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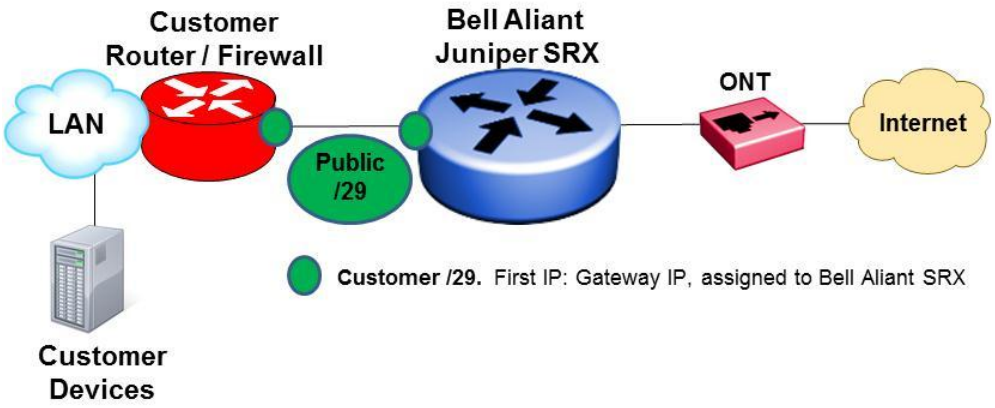
Title:	FibreOP Business Internet 5 Static IP – Customer Configuration		Version 1.1

Summary:

This document provides background information and guidance for customers who purchase the Bell Aliant FibreOP Business Internet Static 5 IP **Base** Service. This service offering has been designed giving customers the freedom to use their own Router or Firewall.

Details describing how the Customer Router or Firewall should interface with the Bell Aliant Juniper SRX will be provided along with functional guidelines customers need to consider for their own networking requirements.

Illustration:



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Background

The Bell Aliant FibreOP Business Internet Static Five (5) IP service uses a Juniper SRX as the demarcation device for the service. A demarcation point is the physical network location where up to, Bell Aliant can confirm the service is functioning properly.

A LAN and WAN port are used on the Juniper SRX. The LAN port connects to the customer equipment and is the demarcation point for Bell Aliant. The WAN port connects to the co-located Bell Aliant ONT for the FibreOP connection to the Internet.

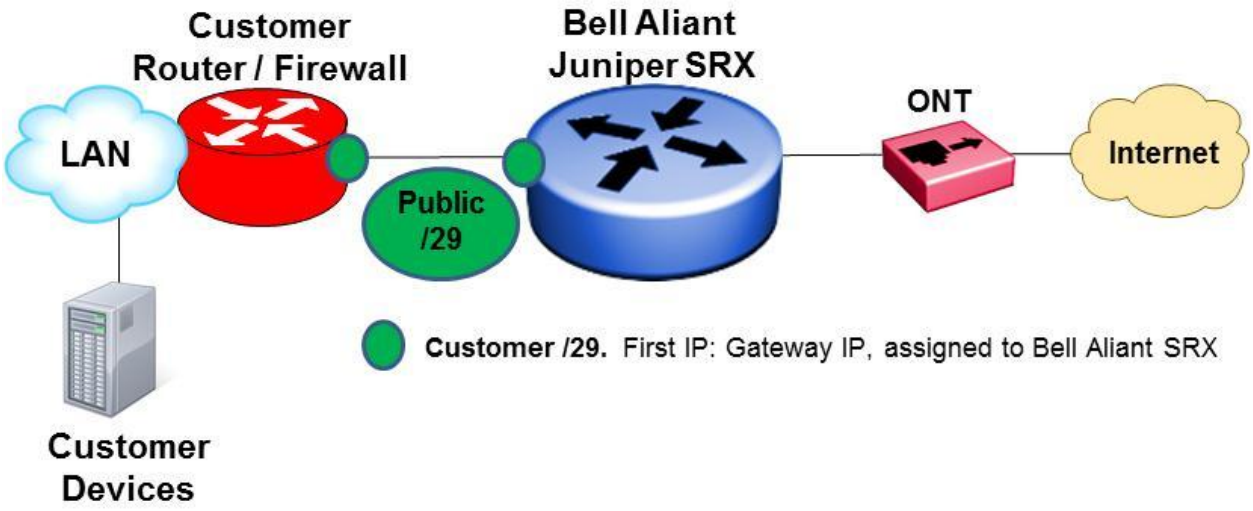
This document will focus on the inter-networking connectivity between the Customer Router/Firewall and the Bell Aliant Juniper SRX. More specifically, details are included to ensure customers understand their own networking requirements.

General

The FibreOP Business Internet Static Five (5) IP service has been implemented using a /29 subnet (mask 255.255.255.248) connecting a Bell Aliant Juniper SRX device to the customer network.

The Juniper SRX is assigned the first "usable" IP address from the subnet and acts as the customer's gateway to the Internet. Note that the Juniper SRX routes all traffic destined for this subnet without interference. No filtering, translation, or blocking is configured on the SRX for the customer's network.

