Network Management Department

Market Data Feed Service (MDFS) Network Specifications

Version: 7.0

Contents

Revision History

Version	Date	Description
1.0	2023/09/15	Draft -1st review
2.0	2024/01/12	2nd review
3.0	2024/01/13	3rd review
4.0	2024/01/15	4th review
5.0	2024/01/17	5th review
6.0	2024/02/13	6th review
7.0	2024/03/05	7th review

1. Introduction

This document refers to network specifications needed for customers to use the new service "Market Data Feed" through **multicast** provided by Athens Stock Exchange (ATHEX).

It also refers to network specifications needed for customers to use the new service "Market Data Feed" through **unicast (retransmission)** provided by Athens Stock Exchange (ATHEX).

From now on, MDF refers to "Market Data Feed" wherever met in this document.

2. Customer Registration

The current form should be completed (whenever needed) and sent to Athens Stock Exchange Network Department at: noc@athexgroup.gr at word format file with name:

> *<customer_name>_MDFS.doc*

The form needs to be completed for all communications between the Network Management Department of ATHEX and customers'.

The below table should be completed by customer's appropriate department:

Customer Company Name:	
Technical Contact for communication (name):	
Phone number:	
Email :	

Table A: Customer information

3. Points of Presence for MDF supply

Multicast for Market Data Feed Service will be provided equally in terms of content from two points, for redundancy reasons:

- Main Site of ATHEX infrastructure
- Alternative Site of ATHEX infrastructure

A slight time-to-delivery offset may apply between content from the two data sources. Multicast Market Data Feed Service (MDFS) can also be provided to a customer through ATHEX's Points of Presence in London (through x-connections or Member node):

- LD4

- LD8

4. Means of MDF supply

Multicast for MDF will be provided to customers via:

- Leased Lines (including x-connections) through Source-Specific Multicast (SSM - sparse mode)
- Internet though Source-Specific Multicast (SSM - sparse mode) and use of GRE (Generic Routing Encapsulation) tunnels between customer and ATHEX
- Colocation service through any-Source Multicast (ASM)

Unicast (tcp retransmission) for MDF will be provided to customers via:

- Leased Lines (including x-connections)
- Internet
- Colocation service

4.1 Source-Specific Multicast (SSM-sparse mode) through leased lines

Multicast Sources and Groups for SSM implementation through Leased Lines are provided in Table 1. Customers should make sure that they can route the ATHEX internal server source IP and not have a conflict for the multicast IP groups. PIM (Protocol Independent Multicast) neighborship should be implemented between ATHEX and customer equipment.

In case of Data Vendor's leased line, ATHEX suggest that customers have at least:

- one leased line in Main Site
- one leased line in Alternative Site

Total bandwidth requirement: 12 Mbps

In case access to UAT environment is required, the bandwidth should be 24Mbps (double).

Customer participation must be communicated with ATHEX prior to use. Multicast groups for each leased line/circuit will be different and are provided in Table 1. For each customer, the appropriate multicast groups will be communicated during the implementations.

In case of Trading Members who already have own (1) leased lines with ATHEX in Main and Alternative Site, the bandwidth required is 6 Mbps/leased line.

Leased Lines	Main Site Source/ Multicast IP	Alternative Site Source / Multicast IP
Production Environment	10.200.204.20/ 232.0.1.x x=[1..254]	10.200.206.20 / 232.0.2.x x=[1..254]
UAT Environment	10.200.204.101 / 232.1.1.y y=[1..254]	10.200.124.102 / 232.1.2.y y=[1..254]

Table 1: Multicast server Source IPs and Multicast group IPs

Important note

In order to avoid any kind of RPF (Reverse Path Forwarding) check failure at customer's equipment they must route multicast source's IPs to the interface connected upon ATHEX network equipment.

Customer should configure "*pim neighborship*" for SSM multicast (sparse mode) and include the below configuration at their side:

"ip pim sparse-mode"

"ip igmp static-group 232.x.x.x source 10.200.x.x"

In case of MDF through London PoPs, if a customer has already a double x-connection then they will receive the MDF from Main and Alternative Site's server through the primary circuit from ATHEX to London.

If needed, they will receive the MDF through the backup circuit (in case primary is inactive/malfunctioned).

In case of a node connected to London POPs, MDF will be provided similarly.

