Windows PowerShell Get-Help on Cmdlet 'Set-NetAdapterRss'

PS:\>Get-HELP Set-NetAdapterRss -Full

NAME

   Set-NetAdapterRss

SYNOPSIS

   Sets the RSS properties on a network adapter.

SYNTAX

     Set-NetAdapterRss [-Name] <String[]> [-AsJob] [-BaseProcessorGroup <UInt16>] [-BaseProcessorNumber <Byte>]
[-CimSession <CimSession[]>] [-Confirm] [-Enabled

      <Boolean>] [-IncludeHidden] [-MaxProcessorGroup <UInt16>] [-MaxProcessorNumber <Byte>] [-MaxProcessors
<UInt32>] [-NoRestart] [-NumaNode <UInt16>]

      [-NumberOfReceiveQueues <UInt32>] [-PassThru] [-Profile {Closest | ClosestStatic | NUMA | NUMAStatic |
Conservative}] [-ThrottleLimit <Int32>] [-WhatIf]

   [<CommonParameters>]

     Set-NetAdapterRss [-AsJob] [-BaseProcessorGroup <UInt16>] [-BaseProcessorNumber <Byte>] [-CimSession
<CimSession[]>] [-Confirm] [-Enabled <Boolean>] [-IncludeHidden]

     -InterfaceDescription <String[]> [-MaxProcessorGroup <UInt16>] [-MaxProcessorNumber <Byte>] [-MaxProcessors
<UInt32>] [-NoRestart] [-NumaNode <UInt16>]

[-NumberOfReceiveQueues <UInt32>] [-PassThru] [-Profile {Closest | ClosestStatic | NUMA | NUMAStatic | Conservative}] [-ThrottleLimit <Int32>] [-WhatIf]

[<CommonParameters>]

Set-NetAdapterRss [-AsJob] [-BaseProcessorGroup <UInt16>] [-BaseProcessorNumber <Byte>] [-CimSession <CimSession[]>] [-Confirm] [-Enabled <Boolean>] -InputObject

<CimInstance[]> [-MaxProcessorGroup <UInt16>] [-MaxProcessorNumber <Byte>] [-MaxProcessors <UInt32>] [-NoRestart] [-NumaNode <UInt16>] [-NumberOfReceiveQueues

<UInt32>] [-PassThru] [-Profile {Closest | ClosestStatic | NUMA | NUMAStatic | Conservative}] [-ThrottleLimit <Int32>] [-WhatIf] [<CommonParameters>]

DESCRIPTION

The Set-NetAdapterRss cmdlet sets the receive side scaling (RSS) properties on a network adapter. RSS is a scalability technology that distributes the receive network

traffic among multiple processors by hashing the header of the incoming packet. If RSS is disabled, network traffic is processed on a single processor core. This may

impact network performance as the processor utilization increases. Many properties can be configured using the parameters to optimize the performance of RSS. The

selection of the processors to use for RSS is an important aspect of load balancing. Most of the parameters for this cmdlet help to determine the processors used by

RSS. A thorough understanding of RSS is recommended before modifying individual parameters. Selecting the correct profile should be sufficient in most scenarios.

PARAMETERS

-AsJob [<SwitchParameter>]

Runs the cmdlet as a background job. Use this parameter to run commands that take a long time to complete.   The cmdlet immediately returns an object that

represents the job and then displays the command prompt. You can continue to work in the session while the job completes. To manage the job, use the `*-Job`

cmdlets. To get the job results, use the Receive-Job (https://go.microsoft.com/fwlink/?LinkID=113372)cmdlet.   For more information about Windows PowerShellr

background jobs, see about_Jobs (https://go.microsoft.com/fwlink/?LinkID=113251).

    Required?   false

    Position?   named

    Default value   False

    Accept pipeline input?   False

    Accept wildcard characters? false

-BaseProcessorGroup <UInt16>

    Specifies the base processor group of a non-uniform memory access (NUMA) node. This impacts the processor array used by RSS. This parameter is the lowest group

    number of any processors that appear in the processor array.

