

[SoftNAS KB]: Enabling Azure Accelerated Networking for SoftNAS 4.2

Supported version:

SoftNAS 4.2

Introduction

Accelerated Networking is supported D/DSv2 and F/Fs series instance sizes with 2 or more vCPUs.

Instances that support hyperthreading, D/DSv3, E/ESv3, Fsv2, and Ms/Mms, require 4 or more vCPUs.

Further details, including links to technical overviews of AAN, can be found here:

<https://azure.microsoft.com/en-us/blog/maximize-your-vm-s-performance-with-accelerated-networking-now-generally-available-for-both-windows-and-linux/>

*If the Softnas instance was created in an availability set ALL VMs in that Availability set will be required to be shutdown.

**This will require 2 restarts of the SoftNAS VM

This document is intended for readers with a basic level of experience with the Azure CLI. In this example the Azure CLI power shell plugin is used.

If you have upgraded to SoftNAS 4.2

With the release of SoftNAS OS Version 4.2 Azure Accelerated Networking (AAN) is now supported.

This document describes the recommended steps to enable Azure's Accelerated Networking (AAN) on a SoftNAS VM instances when upgrading from versions 4.0.X or 4.1. to version 4.2

This document is intended for readers that are familiar with the Azure CLI and its basic usage. The included examples were performed using Windows PowerShell and the Azure CLI plug-in.

Important Info

- The SoftNAS VM will require two restarts.
- If the SoftNAS instance was created in an availability set ALL VMs in that Availability set will be required to be shutdown. This does not apply to Availability Zones.
- Accelerated Networking is supported on D/DSv2 and F/Fs series instance sizes with 2 or more vCPUs.
- Instances that support hyperthreading (D/DSv3, E/ESv3, Fsv2, and Ms/Mms) require 4 or more vCPUs.
- Further details, including links to technical overviews of AAN, can be found here:

<https://azure.microsoft.com/en-us/blog/maximize-your-vm-s-performance-with-accelerated-networking-now-generally-available-for-both-windows-and-linux/>

Enable Azure Accelerated Networking

1. Perform the update process to version 4.2 as described in the user documentation.

<https://docs.softnas.com/display/SD/Updating+to+Latest+Version>

*If this has been done this step as well as step 2 can be skipped.

2. Once the reboot has completed verify the instance state ensuring the upgrade was successful.
3. Shutdown the SoftNAS VM

If the SoftNAS instance was created in an availability shutdown all VMs in that set.

```
az vm deallocate --resource-group <rg of the VM> -- name <name of VM>
```

```
Windows PowerShell
PS C:\> az vm deallocate --resource-group JY --name JY-node-b
{
  "additionalProperties": {},
  "endTime": "2018-10-30T20:46:48.988260+00:00",
  "error": null,
  "name": "6ef56817-d884-49b3-87fb-e4763f9c023d",
  "startTime": "2018-10-30T20:45:46.673501+00:00",
  "status": "Succeeded"
}
PS C:\>
```

