Object⁺ Limit Management

OLM

Simplifying Pre-Trade Limits

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Introduction

If your organization deals with maintaining pre-trade limits on multiple trading systems, probably from different ISVs, the Object+ Limit Management system (OLM) may be a valuable tool to solve a number of problems that are typical for such a process.
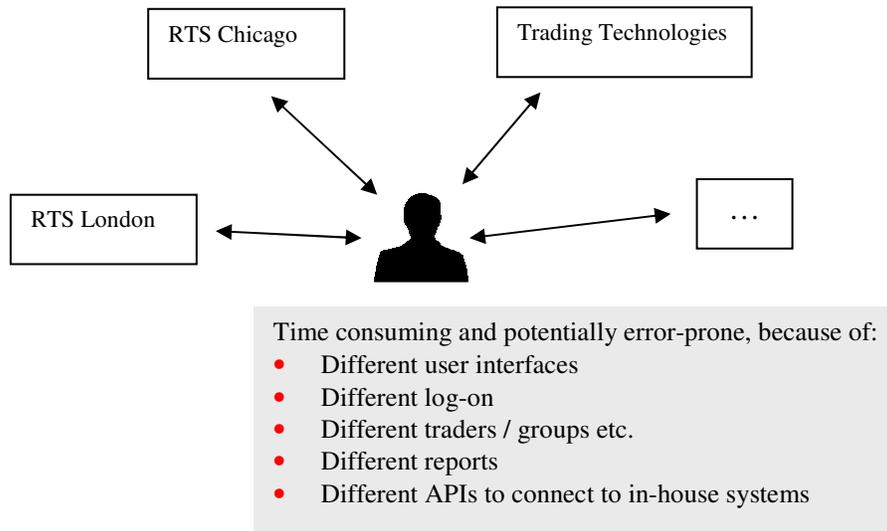
RTS Chicago

Trading Technologies

RTS London

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Time consuming and potentially error-prone, because of:
- Different user interfaces
- Different log-on
- Different traders / groups etc.
- Different reports
- Different APIs to connect to in-house systems

Figure 1: Maintaining pre-trade limits on multiple systems - the problem

The OLM system shields the user as well as your in-house systems from the intricacies of connecting to different ISV systems, by providing <u>one centralized solution</u> for maintaining the pre-trade limits.
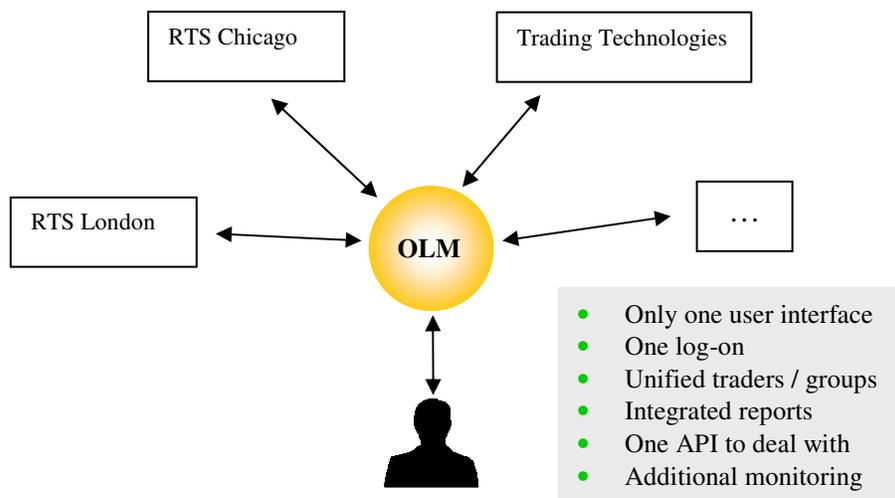
RTS Chicago

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- Only one user interface
- One log-on
- Unified traders / groups
- Integrated reports
- One API to deal with
- Additional monitoring

Figure 2: The OLM solution

The next sections describe the OLM system and its benefits in greater detail.

The OLM System

The Object+ Limit Management system (OLM) offers one central place to administer pre-trade limits for multiple trading systems. The trading systems themselves are not part of OLM; they are typically provided by independent software vendors (ISVs). OLM provides you with a unified way to view and maintain the limits, independent of the ISVs.

