CBOE Application Programming Interface

Version 9.0.2

CBOE Application Server Volume 1: Overview and Concepts

Programmer's Guide for the CBOE Application Server

CBOE PROPRIETARY INFORMATION

15 July 2011

Document #[CAS-01]

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Disclaimer

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Change Notices

The following change notices are provided to assist users of the CMi in determining the impact of changes to their applications.

Date	Version	Description of Change
15 Jul 2011	V9.0.2	No changes
29 Apr 2011	V9.0.1	No changes
14 Jan 2011	V9.0	No changes
08 Jan 2010	V7.0	No changes
07 Aug 2009	V6.1	No changes
22 May 2009	V6.0	No changes
25 Nov 2008	V5.3	No changes
24 Sept 2008	V5.2	No changes
19 Jul 2008	V5.1	No changes
29 Feb 2008	V5.0	No changes
18 Jan 2008	V4.2.4	No changes
02 Nov 2007	V4.2.3	No changes
01 June 2007	V4.2.2	No changes
23 Feb 2007	V4.2.1	No changes
15 Dec 2006	V4.2	No changes
20 Sept 2006	V4.1	No changes
25 May 2006	V4.0	Referenced the new API-08 document
06 Jan 2006	V3.2b	No updates.
12 Aug 2005	V3.2	No updates
29 Jul 2005	V3.2	No changes.
08 Apr 2005	V3.1a	No changes.
30 Nov 2004	V3.1	No changes.
18 Jun 2004	V3.0	No changes.
28 Apr 2004	V2.52	No changes.
06 Feb 2004	V2.63	No changes.
10 Oct 2003	V2.62	No changes.
29 Aug 2003	V2.61	No changes.
31 Jul 2003	V2.6	Support for market linkage and stock

Date	Version	Description of Change
08 Jul 2003	V2.51	Revisions since the last release.
14 Mar 2003	V2.5	Support for Hybrid
24 Jan 2003	V2.1	Support for Linkage P orders.
20 May 2002	V2.0.1	No change.
22 Apr 2002	V2.0	Production Release
27 Feb 2002	V2.0b	Software Development Kit Beta 2
23 Jan 2002	V2.0a	Software Development Kit Beta 1
04 May 2001	V1.0b	Added Market Data role information.
16 Mar 2001	V1.0a	Error corrections and updated to reflect that strategies will not be part of Version 1.0.
15 Jan 2001	V1.0	Production Version
22 Sep 2000	V0.9	Network Testable Version
29 Apr 2000	V0.8	Includes revisions to the CMi API since the last update. Refer to the Release Notes for full details.
30 Sep 1999	V0.5	First Publication

About This Document

Purpose

This document provides an overview of the CBOE Application Server (CAS).

Intended Audience

Software developers, system administration personnel, and anyone using the CAS to access the CBOE markets.

Prerequisites

This document assumes that the reader has a working knowledge of modern operating systems, such as NT and UNIX, specifically how to install and operate software on these platforms.

You should have already read API Volume 1: Overview and Concepts and API Volume 2: CMi Programmer's Guide.

Related Documents

Document Number	Document Description
Roadmap.doc	CBOE API and CAS Document Road Map
API-01	CBOE API Volume 1: Overview and Concepts
API-02	CBOE API Volume 2: CMi Programmer's Guide
API-03	CBOE API Volume 3: CMi Programmer's Guide to Messages and Data Types
API-04	CBOE API Volume 4: CMi Dictionary of Attributes and Operations
API-05	CBOE API Volume 5: Using CMi with Specific Object Request Brokers
API-06	CBOE API Volume 6: Connecting to the CBOE Network
API-07	CBOE API Volume 7: CBOEdirect Certification and Testing Procedures
API-08	CBOE API Volume 8: CMi Programmer's Guide for the Market Data Express (MDX) Data Feed
FIX-01	CBOE API FIX Protocol Support
CAS-02	CBOE Application Server Volume 2: CBOE Application Server Simulator for Stand Alone Testing

Support and Questions Regarding This Document

Questions regarding this document can be directed to The Chicago Board Options Exchange at 312.786.7300 or via e-mail: api@cboe.com.

The latest version of this document can be found at the CBOE web site http://systems.cboe.com.

Introduction

The CBOE is adding new interfaces to provide access to exchange services. These interfaces are designed to support both electronic and open outcry trading at the Chicago Board Options Exchange.

