

EdgeXOS Platform Notes

XRoads Networks

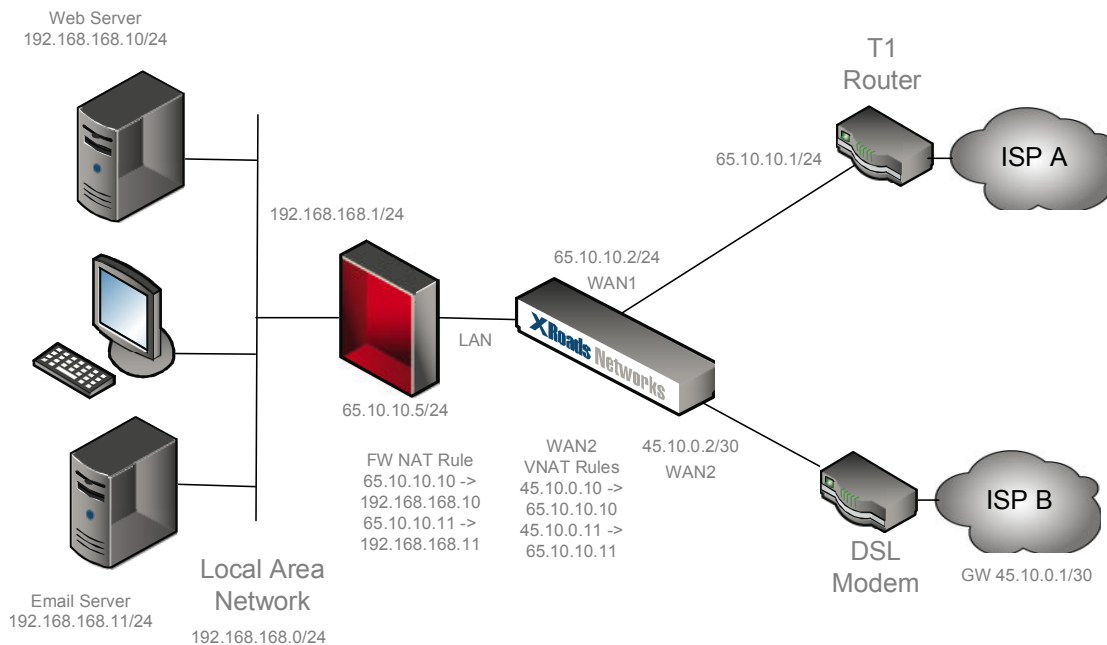
Edge Network Appliance Platform Notes

EdgeXOS Web/Email Server Balancing

How To Easily Setup Inbound Web & Email Server Balancing

This document provides an overview of how you can easily setup web server and/or email server load balancing or just failover using our application proxy service (VirtualNAT).

Example: In this example we assume that there is an email and web server located on the local area network and the EdgeXOS appliance is proxying WAN1 traffic and NATing WAN2 traffic. WAN1 could just as easily be in NAT or static routing mode, VirtualNAT works the same in each instance.



VNAT (AppProxy) Server Balancing Example

In this example we show how to easily add an application proxy rule for traffic coming in on WAN2 to be forwarded to the WAN1 address which is being passed-through the EdgeXOS appliance to the firewall.

This example should hopefully show how the VirtualNAT rules can be used to perform inbound server mapping.

Setting Up Server Connectivity on WAN1: In this example WAN1 is in proxy mode, so all WAN1 addresses are able to pass through the EdgeXOS appliance to the firewall which terminates the WAN1 addresses and is NATing those addresses to the internal servers.

By default any connectivity to the WAN1 addresses being used for the web and email servers is passed right through the EdgeXOS appliance to the firewall, so no additional inbound rules are needed.

What is required is that all WAN1 addresses which are used for inbound connectivity have the appropriate Vector Mappings to ensure that they go back out the WAN1 address.

This example shows the two Vector Mappings which need to be created to ensure outbound connectivity from the web server (65.10.10.10) and the email server (65.10.10.11) go back out the WAN1 connection.

Device Name	Address	Interface Map	Port Map	Apply Order
Email_Server	65.10.10.11	WAN1	25	1
Web_Server	65.10.10.10	WAN1	80	1

These rules would be added under the NetBalancing tab, Vector Mappings menu.