Benefits

OLM offers one application program, one user interface, and one workflow to inspect and modify the configured pre-trade limit values. Not only does this save time, it also reduces the chance of errors.

Apart from the user interface, the limit settings can also be controlled and monitored by in-house systems that use the OLM Application Programming Interface (API) – it replaces the different APIs provided by each ISV. This reduces the cost of developing connections between in-house and ISV systems.

The system offers an easy way to group traders or accounts. This allows quickly finding all limit settings of one specific trader, even if these limits exist on different ISV systems. It also allows quickly disabling trading for one specific trader, by setting the limits of all related accounts to zero.

The OLM system continuously monitors the state of the connected ISV systems, and issues a warning when the connection is lost, or when an unauthorized change has been made to the pre-trade limit settings.

Basic principle

OLM is a client-server system. The server is permanently connected to the ISVs' pre-trade limit systems. It uses these connections to keep a copy of all limit settings in its own data base. As soon as the user changes one or more limit values, OLM sends these new values to the ISV system and makes sure they have been made effective. But the opposite is also true: if limit values are changed directly in the ISV system, the changes are detected, and transferred to the central OLM data base. Effectively, the OLM server provides a two-way synchronization between the central data base and each individual ISV system.
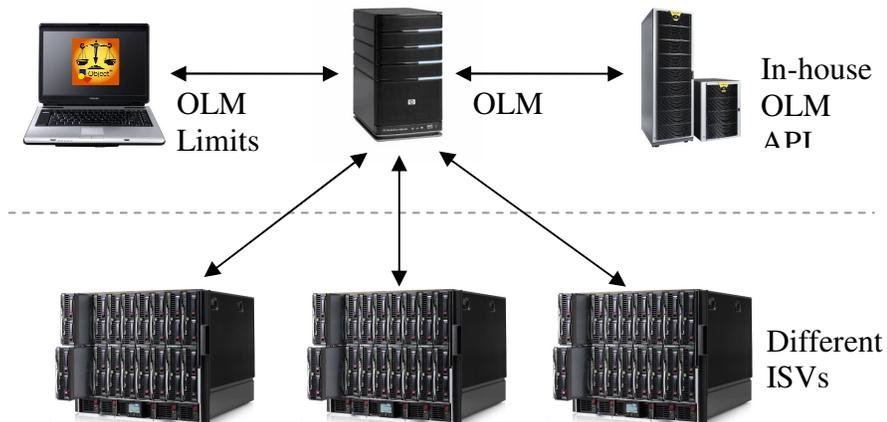
Figure 3: OLM clients and server

User Interface versus API

The OLM system comes with a Windows application, "OLM Limits", which gives access to all functions of the system. The OLM Limits program communicates with the server using the OLM Application Programming Interface (API). The exact same API is available to be used in other applications, allowing your in-house systems to access the server, and thus the pre-trade limit systems of the ISV's (as shown in Figure 3).

Trading Technologies Interface

The OLM system is also interfaced with the latest version of the TT API. Hence facilitating full OLM functionality for firms using TT.

Functionality

The next sections give an overview of the OLM functionalities, and show screen shots from the OLM Limits program as an illustration.

Inspecting and updating pre-trade limits

Pre-trade limits are typically defined for a trader, an account, or a group of traders / accounts. OLM uses the term "trading entity" (or TE for short) as a collective term. OLM allows browsing the trading entities, en inspecting their pre-trade limit values. The example screen shows that trader "James" has user accounts for RTS Frankfurt, RTS London, and Trading Technologies. In the example, the limit settings are shown for his "London" user name.

