

NIC Teaming in Windows Server 2022

<https://4sysops.com/archives/nic-teaming-in-windows-server-2022/>

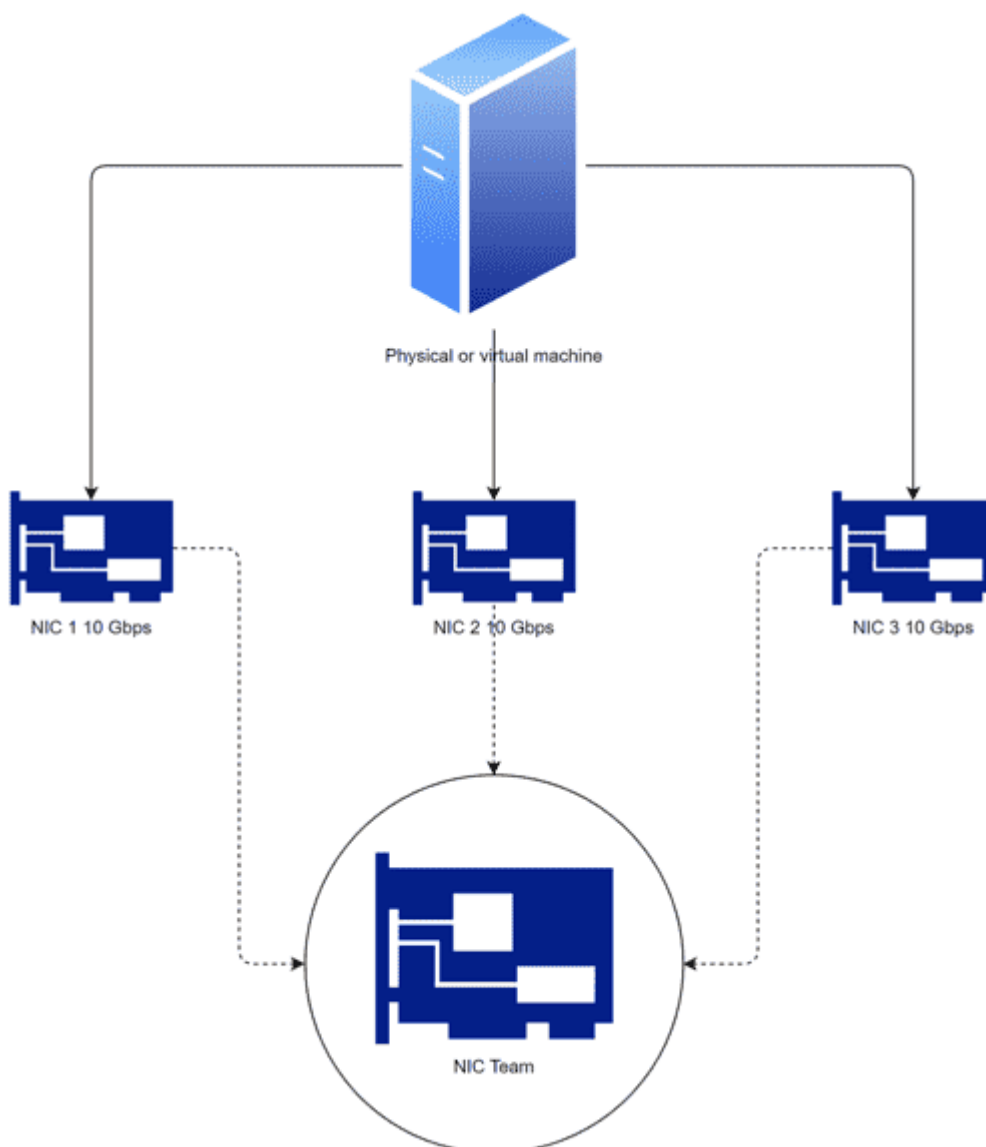
NIC Teaming in Windows Server 2022 allows you to combine multiple physical and virtual network interfaces into a single logical virtual adapter called NIC Team. The feature is available in Windows Server, Windows Full Desktop Experience (with GUI), and Server Core (without GUI). The idea is to provide better performance, reliability, load balancing, and redundancy between network cards. NIC Teaming is also known as link aggregation, bandwidth aggregation, and load balancing and failover (LBFO).

