



We use optional cookies to improve your experience on our websites, such as through social media connections, and to display personalized advertising based on your online activity. If you reject optional cookies, only cookies necessary to provide you the services will be used. You may change your selection by clicking “Manage Cookies” at the bottom of the page. [Privacy Statement](#) [Third-Party Cookies](#)

Accept

Reject

Manage cookies

# Microsoft Ignite

Nov 19–22, 2024

Register now >



Learn

Discover ▾

Product documentation ▾

Development languages ▾

Topics ▾



Sign in

Microsoft 365

Solutions and architecture ▾

Apps and services ▾

Training ▾

Resources ▾

Free Account

## Version

Windows 11 and Windows Server 2022  
PowerShell ▾

Search

Set-NetUDFSetting

Test-NetConnection

- > NetworkConnectivityStatus
- > NetworkController
- > NetworkControllerDiagnostics
- > NetworkLoadBalancingClusters
- > NetworkSwitchManager
- > NetworkTransition
- > NFS
- > NPS
- > PcsvDevice
- > PersistentMemory
- > pki
- > PlatformIdentifier
- > PnpDevice
- > PrintManagement
- > ProcessMitigations
- > Provisioning
- > RDMgmt
- > RemoteAccess
- > RemoteDesktopServices
- > ScheduledTasks
- > SecureBoot
- > ServerCore
- > ServerManager
- > ServerManagerTasks
- > ShieldedVmCmdlets
- > ShieldedVMDataFile
- > ShieldedVMTemplate
- > SmbShare
- > SmbWitness
- > SMISConfig

Learn / Windows / PowerShell / NetTCPIP /



# Test-NetConnection

Reference

Feedback

Module: [NetTCPIP](#)

## In this article

[Syntax](#)

[Description](#)

[Examples](#)

[Parameters](#)

[Show 2 more](#)

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

 Download PDF


```
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 "Detailed"
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 -InformationLevel Detailed
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::200:5eff:fe00:202 InterfaceIndex: 4] is selected for Destination: 2001:428:3805:187::2768 in Compartment: 1, Reason: RouteOrder.

SourceAddressSelectionEvents : IP: Source address 2001:4898:e0:79:f17c:d212:8743:43c2 is preferred over fe80::200:5eff:fe00:202

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::200:5eff:fe00:202 InterfaceIndex: 5] is blocked for Destination: 2600:1409:a:185::2768 ConstrainInterfaceIndex: 5

RouteMetric: 256] is blocked for Destination: 2600:1409:a:185::2768 ConstrainInterfaceIndex: 5

SourceAddressSelectionEvents : IP: Source address 2001:4898:e0:79:75dd:64cf:d9ff:f86 is preferred over fe80::200:5eff:fe00:202

IP: Source address 2001:4898:e0:79:75dd:64cf:d9ff:f86 is preferred over fe80::200:5eff:fe00:202

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.

# Feedback

Was this page helpful? 

Yes

No

[Provide product feedback](#)