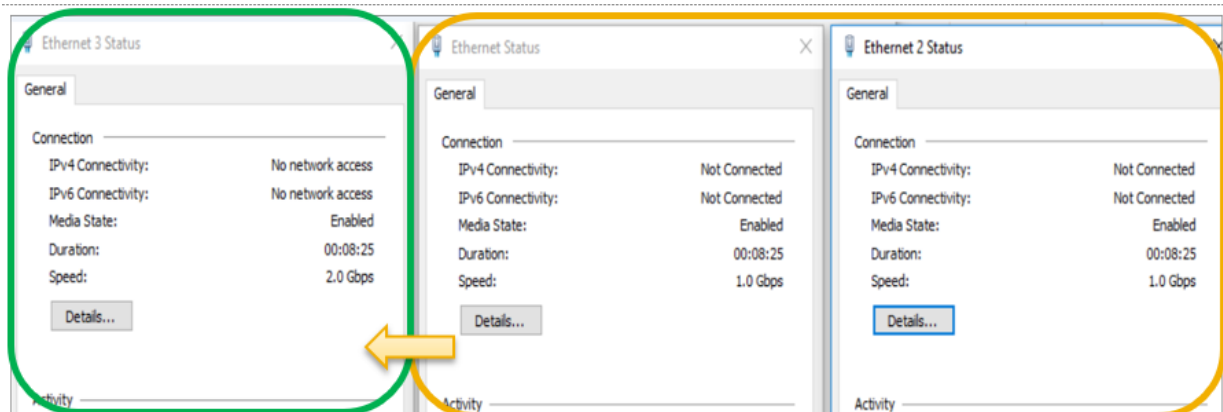


Figure 2 Two NICs Link Aggregation to 2 Gbps Speed



3 Realtek Ethernet CLI Tool

Realtek Ethernet CLI Tool supports 2 teaming modes - FEC/GEC and LACP.

When a NIC team is configured in LACP mode, Realtek NIC teaming always operates in LACP's active mode and no option is available to change to the LACP's passive mode.

Table 1 Teaming modes supported in Realtek Ethernet Tool

Features	Teaming Modes of Realtek Ethernet Tool		
	FEC/GEC	FEC/GEC	LACP
Fault Tolerance	V	V	V
Link Aggregation	V	V	V
Load Balancing	Tx	Tx/Rx	Tx/Rx
Switch Dependent	No	Yes, need to configure the switch's LAG type to FEC/GEC (Static)	Yes, need to configure the switch's LAG type to 802.3ad (LACP)

3.1 Parameters of CLI Tool for NIC Teaming

Default Installed Path in Dell-Wyse-Windows 10-IoT-Enterprise: "C:\Program Files\Realtek\Teaming\"

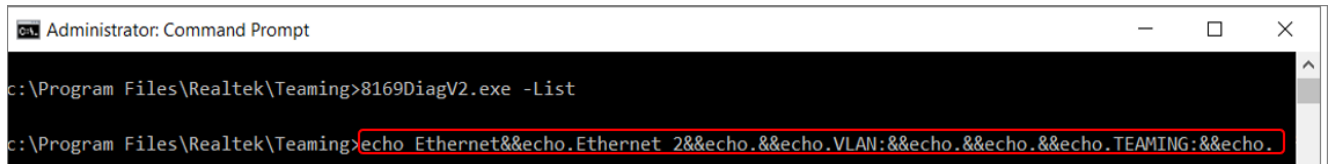
Table 2 Parameters of CLI Tool for NIC Teaming

Function	Command
List List all physical network adapter names and virtual network adapter names for NIC Team and VLAN	8169DiagV2.exe -List
Add Team Add physical network adapters to a NIC team	8169DiagV2.exe -AddTeamType < team type > -TeamName < team name > -TeamList < adapter name1, adapter name2, ... > <ul style="list-style-type: none"> • Team Type: 1: FEC/GEC 2: LACP • Example: 8169DiagV2.exe -AddTeamType 1 -TeamName MyTeam -TeamList "Ethernet", "Ethernet 2"
Delete Team Delete a NIC team by virtual adapter name	8169DiagV2.exe -DelTeam -Name < virtual adapter name > <ul style="list-style-type: none"> • Example: 8169DiagV2.exe -DelTeam -Name "Ethernet 3"



3.2 USAGE NOTICE

- Dell recommends not to install the GUI tool and use GUI and CLI tool alternately. It causes NIC behavior abnormal or system crash.
- Administrative privilege is required for this tool.
- IGNORE the message highlighted in the image when executing “8169DiagV2.exe -List”.



```
Administrator: Command Prompt
c:\Program Files\Realtek\Teaming>8169DiagV2.exe -List
c:\Program Files\Realtek\Teaming>echo Ethernet&&echo.Ethernet 2&&echo.&&echo.VLAN:&&echo.&&echo.&&echo.TEAMING:&&echo.
```

Figure 3 Message displayed when executing “8169DiagV2.exe -List”.

