

## NETSH.exe (Network Shell)

Configure Network Interfaces, Windows Firewall, Routing & remote access.

### Syntax

NETSH [*Context*] [*sub-Context*] *command*

### Key

The contexts and commands available vary by platform, the list below is for **Windows Server 2016**.  
Use interactive mode/help (described below) to check the commands available on your machine.

abort - Discard changes made while in offline mode.  
add - Add a configuration entry to a list of entries.  
netsh add helper *DllFileName* - Install the specified helper DLL

advfirewall - Change the 'netsh advfirewall' context.

netsh advfirewall consec ? - Display a list of commands.  
netsh advfirewall consec add - Add a new connection security rule.  
netsh advfirewall consec delete - Delete all matching connection security rules.  
netsh advfirewall consec dump - Display a configuration script.

netsh advfirewall consec *ruleName* - Add a new connection security rule.  
netsh advfirewall consec *ruleName* delete - Delete a connection security rule.  
netsh advfirewall dump - Display the current configuration settings.

netsh advfirewall export *fileName* - Export the current configuration settings to a file.  
netsh advfirewall import *fileName* - Import the configuration settings from a file.

netsh advfirewall firewall *ruleName* add - Add a new firewall rule.  
netsh advfirewall firewall *ruleName* delete - Delete a firewall rule.  
netsh advfirewall firewall *ruleName* show - Display a firewall rule.  
netsh advfirewall firewall *ruleName* show all - Display all firewall rules.  
netsh advfirewall firewall *ruleName* show *ruleName* - Display a firewall rule.

netsh advfirewall firewall *ruleName* set *ruleName* - Set a firewall rule.  
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alias - Add an alias.  
branchcache - Change to the 'netsh branchcache' context.  
bridge - Change to the 'netsh bridge' context.  
netsh bridge dump - Display a configuration script.  
netsh bridge install - Install the component corresponding to the current context.  
netsh bridge set - Set configuration information.  
netsh bridge show - Display information.  
netsh bridge uninstall - Remove the component corresponding to the current context.

bye - Exit the program.  
commit - Commit changes made while in offline mode.  
delete - Delete a configuration entry from a list of entries.  
netsh delete helper *DllFileName* - Remove the specified helper DLL from netsh.  
Note that after a helper is removed, it is no longer supported by netsh.  
dhcp - Change to the 'DHCP' context.  
dhcpclient - Change to the 'netsh dhcpclient' context.  
netsh dhcpclient list - List all the commands available.  
netsh dhcpclient trace enable - Enable tracing for DHCP client and DHCP QEC.  
netsh dhcpclient trace disable - Disable tracing for DHCP client and DHCP QEC.  
dnsclient - Change the 'netsh dnsclient' context.  
dump - Display a configuration script.  
netsh dump - Create a script that contains the current configuration.

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If saved to a file, this can be used to restore the configuration settings.

- exec

- Run a script file.
- exit

- Exits the program.
- firewall

- Change to the 'netsh firewall' context.
- netsh firewall add

- Add firewall configuration.
- netsh firewall delete

- Delete firewall configuration.
- netsh firewall dump

- Display a configuration script.
- netsh firewall reset

- Reset firewall configuration to default.
- netsh firewall set allowedprogram

- Set firewall allowed program configuration.
- netsh firewall set icmpsetting

- Set firewall ICMP configuration.
- netsh firewall set logging

- Set firewall logging configuration.
- netsh firewall set multicastbroadcastresponse

- Set firewall multicast/broadcast response configuration.
- netsh firewall set notifications

- Set firewall notification configuration.
- netsh firewall set opmode

- Set firewall operational configuration.
- netsh firewall set portopening

- Set firewall port configuration.
- netsh firewall set service

- Set firewall service configuration.
- netsh firewall show allowedprogram

- Show firewall allowed program configuration.
- netsh firewall show config

- Show firewall configuration.
- netsh firewall show currentprofile

- Show current firewall profile.
- netsh firewall show icmpsetting

- Show firewall ICMP configuration.
- netsh firewall show logging

- Show firewall logging configuration.
- netsh firewall show multicastbroadcastresponse

- Show firewall multicast/broadcast response configuration.
- netsh firewall show notifications

