



ICE Trade Vault
Public User & Technology Guide
June 6, 2014

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INTRODUCTION

The purpose of this guide is to publically disclose a description of the IT requirements for ICE Trade Vault. Participants of ICE Trade Vault will have access to a full suite of implementation documentation, a dedicated support team, and a test environment to assist with connecting and testing.

TRADE VAULT – TRADE SUBMISSION

ICE eConfirm serves as the front-end application for reporting parties submitting derivatives data to ICE Trade Vault. This design allows ICE Trade Vault users to leverage existing connectivity to efficiently meet derivatives reporting obligations. Participants may choose from three easy methods to upload trade information:

- Manual entry using a web form located in ICE eConfirm - Trade Entry;
- Batch upload using a tab delimited or XML file formats; and
- Direct system interface utilizing an XML API.

SYSTEM REQUIREMENTS

ICE Trade Vault and ICE eConfirm are browser based applications that are accessed through an internet browser.

- Supported web browsers include Microsoft Internet Explorer version 7 or newer, Mozilla Firefox version 3 or newer, Apple Safari version 3 or newer and Google Chrome.
- Java must be enabled, and the most recent version of Adobe Flash plugin installed to use ICE Trade Vault and ICE eConfirm.

To launch ICE Trade Vault and ICE eConfirm, open the internet browser, and navigate to www.ICETradeVault.com

The ICE Trade Vault and ICE eConfirm launch page features information about the applications as well as links to depth documentation though white papers, regulation & compliance, application FAQs, and detailed eConfirm information.

API

The API is the most efficient method for submitting trades and it allows for two-way communication with the system. Users may submit and retrieve trades electronically in real-time to update their internal trading systems.

The API is based on XML using HTTPS as the communication transport mechanism. XML was chosen as the basis for the API because of its ubiquitous nature. XML allows the ICE Trade Vault System to define a common language for data exchange while giving participants the flexibility to use the development language of their choice for the client-side connection.

The API communicates via HTTPS. Upon login, each API engine establishes a 128-bit SSL connection, which is used throughout the session.

GENERAL ARCHITECTURE

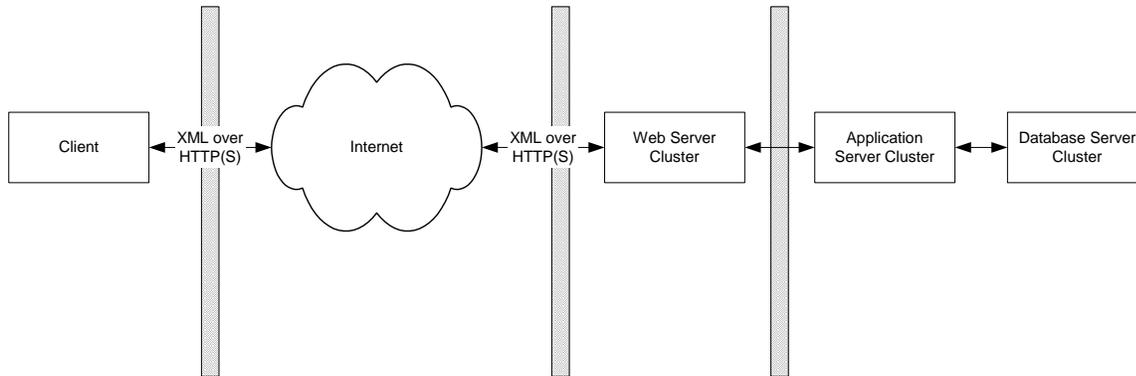


Figure 1: General Architecture

The overall architecture of the ICE eConfirm API is as depicted in Figure 1 above. Clients interact with the ICE system using XML over HTTPS. No client-side libraries are required to be installed; eliminating the need to install the latest API code set.

XML over HTTPS allows for transfer of data between two entities across the Internet in a secure and standardized manner. In this method, the schema is the binding contract between a participant and the ICE system. To allow for usage of the HTTPS protocol, the client application has to register a digital certificate provided by ICE Trade Vault (either manually or programmatically) and must be able to process cookies. The current servlet uses a validating parser so the client application is responsible for passing the right data types as specified in the schema.

