# IVolatility Risk Management (IV RM)®

***IVolatlity.com Service***

## Real-time ASP service for professionals and institutions

As the options markets continue to move to screen based trading, access to sophisticated technology, analytics and information will increasingly become the lifeblood of every trading group. Trading firms and hedge funds devote more resources to this area than to any other part of their business.

IVolatulity.com designed the real-time risk management service (IV RM) to address the expanding needs of institutional options traders. IV RM is an affordable, customizable and scalable platform that automates the unique business processes associated with screen based trading and risk management, providing the analytical information users need to support their trading activity quickly and easily. IV RM's flexibility enables clients to create the most efficient solution for their needs, however complex. And it is the only solution available that is based on the analytical power of IVolatility.com data services.

1: <All> - Risks - [Untitled1.rvw]

File View Underlying Options Manage Tools Window ?

| Type | Value | Trades | Expiry | Index | Model |
|---|---|---|---|---|---|
| <All> | <All> | <All> | <All> | DJX | Standard |

| P&L MTM | P&L Theo | Vga | WtdVga | Tht | NetDlt$ | NetGma$ | Rho | IdxDltEq | OptDlt$ | BetaWtdDlt | BtWtdDlt$ | NetDlt | NetGma$1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -1,917,361 | -1,686,861 | -13,351 | -10,801 | 3,459 | -160,211,222 | -971,492 | -3,698 | -1,527,713 | -18,685,011 | -1,503,248 | -157,645,611 | 32,585 | -16,089 |

| Sym | ThtGma | C/P | Exp | Str | Bid | Ask | Last | UndPos | OptQty | NetDlt | BtWtdDlt$ | NetDlt$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AAPL | -0.09 | | | | 55.38 | 55.39 | 55.41 | 1,300 | -16 | 5,899 | 420,255 | 326,691 |
| ACDO | -3.14 | | | | 28.02 | 28.04 | 28.04 | 3,100 | 86 | 2,269 | 86,065 | 63,587 |
| AKAM | -1.96 | | | | 13.38 | 13.40 | 13.39 | -3,350 | -31 | 388 | 12,352 | 5,201 |
| AMGN | 19.15 | | | | 59.25 | 59.24 | 59.26 | 41,617 | -52 | 27,624 | 1,845,110 | 1,636,607 |
| AXP | -0.57 | | | | 55.42 | 55.45 | 55.44 | -- | 100 | 3,971 | 189,907 | 220,156 |
| BA | 0.88 | | | | 53.87 | 53.90 | 53.86 | -- | 100 | 2,977 | 187,579 | 160,420 |
| BAAJ | 0.44 | C | Jan05 | 50.00 | 4.60 | 4.80 | 4.80 | | 50 | | | |
| BAMJ | 0.44 | P | Jan05 | 50.00 | 0.60 | 0.70 | 0.60 | | 50 | | | |
| CC | 0.41 | | | | 17.19 | 17.21 | 17.21 | -4,800 | 27 | -8,449 | -177,854 | -145,318 |
| CMCSA | 1.68 | | | | 29.64 | 29.65 | 29.65 | 9,900 | 240 | 4,532 | 128,125 | 134,345 |
| CSC | 0.53 | | | | 54.97 | 54.98 | 54.99 | -- | 100 | 3,180 | 195,773 | 174,797 |
| CSCO | -88.23 | | | | 18.89 | 18.90 | 18.90 | -9,718 | -498 | -6,595 | -206,522 | -124,621 |

Not Real Time

IV RM combines trades execution capturing, risk management and reporting functionality with powerful pre trade analytics,
IVolatility.com data and sophisticated technology to provide a single comprehensive solution for options professionals.

**IV RM** is an affordable and easy to use solution, which allows professionals to concentrate on risk management and trading, rather than on technical issues. Just launch our web application and use it as a fully comprehensive risk system to track profits, perform what-if analysis, hedge portfolio against market moves, analyze your risks intra-day - whatever empowers you to increase profits and reduce risk. Dividends, interest rates, as well as correlations and implied volatilities provided by unique IVolatility.com database are
data service updated on a daily basis. Real-time market quotes are used to revaluate your risks intra-day, which are updated on demand. All calculations are done via our servers, so as to not affect your desktop performance.