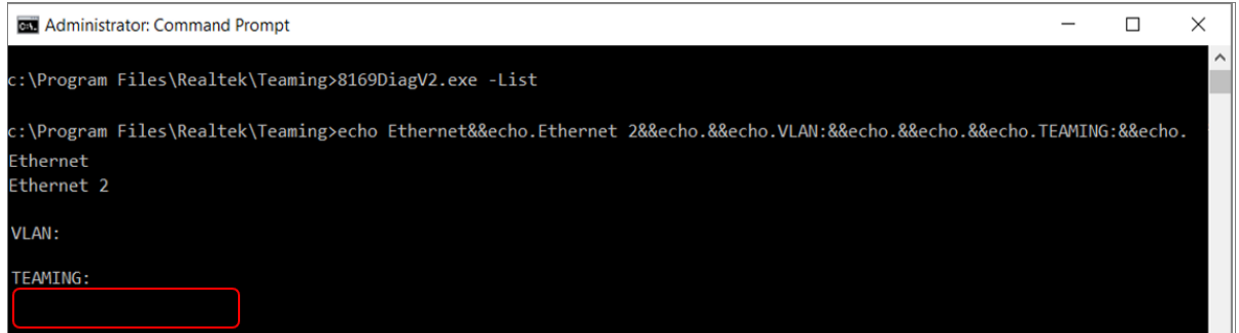


4 Steps to configure NIC Teaming

For information on the command definition, see [Parameters of CLI Tool for NIC Teaming](#).

4.1 Create NIC Team

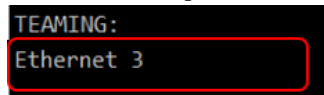
1. Use **List** command to ensure that there is no NIC Team in TEAMING list.



```
Administrator: Command Prompt
c:\Program Files\Realtek\Teaming>8169DiagV2.exe -List
c:\Program Files\Realtek\Teaming>echo Ethernet&&echo.Ethernet 2&&echo.VLAN:&&echo.&&echo.&&echo.TEAMING:&&echo.
Ethernet
Ethernet 2
VLAN:
TEAMING:

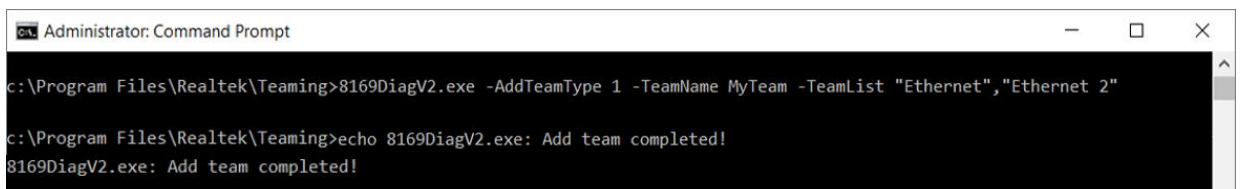
```

If there is an adapter name in the list, the NIC team is already created.



```
TEAMING:
Ethernet 3
```

2. Use Add Team command to create a NIC team.

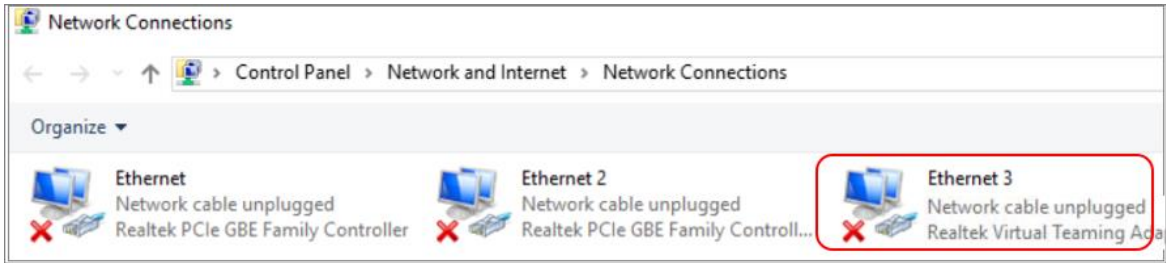


```
Administrator: Command Prompt
c:\Program Files\Realtek\Teaming>8169DiagV2.exe -AddTeamType 1 -TeamName MyTeam -TeamList "Ethernet","Ethernet 2"
c:\Program Files\Realtek\Teaming>echo 8169DiagV2.exe: Add team completed!
8169DiagV2.exe: Add team completed!
```