4. Issue the following CLI command

az network nic update --name <nic name of VM> --resource-group <rg of VM> --accelerated-networking true

```
Select Windows PowerShell
PS C:\> az network nic update --name jy-node-b762 --resource-group JY --accelerated-networking true
{
  "dnsSettings": {
    "appliedDnsServers": [],
    "dnsServers": [],
    "internalDnsNameLabel": null,
    "internalDomainNameSuffix": "xtvb12zg1axutk3eo2kdjwvctg.xx.internal.cloudapp.net",
    "internalFqdn": null
  },
  "enableAcceleratedNetworking": true,
  "enableIpForwarding": false,
  "etag": "W/\"34569559-abb3-4cef-b2bc-eaded45468e5\"",
  "id": "/subscriptions/7c37e269-dfc8-418c-87af-bf8311fb82b0/resourceGroups/JY/providers/Microsoft.Network/networkInterfaces/jy-node-b762",
  "ipConfigurations": [
    {
      "additionalProperties": {
        "type": "Microsoft.Network/networkInterfaces/ipConfigurations"
      },
      "applicationGatewayBackendAddressPools": null,
      "applicationSecurityGroups": null,
      "etag": "W/\"34569559-abb3-4cef-b2bc-eaded45468e5\"",
      "id": "/subscriptions/7c37e269-dfc8-418c-87af-bf8311fb82b0/resourceGroups/JY/providers/Microsoft.Network/networkInterfaces/jy-node-b762/ipConfigurations/ipconfig1",
      "loadBalancerBackendAddressPools": null,
      "loadBalancerInboundNatRules": null,
      "name": "ipconfig1",
      "primary": true,
      "privateIpAddress": "10.0.11.6",
      "privateIpAddressVersion": "IPv4",
      "privateIpAllocationMethod": "Dynamic",
      "provisioningState": "Succeeded",
      "publicIpAddress": {
        "dnsSettings": null,
        "etag": null,
        "id": "/subscriptions/7c37e269-dfc8-418c-87af-bf8311fb82b0/resourceGroups/JY/providers/Microsoft.Network/publicIPAddresses/JY-node-b-ip",
        "idleTimeoutInMinutes": null,
        "ipAddress": null,
        "ipConfiguration": null,
        "ipTags": null,
        "location": null,

```

The NIC name can be found using the following CLI command:

az vm nic list --resource-group <rg of the VM> --vm-name <name of VM>

The name is marked in the image below.

```
Windows PowerShell
PS C:\> az vm nic list --resource-group JY --vm-name JY-node-b
{
  "additionalProperties": {},
  "id": "/subscriptions/7c37e269-dfc8-418c-87af-bf8311fb82b0/resourceGroups/JY/providers/Microsoft.Network/networkInterfaces/jy-node-b762",
  "primary": null,
  "resourceGroup": "JY"
}
PS C:\>
```

5. Once the operation completes start the SoftNAS VM.

VMs in the same availability set that were shut down can also be restarted.

az vm start --resource-group <rg of the VM> --name <name of VM>

```
Windows PowerShell
PS C:\> az vm start --resource-group JY --name JY-node-b
{
  "additionalProperties": {},
  "endTime": "2018-10-30T20:53:21.709573+00:00",
  "error": null,
  "name": "2e4617a6-f247-4a72-b50d-856f6fdd7129",
  "startTime": "2018-10-30T20:52:53.928193+00:00",
  "status": "Succeeded"
}
PS C:\>
```

Verify Azure Accelerated Networking is correctly enabled

1. Establish an SSH connection to the SoftNAS VM.
2. Issue the 'lspci' command and ensure that Mellanox Ethernet controller is listed.

```
softnas@JY-node-1:~$ lspci
0000:00:00.0 Host bridge: Intel Corporation 440BX/ZX/DX - 82443BX/ZX/DX Host bridge (AGP disabled) (rev 03)
0000:00:07.0 ISA bridge: Intel Corporation 82371AB/EB/MB PIIX4 ISA (rev 01)
0000:00:07.1 IDE interface: Intel Corporation 82371AB/EB/MB PIIX4 IDE (rev 01)
0000:00:07.3 Bridge: Intel Corporation 82371AB/EB/MB PIIX4 ACPI (rev 02)
0000:00:08.0 VGA compatible controller: Microsoft Corporation Hyper-V virtual VGA
0086:00:02.0 Ethernet controller: Mellanox Technologies MT27500/MT27520 Family [ConnectX-3/ConnectX-3 Pro Virtual Function]
softnas@JY-node-1:~$
```

3. Verify packets are going over the correct interface by issuing the following: 'ethtool -S eth0 | grep vf_'. Counters should show values.

```
softnas@JY-node-1:~$ ethtool -S eth0 | grep vf_
vf_rx_packets: 3661
vf_rx_bytes: 644188
vf_tx_packets: 47358
vf_tx_bytes: 13469546
vf_tx_dropped: 0
softnas@JY-node-1:~$
```

