NIC Troubleshooting and RAID Configuration

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Author Note

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Abstract

The purpose of this paper is to offer both the explanation and guide of how the author carried out the assignment to troubleshoot a Windows 2016 Server's NIC (Network Interface Controller) and explain the possible RAID (Redundant Array of Independent Disks) configuration for the server.

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NIC

Troubleshooting the NIC was able to be easily done through opening PowerShell in the Windows Server 2016 VM (Virtual Machine). Open doing so, the "Get-NetAdapterAdvancedProperty" command was run to gather information about the network adapter.

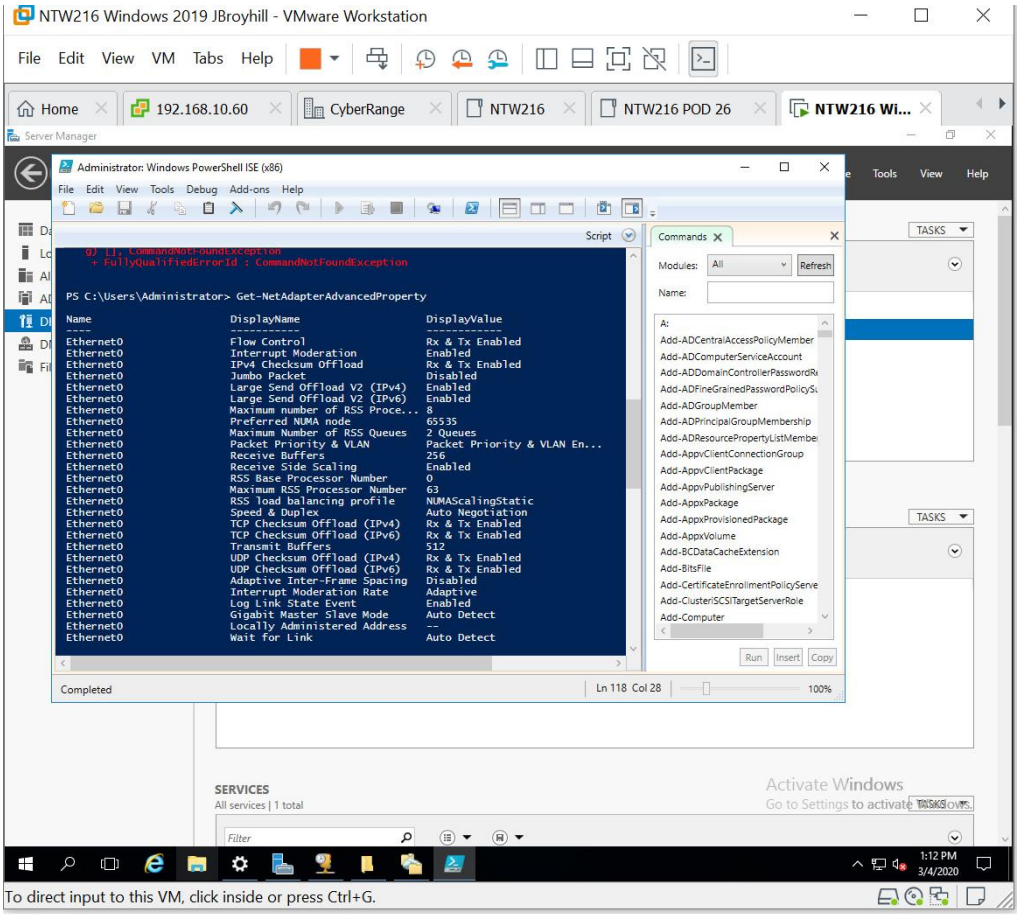

Figure 1. Windows Server 2016 screenshot. This showcases the results of the "Get-NetAdapterAdvancedProperty" command

Following that, the loopback address was both pinged and had its connection to the server tested, ensuring the NIC was working as intended.