You can create groups of traders in any way you want. Figure 4 shows for example that "James" works at the Derivatives Desk, which in turn is part of the Trading Desks group.
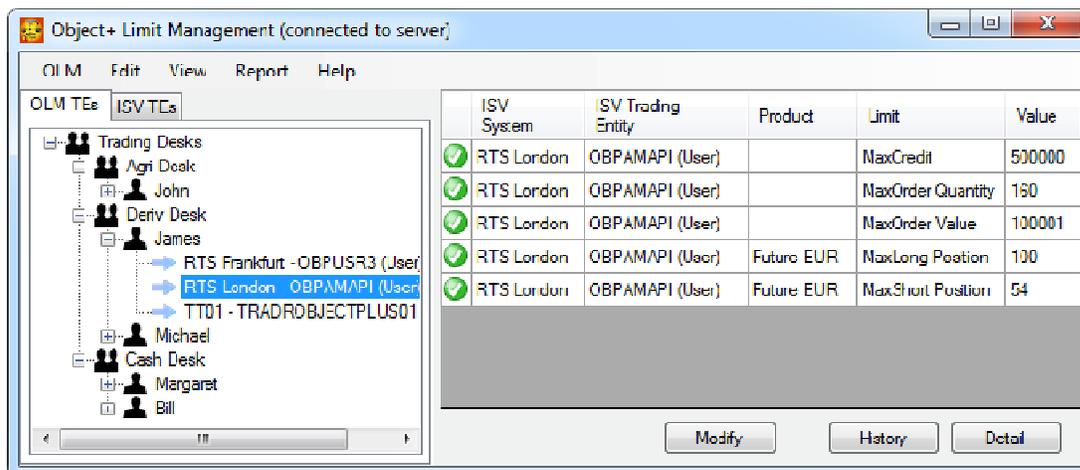
Figure 4: OLM limits overview

From the main screen, you can go to the Modify Limits window (shown in Figure 5) or you can inspect the history of all limit modifications of a specific trader, shown in Figure 6.

The Modify Limits window lets you change, add or remove limits for a specific trader or account. The new limits are sent to the ISV system, and OLM will keep track of the update to make sure it was successfully executed.
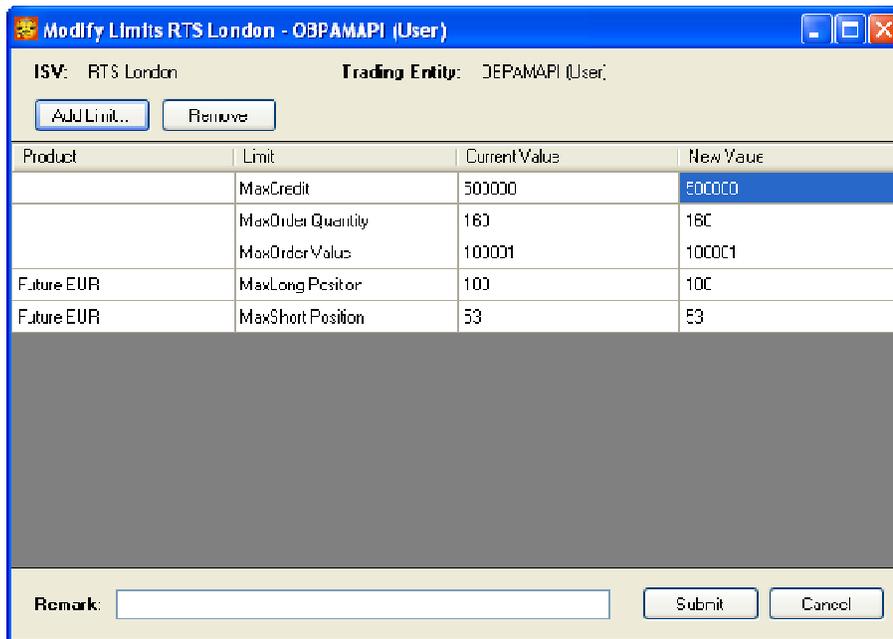
Figure 5: Modify a trading entity's limits