ADVANTAGES OF XML OVER HTTPS

- It does not restrict clients to using any other protocol other than HTTPS; and
- No additional client libraries are necessary for installation other than XML parser libraries.

IMPORTANT CONSIDERATIONS WHEN IMPLEMENTING XML OVER HTTPS

- All object serialization and de-serialization to and from XML needs to be handled by the client;
- Client is responsible for handling transport protocol which involves parsing HTTPS headers, cookie manipulation, request formation and transmission;
- There is no standardized way to handle exceptions. The schema provided by ICE solves this problem by providing a <Response> element as specified in the schema. The client code is still responsible for parsing and handling responses; and
- Character encoding is not supported for each element.

XML OVER HTTPS METHOD OF INVOCATION

All XML messages should comply with the schema presented in Appendix A. In order for an API client to interact with ICE, the following conditions must be met:

- Register the certificate provided by ICE Trade Vault as a trusted certificate by consulting your programming language guidelines. For example, this can be accomplished using the key tool utility in Java;

- Write a client application using any programming language and create the XML output conforming to the schema. The XML output may involve a query, submit or cancel order to ICE; and
- Post the XML using HTTPS post. The URL for the post is determined based on the environment being accessed (e.g., Staging or Production). The post will accept three parameters.

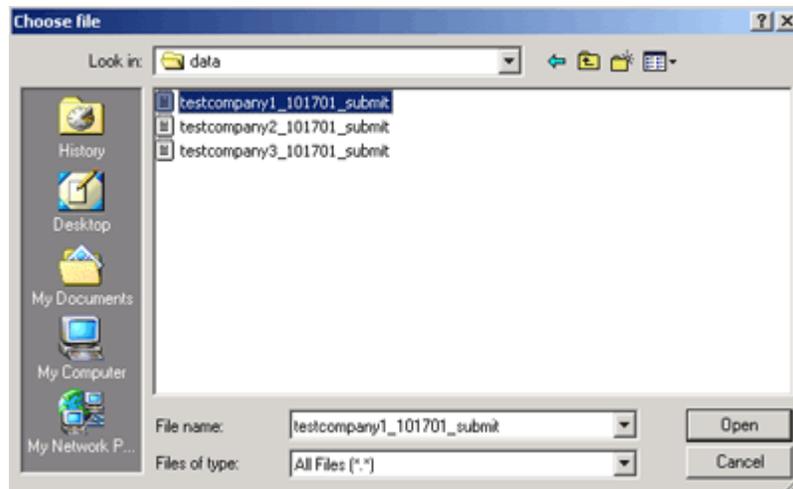
FILE UPLOAD

The file upload submission of trade details to the ICE Trade Vault System is via HTTPS. A 128-bit certificate is used to encrypt the data during the exchange. The Upload screen enables the transfer of files from your computer into the ICE system.

- Click Data Submission from the main menu bar and then select the Upload tab.

UPLOADING THE FILE

- After clicking the Browse button, the Internet Explorer standard “Choose File” window will appear. Select the appropriate file to be uploaded into the system and click Open. Repeat this step to upload up to three files at one time.



- Once the file is attached, click the “Upload” button to send the data securely via HTTPS to the ICE System.
- An Upload Success or Upload Failure message will be displayed on the screen

- If successful, the file will be dropped into the directory of the company the user is logged in under.

FILE FORMAT

File must be in a tab delimited (.txt) format.

- The file's header row, the first row, must contain only ICE field names.
- All subsequent rows should contain trade details. Each row represents a single trade.
- The same file format is used when submitting, editing, or canceling trades.
- Multiple markets, products, and trade types can be submitted in a single file. (e.g., oil, metals, gas, and power trades can all be submitted in a single file)
- Participants are not required to submit all columns, only those applicable for the trades that are being submitting.
- Columns with non-ICE field names are ignored.
- Columns may in any order, but the column header names must match the ICE eConfirm field names exactly.

MANUAL TRADE ENTRY

Trade may be manually keyed in using the Trade Entry GUI. On this screen, users have the ability to submit trade information via an online web form. The web form allows you to enter confirm information manually and submit the confirm record for processing to the ICE System. Once trades have been uploaded to the system, the web form is available to edit non confirmed trades and perform lifecycle events on confirmed trades.