Deanosim's Blog

Windows   Featured

Windows 10/11 WINNAT and why your programs can't listen on certain ports. [2024 Update]

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Oct 18, 2021 • 4 min read

Update for 2024:

This is still a problem in 2024 on Windows 11, But it turns out that the below fix doesn't actually fix the root cause of the problem, the actual problem is that Microsoft pushed out a faulty Windows Update that reversed the Dynamic Port Range and Microsoft never bothered to push out an update to fix it for the people that got that broken update, So I'm going to put below an updated fix that should resolve this problem once and for all.

To fix the verseed dynamic ports once and hopefully for all you only need two commands.

```
netsh int ipv4 show dynamicport tcp
```

The command to see your current Dynamic Port Range

```
PS C:\Users\Deano> netsh int ipv4 show dynamicport tcp

Protocol tcp Dynamic Port Range
---------------------------------
Start Port        : 1024
Number of Ports : 64511
```

This is what my Dynamic Port Range looks like for TCP before the fix.

Then run

```
netsh int ipv4 set dynamic tcp start=49152 num=16384
```

This restores your Dynamic Port Range to the default

```
PS C:\Users\Deano> netsh int ipv4 show dynamicport tcp

Protocol tcp Dynamic Port Range
---------------------------------
Start Port        : 49152
Number of Ports : 16384
```

Sources for New Fix:
https://superuser.com/a/1671710
https://stackoverflow.com/a/62359555

Sadly no link previews on my blog for those sites anymore due to their policy changes.

OLD FIX BELOW:

You're probably here because You've been having Error's like "The default port is occupied by another application" or "An attempt was made to access a

socket in a way forbidden by its access permissions." and you've tried using netstat, TCPView, and others to find out what is using that port (For me port 1143 for ProtonMail Bridge) But there's nothing that either program can see using the port.
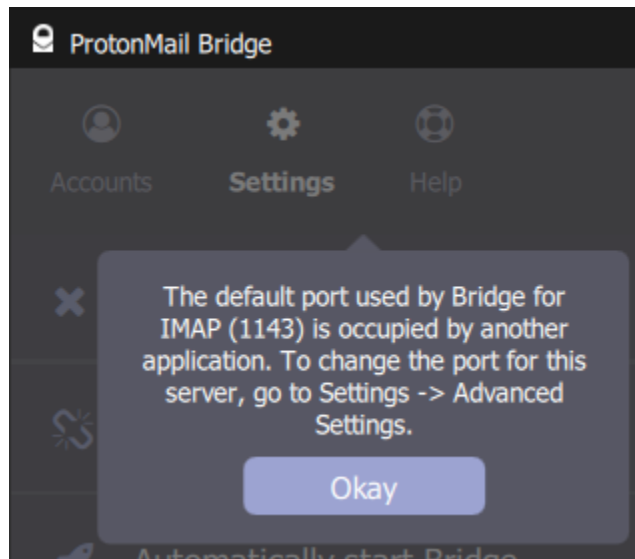
If you're anything like me you've been searching for hours but keep finding the same posts telling you to run netstat and TcpView to find out what's using the port, but that's very unhelpful when those methods can't see what is using the port.

After many hours of research I discovered the Wonders of Windows NAT Driver (WINNAT) and that in a Windows update in 2018 they snuck in a feature that allows WINNAT to reserve ports for Windows use (even if Windows 10 isn't actually using them) so that no other programs on your computer can use these ports.

Now enough yabberying from me, here's how to work around this.

Open an Admin Powershell or Windows terminal instance and run the following:

