



# **EXTEST Multicast Connectivity Guide**

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## Change History

Version	Change	Date	Changed By
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## Glossary

<b>Term</b>	<b>Description</b>
AS	Autonomous System
BGP	Border Gateway Protocol
EXTEST	External Testing Environment
IGMP	Internet Group Management Protocol
IP	Internet Protocol
PIM	Protocol Independent Multicast
RP	Rendezvous Point

# Introduction

## Scope

Alpha ATS Subscribers may use the EMAPI Multicast feed to consume public market data information for Alpha traded and listed securities. This document further describes how to access the EMAPI Multicast feed in the External Testing (EXTEST) Environment. The following feeds are available via IP Multicast:

- Public Orders
- Public Trades
- MBL Full
- MBL L1
- MBL L2

## Intended Audience

Alpha ATS Subscribers who want to perform testing of the Alpha Multicast Feed and recovery functionality.

## Documents Referenced

Alpha ATS EMAPI Programmer's Guide v5.0

# Connectivity to Test Environment

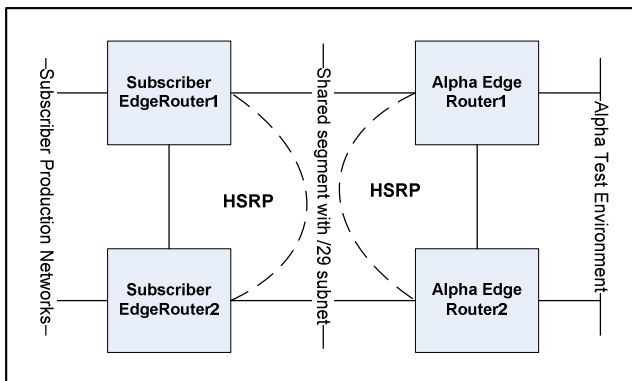
## Overview

*ALPHA DOES NOT SUPPORT IP MULTICAST OVER VPN OR INTERNET.*

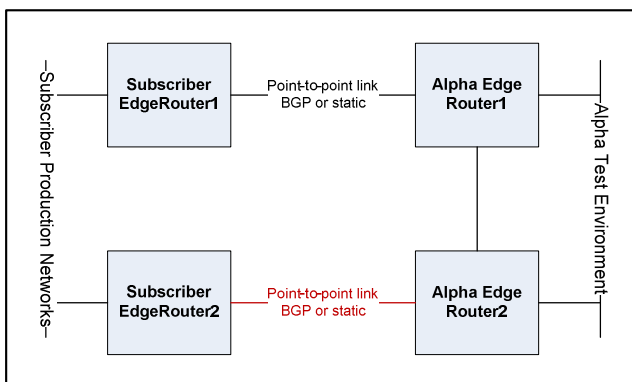
Subscribers may choose to connect to the Alpha External Test Environment (EXTEST) directly and/or through a managed service provider to receive Alpha Multicast market data feed.

For multicast traffic to flow properly between Alpha edge routers and the Subscriber edge routers, certain modifications to existing cross-connects will be required if the existing cross-connects are part of the legacy design.

### Legacy Cross-Connect design with no support for IP Multicast



### New Design with support for IP Multicast



The routing information will be distributed via BGP or static. Dynamic protocol is preferred. Alpha only supports and accepts registered public address space and AS numbers. Alpha will assign the point-to-point address space.

## Multicast Routing

The EXTEST environment uses multicast range 233.65.138.0/24 as per RFC 3180. To allow for both current and future multicast channels, Alpha recommends Subscribers provision access for the entire GLOP range of 233.65.138.0/24.

Alpha edge routers will be configured for PIM Sparse Mode.

Location	Multicast Address Range	RP	Multicast Source Address
EXTEST	233.65.138.0/24	69.171.223.227/32	69.171.221.192/26

## TCP Recovery

There are two forms of TCP based recovery in the event of a loss of multicast market data. Recovery of small gaps will be handled by the API via TCP to the appropriate recovery channel. If the gap cannot be filled from the TAX Server via TCP, the session is considered inactive and the client will receive an error callback per the EMAPI Programmer's Guide. In this scenario, a client must re-establish the session and do a replay to recovery any lost messages.

## Bandwidth Recommendations

EXTEST supports functional testing and bandwidth recommendations are not necessary. If a client is accessing the EXTEST Environment and Alpha's Production Secondary Environment over the same circuit, then the Production Bandwidth Recommendations apply.

## EXTEST Environment Configuration

### Symbol Distribution

At this time, Alpha will maintain a single multicast group per flow where each flow will contain the entire universe of symbols available for trading on Alpha (i.e. Public Orders will contain Alpha Traded and Alpha Listed securities). With appropriate notice to its Subscribers and Vendors, Alpha reserves the right to partition or segment the market data feeds as required to allow for future growth / capacity expansion.

### Public IP Addresses & Ports

#### EXTEST SIDE-A

	Flow	Source IP	Multicast Group	Multicast Port	Recovery IP	Recovery Port
TSX / TSXV Listed Alpha Listed	Public Orders	69.171.221.200	233.65.138.10	59010	69.171.221.200	6868 6869
	Public Trades		233.65.138.12	59012		
	MBL Full		233.65.138.14	59014		
	MBL L1		233.65.138.16	59016		
	MBL L2		233.65.138.18	59018		

#### EXTEST SIDE-B

	Flow	Source IP	Multicast Group	Multicast Port	Recovery IP	Recovery Port
TSX / TSXV Listed Alpha Listed	Public Orders	69.171.221.200	233.65.138.11	59011	69.171.221.200	6870 6871
	Public Trades		233.65.138.13	59013		
	MBL Full		233.65.138.15	59015		
	MBL L1		233.65.138.17	59017		
	MBL L2		233.65.138.19	59019		

## Support

For further support, please contact Alpha Group Client Services at:

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