The history overview allows inspecting any limit update in the past. With the horizontal slider you can move "through time", and see exactly what was changed and who is responsible for the change.
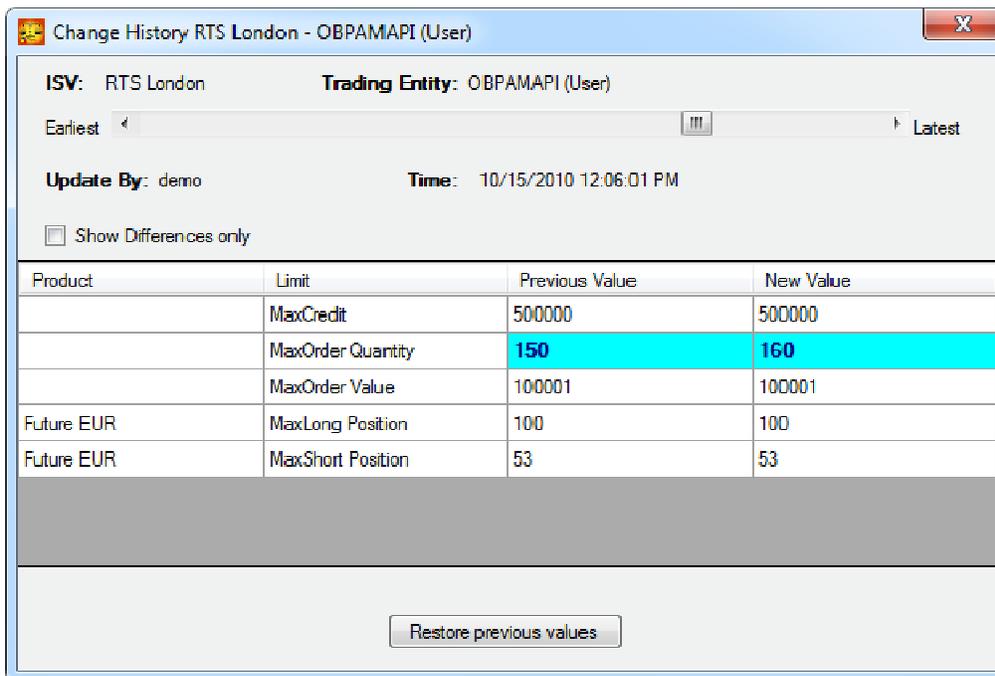

Figure 6: History of limit updates for a trader

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OLM through Browser Based Web Link

Alongside the use of the OLM GUI, we have added the possibility <u>to approach the OLM system via your own browser,</u> using logon credentials to access the OLM application. This allows for more flexibility as traders will be able to access all OLM functionality from any location. Traders can request a limit change through the web link. This change request is forwarded to the central application of OLM where the Risk Manager will validate or decline the trader's request.

Figure 7: Example of the browser based screen where a trader can enter limit change requests.

Reporting

The OLM system can create several reports, such as the changes of all limits in a given time period, or the current limit values. The reports include selected traders of one or more of the connected ISVs. The report page leaves room for your company logo.

Figure 8: Limits overview report

Monitor unsolicited changes

Although OLM offers a centralized way to administer all limit settings, it is technically still possible to use the ISV software and change the limits directly in the ISV system. The OLM system notices these "unsolicited" changes, and does two things when it detects one:

➤ It updates its own limits data base – after all, the new limit values are already in effect!

➤ It registers the unsolicited change, and allows you to inspect it in an overview window of the OLM Limits program. It can even alert the user, so you can take immediate action by (for example) reverting the change.

Figure 9: Unsolicited changes monitor

You can inspect the details of the unsolicited change, and undo the changes if you don't agree. Basically, the details window is the same as shown in Figure 6: the update history window. When opened from the unsolicited changes, the "time" slider is positioned on the update in question. Pressing the "Restore previous values" button leads to a regular modify limits window, as shown in Figure 5, with the limit values as they were before the unsolicited change. So it takes only a few button clicks to revert an unsolicited change – you are in full control.

Figure 10: Reverting an unsolicited change

Monitor ISV system availability

The OLM system relies on two-way synchronization with the ISV systems. Therefore, it continuously monitors the connection with the ISV systems, and issues a warning user if an ISV system has been non-responsive for a longer time period. This guard function prevents a situation where the ISV's pre-trade limits systems fails without anyone noticing, potentially allowing a trader to exceed his trading limits.

Figure 11: ISV system status

"Cloaked" values

ISV systems probably support much more types of limit settings than you are interested in. All these non-used limits might clutter your windows and reports. OLM solves this by giving you the option of configuring the not-used limits as "cloaked". Such a limit does not appear in reports or on the screen, unless you specifically request it.

However, this is more than just a cosmetic feature: OLM *does* store the values of the cloaked limits in its data base. So if such a value is changed directly in the ISV system, it will be detected by OLM and reported as an unsolicited change.

If you change your mind about the cloaked status of a limit, and want to use it after all, the value will be readily available, because it already exists in the OLM data base.

Some technical details

The OLM server runs on Windows. It comes with a built-in data base server.

On the client side, the OLM Limits program also runs on Windows. Other programs, running on essentially any platform, can connect to the server with the OLM API, because it is based on standard, non-proprietary, and widely available technologies: HTTP, JSON, and Representational State Transfer (REST).

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