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NIC Teaming is disabled by default. If you want to enable it, you need to have at least two physical or virtual network cards. If you decide to enable NIC Teaming in guest operating systems using virtual network cards, some options will not be available.

In this article, I will show you which options are available and how to configure NIC Teaming in Windows Server 2022 using Server Manager.



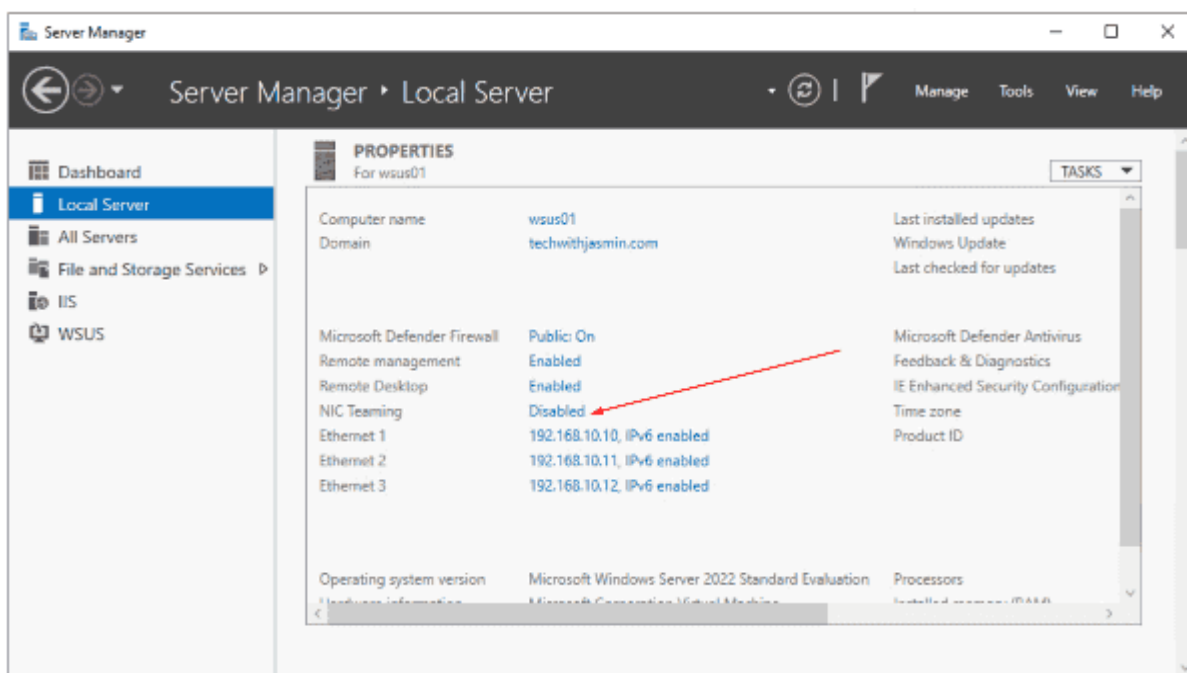
A server with multiple network cards

In my scenario, I use a machine running Windows Server 2022 with three NICs (network interface cards) and combine them into a single NIC Team.

