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Test-NetConnection

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Module: NetTCPIP

In this article

Displays diagnostic information for a connection.

Syntax

PowerShell Copy

```
Test-NetConnection
    [[-ComputerName] <String>]
    [-TraceRoute]
    [-Hops <Int32>]
    [-InformationLevel <String>]
    [<CommonParameters>]
```

PowerShell Copy

```
Test-NetConnection
    [[-ComputerName] <String>]
    [-CommonTCPPort] <String>
    [-InformationLevel <String>]
    [<CommonParameters>]
```

PowerShell Copy

```
Test-NetConnection
    [[-ComputerName] <String>]
    -Port <Int32>
    [-InformationLevel <String>]
    [<CommonParameters>]
```

PowerShell Copy

```
Test-NetConnection
    [[-ComputerName] <String>]
    [-DiagnoseRouting]
    [-ConstrainSourceAddress <String>]
    [-ConstrainInterface <UInt32>]
    [-InformationLevel <String>]
    [<CommonParameters>]
```

Description

The **Test-NetConnection** cmdlet displays diagnostic information for a connection. It supports ping test, TCP test, route tracing, and route selection diagnostics. Depending on the input parameters, the output can include the DNS lookup results, a list of IP interfaces, IPsec rules, route/source address selection results, and/or confirmation of connection establishment.

Examples

Example 1: Test ping connectivity

PowerShell Copy

```
PS C:\> Test-NetConnection
ComputerName            : internetbeacon.msedge.net

RemoteAddress           : 2a01:111:2003::52

InterfaceAlias          : Ethernet

SourceAddress           : 2001:4898:d8:33:81e8:7b49:8bf5:8710

PingSucceeded           : True

PingReplyDetails (RTT) : 5 ms
```

This command tests ping connectivity to a default server.

Example 2: Test ping connectivity with detailed results

PowerShell Copy

```
PS C:\> Test-NetConnection -InformationLevel "Detailed"
ComputerName            : internetbeacon.msedge.net

RemoteAddress           : 2a01:111:2003::52

NameResolutionResults   : 2a01:111:2003::52

                          13.107.4.52

InterfaceAlias          : Ethernet

SourceAddress           : 2001:4898:d8:33:81e8:7b49:8bf5:8710

NetRoute (NextHop)      : fe80::200:5eff:fe00:203

PingSucceeded           : True

PingReplyDetails (RTT) : 6 ms
```

This command tests ping connectivity to a default server and sets the *InformationLevel* parameter to Detailed.

Example 3: Test TCP connectivity and display detailed results

PowerShell Copy

```
PS C:\> Test-NetConnection -Port 80 -InformationLevel "Detailed"
ComputerName            : internetbeacon.msedge.net

RemoteAddress           : 2a01:111:2003::52

RemotePort              : 80
```

```
NameResolutionResults   : 2a01:111:2003::52
                          13.107.4.52
MatchingIPsecRules      : Ipsec/Domain-TrafficFromInternet-v6
NetworkIsolationContext : Internet
IsAdmin                 : False
InterfaceAlias          : Ethernet
SourceAddress           : 2001:4898:d8:33:81e8:7b49:8bf5:8710
NetRoute (NextHop)      : fe80::200:5eff:fe00:203
TcpTestSucceeded        : True
```

This command tests TCP connectivity to a default server and sets the *InformationLevel* parameter to Detailed.

Example 4: Test a connection to a remote host

PowerShell Copy

```
PS C:\> Test-NetConnection -ComputerName "www.contoso.com" -InformationLevel "De
PingReplyDetails (RTT) : 164 ms
ComputerName           : www.contoso.com
RemoteAddress          : 65.55.39.10
NameResolutionResults  : 65.55.39.10
                         64.4.6.100
InterfaceAlias         : Ethernet
SourceAddress          : 10.137.193.122
NetRoute (NextHop)     : 10.137.192.1
PingSucceeded          : True
PingReplyDetails (RTT) : 164 ms
```

This command tests ping connectivity to a remote host named www.contoso.com.