    Required?   false

    Position?   named

    Default value   None

    Accept pipeline input?   False

    Accept wildcard characters? false

-BaseProcessorNumber <Byte>

    Specifies the base processor number of a NUMA node. This parameter is the lowest processor number of any processors from the BaseProcessorGroup parameter that

    appear in the processor array. This allows for partitioning processors across network adapters.

    Required?   false

    Position?   named

    Default value   None

    Accept pipeline input?   False

    Accept wildcard characters? false

-CimSession <CimSession[]>

    Runs the cmdlet in a remote session or on a remote computer. Enter a computer name or a session object, such as the output of a New-CimSession

(https://go.microsoft.com/fwlink/p/?LinkId=227967)   or

[Get-CimSession](https://go.microsoft.com/fwlink/p/?LinkId=227966)cmdlet. The default is the current session

on the local computer.

Required?   false

Position?   named

Default value   None

Accept pipeline input?   False

Accept wildcard characters? false

-Confirm [<SwitchParameter>]

Prompts you for confirmation before running the cmdlet.

Required?   false

Position?   named

Default value   False

Accept pipeline input?   False

Accept wildcard characters? false

-Enabled <Boolean>

Indicates whether RSS on an interface is enabled.

Required?   false

Position?   named

Default value   None

Accept pipeline input?   False

Accept wildcard characters? false

-IncludeHidden [<SwitchParameter>]

Indicates that the cmdlet includes both visible and hidden network adapters in the operation. By default only visible

network adapters are included. If a wildcard

character is used in identifying a network adapter and this parameter has been specified, then the wildcard string is

matched against both hidden and visible

network adapters.

Required?   false

Position?   named

Default value   False

Accept pipeline input?   False

Accept wildcard characters?   false

-InputObject <CimInstance[]>

Specifies the input to this cmdlet. You can use this parameter, or you can pipe the input to this cmdlet.

Required?   true

Position?   named

Default value   None

Accept pipeline input?   True (ByValue)

Accept wildcard characters?   false

-InterfaceDescription <String[]>

Specifies an array of network adapter interface descriptions. For a physical network adapter this is typically the name of the vendor of the network adapter

followed by a part number and description, such as `Contoso 12345 Gigabit Network Device`.

Required?   true

Position?   named

Default value   None

Accept pipeline input?   True (ByPropertyName)

Accept wildcard characters?   false

-MaxProcessorGroup <UInt16>

Specifies the maximum processor group of a NUMA node. This parameter is the highest group number of any processors that appear in the processor array for this

network adapter.

Required?   false

Position?   named

Default value   None

Accept pipeline input?   False

Accept wildcard characters? false

  -MaxProcessorNumber <Byte>

    Specifies the maximum processor number of a NUMA node. This parameter is the highest processor number of any processors from the MaxProcessorGroup parameter that

    appear in the processor array for this network adapter.

    Required?   false

    Position?   named

    Default value   None

    Accept pipeline input?   False

    Accept wildcard characters? false

  -MaxProcessors <UInt32>

    Specifies the maximum number of processors to be used concurrently by RSS from the processor array for load balancing network transmissions from a single network

    adapter.

    Required?   false

    Position?   named

    Default value   None

    Accept pipeline input?   False

    Accept wildcard characters? false

  -Name <String[]>

    Specifies an array of network adapter names.

    Required?   true

    Position?   0

Default value   None

Accept pipeline input?   True (ByPropertyName)

Accept wildcard characters? false

 -NoRestart [<SwitchParameter>]

       Indicates that the cmdlet does not restart the network adapter after completing the operation. Many advanced properties require restarting the network adapter

    before the new settings take effect.

