Estate Valuations & Pricing Systems, Inc.
Data Flow, Data Sources
and Valuation Methodology

Overview

The valuation software included in EVP Systems' EVP Office—specifically EstateVal, GiftVal, and CostBasis—all have identical data flows and calculation methodologies. CapWatch shares the data flow, but does not perform calculations.

Briefly, these applications make requests of the EVP Systems' data center, which then either interactively queries third-party data providers via the Web or pulls information from local databases stocked with third-party data. The result is then returned to the client applications where calculations are performed. All calculations are done according to IRS regulations and industry standards. (See `tinyurl.com/irs-regs` for details.)

The majority of the data used by EVP Systems comes from ICE Data Pricing and Reference Data LLC, via queries of its RemotePlus service. Other valuation data comes from local databases loaded regularly with information from ICE, LSEG (London Stock Exchange Group) Data & Analytics (formerly Refinitiv), QUODD Financial Information Services, Nasdaq Inc., Exchange Data International, Thomson Reuters Lipper, Invesco Ltd., CoinAPI Ltd., and other vendors.

Data Flow

The EVP Systems client applications treat a security as a series of stand-alone pieces of raw data: a type, a name, a description, a high or ask value, a low or bid value, etc. When a valuation is requested, the client determines which pieces of data it does not have for each security and requests them from the EVP Systems data center. (These requests are not always everything about a security—if an existing security is re-priced on a new date, only the date-specific information is requested.)

Different types of securities—stocks, corporate bonds, government bonds, and so on—have different requirements, so the first request for a new security is always for the security type, along with other elements that each type has in common, such as a name, a domicile country, and a currency.

The communication between the client application and the EVP Systems data center allows each security to request specific pieces of data individually. While these requests might result

in multiple back-end queries to third-party data—the process to determine the type of a security is very complicated, for instance—the single client request always produces a single data center response.

When the type of a security is returned to the client, it bases further requests on this response. If the security is a stock, for instance, the client application will ask for pricing data—and, as with the query for a security type, this will result in many backend requests to produce a single answer. If a high/low pricing pair is not available on the valuation date, the Data Center will search both forward and backwards for a specific amount of time, looking for trade data. If no trades are available, it will begin looking over that same range for ask/bid pairs. If it cannot find them, it will settle for market pricing. As with the security type, this information is returned to the client as a single answer, no matter how complicated the process is to assemble it.

The default protocol used for this communication is custom-designed by EVP Systems, and does not conform to any publicly available or RFC-documented format.

The default connection is via HTTPS TLS 1.2 to port 443 on `dc.evpsys.com`. Alternatively, an unencrypted TCP/IP stream can be made to port 60000 on `dc1.evpsys.com` or `dc2.evpsys.com`. (This port is not defined by the Internet Assigned Numbers Authority, leaving it available for general use.)

Both connection types support SOCKS4, SOCKS5, and HTTP Tunnel proxies.

Data Sources

The majority of the data EVP Systems' uses comes from ICE Data Pricing and Reference Data LLC (`www.theice.com/market-data`), via the Web interface to their RemotePlus system (`tinyurl.com/qhr6eck`). Local databases exist for some prices, dividends, distributions, accruals, and capital change data, and these are queried for the appropriate information before any request to ICE. Some pricing data and dividends, mil-rates, and precious metals prices, come from LSEG Data & Analytics (`www.lseg.com/en/data-analytics`), via nightly FTP download. Local mutual fund prices come from Nasdaq, Inc. (`www.nasdaq.com/market-activity/mutual-fund`) via a nightly download hosted by ICE. Local UIT distribution data comes from QUODD Financial Services (`www.quodd.com`) and Exchange Data International (`www.exchange-data.com`), via nightly FTP downloads. Local daily accrual data comes from individual funds, via a nightly FTP downloads. Capital change data comes from Xcitek (an ICE brand), via a nightly FTP download. Cryptocurrency prices come from CoinAPI (`www.coinapi.io`) and CoinMarketCap (`coinmarketcap.com`), via a nightly Web Services/HTTPS download.

EVP Systems does not perform the underlying security valuations. While the company makes every effort to ensure the accuracy of the data received from vendors, EVP Systems' software is designed to calculate and report on that data, not verify it. See the "Data Quality Process" documentation for the checks that are performed.

Valuation Methodology

Once a client application has all the pieces of information about a security that it needs, the actual results can be computed. These calculations are performed at the client's request, to allow for maximum flexibility—preferences can be changed and values manually edited without requiring the server to be queried for new results. Portfolio descriptive information—including decedent names, file names, report titles, numbers of shares and so on—are all stored and manipulated locally on clients' systems, and are never transmitted to or stored by EVP Systems. EVP Systems has no access to the client's proprietary or personally identifiable information (PII) or Sensitive Personal Information (SPI).

All calculations are computed according to IRS regulations as defined in Form 706 Schedule B for estate valuations (`tinyurl.com/pgkdutl`), and Form 709 (`tinyurl.com/nzn6dbs`) for gift valuations.

Most client-side calculations are performed using 64-bit `double` variables, as implemented by Microsoft's VisualStudio C++ 2022. Microsoft defines `double`s with a range of $1.7^{+/-308}$ and 15 digits of precision (`tinyurl.com/ndt8hu2`). Some calculations use an arbitrary-precision library called decNumber to improve accuracy in specific corner cases (`speleotrove.com/decimal`).

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