## Market coverage

**IV RM service** supports all U.S. markets including:

- Stocks (NYSE, NASDAQ, AMEX, other regional stock exchanges)
- Options (ISE, CBOE, AMEX, PHLX, PSE, BOX)
- Index futures & options (CME/GLOBEX, NYBOT, CBOT)
- Commodities and other products futures & options (CME/GLOBEX, NYMEX, COMEX, NYBOT, CBOT)

Depending on your needs, system may be enabled for any list of instruments from above, new ETI or OTC.

## Customization

Layout of any screens can be customized (colors, columns displayed).
Different screens can be saved as one group (book), which makes it easy to launch all of them by simply opening one Book.

## IVolatility.com data

Powerful database of IVolaitlity.com provides unique data to IV RM real-time service on a daily basis:

- EOD Implied volatilities for options
- Correlation & Betas of stocks against major indexes SPX, NDX, OEX and DJX are used for What-If scenarios with stock price simulations and hedging strategies against market
- Volatility Bands that show min/max values of volatility curves for last year are used in Volatility Manager
- Close mark prices for stock and options are used for Daily PnL calculations

## Real-time trade feed

In addition to the manual entry of your trades, or loading trade files throughout the day, we also offer an automated RTTF (Real-Time Trade Feed) service. We can accept a real-time trade feed of activity from major clearing firms so that your positions and risks are updated automatically throughout the trading day. With your approval, we can receive a copy of your trade activity, and automatically update your position within our system. We currently support Merrill Pro, O'Connor, Bank of America, Direct Trading, Wolverine Trading, Eze Castle, ...and this list continues to grow.

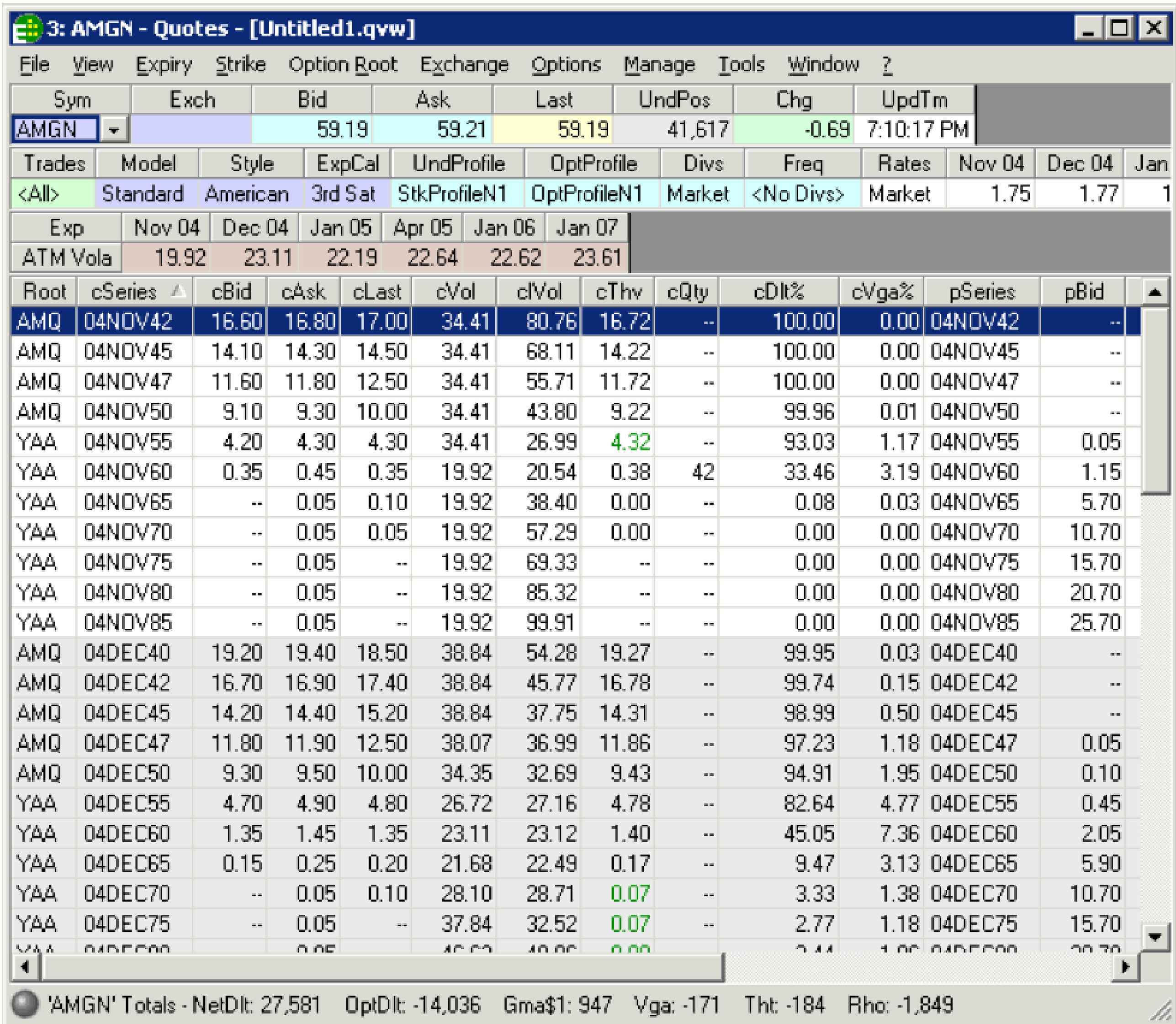
**IV RM** is a FIX 4.1 - 4.3 compatible, so can be easily integrated with any execution systems with FIX interface. You can check the live state of integrations available with sales manager. In the case the integration are not available right now it can be considered and added.

