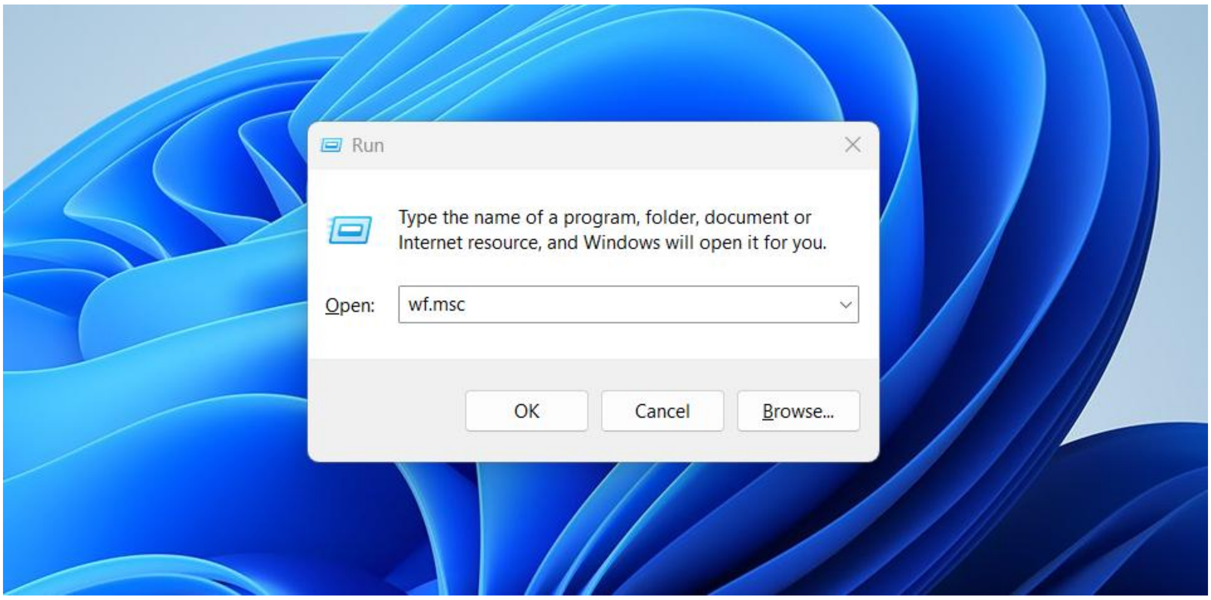
Task 4: Setup and Use a Firewall on Windows

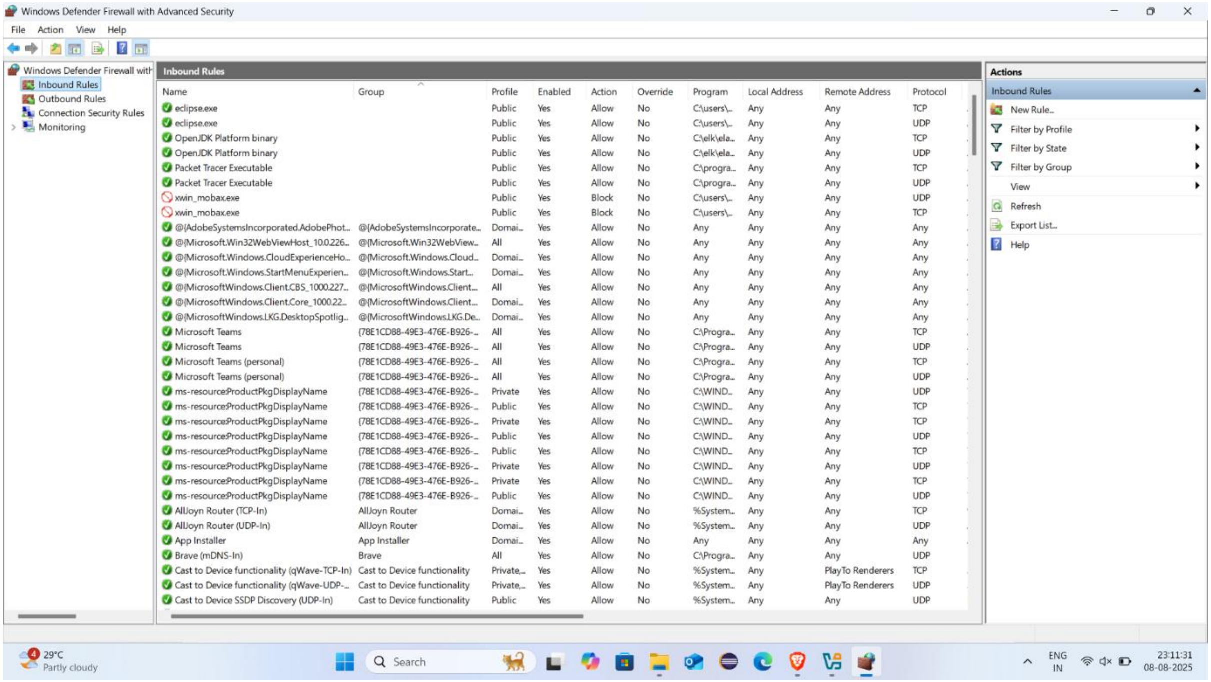
1. Open Firewall Configuration

- Press Win + R, type **wf.msc**, and press **Enter**.
- This opens Windows Defender Firewall with Advanced Security.



Type the name of a program, folder, document or Internet resource, and Windows will open it for you.

