

EdgeXOS Platform Notes

XRoads Networks

Edge Network Appliance Platform Notes

EdgeXOS Site2Site Troubleshooting

How To Troubleshoot Site2Site Connections

This document provides a guide to troubleshooting most Site2Site tunnel issues. If you are having a problem with Site2Site tunnels you can use this guide to assist in finding the problem.

Verifying The Configuration

When having issues with a tunnel, always verify the tunnel configuration. The easiest way to do this is by opening web connections to admin GUI's of both devices and switching back and forth between the two to make sure that the parameters for each are the same.

When configuring a tunnel between two EdgeXOS appliances the compression, encryption, and tunnel type must be the same.

Some commonly mis-configured parameters include the Tunnel ID and the Virtual Addresses. The second part of the tunnel ID **MUST** be the same on both sides of the tunnel or the tunnel will not work. The Virtual Addresses **MUST** be reversed on each end of the tunnel connection and each individual tunnel should have Virtual Addresses in different /24 subnets, i.e. no two tunnels should have the same /24 being used for its Virtual Addresses.

The screenshot shows a configuration interface for a tunnel. The 'Tunnel ID' field is a dropdown menu with '4' selected, and the second octet of the ID is a text input field containing '4', which is highlighted with a red box. Below this are two 'Virtual Address' fields. The first shows a local address of 10.0.1.1 and a remote address of 10.0.1.2. The second shows a local address of 10.0.1.2 and a remote address of 10.0.1.1.

NOTE: Make sure that each tunnel has a different third octet for its Virtual Addresses, i.e. 10.0.1.x for one tunnel and 10.0.2.x for the other tunnel.

Checking Connectivity

If the tunnels are configured properly the next step is to make sure that you have Layer 3 connectivity between EdgeXOS appliances. This can be tested using the ping application built-in to the appliance. Under the Tools tab (Ping menu option) perform a ping test to the "Remote Edge Device" IP address via the appropriate WAN interface.

The screenshot shows the 'Ping' configuration interface. It includes a 'Ping' label, a text input field for the IP address '205.200.200.15', and a dropdown menu for the interface 'WAN1'.

If the response is positive than you know that basic connectivity is working, so it must be a tunnel specific problem. If you get a "Host is down" message than you need to check the Interface information and any Static Routes that you might be required.