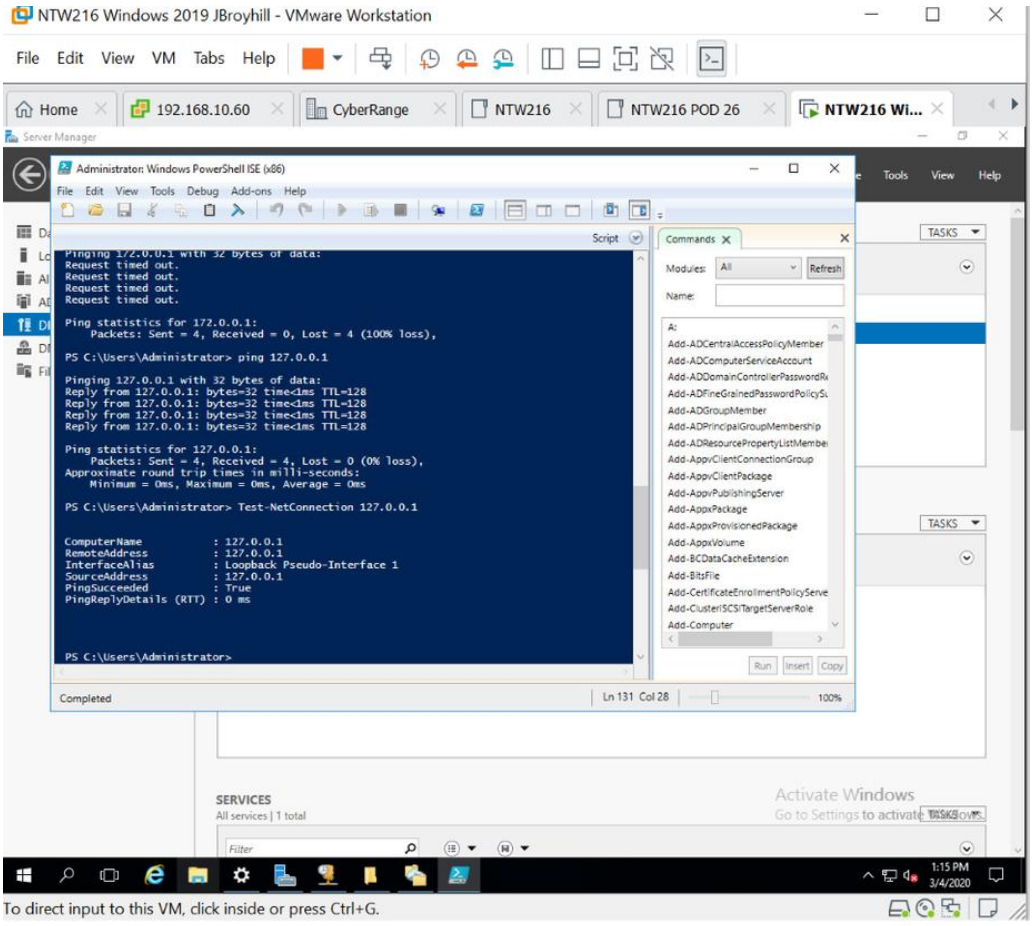

Figure 2. Windows Server 2016 screenshot. This showcases the results of the successful attempts to ping and test the connection with the loopback address

As a result of these commands, and subsequently checking and seeing that the network adapter is indeed in Device Manager, the NIC was confirmed to be active and working as intended, the troubleshooting finished.

RAID

Regarding the best possible RAID setup with the server, a balance must be maintained between efficiency and cost: the RAID should work to provide fault-tolerance but also shouldn't go overboard, resulting in high-costs for what may be unnecessary levels of protection. For this reason, RAID 1 would likely be the most logical choice (as the size of the organization is

currently undetermined). The RAID 1 type of configuration uses mirroring, ensuring two disks are exact copies of each other, allowing for a large amount of redundancy, as “both drives in a pair would need to fail for that logical drive to also fail”(GCN, 2009). RAID 1 also features quick access times, and despite the fact that its capacity of half of a RAID 0 configuration, it should suffice for the needs presented.

References

Crowe, G. (2009, August 31). *A Breakdown on Common RAID Configurations -- GCN*. GCN. https://gcn.com/articles/2009/08/31/gcn-lab-review-nas-sidebar-raid.aspx