Some tips to diagnose possible performance issues that might crop up while working remotely on your NBER Desktop.

From time to time we have seen sluggish performance when working on our NBER Office Desktops while working from home. Here are a few tips to systematically try to troubleshoot the problem.

First lets take a look at the possible reasons for the problem.

1) Your NBER Desktop is out of resources (CPU,Memory, Disk space).
2) Your NBER Desktop's Windows update did not properly complete.
3) The NBER server (nber5.nber.org, or whichever server you connect your tunnel through) is overloaded. We should point out that these servers you tunnel through are also used for heavy duty computing.
4) Issues with NBER network.
5) Issues in the network between your home/location and NBER.
6) Your home PC/laptop/desktop is out of resources.
7) Your home/location network.

Lets take each item one by one.

1) Your NBER Desktop. Sometimes we have too many documents, spreadsheet and other items open and that can cause your desktop to slow down. Also, we need a little bit of resources for Remote Desktop to run itself. So something you could get away working on your console may be sluggish if the resoure utilization approaches the max available resources, especially Memory(RAM). How to find your current resource utilization? Right Click on task bar at the bottom, and choose "**Task Manager**" Another way to get to it is Click on Start and type Task Manager in the search box and open Task Manager app. When the Task Manager is open, it defaults to the **Processes Tab.** You will see a set of processes their Cpu usages and Memory usage, Disk uage etc. Usually Memory is the key parameter to look into. If Memory is too high (over 80%) you want to examine what is using a lot of memory and try to close that item. You can sort usage statistics by clicking on the memory column and it will show the processes that take up most memory at the top. This will give you a clue. Google chrome is a known culprit to use a lot of memory. You can close it and reopen it and that will solve this problem.

If you are unsure, you can always reboot your NBER Desktop (**note reboot, not shutdown**). Usually reboot solves most of the problems.

Not to forget Mac users, you can open a Terminal, and run the top command which is an interactive program that tells you "top" resource users.

2) Sometimes a Windows Update does not complete and it is possible the computer's operating system is in some unstable state. The best solution is to run windows update and reboot.

3) The server to which you tunnel to make your RDC connection is over used. Tunnel usually does not take that many resources so this is not a very likely reason but it happens. The best answer is to try a different server. You can close this tunnel, and just use a different server in your tunnel command. We have 10 servers t use: nber0.nber.org … nber9.nber.org.

4) Issues with NBER network. This is a problem you need to report. It is not easy to see if the problem is isolated to you or the whole of NBER. If you report, and if others report, the NBER IT would need to roll up our sleeves and get to work quickly.

5) Issues with the network between your home/location and NBER. Well we cannot do much about as it is out of either of our control. So we wait it out!   The good news is that this does not occur frequently.

6) You home PC/desktop is out of resources. The process to examine this is essentially the same as your NBER Desktop and as described in #1.

7) Your home/location network. Sometimes your ISP is acting up. Usually a reboot of your home router will help.

Another issue could be the location of your office to where your router sits. Sometimes the router is too far, or there are walls/obstacles that disrupt signals. You can download a "WiFi Analyser" app on your phone and turn it on and walk around your house slowly and see how the signal changes. If you find this to be an issue you can purchase a WiFi "Repeater/booster" This will not increase the speed of your(as that is based on your provider and your subscription) but will improve the signal within your house.

How to diagnose network issues (Items in 4, 5,7)?
There is a program called ping that is standard on Windows, Macs and Unix/Linux systems. This program sends 'packets'(# of 'packets' can be tweaked with parameters) and then receives them back from any remote computer. This program can be used to check connectivity at various levels. On a PC, Open a command prompt (Start → type cmd and choose Cmd) window. From the command prompt, type the command based on for what you want to test:
    a) To test your home computer's connectivity issue the command:
        ping www.google.com
        If you get "no dropped packets" in a), your home computer's connnectivity to the
        internet is intact. So move to:

    b) Test your home computer's connectivity to an nber computer:
        ping nber1.nber.org
        If this shows dropped packets, there is a problem connecting to nber. Please contact IT.