- Show firewall notification configuration.
- netsh firewall show opmode

- Show firewall operational configuration.
- netsh firewall show portopening

- Show firewall port configuration.
- netsh firewall show service

- Show firewall service configuration.
- netsh firewall show status

- Show firewall status.
- help

- Display a list of netsh commands.
- netsh help

- Display a list of netsh commands.
- http

- Change to the 'netsh http' context.
- netsh http add

- Add an http listener.
- netsh http delete

- Delete an http listener.
- netsh http delete sslcert

- Delete an http ssl certificate.
- netsh http delete sslcert

- Delete an http ssl certificate.
- netsh http dump

- Display a configuration script.
- netsh http flush

- Flush the http listener cache.
- netsh http show

- Display the http listener status.
- netsh http show cachepath

- Display the http cache path.
- netsh http show cachestore

- Display the http cache store.
- netsh http show iplist

- Display the http listener ip list.
- netsh http show service

- Display the http listener service.
- netsh http show setting

- Display the http listener settings.
- netsh http show sslcert

- Display the http ssl certificate.
- netsh http show timeout

- Display the http listener timeout.
- netsh http show urlacl

- Display the http listener url acl.
- interface

- Change to the 'netsh interface' context.
- netsh interface 6to4

- Change to the 'netsh interface 6to4' context.
- netsh interface add

- Add a network interface.
- netsh interface delete

- Delete a network interface.
- netsh interface dump

- Display a configuration script.
- netsh interface ipv4

- Change to the 'netsh interface ipv4' context.
- netsh interface ipv6

- Change to the 'netsh interface ipv6' context.
- netsh interface isatap

- Change to the 'netsh interface isatap' context.
- netsh interface portproxy

+ Change to the 'netsh interface portproxy' context.
- netsh interface reset

- Reset information.
- netsh interface set

- Set configuration information.
- netsh interface show interface

- Display the network interface status.
- netsh interface ip show interfaces

- Display the network interface status.
- netsh interface tcp

+ Change to the 'netsh interface tcp' context.
- netsh interface teredo

+ Change to the 'netsh interface teredo' context.
- ipsec

- Change to the 'netsh ipsec' context.
- netsh ipsec dump

- Display a configuration script.
- netsh ipsec dynamic add

- Add policy, filter, and actions to SPD.
- netsh ipsec dynamic delete

- Delete policy, filter, and actions from SPD.
- netsh ipsec dynamic dump

- Display a configuration script.
- netsh ipsec dynamic set

- Modify policy, filter, and actions in SPD.
- netsh ipsec dynamic show

- Display policy, filter, and actions from SPD.
- netsh ipsec static add

- Create new policies and related information.
- netsh ipsec static delete

- Delete policies and related information.
- netsh ipsec static dump

- Display a configuration script.
- netsh ipsec static exportpolicy

- Export all the policies from the policy store.
- netsh ipsec static importpolicy

- Import the policies from a file to the policy store.
- netsh ipsec static set

- Modify existing policies and related information.
- netsh ipsec static show

- Display details of policies and related information.
- ipsecdosprotection

- Change to the 'netsh ipsecdosprotection' context.

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lan - Change to the 'netsh lan' context.  
netsh lan add - Add a configuration entry to a table.  
netsh lan delete - Delete a configuration entry from a table.  
netsh lan dump - Display a configuration script.  
netsh lan export - Save LAN profiles to XML files.  
netsh lan reconnect - Reconnect on an interface.  
netsh lan set - Configure settings on interfaces.  
netsh lan show - Display information.

mbn - Change to the 'netsh mbn context.  
namespace - Change to the 'netsh namespace' context.

netio - Chang to the 'netsh netio' context.  
netsh netio add - Add a configuration entry to a table.  
netsh netio delete - Delete a configuration entry from a table.  
netsh netio dump - Display a configuration script.  
netsh netio show - Display information.

offline - Set the current mode to offline.  
online - Set the current mode to online.  
p2p - Change to the 'netsh p2p' context.  
popd - Pop a context from the stack.  
pushd - Pushe current context on stack.  
quit - Exit the program.  
ras - Change to the 'netsh ras' context. (Remote Access Server)  
netsh ras aaaa - Change to the 'netsh ras aaaa' context.  
netsh ras add - Add items to a table.  
netsh ras delete - Delete items from a table.  
netsh ras diagnostics - Display diagnostic information.  
netsh ras dump - Display a configuration script.  
netsh ras ip - Display IP address.  
netsh ras ipv6 - Display IPv6 address.  
netsh ras set - Configure settings on interfaces.  
netsh ras show - Display information.