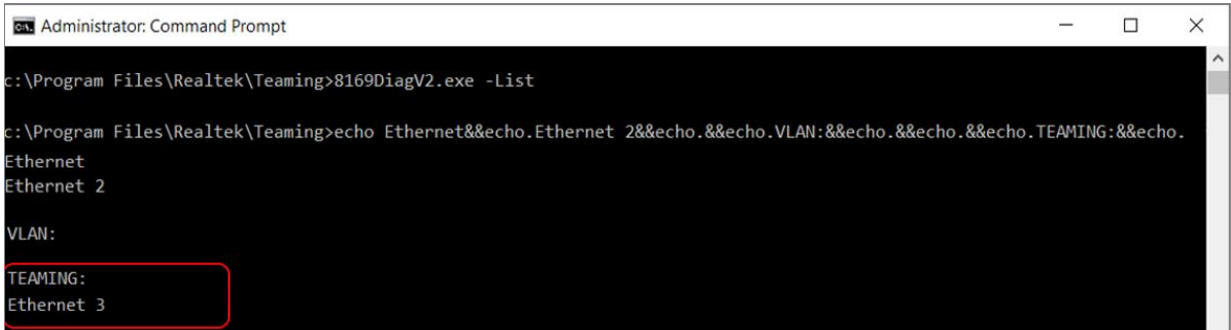
Ensure that the message **Completed** is displayed before executing the next command to prevent undesired NIC behavior or system crash.

3. Verify that the Realtek Virtual Teaming Adapter is displayed in Network Connections.



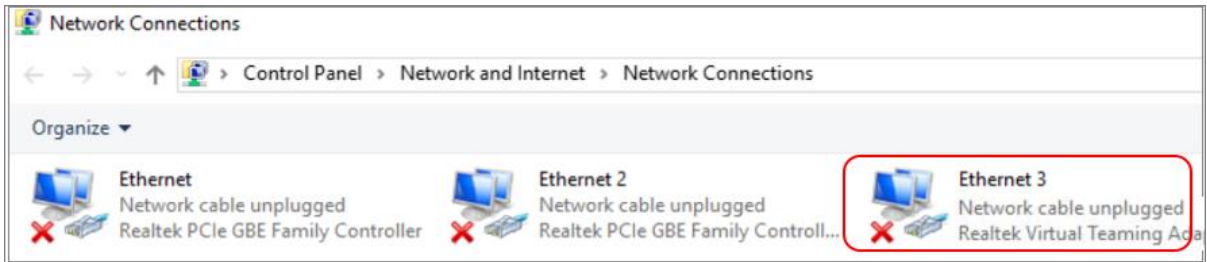


You can also use the **List** command to confirm the new virtual teaming adapter in the TEAMING list.