Open: wf.msc



Inbound Rules

Name	Group	Profile	Enabled	Action	Override	Program	Local Address	Remote Address	Protocol
eclipse.exe		Public	Yes	Allow	No	C:\users\...	Any	Any	TCP
eclipse.exe		Public	Yes	Allow	No	C:\users\...	Any	Any	UDP
OpenJDK Platform binary		Public	Yes	Allow	No	C:\elk\ela...	Any	Any	TCP
OpenJDK Platform binary		Public	Yes	Allow	No	C:\elk\ela...	Any	Any	UDP
Packet Tracer Executable		Public	Yes	Allow	No	C:\progra...	Any	Any	TCP
Packet Tracer Executable		Public	Yes	Allow	No	C:\progra...	Any	Any	UDP
xwin_mobax.exe		Public	Yes	Block	No	C:\users\...	Any	Any	UDP
xwin_mobax.exe		Public	Yes	Block	No	C:\users\...	Any	Any	TCP
@{AdobeSystemsIncorporated.AdobePhot...	@{AdobeSystemsIncorporate...	Domai...	Yes	Allow	No	Any	Any	Any	Any
@{Microsoft.Win32WebViewHost_10.0.226...	@{Microsoft.Win32WebView...	All	Yes	Allow	No	Any	Any	Any	Any
@{Microsoft.Windows.CloudExperienceHo...	@{Microsoft.Windows.Cloud...	Domai...	Yes	Allow	No	Any	Any	Any	Any
@{Microsoft.Windows.StartMenuExperien...	@{Microsoft.Windows.Start...	Domai...	Yes	Allow	No	Any	Any	Any	Any
@{MicrosoftWindows.Client.CBS_1000.227...	@{MicrosoftWindows.Client...	All	Yes	Allow	No	Any	Any	Any	Any
@{MicrosoftWindows.Client.Core_1000.22...	@{MicrosoftWindows.Client...	Domai...	Yes	Allow	No	Any	Any	Any	Any
@{MicrosoftWindows.LKG.DesktopSpotlig...	@{MicrosoftWindows.LKG.De...	Domai...	Yes	Allow	No	Any	Any	Any	Any
Microsoft Teams	{78E1CD88-49E3-476E-B926-...	All	Yes	Allow	No	C:\Progra...	Any	Any	TCP
Microsoft Teams	{78E1CD88-49E3-476E-B926-...	All	Yes	Allow	No	C:\Progra...	Any	Any	UDP
Microsoft Teams (personal)	{78E1CD88-49E3-476E-B926-...	All	Yes	Allow	No	C:\Progra...	Any	Any	TCP
Microsoft Teams (personal)	{78E1CD88-49E3-476E-B926-...	All	Yes	Allow	No	C:\Progra...	Any	Any	UDP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Private	Yes	Allow	No	C:\WIND...	Any	Any	UDP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Public	Yes	Allow	No	C:\WIND...	Any	Any	TCP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Private	Yes	Allow	No	C:\WIND...	Any	Any	TCP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Public	Yes	Allow	No	C:\WIND...	Any	Any	UDP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Public	Yes	Allow	No	C:\WIND...	Any	Any	TCP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Private	Yes	Allow	No	C:\WIND...	Any	Any	UDP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Private	Yes	Allow	No	C:\WIND...	Any	Any	TCP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Public	Yes	Allow	No	C:\WIND...	Any	Any	UDP
AllJoyn Router (TCP-In)	AllJoyn Router	Domai...	Yes	Allow	No	%System...	Any	Any	TCP
AllJoyn Router (UDP-In)	AllJoyn Router	Domai...	Yes	Allow	No	%System...	Any	Any	UDP
App Installer	App Installer	Domai...	Yes	Allow	No	Any	Any	Any	Any
Brave (mDNS-In)	Brave	All	Yes	Allow	No	C:\Progra...	Any	Any	UDP
Cast to Device functionality (qWave-TCP-In)	Cast to Device functionality	Private,...	Yes	Allow	No	%System...	Any	PlayTo Renderers	TCP
Cast to Device functionality (qWave-UDP-...	Cast to Device functionality	Private,...	Yes	Allow	No	%System...	Any	PlayTo Renderers	UDP
Cast to Device SSDP Discovery (UDP-In)	Cast to Device functionality	Public	Yes	Allow	No	%System...	Any	Any	UDP

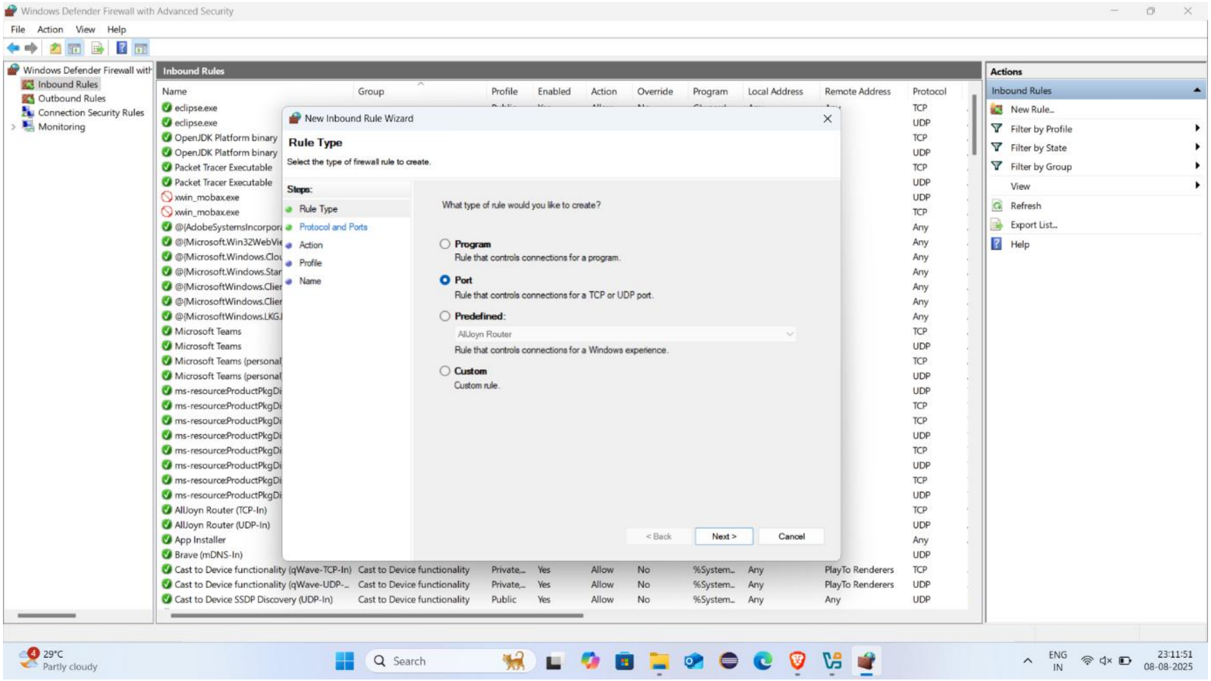
2. List Current Rules

- Go to **Inbound Rules** → scroll to view existing rules.