The first of these interfaces is an Application Programming Interface (API) that provides access to all exchange trading services and is targeted at firms making markets at CBOE. This API is known as the *CBOE Market Interface* (CMi). CMi is a distributed object interface based upon the CORBA (Common Object Request Broker Architecture) standard from the Object Management Group (OMG). The interface is defined using the Interface Definition Language (IDL), which is an OMG and ISO standard. Messages are transported using the Internet Inter-Orb Protocol (IIOP), which operates over standard Internet protocols (TCP/IP).

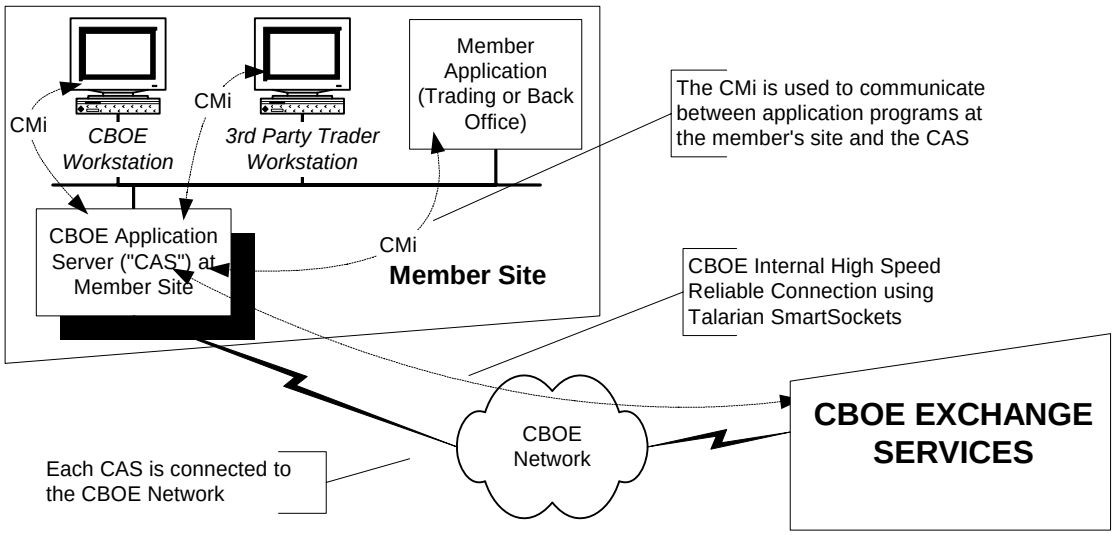
The second interface is a message-based protocol based upon the Financial Information Exchange (FIX) protocol. CBOE's implementation of the FIX protocol should be of particular interest to retail and institutional firms that require order routing to CBOE markets. The FIX protocol is implemented over TCP/IP. FIX is an important messaging protocol in the financial industry. CBOE continues to work with the FIX protocol organization and to participate in FIX working groups to help evolve the FIX protocol for wider use in exchange based derivatives markets.

Introduction to the CBOE Application Server (CAS)

The CAS is a CBOE application program written in Java that sits between the CBOE Network and client applications that access CBOE Exchange Services. The CAS is responsible for communicating with the exchange on behalf of client applications. It also acts as a concentrator and cache of information to minimize the amount of information that needs to be transmitted between the client application (such as a GUI trading application or an automated quotation system (black box trading system)).

The CAS exposes a CORBA interface that operates over the Internet Inter-ORB Protocol (IIOP). The CORBA interface is defined in the Interface Definition Language (IDL), which is part of the CORBA standard.

The following diagram shows how the CAS fits into the CBOE systems architecture.



How to obtain the CAS

The CAS software can be obtained from the CBOE after developing an application and performing stand-alone testing using the CAS Simulator.

Platforms Supported

Since the CAS is written in Java, it should be able to run on any platform that supports the Sun Java Runtime Environment Version 1.2.2 or later. To maintain quality standards, CBOE is testing the CAS to operate on the following platforms at this time.

- Microsoft Windows NT Version 4.0 Service Pack 6 or later.
- Sun Solaris 2.6 or later

CBOE will revise this list of supported platforms based upon the requirements of users of the CAS and the CMi.

The CAS Simulator

The CAS Simulator is a stand-alone Java application that mimics the behavior of the CAS. The CAS Simulator is provided to assist developers in developing and testing their application. The CAS Simulator is used for stand alone testing of a client application prior to performing a live network test over the CBOE Network.

The CAS Simulator is supplied as part of the CMi Software Development Kit, which is available from the CBOE Website (http://www.cboe.com).

Refer to *CBOE Application Server Volume 2: CBOE Application Server Simulator for Stand Alone Testing* for more information on the CAS Simulator.