How to set up NIC Teaming

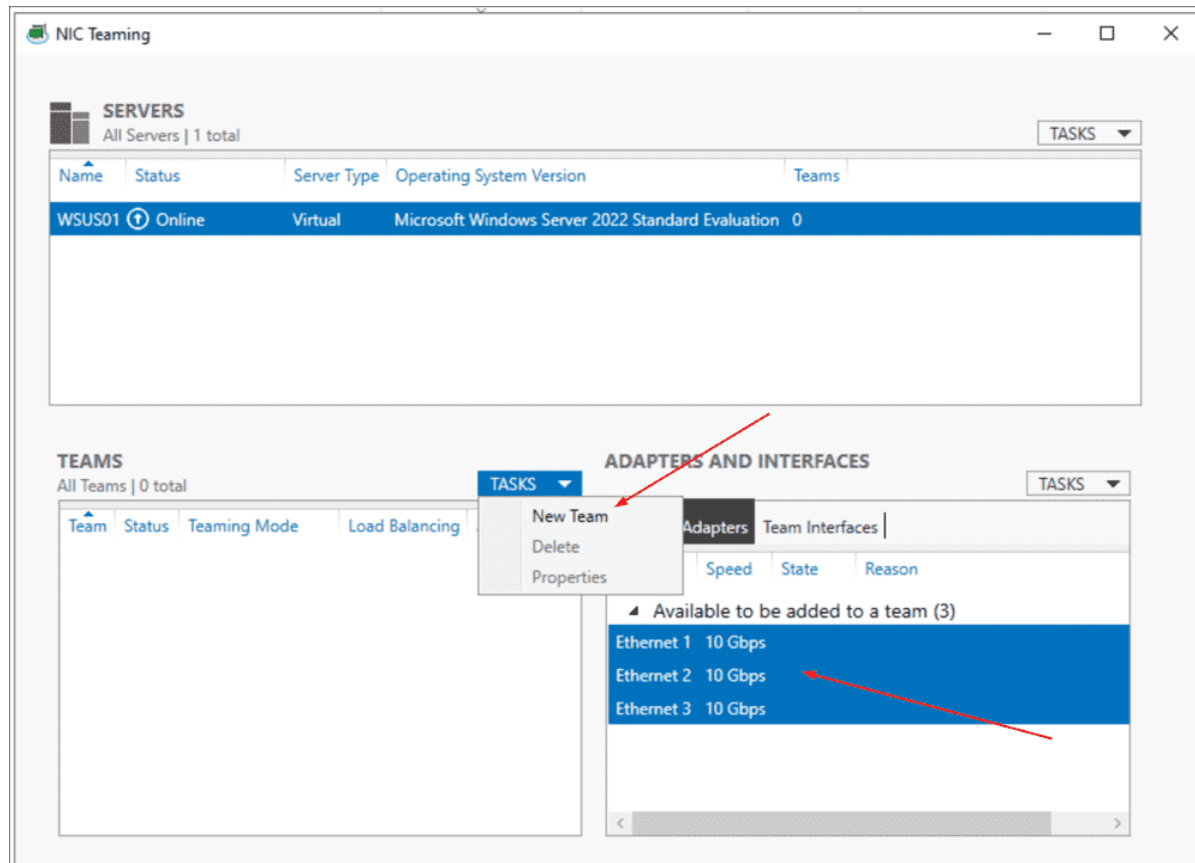
All your network cards need to be connected to the network and have a valid IP address.

1. Open **Server Manager**.
2. Select **Local Server**.
3. Under **NIC Teaming**, click **Disabled**.



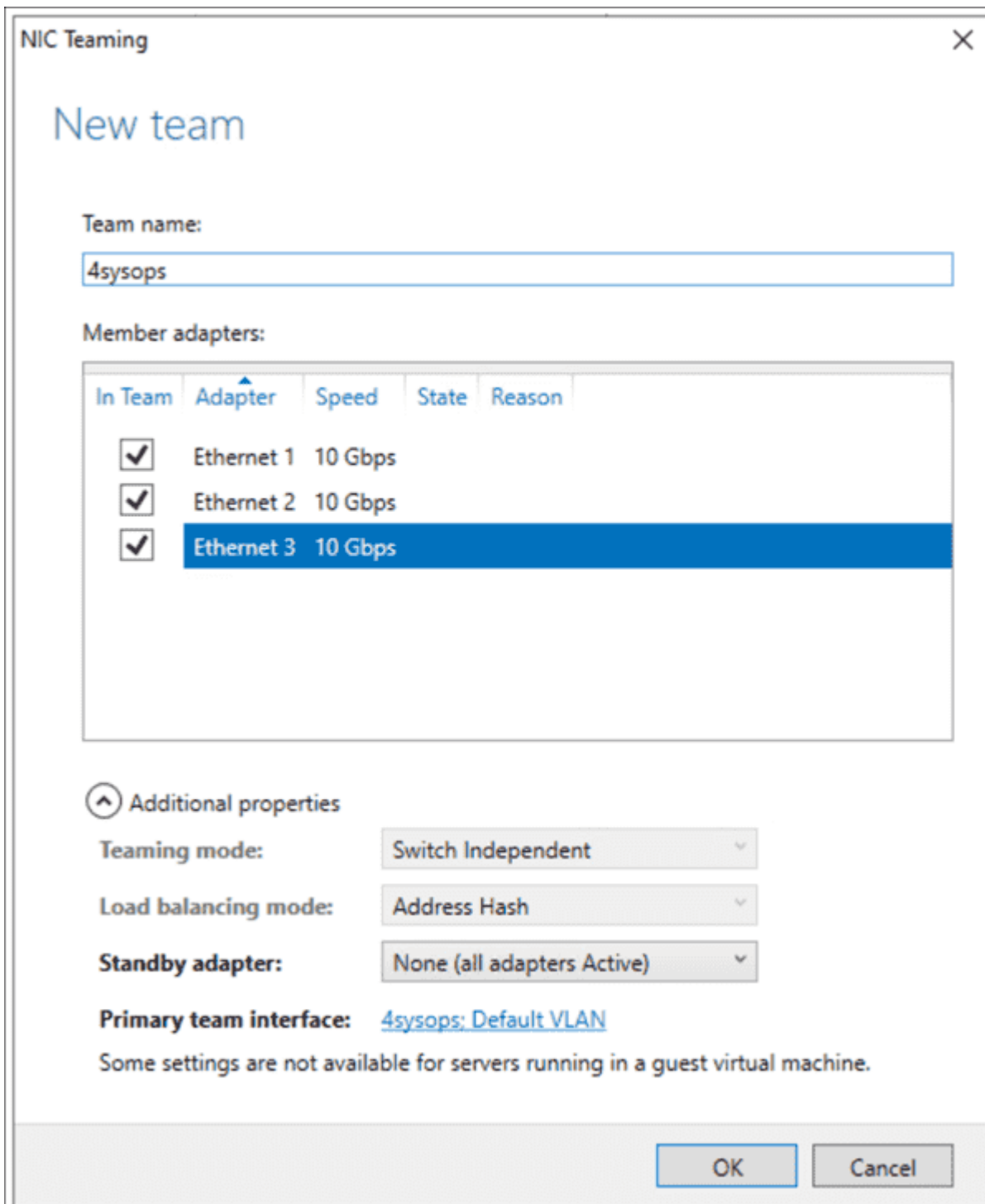
NIC Teaming is disabled by default in the Server Manager