## Trades & position management

- Trade blotter with the ability to sort and filter trades by stock, date
- Manual quick entry of a trade is available from any screen by a simple click
- Trades/positions can be imported from any XLS, CSV, TXT file
- Possibility to expire/exercise options any time with closing position or converting into underlying position

## Quotes View

- Multiple screens can be opened simultaneously, quotes are updated in live
- Options, futures, future options chains displayed along with quotes, market implied vols, IVOL DB vols, Theo Option Price and Greeks
- Filters by strike, expiry, root available




| Root | cSeries | cBid | cAsk | cLast | cVol | cIVol | cThv | cQty | cDlt% | cVga% | pSeries | pBid |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AMQ | 04NOV42 | 16.60 | 16.80 | 17.00 | 34.41 | 80.76 | 16.72 | -- | 100.00 | 0.00 | 04NOV42 | -- |
| AMQ | 04NOV45 | 14.10 | 14.30 | 14.50 | 34.41 | 68.11 | 14.22 | -- | 100.00 | 0.00 | 04NOV45 | -- |
| AMQ | 04NOV47 | 11.60 | 11.80 | 12.50 | 34.41 | 55.71 | 11.72 | -- | 100.00 | 0.00 | 04NOV47 | -- |
| AMQ | 04NOV50 | 9.10 | 9.30 | 10.00 | 34.41 | 43.80 | 9.22 | -- | 99.96 | 0.01 | 04NOV50 | -- |
| YAA | 04NOV55 | 4.20 | 4.30 | 4.30 | 34.41 | 26.99 | 4.32 | -- | 93.03 | 1.17 | 04NOV55 | 0.05 |
| YAA | 04NOV60 | 0.35 | 0.45 | 0.35 | 19.92 | 20.54 | 0.38 | 42 | 33.46 | 3.19 | 04NOV60 | 1.15 |
| YAA | 04NOV65 | -- | 0.05 | 0.10 | 19.92 | 38.40 | 0.00 | -- | 0.08 | 0.03 | 04NOV65 | 5.70 |
| YAA | 04NOV70 | -- | 0.05 | 0.05 | 19.92 | 57.29 | 0.00 | -- | 0.00 | 0.00 | 04NOV70 | 10.70 |
| YAA | 04NOV75 | -- | 0.05 | -- | 19.92 | 69.33 | -- | -- | 0.00 | 0.00 | 04NOV75 | 15.70 |
| YAA | 04NOV80 | -- | 0.05 | -- | 19.92 | 85.32 | -- | -- | 0.00 | 0.00 | 04NOV80 | 20.70 |
| YAA | 04NOV85 | -- | 0.05 | -- | 19.92 | 99.91 | -- | -- | 0.00 | 0.00 | 04NOV85 | 25.70 |
| AMQ | 04DEC40 | 19.20 | 19.40 | 18.50 | 38.84 | 54.28 | 19.27 | -- | 99.95 | 0.03 | 04DEC40 | -- |
| AMQ | 04DEC42 | 16.70 | 16.90 | 17.40 | 38.84 | 45.77 | 16.78 | -- | 99.74 | 0.15 | 04DEC42 | -- |
| AMQ | 04DEC45 | 14.20 | 14.40 | 15.20 | 38.84 | 37.75 | 14.31 | -- | 98.99 | 0.50 | 04DEC45 | -- |
| AMQ | 04DEC47 | 11.80 | 11.90 | 12.50 | 38.07 | 36.99 | 11.86 | -- | 97.23 | 1.18 | 04DEC47 | 0.05 |
| AMQ | 04DEC50 | 9.30 | 9.50 | 10.00 | 34.35 | 32.69 | 9.43 | -- | 94.91 | 1.95 | 04DEC50 | 0.10 |
| YAA | 04DEC55 | 4.70 | 4.90 | 4.80 | 26.72 | 27.16 | 4.78 | -- | 82.64 | 4.77 | 04DEC55 | 0.45 |
| YAA | 04DEC60 | 1.35 | 1.45 | 1.35 | 23.11 | 23.12 | 1.40 | -- | 45.05 | 7.36 | 04DEC60 | 2.05 |
| YAA | 04DEC65 | 0.15 | 0.25 | 0.20 | 21.68 | 22.49 | 0.17 | -- | 9.47 | 3.13 | 04DEC65 | 5.90 |
| YAA | 04DEC70 | -- | 0.05 | 0.10 | 28.10 | 28.71 | 0.07 | -- | 3.33 | 1.38 | 04DEC70 | 10.70 |
| YAA | 04DEC75 | -- | 0.05 | -- | 37.84 | 32.52 | 0.07 | -- | 2.77 | 1.18 | 04DEC75 | 15.70 |