3. Add a Rule to Block Port 23 (Telnet)

- In **Inbound Rules**, click **New Rule** (right panel).

  → Name it Block Telnet.



New Inbound Rule Wizard

Rule Type

Select the type of firewall rule to create.

Steps:
- Rule Type
- Protocol and Ports
- Action
- Profile
- Name

What type of rule would you like to create?

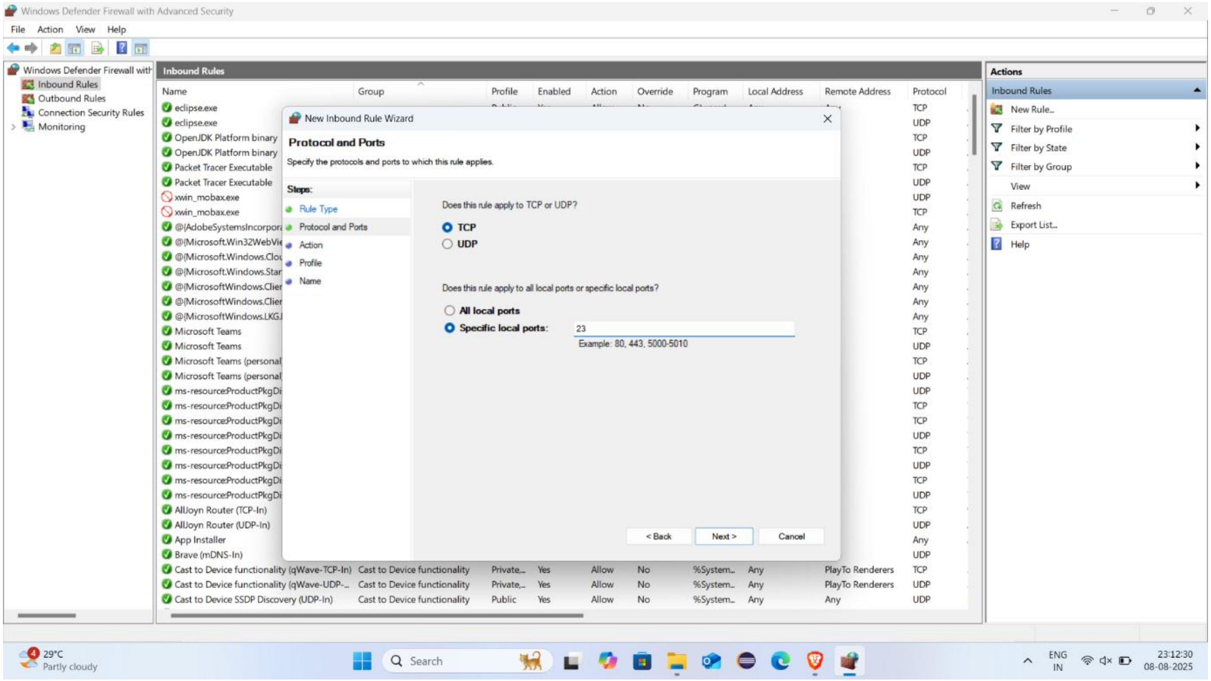
○ **Program**
Rule that controls connections for a program.

● **Port**
Rule that controls connections for a TCP or UDP port.

○ **Predefined:**
AllJoyn Router
Rule that controls connections for a Windows experience.

○ **Custom**
Custom rule.

- Select **Port** → **TCP** → Specific local port: 23



New Inbound Rule Wizard

Protocol and Ports

Specify the protocols and ports to which this rule applies.

Steps:
- Rule Type
- Protocol and Ports
- Action
- Profile
- Name

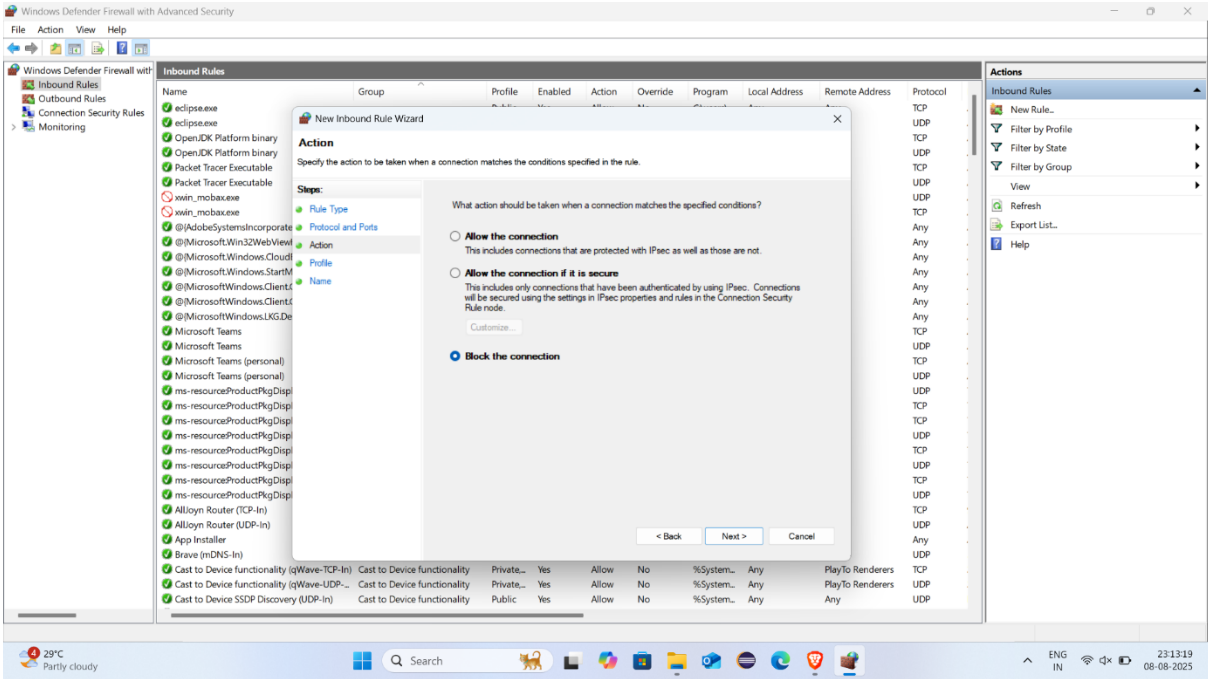
Does this rule apply to TCP or UDP?