1. Click **Tasks** and then **New Team**.



Create a new NIC Team

1. **Define the name** of the NIC Team and **select** the relevant network adapters.



Configure the NIC Team

Under **Additional properties**, you can configure **Teaming mode**, **Load balancing mode**, and **Standby adapter**.

There are three teaming modes available: Switch Independent, Static Teaming, and LACP. Both Static Teaming and LACP are switch dependent.

Additional properties

Teaming mode: Switch Independent

Load balancing mode: Dynamic

Standby adapter: Address Hash
Hyper-V Port

Primary team interface: Dynamic [Default VLAN](#)

Teaming mode

Switch independent mode doesn't require network cards that are members of NIC Teaming to be connected with the same switch. They may be attached to different switches; however, that doesn't matter in this case.

Switch dependent mode requires all network cards that are members of NIC Teaming to be connected to the same switch. If you select this mode, it will offer you two operation modes, including:

- **Static teaming**—This requires the same configuration on the host and switches to identify which links are from the NIC Teaming mode.
- **Link Aggregation Control Protocol (LACP)**—This dynamically identifies the links between the host and the switch.

In addition, you can configure the load balancing mode and choose one of the three available options: **Address Hash**, **Hyper-V Port**, and **Dynamic**.

Additional properties

Teaming mode: Switch Independent

Load balancing mode: Dynamic

Standby adapter: Address Hash
Hyper-V Port

Primary team interface: Dynamic [Default VLAN](#)