routing - Change to the 'netsh routing' context.  
rpc - Change to the 'netsh rpc' context.  
netsh rpc add - Add items to a table.  
netsh rpc delete - Delete items from a table.  
netsh rpc dump - Display a configuration script.  
netsh rpc filter - Display filter settings.  
netsh rpc reset - Reset filter settings.  
netsh rpc show - Display information.

set - Update configuration.  
netsh set machine [name] [username] [password] [domain] [type] [flags]  
If a machine name is not specified, the current machine is used.  
A username and password can be specified.  
The domain is optional.  
The type is optional.  
The flags are optional.

show - Display information.  
netsh show alias - List aliases.  
netsh show helper - List helpers.


trace - Change to the 'netsh trace' context.  
netsh trace convert - Convert a trace file.  
netsh trace correlate - Correlate trace files.  
netsh trace diagnose - Diagnose a trace file.  
netsh trace dump - Display a configuration script.  
netsh trace export - Export a scenario to a WPR profile.  
netsh trace help - display help  
netsh trace merge - Merge trace files and add symbols metadata.  
netsh trace postreset - ?  
netsh trace start - Start tracing.  
netsh trace stop - Stop tracing.

unalias - Delete an alias.  
wcn - Change to the 'netsh wcn' context (Wireless config/connect).  
wfp - Change to the 'netsh wfp' context, Windows Filtering Platform (WFP).  
winhttp - Change to the 'netsh winhttp' context.  
netsh winhttp dump - Display a configuration script.  
netsh winhttp import - Import WinHTTP proxy settings.  
netsh winhttp reset - Reset WinHTTP settings.  
netsh winhttp set - Configure WinHTTP settings.  
netsh winhttp show - Display currents settings.


winsock - Change to the 'netsh winsock' context.  
netsh winsock audit - Display a list of Winsock LSPs that have been installed and removed.  
netsh winsock dump - Display a configuration script.  
netsh winsock remove - Remove a Winsock LSP from the system.  
netsh winsock reset - Reset the Winsock Catalog to a clean state.  
netsh winsock show - Display information.

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wlan	- Change to the 'netsh wlan' context (wireless lan).
netsh wlan add	- Add a configuration entry to a table.
netsh wlan connect	- Connect to a wireless network.
netsh wlan delete	- Delete a configuration entry from a table.
netsh wlan disconnect	- Disconnect from a wireless network.
netsh wlan dump	- Display a configuration script.
netsh wlan export	- Save WLAN profile to an XML file.
netsh wlan help or ?	- Display a list of commands.
netsh wlan IHV	- Commands for IHV logging.
netsh wlan refresh	- Refresh hosted network settings.
netsh wlan reportissues	- Generate WLAN smart trace report.
netsh wlan set	- Set configuration information.
netsh wlan show	- Display information.
netsh wlan start	- Start hosted network.
netsh wlan stop	- Stop hosted network.
netsh	- Interactive mode

In interactive mode, switch context by typing any context name: advfirewall, bridge, firewall, http, interface, ipsec.. etc  
Then list the available commands with ?  
Exit interactive mode with Quit or Exit.  
To view help for any command, type the command, followed by a space and ?

For run Netsh against a remote machine, both *File and Printer sharing* must be enabled and the *Remote Registry service* must be running on the remote machine.

The syntax above is based on Windows CMD. *ip* is an alias for *ipv4*.  
Most NETSH options require [elevation](#).