● **TCP**
○ **UDP**

Does this rule apply to all local ports or specific local ports?

○ **All local ports**
● **Specific local ports:** 23
Example: 80, 443, 5000-5010

→ **Block the connection.**



New Inbound Rule Wizard

Action

Specify the action to be taken when a connection matches the conditions specified in the rule.

Steps:

- Rule Type
- Protocol and Ports
- Action
- Profile
- Name

What action should be taken when a connection matches the specified conditions?

○ **Allow the connection**
This includes connections that are protected with IPsec as well as those are not.

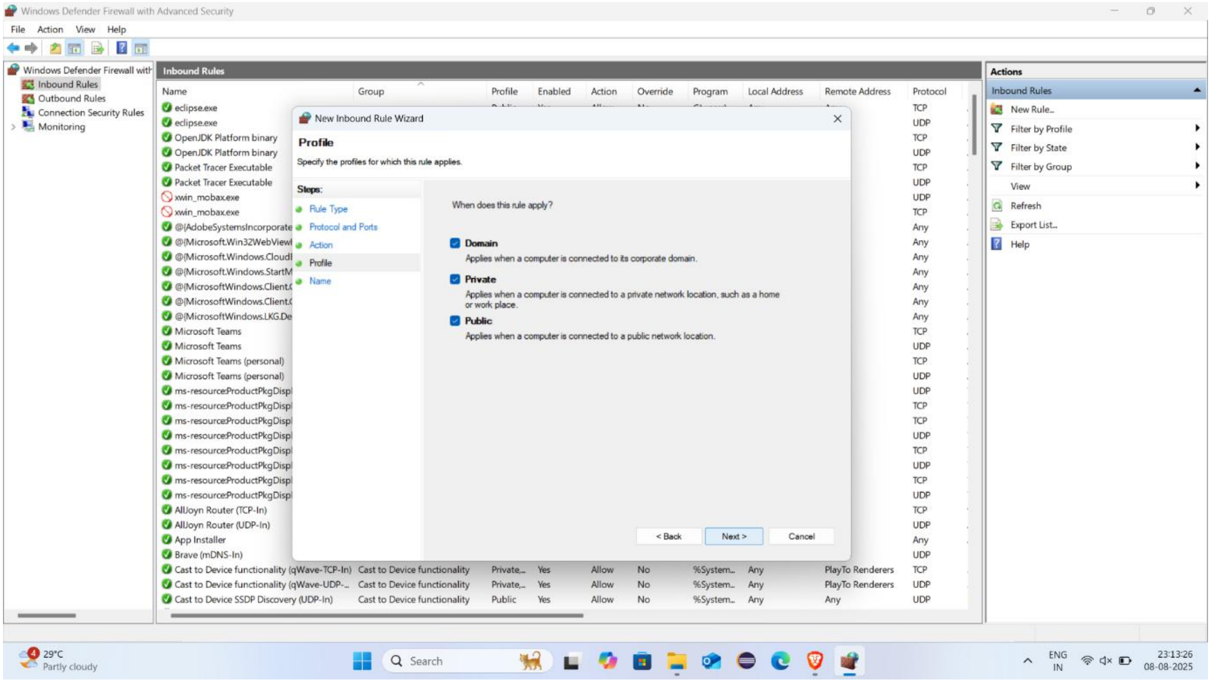
○ **Allow the connection if it is secure**
This includes only connections that have been authenticated by using IPsec. Connections will be secured using the settings in IPsec properties and rules in the Connection Security Rule node.

Customize...

● **Block the connection**

< Back | Next > | Cancel

→ Choose **All Profiles**



New Inbound Rule Wizard

Profile

Specify the profiles for which this rule applies.

Steps:

- Rule Type
- Protocol and Ports
- Action
- Profile
- Name

When does this rule apply?

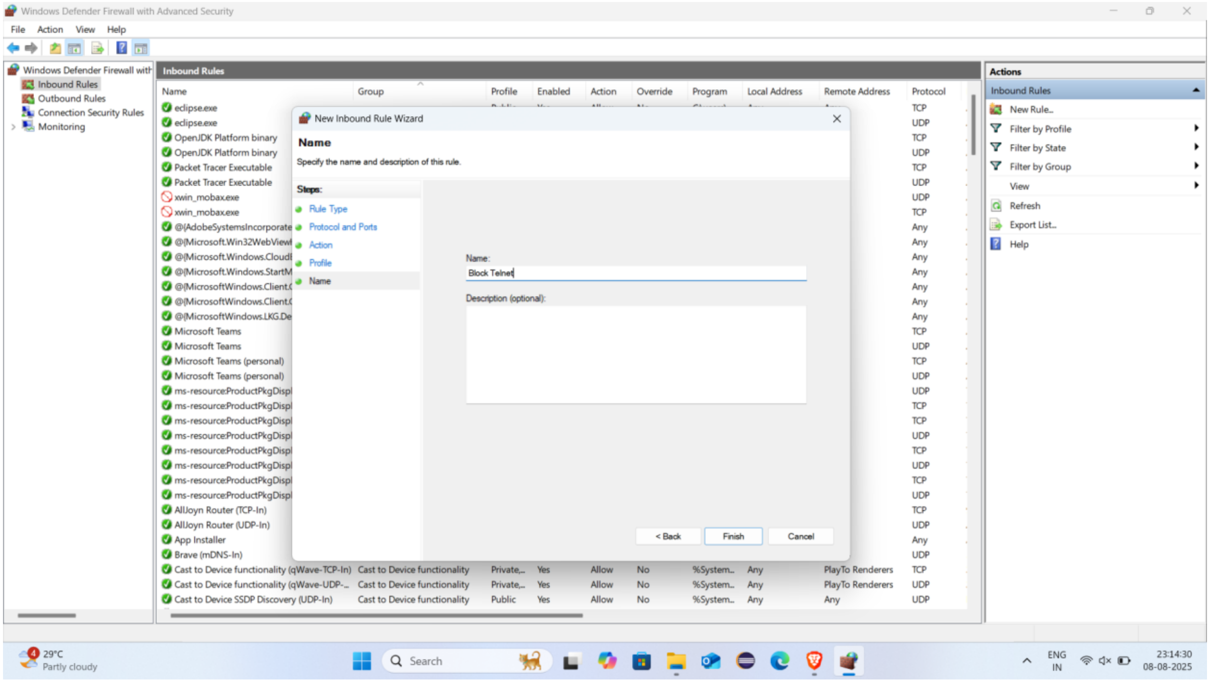
☑ **Domain**
Applies when a computer is connected to its corporate domain.