    Required?   false

    Position?   named

    Default value   False

    Accept pipeline input?   False

    Accept wildcard characters? false

 -NumaNode <UInt16>

       Specifies the NUMA node affinity for a network adapter. This ensures that a given network transmission is load balanced by RSS within the NUMA node. This affects

     the memory allocation and also impacts the preference and ordering of the processors in the processor array. It does not affect the set of processors contained in

    the array, but it may impact the subset of the array that RSS actually uses.

    Required?   false

    Position?   named

    Default value   None

    Accept pipeline input?   False

    Accept wildcard characters? false

 -NumberOfReceiveQueues <UInt32>

    Specifies the number of receive queues per network adapter that is to be used by the interface

    Required?   false

    Position?   named

Default value   None

Accept pipeline input?   False

Accept wildcard characters? false

-PassThru [<SwitchParameter>]

    Returns an object representing the item with which you are working. By default, this cmdlet does not generate any output.

    Required?   false

    Position?   named

    Default value   False

    Accept pipeline input?   False

    Accept wildcard characters? false

-Profile <Profile>

    Specifies the RSS profile.

    The acceptable values for this parameter are:

    - Closest: Behavior is consistent with the behavior of Windows Serverr 2008 R2.

    - ClosestStatic: No dynamic load balancing, such as distributing but not load balancing at runtime.

    - NUMA: Assigns RSS processors in a round robin basis across every NUMA node to enable applications that are running on NUMA servers to scale well.

    - NUMAStatic: Default behavior.

    RSS processor selection is the same as for NUMA scalability without dynamic load balancing. - Conservative: RSS uses as few processors as possible to sustain the

    load. This option helps reduce the number of interrupts.

    Required?   false

Position?   named

Default value   None

Accept pipeline input?   False

Accept wildcard characters? false

-ThrottleLimit <Int32>

  Specifies the maximum number of concurrent operations that can be established to run the cmdlet. If this parameter is omitted or a value of `0` is entered, then

  Windows PowerShellr calculates an optimum throttle limit for the cmdlet based on the number of CIM cmdlets that are running on the computer. The throttle limit

applies only to the current cmdlet, not to the session or to the computer.

Required?   false

Position?   named

Default value   None

Accept pipeline input?   False

Accept wildcard characters? false

-WhatIf [<SwitchParameter>]

Shows what would happen if the cmdlet runs. The cmdlet is not run.

Required?   false

Position?   named

Default value   False

Accept pipeline input?   False

Accept wildcard characters? false

<CommonParameters>

This cmdlet supports the common parameters: Verbose, Debug,

ErrorAction, ErrorVariable, WarningAction, WarningVariable,

OutBuffer, PipelineVariable, and OutVariable. For more information, see

about_CommonParameters (https:/go.microsoft.com/fwlink/?LinkID=113216).

INPUTS

Microsoft.Management.Infrastructure.CimInstance#ROOT/StandardCimv2/MSFT_NetAdapterRssSettingData[]

The `Microsoft.Management.Infrastructure.CimInstance` object is a wrapper class that displays Windows Management Instrumentation (WMI) objects. The path after the

pound sign (`#`) provides the namespace and class name for the underlying WMI object.

OUTPUTS

Microsoft.Management.Infrastructure.CimInstance#ROOT/StandardCimv2/MSFT_NetAdapterRssSettingData

The `Microsoft.Management.Infrastructure.CimInstance` object is a wrapper class that displays Windows Management Instrumentation (WMI) objects. The path after the

pound sign (`#`) provides the namespace and class name for the underlying WMI object.

NOTES

Example 1: Set an RSS profile for a NUMA server without dynamic load balancing

PS C:\> Set-NetAdapterRss -Name "Ethernet" -Profile NUMAStatic

This command sets an RSS profile for a NUMA server without dynamic load balancing on the network adapter named Ethernet.

RELATED LINKS

Online Version: https://learn.microsoft.com/powershell/module/netadapter/set-netadapterrss?view=windowsserver2022-ps&wt.mc_id=ps-gethelp

Disable-NetAdapterRss

Enable-NetAdapterRss

Get-NetAdapterRss