### Examples

Enable or Disable File and Printer Sharing

```
C:\> netsh advfirewall firewall set rule "File and Printer Sharing" enable
C:\> netsh advfirewall firewall set rule "File and Printer Sharing" disable
```

Install ipmontr.dll:

```
C:\> netsh advfirewall firewall add rule name="ipmontr" enable
```

Export the firewall policy:

```
C:\> netsh advfirewall firewall export policy
```

Enable or Disable the LAN connection

```
C:\> netsh interface set interface "Local Area Connection" disable
C:\> netsh interface set interface "Local Area Connection" enable
```

Show TCP/IP settings:

```
C:\> netsh interface ip show configuration
C:\> netsh interface ipv4 show configuration
C:\> netsh interface ipv6 show configuration
```

Set a static IP address (e.g. for a laptop):

```
C:\> netsh interface ip set address name="Local Area Connection" source=static addr=192.168.0.10
mask=255.255.255.0 gateway=192.168.0.1 gwmetric=1
```

Set a dynamic IP address with DHCP:

```
C:\> netsh interface ip set address name="Local Area Connection" source=dhcp
```

Add multiple DNS servers:

```
C:\> netsh interface ipv4 add dns "Local Area Connection" 10.0.0.1
C:\> netsh interface ipv4 add dns "Local Area Connection" 10.0.0.3 index=2
index=2 adds the IP as a secondary dns server.
```

Set a static DNS server address:

```
C:\> netsh interface ip set dns name="Local Area Connection" source=static addr=192.168.0.2 register=none
```

Working with foreign locales: you cannot rely on the interface name being English e.g. in French the *Local Area Network* is called "*Connexion au réseau local*" To display the different interfaces with their index numbers:

```
C:\> netsh interface ip show interfaces
```

Knowing the index number (the main/active interface tends to be 13.) we can set a static address/gateway using the index number:

```
C:\> netsh interface ip set address 13 static 192.168.0.10 255.255.255.0 192.168.0.1 1
```

Set a dynamic DNS server address with DHCP:

```
C:\> netsh interface ip set dns name="Local Area Connection" source=dhcp
```

Set a static address for the WINS server:

```
C:\> netsh interface ip set wins name="Local Area Connection" source=static addr=192.168.100.3
```

To configure WINS from DHCP:

```
C:\> netsh interface ip set wins name="Local Area Connection" source=dhcp
```

List general configuration state including DirectAccess and DNSSEC:

```
C:\> netsh dns show state
```

Disable IPv6 [privacy](#) extensions:

```
C:\> netsh interface ipv6 set privacy state=disabled store=persistent (saved configuration)
C:\> netsh interface ipv6 set privacy state=disabled store=persistent (saved configuration)
```

Backup the local DHCP server configuration:

```
C:\> netsh dump dhcp > C:\backups\netsh_dhcp.txt
You can use this backup file to restore the configuration.
```

Work against a remote machine:

```
C:\> netsh set machine source=netsh
```

Run a network capture to the file c:\temp\temp.pcap:

```
C:\> netsh trace start capture {c:\temp\temp.pcap}
C:\> netsh trace stop
```

Run a network capture with the persistent file c:\temp\temp.pcap: [netsh trace start capture {c:\temp\temp.pcap} persistent](#) while Windows is starting:

```
C:\> netsh trace start persistent {c:\temp\temp.pcap}
C:\> netsh trace stop
```

Backup the current network interface configuration:

```
C:\> netsh dump interface > c:\backups\netsh_interfaces.txt
```

Restore network interface configuration:

```
C:\> netsh exec c:\backups\netsh_interfaces.txt
```

Run Netsh from [PowerShell](#) (returns a hashtable):

```
PS C:\> $myFWstate=netsh firewall show state
PS C:\> $myFWstate -match "disable"
```

Disable Network auto-tuning (certain routers and networking devices perform better with this off.):

```
PS C:\> netsh interface tcp set global autotuning=disabled
```

Enable Network auto-tuning (certain routers and networking devices perform better with this on.):

```
PS C:\> netsh interface tcp set global autotuning=normal
```

Remove a wireless network profile, ([script to remove all](#) insecure profiles):

```
PS C:\> netsh wlan delete profile name="CentralPerkCoffee"
```

*"Once you eliminate your #1 problem, #2 gets a promotion" ~ Gerald Weinberg, "The Secrets of Consulting"*

## Related commands

- [Netsh command reference](#) - Microsoft.com
- [Q242468](#) - How to Use the Netsh.exe Tool.
- [DNSCMD](#) - Manage DNS servers.
- [NVSPBIND](#) - Modify network bindings (Unsupported tool.)

[NETSH](#) - Change from Static IP Address to DHCP with NETSH.  
[ROUTE](#) - Manipulate network routing tables.  
PowerShell: `New-NetEventSession`  
Equivalent bash command (Linux): [ifconfig](#) - Interface configurator.



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