☑ **Private**
Applies when a computer is connected to a private network location, such as a home or work place.

☑ **Public**
Applies when a computer is connected to a public network location.

< Back | Next > | Cancel

→ Name it Block Telnet.



New Inbound Rule Wizard

Name

Specify the name and description of this rule.

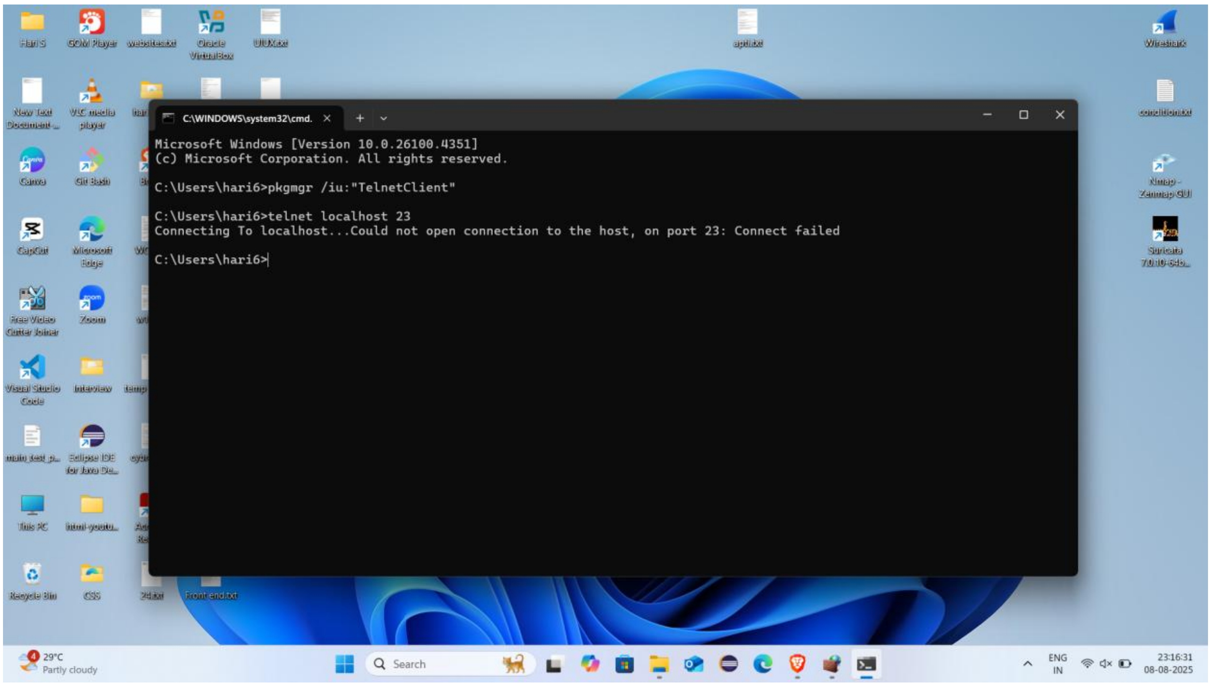
Steps:
- Rule Type
- Protocol and Ports
- Action
- Profile
- Name

Name: Block Telnet

Description (optional):

4. Test the Rule

- Install Telnet client (pkgmgr /iu:"TelnetClient" in cmd if needed).
- Run:

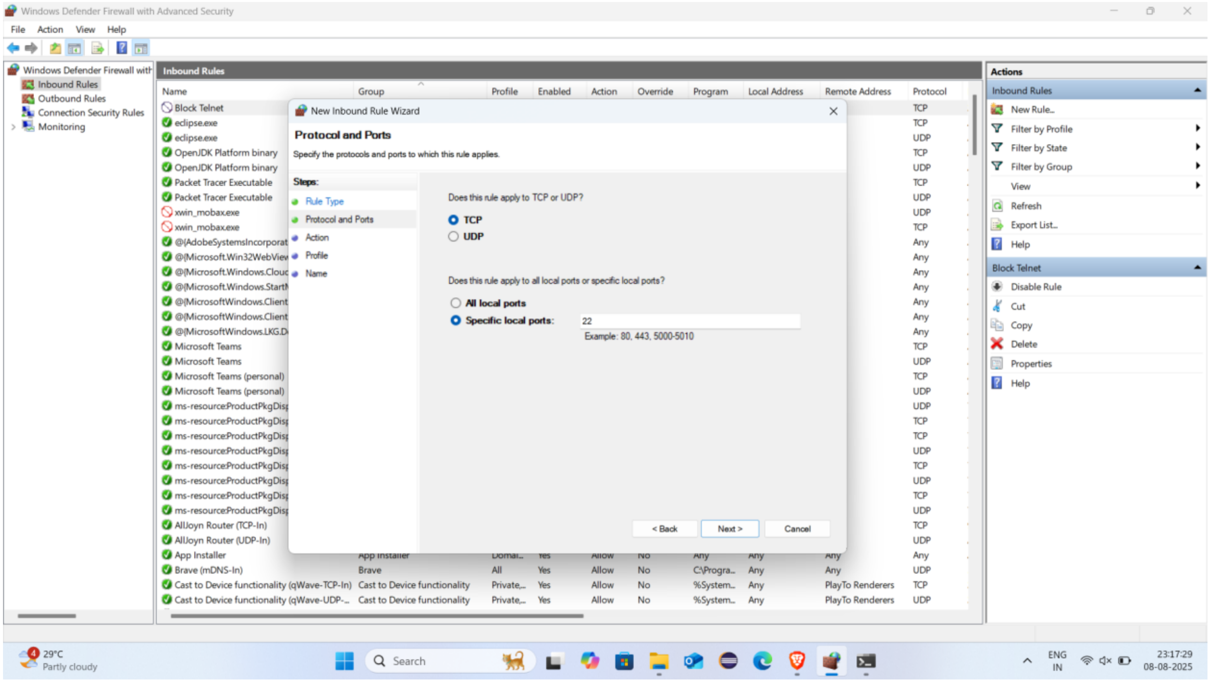


```
Microsoft Windows [Version 10.0.26100.4351]
(c) Microsoft Corporation. All rights reserved.

C:\Users\hari6>pkgmgr /iu:"TelnetClient"

C:\Users\hari6>telnet localhost 23
Connecting To localhost...Could not open connection to the host, on port 23: Connect failed

C:\Users\hari6>
```