Example 5: Perform route diagnostics to connect to a remote host

PowerShell Copy

```
PS C:\> Test-NetConnection -ComputerName www.contoso.com -DiagnoseRouting -Infor
ComputerName : www.contoso.com

RemoteAddress : 2001:428:3805:187::2768

SelectedSourceAddress : 2001:4898:e0:79:f17c:d212:8743:43c2

OutgoingInterfaceIndex : 4

SelectedNetRoute : DestinationPrefix: ::/0 NextHop: fe80::200:5eff:fe00:202

RouteSelectionEvents : IP: Route [DestinationPrefix: ::/0 NextHop: fe80::200:5ef

Route [DestinationPrefix: ::/0 NextHop: fe80::200:5eff:fe00:202 InterfaceIndex:
Destination: 2001:428:3805:187::2768 in Compartment: 1, Reason: RouteOrder.

SourceAddressSelectionEvents : IP: Source address 2001:4898:e0:79:f17c:d212:874
```

```
RouteDiagnosticsSucceeded : True
```

This command performs route diagnostics to reach a remote host named www.contoso.com .

Example 6: Perform route diagnostics to connect to a remote host with routing constraints

PowerShell Copy

```
PS C:\> Test-NetConnection -ComputerName "www.contoso.com" -ConstrainInterface 5
ComputerName : www.contoso.com

RemoteAddress : 2600:1409:a:185::2768

ConstrainInterfaceIndex : 5

SelectedSourceAddress : 2001:4898:e0:79:75dd:64cf:d9ff:f86

OutgoingInterfaceIndex : 5

SelectedNetRoute : DestinationPrefix: ::/0

NextHop: fe80::200:5eff:fe00:202

RouteSelectionEvents : IP: Route [DestinationPrefix: ::/0 NextHop: fe80::200:5ef

RouteMetric: 256] is blocked for Destination: 2600:1409:a:185::2768 ConstrainInt

SourceAddressSelectionEvents : IP: Source address 2001:4898:e0:79:75dd:64cf:d9ff

IP: Source address 2001:4898:e0:79:75dd:64cf:d9ff:f86 is preferred over fe80::75

RouteDiagnosticsSucceeded : True
```

This command performs route diagnostics to reach a remote host named www.contoso.com with routing constraints.

Parameters

-CommonTCPPort

Specifies the common service TCP port number. The acceptable values for this parameter are:

- SMB
- HTTP
- RDP
- WINRM

Expand table

Type:	String
Accepted values:	HTTP, RDP, SMB, WINRM
Position:	1
Default value:	None
Required:	True
Accept pipeline input:	False
Accept wildcard characters:	False

-ComputerName

Specifies the Domain Name System (DNS) name or IP address of the target computer.

Expand table

Type:	String
Aliases:	RemoteAddress, cn
Position:	0
Default value:	None
Required:	False
Accept pipeline input:	True
Accept wildcard characters:	False

-ConstrainInterface

Specifies the interface constraint to use for route diagnostics.

Expand table

Type:	UInt32
Position:	Named
Default value:	None
Required:	False
Accept pipeline input:	False
Accept wildcard characters:	False

-ConstrainSourceAddress

Specifies the source address constraint to use for route diagnostics.

Expand table

Type:	String
Position:	Named
Default value:	None
Required:	False
Accept pipeline input:	False
Accept wildcard characters:	False

-DiagnoseRouting

Indicates that route diagnostics runs to output the route and source address selection information for the remote host.

Expand table

Type:	SwitchParameter
Position:	Named
Default value:	None

Required:	True
Accept pipeline input:	False
Accept wildcard characters:	False

-Hops

Specifies the number of hops to traverse in a trace route command.

Expand table

Type:	Int32
Position:	Named
Default value:	None
Required:	False
Accept pipeline input:	False
Accept wildcard characters:	False

-InformationLevel

Specifies the information level. The acceptable values for this parameter are:

- Detailed
- Quiet

If you set this parameter to Quiet, the cmdlet returns basic information. For example, for a ping test, this cmdlet returns a Boolean value that indicates whether the attempt to ping a host or port is successful.

Expand table

Type:	String
Accepted values:	Quiet, Detailed
Position:	Named
Default value:	None
Required:	False
Accept pipeline input:	False
Accept wildcard characters:	False

-Port

Specifies the TCP port number on the remote computer. The cmdlet uses this port number to test connectivity to the remote computer.

Expand table

Type:	Int32
Aliases:	RemotePort
Position:	Named
Default value:	None
Required:	True

Accept pipeline input:	True
Accept wildcard characters:	False

-TraceRoute

Indicates that Tracert runs to test connectivity to the remote host.

Expand table

Type:	SwitchParameter
Position:	Named
Default value:	None
Required:	False
Accept pipeline input:	False
Accept wildcard characters:	False

Inputs

None

Outputs

NetRouteDiagnostics

This object displays route diagnostics information and is returned if you specify the NetRouteDiagnostics parameter set.

NetConnectionResults

This object displays connection results and is returned if you specify the CommonTCPPort, RemotePort, or ICMP parameter set.

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