## Portfolio risk management

Risk management and pre-trade analytics include a complete set of tools for decision making about trading. This includes standard risks as well as more sophisticated tools empowered by the IVolaitlity.com database.

- Accurate options models are used for risks calculations, they include full dividend stream, different expirations for stock/index/future underlying, american/euro styles, etc.
- Price rules for filtering out bad prices from data source and feed corrected quotes into option models
- Import of your custom volatilities for risk calculations or use EOD close volatilities from IVolaitlity.com database.

- Aggregated Risks evaluation
    - Aggregating stock, options or index cash options and future risks within one underlying or for a whole group
    - Risk presented in either correlated or uncorrelated numbers based on IVolatility.com data
    - WHAT-IF and Stress Scenarios based on Price/Volatility/Time simulations. Either parallel or correlated stress testing for market movement
    - Weighted Vega Shift for Volatility simulations for adjusting to different Vega exposures
- Daily intra-day P&L Reporting
- Greeks Allocation among expiration allows you to track risk exposure at different expirations for a single or multi-asset group.
- Hedging functionality allows for an optimized Delta and Vega hedging of any custom risk group against indices and other underlyings, providing the optimal solution to reduce VAR of portfolios and sub portfolios. It uses correlation based analysis of true Vega and Delta exposure, rather then non-correlated Vega and Delta, for the most accurate data.

## Additional connectivity

Exchanges:
- Certified by ISE Software Bridge is developed from IV RM system to ISE for data, executions, orders, quotes routing.

## End of the day

IV RM support team provides End of the Day with updating of the system with following data overnight:

- New options chains, deletions, dividends are updated from feed
- Close mark prices for Daily PnL are updated from IVolatility.com database for equity options and from feed for future options
- Default volatilities are loaded from IVolatility.com for equity options and calculated in the IV RM for future options
- New LIBOR rates are updated
- Correlations, Betas are updated from IVolatility.com

All EOD procedures are managed by IV RM support team to make system ready for user access at 7am.

## Backups

IV RM is configured for Primary and Backup servers for failsafe redundancy of positions and risk, and 2 datafeed servers are used to ensure reliability of market data.

## Pricing and trial

We offer a free demo of our IV RM using 20 minute delayed market data, with our support team guiding you over the phone throughout the DEMO. On request, your positions can be imported into the system for the DEMO so you can evaluate our system better. After the DEMO, if you would like to subscribe to our IV RM service we can have you up and running in a few short days.

**IV RM** is a powerful risk management tool and is priced affordably. Pricing varies based on the solution desired, total position sizes, number of users, special enhancements or integration, etc. help determine the pricing. To arrange a demo and to receive further information, please contact us to discuss further.

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