- It should fail to connect.

5. Allow SSH (Port 22

- Repeat **New Rule** steps but choose **Allow the connection** and port 22.



New Inbound Rule Wizard

Protocol and Ports

Specify the protocols and ports to which this rule applies.

Steps:
- Rule Type
- Protocol and Ports
- Action
- Profile
- Name

Does this rule apply to TCP or UDP?

● TCP

○ UDP

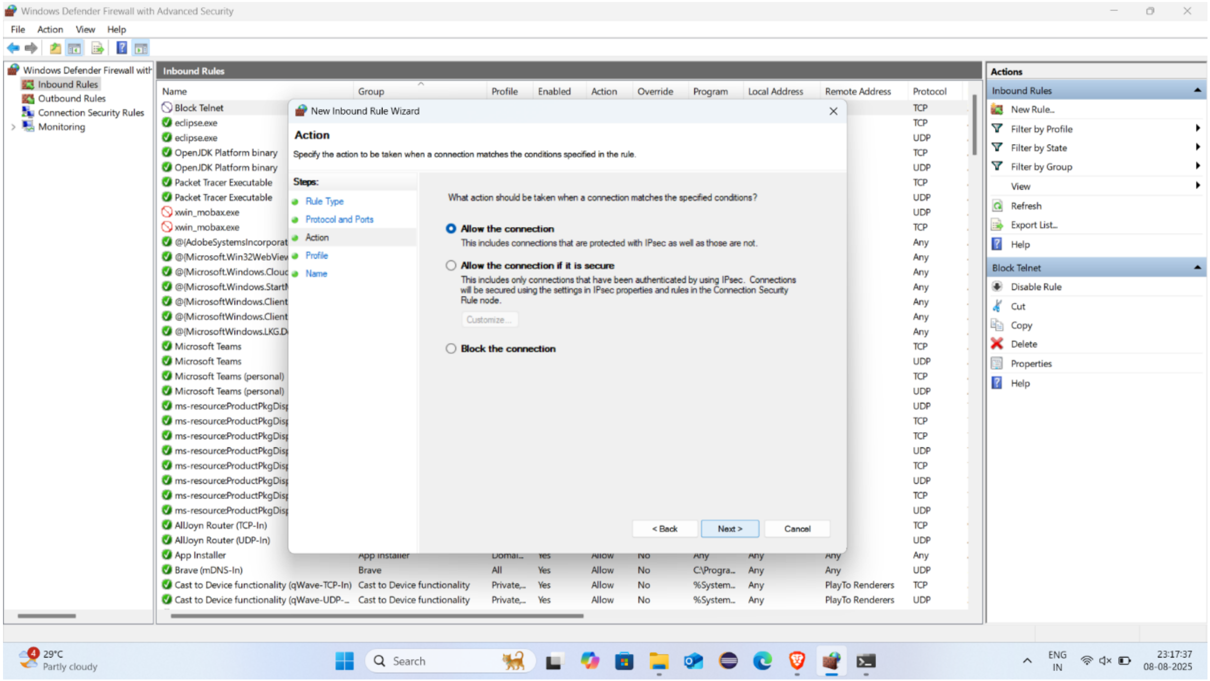
Does this rule apply to all local ports or specific local ports?

○ All local ports

● Specific local ports: 22

Example: 80, 443, 5000-5010

< Back | Next > | Cancel



New Inbound Rule Wizard

Action

Specify the action to be taken when a connection matches the conditions specified in the rule.

Steps:
- Rule Type
- Protocol and Ports
- Action
- Profile
- Name

What action should be taken when a connection matches the specified conditions?

● Allow the connection

This includes connections that are protected with IPsec as well as those are not.

○ Allow the connection if it is secure

This includes only connections that have been authenticated by using IPsec. Connections will be secured using the settings in IPsec properties and rules in the Connection Security Rule node.