Load balancing mode

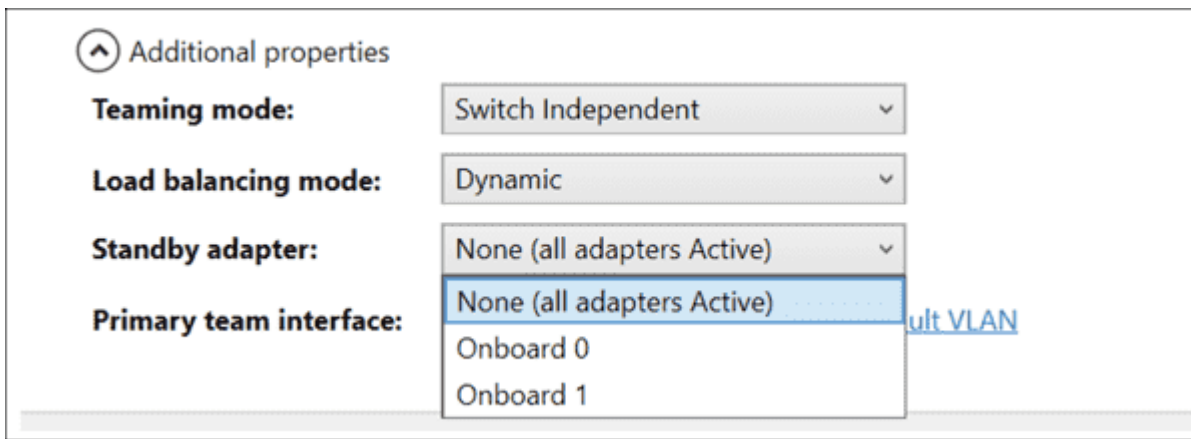
Address Hash mode helps to create a balance between network adapters that are members of NIC Teaming. It creates a hash based on the address component of the packet and then assigns the value to one of the adapters.

Hyper-V Port helps distribute traffic from switches to hosts on multiple links based on the MAC of the virtual machines.

Dynamic combines the address hash and Hyper-V port into a single mode. Outbound traffic is distributed based on a hash of TCP ports and IP addresses. Inbound traffic is distributed based on MAC.

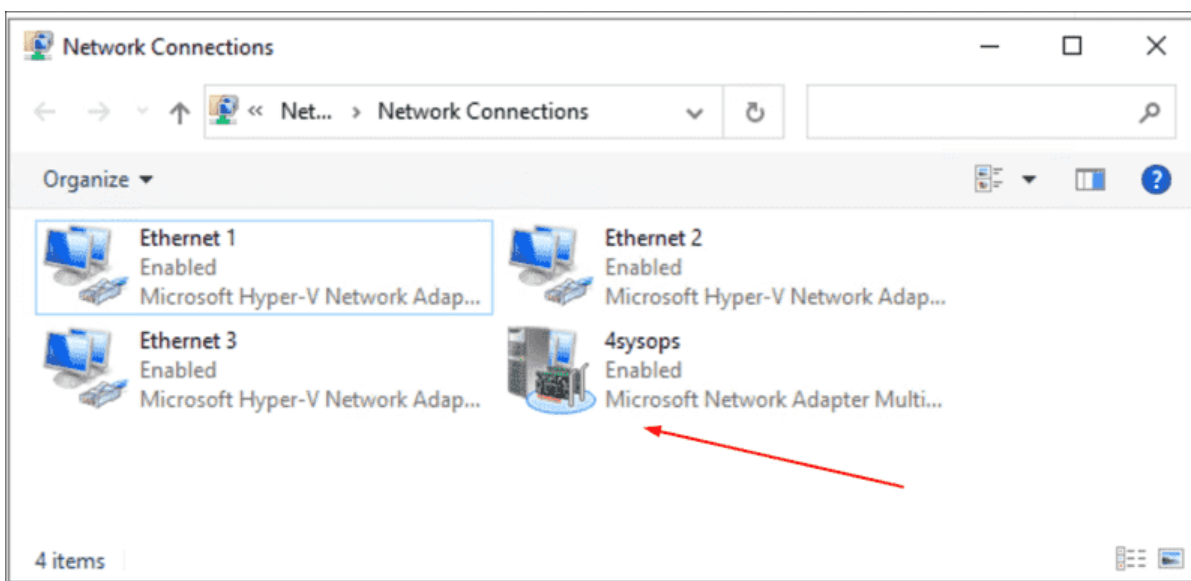
You can combine different teaming modes with load-balancing modes.

Under the **Standby adapter**, you can choose whether you want to have all network cards active or put one of them in standby mode. Standby mode means that if one NIC fails, the second will take over network traffic.



Standby adapter

1. Once configured, click **OK**.
2. Navigate to your **network sharing center**. You can do this by opening Run and typing `nca.cpl`. You will see that three network cards are joined to NIC Teaming. In my case, it's called `4sysops`.



NIC Team was successfully created

This NIC Team shares a single IP address.

Conclusion

NIC Teaming combines multiple physical and virtual network interfaces into a single logical virtual adapter called a **NIC Team**. It provides better performance, load balancing, and redundancy between network cards.

It supports different teaming and load-balancing modes. You can use all network cards that are members of NIC Teaming as active ones, or you can put one of them in standby mode.