The rest of the subnet is available for the customer to allocate as required. Customers are encouraged to use the next available IP address for their Router / Firewall, and allocate the remaining IP addresses to public-facing devices via NAT on their Router / Firewall. Although it is possible to connect devices "in front of" the Customer Router / Firewall, Bell Aliant recommends against this for security reasons.



From the Internet all Customer IP addresses within Public /29 IP subnets will be reachable. Static IP Routes will be used on Bell Aliant equipment to ensure traffic is sent to its appropriate next-hop as per:

From the Internet to Customer for public /29:
Internet → WAN port of SRX → Public /29 subnet

From the Customer Router to Internet:
Customer Router → LAN port of SRX (first usable IP from /29) → Internet

Customer Router/Firewall

The Fast Ethernet **WAN** port on the Customer Router/Firewall should be configured as follows:

IP address: Second IP from assigned /29
Default gateway: First IP from assigned /29
Protocols: IPv4
Routing: Static Routes
AutoNeg: Yes
Duplex: Auto
Speed: Auto

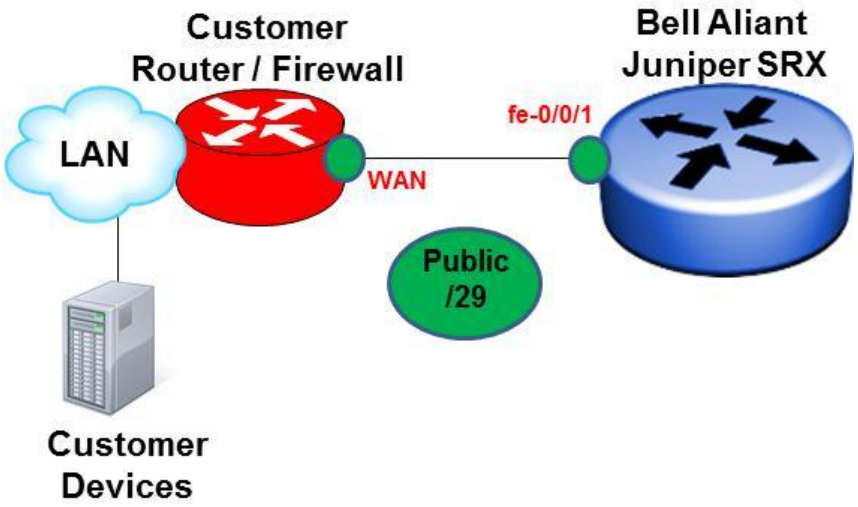
Encapsulation: Ethernet (No 802.1Q VLAN Tagging on WAN port)

Connect to: Physical LAN port **fe-0/0/1** on the Bell Aliant Juniper SRX

DNS:

Primary DNS IP	Secondary DNS IP
47.55.55.55	142.166.166.166

Figure 1 Customer Router WAN connectivity



Note: Shown above, the Bell Aliant support demarcation point is the customer facing LAN port (**fe-0/0/1**) on the Juniper SRX.

Other considerations:

Identifying all of the needs in a Customer Router/Firewall is a difficult task. Both the requirements of the FibreOP Business Internet Static Five (5) IP service and the Customer's own LAN network must be understood. Below are guidelines to be considered if the FibreOP Static IP service has been purchased:

- The public /29 subnet is completely controlled by the customer. This includes how and where the IP addresses are used.
    - The first usable IP address from the subnet is assigned to the SRX internal interface port fe-0/0/1.
    - This first usable IP address should be configured as the default gateway to the Internet on the Customer Router/Firewall.

- The WAN port on the Customer Router/Firewall must be configured with an IP from the public /29 subnet – the second usable IP address from the subnet is suggested but not required.

- A dedicated Fast Ethernet connection will be used to connect the customers Router/Firewall (WAN port) to the SRX (LAN port fe-0/0/1).

- Public addresses from the /29 subnet can be Network Address Translated (NAT) to Private addresses located on the customer LAN. Several options are available for configuring NAT including:

    a. **1 – Many** (1 Public to Many Private)
    b. **1 - 1** (1 Public to 1 Private)
    c. **Many – 1** (Many Public to 1 Private)

    Bell Aliant recommends the use of NAT to translate private IP addresses of servers for additional security control. Where possible, servers should also be placed in a secure network segment (DMZ) off the customer Router/Firewall rather than directly on the customer LAN.

- As with any Bell Aliant FibreOP service, Speed Tests and performance can be validated via:
    - http://speedtest.bellaliant.net

Glossary

DMZ (Demilitarized Zone). In computer networks, a DMZ (demilitarized zone) is a computer host or small network inserted as a "neutral zone" between a company's private network and the outside public network. It helps to prevent outside users from getting direct access to a server that has company data.

PAT (Port Address Translation). PAT allows multiple devices on the same customer LAN to share 1 Static Public IP address. The Customer Router/Firewall would append a unique port number to the internal IP allowing it to be unique.

NAT (Network Address Translation). Similar to above, NAT allows a network device to assign a public IP address to a large private network using addresses in a private range:

Private IP Range	
Class	**Address Range**
A	**10.0.0.0 – 10.255.255.255**
B	**172.16.0.0 – 172.31.255.255**
C	**192.168.0.0 – 192.168.255.255**

/29 Number of mask bits; can also written as 255.255.255.248.