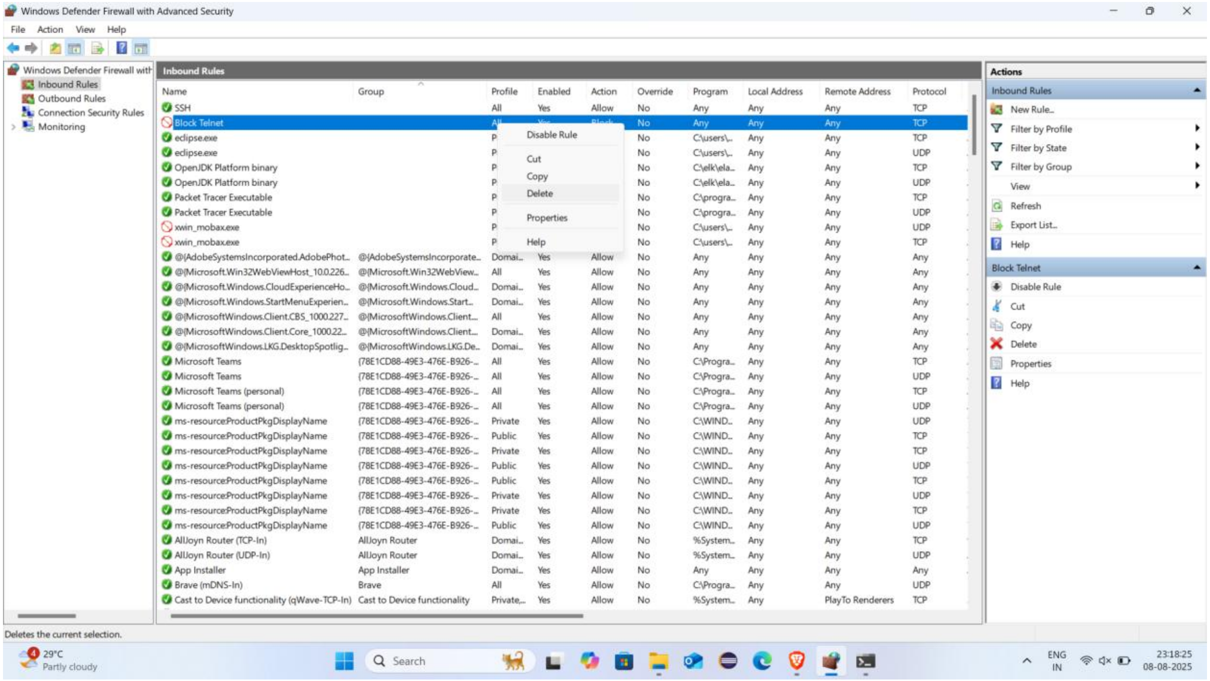
Customize...

○ Block the connection

< Back | Next > | Cancel

6. Remove the Test Block Rule

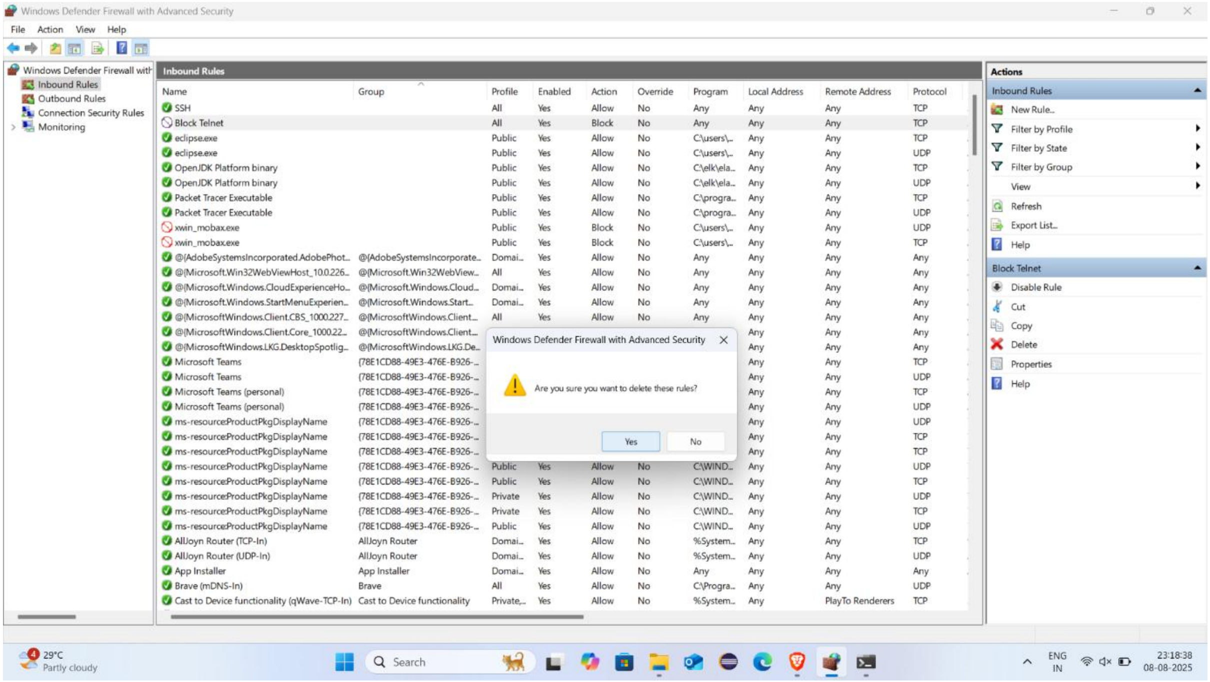
- Find your Block Telnet rule → Right-click → **Delete**.