Multicast source IPs and multicast group IP ranges are the ones mentioned in Table 1.

4.2   Retransmission through leased lines

For the retransmission case ATHEX suggest that customers have at least:

- one leased line in Main Site
- one leased line in Alternative Site

Total bandwidth requirement: 2 Mbps at each leased line

In case access to UAT environment is required, the bandwidth should be 4 Mbps (double).

In table 2, the IPs are defined. The ports will be defined for each customer.

Leased Lines	Main Site Source	Alternative Site Source
Production Environment	10.200.204.20 tcp/port x x: will be defined for each customer	10.200.206.20 tcp/port x x: will be defined for each customer
UAT Environment	10.200.204.101 tcp/port y y: will be defined for each customer	10.200.124.102 tcp/port y y: will be defined for each customer

Table 2: server Source IPs for retransmission

4.3   Source Specific Multicast (SSM) through Internet

MDF will be provided over Internet through GRE tunnels for customers who will require it. Multicast server sources will be of public IP and are provided in Table 3 below.

Customer should configure "*pim neighborship*" for SSM multicast (sparse mode) and include the below configuration at their side:

"ip pim sparse-mode"

"ip igmp static-group 232.x.x.x source 193.242.243.x"

GRE Tunnels	Main Site Source/ Multicast IP	Alternative Site Source 1/ Multicast IP
Production Environment	193.242.243.134/ 232.0.128.x x=[1..254]	193.242.243.135/ 232.0.129.x x=[1..254]
UAT Environment	193.242.243.136/ 232.1.128.y y=[1..254]	193.242.243.137/ 232.1.129.y y=[1..254]

Table 3: multicast server Source IPs and Multicast group IPs for Internet option

Customers should have one GRE tunnel for connecting to ATHEX Main Site and another for connecting to ATHEX Alternative Site. Customers should provide their public tunnel end IP during communication with ATHEX Network Management Department.

- Internet customers will receive multicast traffic from Main Site Source through the respective GRE Tunnel:
  For interface tunnel configuration:
    - ✓ 10.207.218.x/30, it will be defined together with ATHEX Network Operation Department)

✓ Customer should communicate the public IP in Table 4

ATHEX Main Site tunnel end	Customer tunnel end
193.242.255.53/32	<to be filled>/32

Table 4: GRE tunnel ends

- Internet customers will receive multicast traffic from Alternative Site Source through the respective GRE Tunnel:
  For interface tunnel configuration:
    ✓ 10.207.219.x/30 , it will be defined together with ATHEX Network Operation Department)
    ✓ Customer should communicate the public IP in Table 5

ATHEX Alternative Site tunnel end	Customer tunnel end
193.242.255.54/32	<to be filled>/32

Table 5: GRE tunnel ends

4.4   Retransmission through Internet

For retransmission through internet, table 6 defines the server IPs.

	Main Site Source	Alternative Site Source
Production Environment	193.242.243.134 tcp/port x x: will be defined for each customer	193.242.243.135 tcp/port x x: will be defined for each customer
UAT Environment	193.242.243.136 tcp/port y y: will be defined for each customer	193.242.243.137 tcp/port y y: will be defined for each customer

Table 6: unicast server Source IPs for Internet option

4.5   Any-Source Multicast (ASM) through colocation infrastructure

For collocated customers, ASM IPs and groups are provided in Table 7 and further configurations will be provided during the implementations with ATHEX Network Management Department. In case, more multicast groups are provided, these will be communicated appropriately

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Leased Lines	Main Site Source/ Multicast IP	Alternative Site Source / Multicast IP
Production Environment	10.200.204.20/ 239.0.1.x x=[1..254]	10.200.206.20/ 239.0.2.x x=[1..254]
UAT Environment	10.200.204.101/ 239.1.1.y y=[1..254]	10.200.124.102/ 239.1.2.y y=[1..254]

Table 7: Multicast Source IPs/ Multicast IPs for ASM

4.6   Retransmission through collocation service

For the case of retransmission through collocation server, the IPs will be the same as table 2.

5. Terms and Conditions

The customer is responsible for obtaining any and all approval(s) for importing and operating their equipment, as may be required by the respective local laws and regulations.

Both parties are responsible for securing their respective ends of the connection against unauthorized third party access.