The screenshot shows the configuration form for a Vector Mapping. On the left is a dark blue sidebar with labels: 'Device Name:', 'Map Address:', 'Map Interface:', and 'Apply Order:'. Each label has a question mark icon. The main form area contains: 'Device Name:' with a text input 'Email Server'; 'Map Address:' with four numeric input fields containing '65', '10', '10', and '11', followed by a dropdown menu and the text '(Forward Address or Range - Available via the LAN interface)'; 'Optional -' with a text input, 'OR', a dropdown menu containing 'SMTP', and the text '(Enter a source port or port range x:x, if any)'; 'Map Interface:' with a dropdown menu containing 'WAN1'; and 'Apply Order:' with a dropdown menu containing '1'.

This is all that is required to get the WAN1 connectivity working for the two servers.

NOTE: Make sure that you have added any firewall rules necessary if the firewall is enabled. If the firewall is not enabled then no additional rules are required.

NOTE: If you do not plan on hosting your DNS records on the EdgeXOS appliance then you will need to make sure to add additional A records and MX records to your existing domain controller for the WAN2 addresses which we will be configuring next.

If you are not using the EdgeXOS ActiveDNS module you will only be able to perform round-robin load balancing and/or failover using other DNS resolvers.

Setting Up Server Connectivity on WAN2: Now because we NAT all other WAN interfaces we need to setup some type of forwarding service for the web and email services on WAN2. This forwarding service could be One-to-One NAT, One-to-Many NAT or VirtualNAT. Since VirtualNAT is the easiest method, we will use that in this case.

NOTE: The upside of using VirtualNAT is that it is very easy to configure, downside is that all logging will show WAN2 connections coming from the EdgeXOS appliance.

The steps for setting up the WAN2 rules are as follows:

- Step 1) Goto the NetBalancing tab and select the VirtualNAT menu
- Step 2) Enter the Server Name
- Step 3) Select the service type (HTTP, SMTP, FTP, etc)

NOTE: If the service type is not available you can create one, however keep in mind that VirtualNAT application proxy can only be used with TCP-based applications.

Step 4) Enter the LAN side address for the servers, in this case as you can see from the diagram above, the LAN side of the EdgeXOS platform is the 65.10.10.0/24 network, so that is what is entered here.

Step 5) Enter the WAN2 address which will be proxy'd to the LAN side or WAN1 address.

The following is an example rule for the email server:

The screenshot shows a configuration form for a VirtualNAT rule. On the left is a dark blue sidebar with labels: 'Server Name', 'Server Service', 'Internal Address', 'WAN1 Address', and 'WAN2 Address'. Each label has a question mark icon. The main area contains the following fields and options:

- Server Name:** Text input field containing 'Email Server'.
- Server Service:** Dropdown menu showing 'Mail Server (SMTP/POP3/IMAP)'. Below it is a 'Create Server Service' button with a link '(Create A New VirtualNAT Service)'.
- Internal Address:** Four text input fields containing '65', '10', '10', and '11', followed by the text '(Internal Server Address)'.
- WAN1 Address:** A dropdown menu showing 'PROXY MODE' and the text '(External Server Address for WAN1)'.
- WAN2 Address:** Four text input fields containing '45', '10', '10', and '11', followed by the text '(External Server Address for WAN2)'.

Once both rules have been added they should appear as follows when you View the VirtualNAT rules:

Server Name	Server Address	Service Type	WAN1 Addr	WAN2 Addr
Email_Server	65.10.10.11	Mail Server (SMTP/POP3/IMAP)	PROXY MODE	45.10.10.11
Web_Server	65.10.10.10	Web Server (HTTP/HTTPS)	PROXY MODE	45.10.10.10

This is all that is required to get the WAN2 connectivity working for the two servers.

NOTE: DNS records still need to be updated to ensure that inbound traffic can get to the WAN2 45.10.10.0/24 addresses in the event that WAN1 fails or if you wish to perform load balancing. Refer to our guide on DNS setup to see how DNS can be configured on the EdgeXOS appliance.