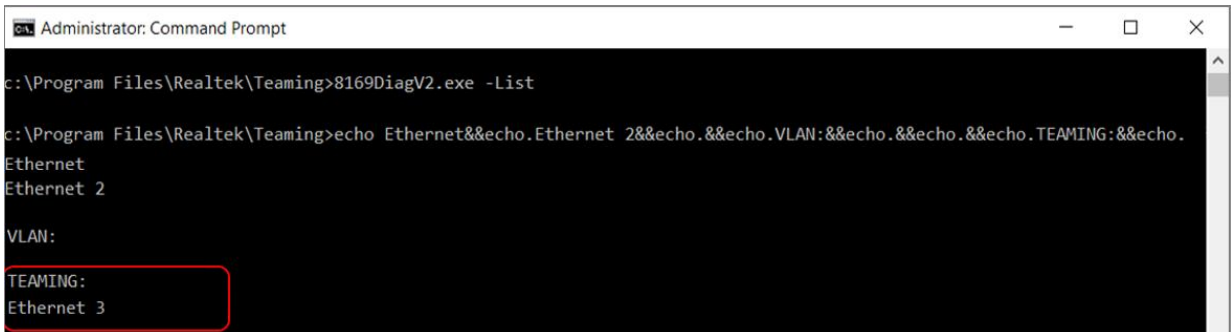


4.2 Remove NIC Team

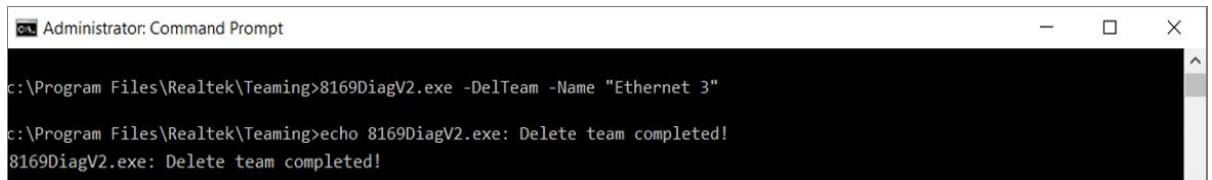
1. Search the Realtek Virtual Teaming Adapter in the Network Connections. (ex: Ethernet 3)



You can also find the name in the TEAMING list by using the **List** command.



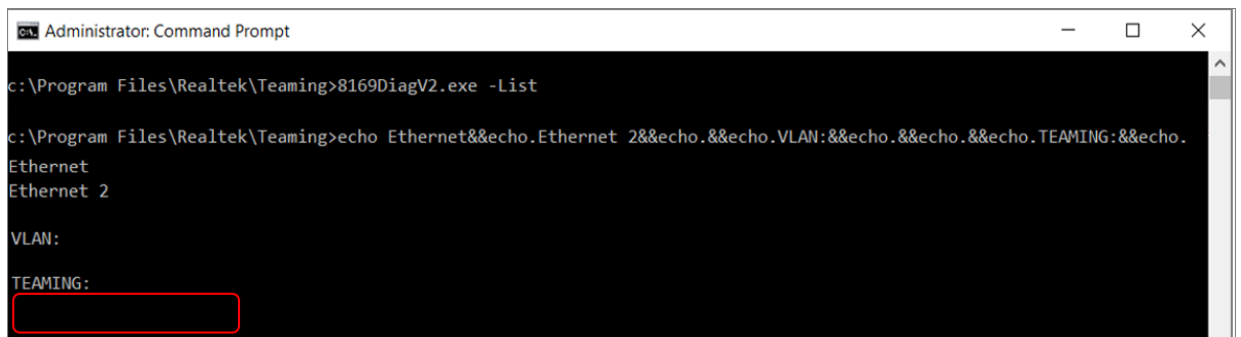
2. Use the Delete Team command with the name of Realtek Virtual Teaming Adapter to remove the NIC team.



```
Administrator: Command Prompt
c:\Program Files\Realtek\Teaming>8169DiagV2.exe -DelTeam -Name "Ethernet 3"
c:\Program Files\Realtek\Teaming>echo 8169DiagV2.exe: Delete team completed!
8169DiagV2.exe: Delete team completed!
```

Ensure that the message **Completed** is displayed before executing the next command to prevent undesired NIC behavior or system crash.

3. Use the List command to ensure that there is no NIC Team in the TEAMING list.



```
Administrator: Command Prompt
c:\Program Files\Realtek\Teaming>8169DiagV2.exe -List
c:\Program Files\Realtek\Teaming>echo Ethernet&&echo.Ethernet 2&&echo.&&echo.VLAN:&&echo.&&echo.&&echo.TEAMING:&&echo.
Ethernet
Ethernet 2
VLAN:
TEAMING:

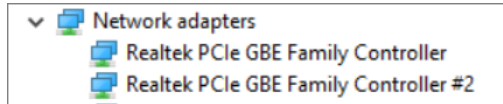
```



5 Uninstallation

For new tool updates, you must uninstall the current version to prevent undesired NIC behavior or system crash.

1. Ensure that there are no Realtek Virtual (Teaming) Adapter in Device Manager.



If the **Realtek Virtual Teaming Adapter** is present, please refer [Remove NIC Team](#) section and delete the adapter.

Delete the **Realtek Virtual Adapter**. This may be present if you have created a VLAN.

2. Delete the **Teaming** folder from *C:\Program Files\Realtek*.

