# (Internet) Network troubleshooting

September 9 2022/Update: Dec 9 2022

In the following steps, we will do some basic troubleshooting using the first three layers of the OSI module. The Physical, Datalink, and Network layers. Most network issues are resolved when checking the first three layers.

Physical - is there power to the closet/equipment? Verify commercial power. If no commercial power, let OME-RESA know it is a power issue and wait for power to be restored before moving to the next step

      No - establish power to closet/equipment

      Yes – continue to the next step



If commercial power is on, but your internet is down, check the OME-RESA UPS (if you have one) and demarc/firewall device...are they both on?  Any error lights?  Is the link light on?

If the devices are powered on (including our UPS if applicable) but there is no link light on the demarc/firewall, make sure that the provider cable or fiber is not loose and is securely connected to the port on the demarc/firewall.  If you have verified (or swapped out) the cable and are still down, let OME-RESA staff know, and we will report the outage to the provider.    techstaff@omeresa.net

Extremely important: If you find that you need to reset the OME-RESA managed firewall, please notify our Tech Department to see if they can achieve this task remotely. If not, take the following steps:

1.  Turn the on/off button at the back of the unit (this places the firewall in a suspended mode)

2.  It takes a while to suspend; make sure the lights on the ports on the front of the firewall go dark

3.  Unplug the device from its power source.

4. Wait at least 60 seconds before plugging the device back in*

If the OME-RESA firewall is recycled improperly, there is a chance of the device losing its configuration and will need to be replaced. The physical device must go back to the home office to synch with the controller resulting in a lengthier downtime for the district.

*The reasons for waiting are:

a) Give the source time to let the power drain from the device. Please make sure you stop the equipment in an orderly fashion (as mentioned above) and remember to leave the device off for at least 60 seconds.
b) Components in electronics are known to store electrical charge and need time to drain (or die) when the flow of electricity has been stopped.  If you quickly plug the cord back into the power supply or wall outlet, you may cause/create interference/collision in the current and possibly create a spark/arc. This action may also weaken components in the device(s).

b)  a chance to give the other end of the network time to register that the device is, in fact, in a down state.  The far end of the connection needs to learn (realize) that the one side is actually in a "down" state. The connection is built to withstand small surges/sags in power, so the device needs time for the knowledge that the connection has indeed become interrupted and is not just a blip in the current flow.

Please know your device. Understand if the equipment needs to be shut down in stages or in a safe manner so as not to damage sensitive components or memory and configuration files. If you don't know, consult the manual or online documentation for the device. (You might want to do this, so you are prepared before you lose your Internet connection).

To properly power the firewall back on, plug the device in. In the back, there will be three LED lights in a row.  The icons are Power, S (status) and a checkmark. The status will blink as the unit powers up. When the power-up is complete, the middle LED light (status) will stay solid green. The device is now ready.

If the UPS and/or the demarc is down (no lights), unplug the demarc/firewall from the UPS and plug it directly into a surge-protected power outlet.  Allow approximately 15-20 minutes for the device to come back online - do NOT power cycle the equipment repeatedly, as you may damage the equipment or configuration.

If the equipment comes back up and your internet access is restored, let OME-RESA know that was the issue so that we can plan a replacement of the UPS.

Data Link - Are there lights on the equipment?  What color are the lights?


• Red or dark – proper connection has not been established between the two connected devices.  Check the other end of the patch cable (or fiber) that connects to the provider equipment. Is that port red or green?  If both are red, contact OME-RESA so we can notify the provider.

If the port on the provider's equipment is green, then going back to your device or OME-RESA's, try swapping out the patch cable or moving the patch cable to another port. If you move the patch cable to another port and get no link light, you may need to contact OME-RESA so that they can activate the port you wish to change to. And, yes – there have been incidents where the patch cable was faulty, and the simple replacement corrected the problem.

- Green - check inbound/outbound port - are they blinking? (passing data)



Once the device has been reset, check the port/power lights:

- If the device is passing data, move on to next step

- If it is a single device (one laptop or one computer) that cannot reach the Internet, check/replace the patch cable/wifi adapter/ NIC card

- If an entire room or section of the building cannot access the Internet, check the switch closest to that area for issues.

- Console into the device if possible and check the log files for error output



Onboard Connectivity
- 12 x 1G RJ45
- 4 x 1G SFP
- Management and Console Port

If the equipment does not come back up or if it does and you do not have internet, let OME-RESA know and we will further troubleshoot and report to the provider if necessary.

Please email [techstaff@omeresa.net](mailto:techstaff@omeresa.net) to provide any updates or findings. You will receive another message notifying you when the connection has been restored.

Layer 3 – Physical and Data Link have been verified; move on to the 3rd layer

Network - can you ping your edge device? Your switch? Your server?

If you can ping your switch/server but not OME-RESA – check the cable between devices and replace if necessary.

Contact OME-RESA for instructions to move the cable to another port on their device. If it is your device, configure a port for that connection and move the patch cable to the newly configured port.

If you are able to ping your LAN switch and OME-RESA's switch in house: (a.k.a. Default Gateway), try to ping OME-RESA's Steubenville IP range:

IPs to try:        10.10.7.52

10.10.7.80

10.10.10.210

10.10.10.211

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Microsoft Windows [Version 10.0.19044.1586]
(c) Microsoft Corporation. All rights reserved.

C:\>ping 10.10.10.210

Pinging 10.10.10.210 with 32 bytes of data:
Reply from 10.10.10.210: bytes=32 time=63ms TTL=127
Reply from 10.10.10.210: bytes=32 time=44ms TTL=127
Reply from 10.10.10.210: bytes=32 time=42ms TTL=127
Reply from 10.10.10.210: bytes=32 time=42ms TTL=127

Ping statistics for 10.10.10.210:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 42ms, Maximum = 63ms, Average = 47ms
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If no, reach out to OME-RESA Tech to contact Circuit Provider

If yes, contact OME-RESA Tech for further instructions

[techstaff@omeresa.net](mailto:techstaff@omeresa.net)