

Marketcetera™'s Open Source Approach

Control, quality & confidentiality through transparent, extensible software

KEY BENEFITS:

- **Highly Cost Effective:**
Marketcetera is available as a free download to use and modify as you need, with commercial supported software licenses available to those needing access to Marketcetera data feeds or for greater operational support
- **Flexible and Extensible:**
Use the software as is, or modify it to meet your needs, you're in complete control
- **Safe and Secure:** You get highly reliable, robust software, with the ability to maintain the confidentiality of your business strategies

Open Source, a software development methodology defined by human readable code made available in the public domain and a spirit of community and collaboration, provides developers with previously unknown possibilities to use, change and improve software to meet their individual needs — without paying license fees.

Open source provides high quality software and documentation, the ability to maintain absolute confidentiality of your proprietary business strategies, and the flexibility and extensibility necessary to develop software that meets your needs — all at a fraction of the cost of proprietary commercial software or in-house development. Marketcetera's Automated Trading Platform, the only Open Source software solution for institutional traders, harnesses the power of Open Source and gives you total control of your trading platform, enabling you to go to market more quickly, maintain confidentiality, and focus on what matters most to your business — your unique trading strategies.

About Open Source Software

Open Source software provides human readable source code that can be redistributed freely and modified as needed, with all derivative software falling under the same open license. Open Source software provides transparency into the code, allowing you to see what the software is doing and modify the code to suit your needs. Open Source also gives you the option to interact and collaborate with other developers in the community, giving you a unique environment in which to share ideas and troubleshoot issues. This community involvement results in better quality software and better documentation, as the whole community tests, debugs, and documents changes and best practices. All of this gives you a better ROI on your

development investment than either traditional commercial software packages or custom development done from scratch.

Source Code example from Marketcetera

```

OutgoingMessageHandler.java
/** Only supports NewOrderSingle, OrderCancelReplace and OrderCancel orders at this point
 * Rejects orders that are of the wrong FIX version, or if the OES is not logged on to a FIX destination.
 * Runs the incoming orders through message modifiers, and forwards them on to a FIX destination.
 * @param message Incoming message
 * @return ExecutionReport for this message
 * @throws CoreException
 */
public Message handleMessage(Message message) throws CoreException {
    if (message == null) {
        Messages.ERROR_INCOMING_MSG_NULL.error(this);
        return null;
    }

    // send a copy to the copyTopic
    try {
        if (incomingCommandsCopier != null) {
            incomingCommandsCopier.convertAndSend(message);
        }
    } catch (JmsException ex) {
        // ignore
    }

    if (!qfApp.isLoggedOn()) {
        Message notLoggedOnReject = createRejectionMessage(new CoreException(Messages.ERROR_NO_DESTINATION_CONN
            message);
        // explicitly remove the OrdStatus b/c we don't know what it is - we aren't logged on
        notLoggedOnReject.setField(new OrdStatus(OrdStatus.REJECTED));
        return notLoggedOnReject;
    }
}

```

Marketcetera's Open Source Approach

The Marketcetera Automated Trading Platform is a standards-based open source software platform distributed under the GPL license. By taking an Open Source approach, Marketcetera gives you total control over your trading platform at a fraction of the cost of traditional proprietary commercial software offerings or in-house solutions. You'll have a robust, extensible software foundation on which to execute your unique strategies, whether you use the platform as is or you choose to customize it to meet your needs.

Marketcetera gives you complete transparency into the source code, meaning you have total control over what you do with the product. Use, modify or enhance the source code to meet your business objectives, without paying license fees. You'll get to market more quickly because there's no waiting for vendors, and you won't have to begin your development efforts from scratch. Plus, you'll maintain complete control — and confidentiality — of your proprietary trading strategies.

If you choose to participate in Marketcetera's Open Source community, you'll have access to a network of developers working on similar challenges. Whether troubleshooting issues or sharing new ideas, the community forums provide another resource for making the most of your development resources. And for companies looking for access to Marketcetera's data feeds and certified broker connections, or more robust support services, Marketcetera offers supported licenses, ensuring you meet your firm's operational demands and compliance mandates.

Built with the needs of trading firms in mind, and delivered via an Open Source approach, Marketcetera gives you reliable, secure, and agile software, enabling you to focus on your singular trading vision.

5 Myths About Open Source Software (OSS)

Myth 1	I'll have to reveal my trade secrets	Download and use OSS software without ever revealing anything about how you're using it. In fact, because there are no sales people involved and no license compliance checks, your trade secrets are kept completely confidential.
Myth 2	Open source is unsupported	Marketcetera, like many Open Source vendors, provides commercial supported licenses, ensuring you'll have access to Marketcetera technical resources and other special benefits, enabling you to meet compliance mandates and ensure operational security.
Myth 3	I'll lose the rights to my intellectual property	You control changes to GPL-licensed software as long as they are for internal use. Disclosures are only required in the event the software is redistributed.
Myth 4	Open source software is low quality software	Because of the active involvement of community members, OSS is constantly tested and refined, with the results made generally available, resulting in stable, robust, high-quality software. And because of the collaborative nature of Open Source, and the need for developers to understand what others are doing, documentation is often far superior to that of proprietary systems.
Myth 5	Community participation and collaboration is required	Though there are many vibrant Open Source user communities comprised of developers testing software, fixing bugs, making feature suggestions and providing code updates, this participation is entirely optional. You're free to participate as much, or as little, as you choose.

A Brief History of the Open Source Movement

Rising out of the Free Software movement, which sought to combat the increasingly closed and proprietary software systems of the 1970s and 1980s, the Open Source approach is based on the idea that better software is developed through transparency of code and distributed peer review. Eric Raymond's paper *The Cathedral and the Bazaar* (1997), a history and analysis of hacker culture focusing on the role of distributed peer review, was presented at O'Reilly Perl Conference in September 1997, sparking the first major Open Source release — the release of Netscape's browser as free software.

Though the notion of freely distributed code was gaining traction, the proponents of the methodology found commercial software companies loath to accept anything called "free." The term Open Source came out of a 1998 Palo Alto strategy session attended by many early Internet era luminaries, and represented an effort to move away from the term "free" toward something that would be more acceptable to commercial software companies.

The Open Source Initiative, founded in 1998, is a central resource on Open Source and maintains the Open Source Definition. For the Open Source definition, or more information on the Open Source Initiative, please visit <http://www.opensource.org/>.



Marketcetera is the leading provider of open source software for automated trading systems. Portfolio managers can quickly transform trading ideas and pricing rules into their own proprietary algorithms that are embedded in the Marketcetera platform. The open source foundation of the platform provides maximum agility and technology choice to institutions of all sizes.

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