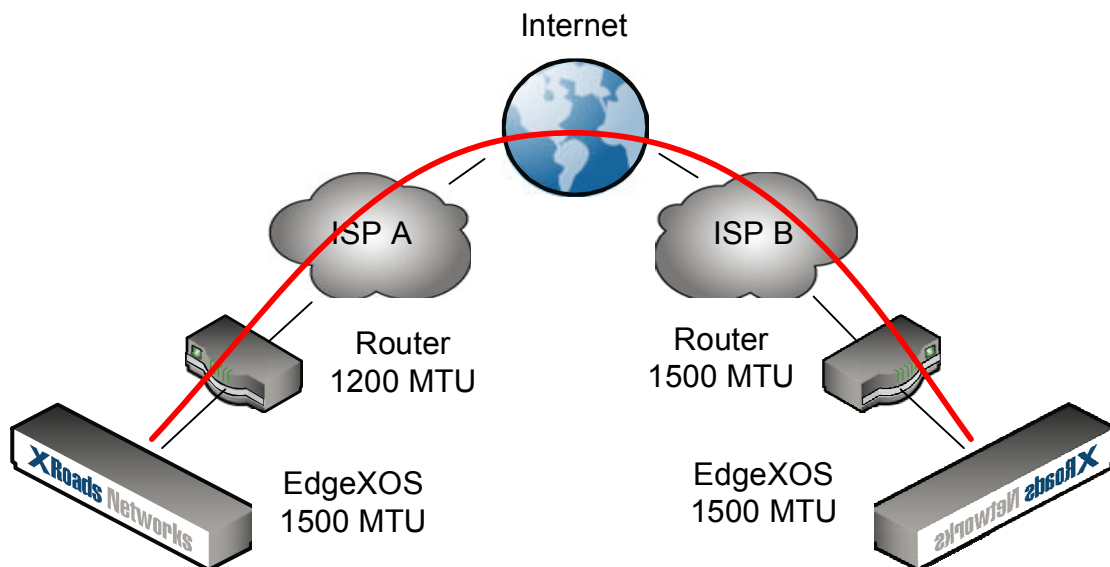
Checking the S2S Log

If end-to-end connectivity checks out using the ping tool, the next step is to check the S2S Log, which can be found under the Site2Site tab. Check to see if there is a specific issue with the tunnel connecting. Sometimes there is a mis-configured parameter which you did not see which this log would identify.

```
Thu Nov 10 16:12:20 2005 LZ0 compression initialized
Thu Nov 10 16:12:20 2005 XOS/OPT ice tunnel 3 opened
Thu Nov 10 16:12:20 2005 Data Channel MTU parms [ L:1511 D:1450 EF:11 EB:135 ET:0 EL:0 AF:14/11 ]
Thu Nov 10 16:12:20 2005 Attempting to establish TCP connection with 205.165.45.5 2
Thu Nov 10 16:12:22 2005 TCP: connect to 205.165.45.5 L2 failed, will try again in 5 seconds: No route to host (errno=113)
Thu Nov 10 16:12:28 2005 TCP: connect to 205.165.45.5 L2 failed, will try again in 5 seconds: No route to host (errno=113)
Thu Nov 10 16:12:34 2005 TCP: connect to 205.165.45.5 L2 failed, will try again in 5 seconds: No route to host (errno=113)
Thu Nov 10 16:12:40 2005 TCP: connect to 205.165.45.5 L2 failed, will try again in 5 seconds: No route to host (errno=113)
Thu Nov 10 16:12:46 2005 TCP: connect to 205.165.45.5 L2 failed, will try again in 5 seconds: No route to host (errno=113)
Thu Nov 10 16:12:52 2005 TCP: connect to 205.165.45.5 L2 failed, will try again in 5 seconds: No route to host (errno=113)
Thu Nov 10 16:12:58 2005 Closing XOS/OPT interface
```

Changing the MTU Parameters

If the tunnel is working, however traffic is not passing, or only some traffic is passing, this could be an MTU issue. MTU problems occur when the settings for this parameter are different at either end of the connection.



If this is the case, there are two ways to solve the problem. 1) change the MTU parameter on all devices to be the same. 2) change the S2S tunnel parameter to equal the lowest MTU setting within the network, or if you don't know what the lowest parameter is, simply lower the MTU setting until the tunnel works.

This can be done by selecting the Params button under the Site2Site tunnel listing. Then change the TCP MTU and the PMTU Discovery Threshold to a lower value. Typically we recommend starting at 1400 and 1200 and going down in increments of 100 after that until you find a range that works.

1500 (TCP MTU/MSS Size - default 1500)

1400 (PMTU Discovery Threshold - default 1450)

Non-Site2Site Issues

Finally, if the tunnel has been established and confirmed using the S2S Log to see that the tunnel is working, and if the tunnel is pingable, and if devices between the tunnels (specifically if the LAN address from one EdgeXOS appliance to the LAN address of the other EdgeXOS appliance is pingable) then the tunnels are considered working and the issue is beyond the EdgeXOS appliances.

Always check to make sure that there are no firewall rules which may be blocking any tunnel traffic, and check to make sure that there are no shaping rules (none are configured by default).

If you are able to establish Layer 3 (ping) connectivity through the tunnel between the two EdgeXOS appliances, then the tunnel is considered to be in good working order. XRoads Networks can not troubleshoot issues outside of the configuration of the appliances, including DNS resolution issues, NetBIOS issues, or traffic sizing issues (beyond lowering the MTU parameters).