Inbound Rules

Name	Group	Profile	Enabled	Action	Override	Program	Local Address	Remote Address	Protocol
SSH		All	Yes	Allow	No	Any	Any	Any	TCP
Block Telnet		All			No	Any	Any	Any	TCP
eclipse.exe		P			No	C:\users\...	Any	Any	TCP
eclipse.exe		P			No	C:\users\...	Any	Any	UDP
OpenJDK Platform binary		P			No	C:\elk\ela...	Any	Any	TCP
OpenJDK Platform binary		P			No	C:\elk\ela...	Any	Any	UDP
Packet Tracer Executable		P			No	C:\progra...	Any	Any	TCP
Packet Tracer Executable		P			No	C:\progra...	Any	Any	UDP
xwin_mobax.exe		P			No	C:\users\...	Any	Any	UDP
xwin_mobax.exe		P			No	C:\users\...	Any	Any	TCP
@{AdobeSystemsIncorporated.AdobePhot...	@{AdobeSystemsIncorporate...	Domai...	Yes	Allow	No	Any	Any	Any	Any
@{Microsoft.Win32WebViewHost_10.0.226...	@{Microsoft.Win32WebView...	All	Yes	Allow	No	Any	Any	Any	Any
@{Microsoft.Windows.CloudExperienceHo...	@{Microsoft.Windows.Cloud...	Domai...	Yes	Allow	No	Any	Any	Any	Any
@{Microsoft.Windows.StartMenuExperien...	@{Microsoft.Windows.Start...	Domai...	Yes	Allow	No	Any	Any	Any	Any
@{MicrosoftWindows.Client.CBS_1000.227...	@{MicrosoftWindows.Client...	All	Yes	Allow	No	Any	Any	Any	Any
@{MicrosoftWindows.Client.Core_1000.22...	@{MicrosoftWindows.Client...	Domai...	Yes	Allow	No	Any	Any	Any	Any
@{MicrosoftWindows.LKG.DesktopSpotlig...	@{MicrosoftWindows.LKG.De...	Domai...	Yes	Allow	No	Any	Any	Any	Any
Microsoft Teams	{78E1CD88-49E3-476E-B926-...	All	Yes	Allow	No	C:\Progra...	Any	Any	TCP
Microsoft Teams	{78E1CD88-49E3-476E-B926-...	All	Yes	Allow	No	C:\Progra...	Any	Any	UDP
Microsoft Teams (personal)	{78E1CD88-49E3-476E-B926-...	All	Yes	Allow	No	C:\Progra...	Any	Any	TCP
Microsoft Teams (personal)	{78E1CD88-49E3-476E-B926-...	All	Yes	Allow	No	C:\Progra...	Any	Any	UDP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Private	Yes	Allow	No	C:\WIND...	Any	Any	UDP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Public	Yes	Allow	No	C:\WIND...	Any	Any	TCP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Private	Yes	Allow	No	C:\WIND...	Any	Any	TCP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Public	Yes	Allow	No	C:\WIND...	Any	Any	UDP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Public	Yes	Allow	No	C:\WIND...	Any	Any	TCP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Private	Yes	Allow	No	C:\WIND...	Any	Any	UDP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Private	Yes	Allow	No	C:\WIND...	Any	Any	TCP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Public	Yes	Allow	No	C:\WIND...	Any	Any	UDP
AllJoyn Router (TCP-In)	AllJoyn Router	Domai...	Yes	Allow	No	%System...	Any	Any	TCP
AllJoyn Router (UDP-In)	AllJoyn Router	Domai...	Yes	Allow	No	%System...	Any	Any	UDP
App Installer	App Installer	Domai...	Yes	Allow	No	Any	Any	Any	Any
Brave (mDNS-In)	Brave	All	Yes	Allow	No	C:\Progra...	Any	Any	UDP
Cast to Device functionality (qWave-TCP-In)	Cast to Device functionality	Private,...	Yes	Allow	No	%System...	Any	PlayTo Renderers	TCP

Deletes the current selection.



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eclipse.exe		Public	Yes	Allow	No	C:\users\...	Any	Any	UDP
OpenJDK Platform binary		Public	Yes	Allow	No	C:\elk\ela...	Any	Any	TCP
OpenJDK Platform binary		Public	Yes	Allow	No	C:\elk\ela...	Any	Any	UDP
Packet Tracer Executable		Public	Yes	Allow	No	C:\progra...	Any	Any	TCP
Packet Tracer Executable		Public	Yes	Allow	No	C:\progra...	Any	Any	UDP
xwin_mobax.exe		Public	Yes	Block	No	C:\users\...	Any	Any	UDP
xwin_mobax.exe		Public	Yes	Block	No	C:\users\...	Any	Any	TCP
@{AdobeSystemsIncorporated.AdobePhot...	@{AdobeSystemsIncorporate...	Domai...	Yes	Allow	No	Any	Any	Any	Any
@{Microsoft.Win32WebViewHost_10.0.226...	@{Microsoft.Win32WebView...	All	Yes	Allow	No	Any	Any	Any	Any
@{Microsoft.Windows.CloudExperienceHo...	@{Microsoft.Windows.Cloud...	Domai...	Yes	Allow	No	Any	Any	Any	Any
@{Microsoft.Windows.StartMenuExperien...	@{Microsoft.Windows.Start...	Domai...	Yes	Allow	No	Any	Any	Any	Any
@{MicrosoftWindows.Client.CBS_1000.227...	@{MicrosoftWindows.Client...	All	Yes	Allow	No	Any	Any	Any	Any
@{MicrosoftWindows.Client.Core_1000.22...	@{MicrosoftWindows.Client...						Any	Any	Any
@{MicrosoftWindows.LKG.DesktopSpotlig...	@{MicrosoftWindows.LKG.De...						Any	Any	Any
Microsoft Teams	{78E1CD88-49E3-476E-B926-...						Any	Any	TCP
Microsoft Teams	{78E1CD88-49E3-476E-B926-...						Any	Any	UDP
Microsoft Teams (personal)	{78E1CD88-49E3-476E-B926-...						Any	Any	TCP
Microsoft Teams (personal)	{78E1CD88-49E3-476E-B926-...						Any	Any	UDP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...						Any	Any	UDP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...						Any	Any	TCP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...						Any	Any	TCP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Public	Yes	Allow	No	C:\WIND...	Any	Any	UDP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Public	Yes	Allow	No	C:\WIND...	Any	Any	TCP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Private	Yes	Allow	No	C:\WIND...	Any	Any	UDP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Private	Yes	Allow	No	C:\WIND...	Any	Any	TCP
ms-resource:ProductPkgDisplayName	{78E1CD88-49E3-476E-B926-...	Public	Yes	Allow	No	C:\WIND...	Any	Any	UDP
AllJoyn Router (TCP-In)	AllJoyn Router	Domai...	Yes	Allow	No	%System...	Any	Any	TCP
AllJoyn Router (UDP-In)	AllJoyn Router	Domai...	Yes	Allow	No	%System...	Any	Any	UDP
App Installer	App Installer	Domai...	Yes	Allow	No	Any	Any	Any	Any
Brave (mDNS-In)	Brave	All	Yes	Allow	No	C:\Progra...	Any	Any	UDP
Cast to Device functionality (qWave-TCP-In)	Cast to Device functionality	Private,...	Yes	Allow	No	%System...	Any	PlayTo Renderers	TCP

Windows Defender Firewall with Advanced Security

Are you sure you want to delete these rules?

7. How Firewall Filters Traffic (Summary)

-Windows Firewall filters traffic by comparing incoming/outgoing packets against its rule set.
-If a packet matches a block rule, it is dropped before reaching the application.
-If it matches an allow rule, it’s passed through.
-If no rule matches, the default profile behavior applies (allow or block).