`net stop winnat`

followed by:
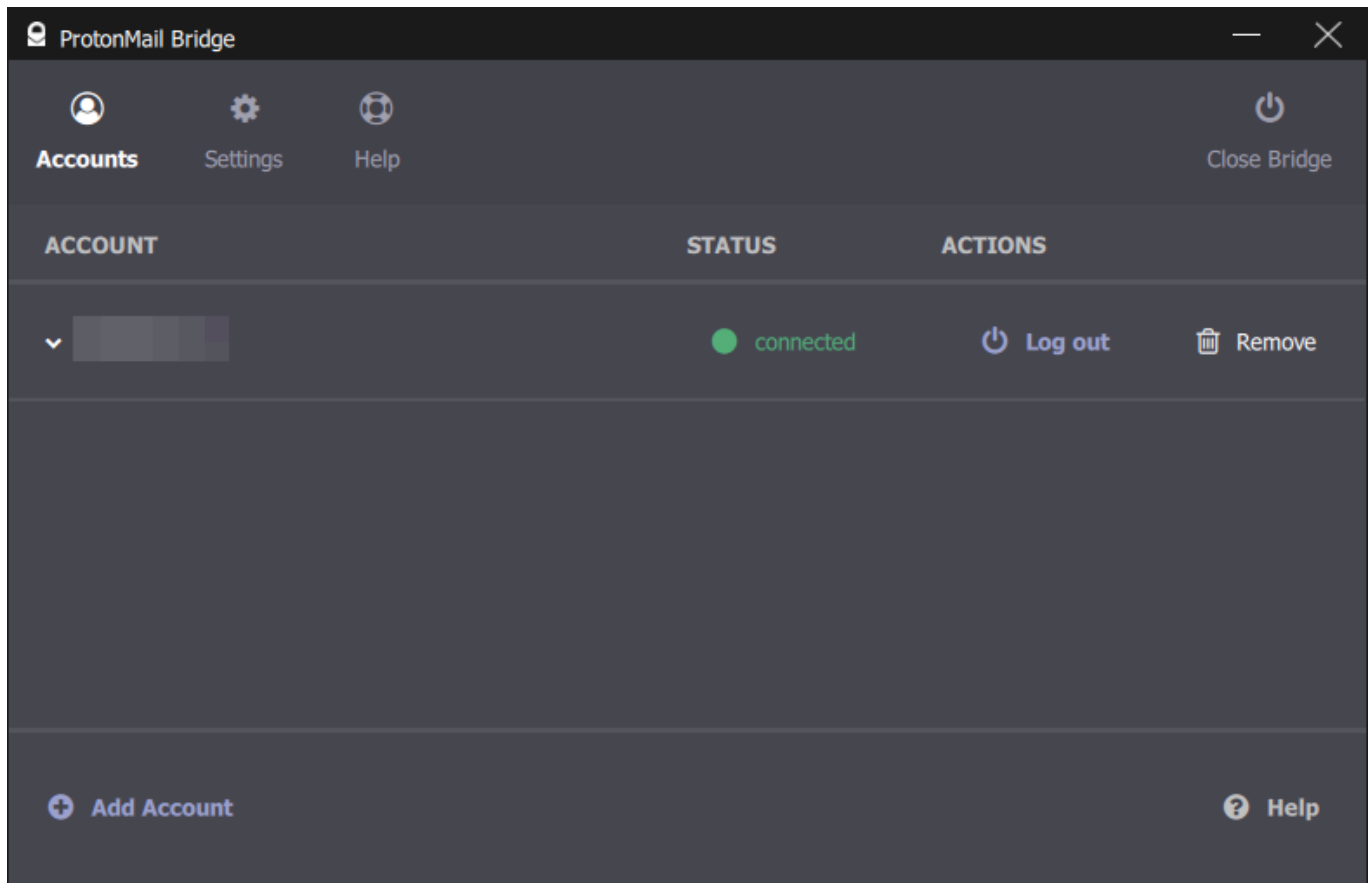
`netsh int ipv4 add excludedportrange protocol=tcp startport=1143 numberofports=1` Replace 1143 with whatever port you are trying to use and change tcp to udp as needed.

And then

`net start winnat`

And try starting your program again and it should suddenly be working again

My Thoughts

While I get why Microsoft added this feature to Windows, I also think they do a terrible job of explaining to people what is happening and why. They also do a terrible job telling you how to do a 'workaround'

After installing this update, applications may not be able to reserve or bind to ports that previously worked.

To resolve this issue, use the following workaround.

Check if the port you want to bind to or reserve is already reserved on the container host. For example, you can use netsh as follows:

```
netsh interface ipv4 show
excludedportrange protocol=tcp
```

If the port is not reserved, you may use it. If it is reserved, choose a different port.

Luckily there are people on the internet that worked out how to do a REAL workaround for this problem using the commands I showed you above. All the sources for this info are Sources section below.

Sources For Old Fix:

Solved - An attempt was made to access a socket in a way forbidden

If you're seeing an error that says "An attempt was made to access a socket in a way forbidden by its access permissions." this may fi...

https://ardalis.com • Ardalis

```
s made to access a socket in a way forbidden by its access permissions.) (An
ess a socket in a way forbidden by its access permissions.
n(SocketError error, String callerName)
ess socketAddress)

Listener.<Bind>g__BindSocket|13_0(<>c__DisplayClass13_0& )
Listener.Bind()
actory.BindAsync(EndPoint endpoint, CancellationToken cancellationToken)
portManager.BindAsync(EndPoint endPoint, ConnectionDelegate connectionDelegat
yClass29_0`1.<<StartAsync>g__OnBind|0>d.MoveNext()

dpointAsync(ListenOptions endpoint, AddressBindContext context)
ync(AddressBindContext context)

tempt was made to access a socket in a way forbidden by its access permission
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yClass29_0`1.<<StartAsync>g__OnBind|0>d.MoveNext()

dpointAsync(ListenOptions endpoint, AddressBindContext context)
ync(AddressBindContext context)<---
```

Unable to start Kestrel getting 'An attempt was made to access a socket in a way forbidden by its access permissions'

While running my Kestrel application from Visual Studio 2017 (Windows 10), I'm getting this line in my command prompt:...

Docker error "Ports are not available" on Windows 10

How to see what is reserving ephemeral port ranges on Windows?

I have a Windows application that needs to use ports 50005 and 50006 but it is being blocked. I see the following when I run nets...

The problem with Forza Horizon 5's "Seasons"

Forza Horizon 5 could be an amazing game, but sadly the seasons lasting only one week and then expiring so you can never earn the...

Jan 14, 2022

How to Hide Twitch Player Extensions

So a friend told me about how you could hide twitch player extensions using BTTV, You...

Mar 7, 2021   1 min read