CAPLIN

Caplin Trader 1.3

Permissioning Overview And Concepts

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CONFIDENTIAL

Contents

1 Preface

1.1 What this document contains

This document introduces permissioning concepts and terms, and shows the permissioning components of the Caplin Trader architecture. The document applies to Caplin Trader version 1.3.

About Caplin document formats

This document is supplied in three formats:

- Portable document format (*.PDF* file), which you can read on-line using a suitable PDF reader such as Adobe Reader®. This version of the document is formatted as a printable manual; you can print it from the PDF reader.
- Web pages (*.HTML* files), which you can read on-line using a web browser. To read the web version of the document navigate to the *HTMLDoc_m_n* folder and open the file *index.html*.
- Microsoft HTML Help (*.CHM* file), which is an HTML format contained in a single file.
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1.2 Who should read this document

This document is intended for Technical Managers, Enterprise Architects, System Architects, and Software Developers who want to integrate Caplin Trader with a Permissioning System.

1.3 Related documents

- **Caplin Trader: Architecture**

  Describes the architecture of Caplin Trader. It focuses on the use of the Caplin Platform in trading applications. It also identifies the areas in which the Platform can be integrated with your company's own and third-party systems.

- **Caplin Liberator: Administration Guide**

  Describes how to install and configure Caplin Liberator and discusses the authentication modules that are provided with the server.

- **Caplin Trader: Installing Permissioning Components**

  Describes how to install the Permissioning Auth Module and Permissioning DataSource in an existing Caplin Trader installation. You only need to install these components if your installation of Caplin Trader is earlier than release 1.2.8, as later releases include these permissioning components.

- **Caplin Trader: How To Create A Permissioning DataSource**

  Describes how to create a Permissioning DataSource adapter using the Permissioning DataSource API. A Permissioning DataSource adapter is required to integrate Caplin Trader with a Permissioning System. The document also discusses the Demo Permissioning DataSource provided with the reference implementation of Caplin Trader from release 1.2.8.

- **Caplin Trader Client: How To Add Permissioning At The Client**

  Describes how to add Permissioning to Caplin Trader Client.

- **Permissioning DataSource: API Reference**

  The API reference documentation provided with the Permissioning DataSource SDK (Software Development Kit). The classes and interfaces presented by this API allow you to write a Java application that will integrate a Permissioning System with Caplin Trader.

- **Caplin Trader Client: API Reference**

  The API reference documentation provided with Caplin Trader Client. The classes and interfaces of the `caplin.security.permissioning` package allow you to write JavaScript classes that extend the live permissioning capabilities of Caplin Trader Client.

1.4 Typographical conventions

The following typographical conventions are used to identify particular elements within the text.

Type	*Uses*
aMethod	Function or method name
aParameter	Parameter or variable name
/AFolder/Afile.txt	File names, folders and directories
`Some code;`	Program output and code examples
The `value=10` attribute is...	Code fragment in line with normal text
Some text in a dialog box	Dialog box output
`Something typed in`	User input – things you type at the computer keyboard
XYZ Product Overview	Document name
◆	Information bullet point
■	Action bullet point – an action you should perform

Note: Important Notes are enclosed within a box like this.
Please pay particular attention to these points to ensure proper configuration and operation of the solution.

Tip: Useful information is enclosed within a box like this.
Use these points to find out where to get more help on a topic.

1.5 Feedback

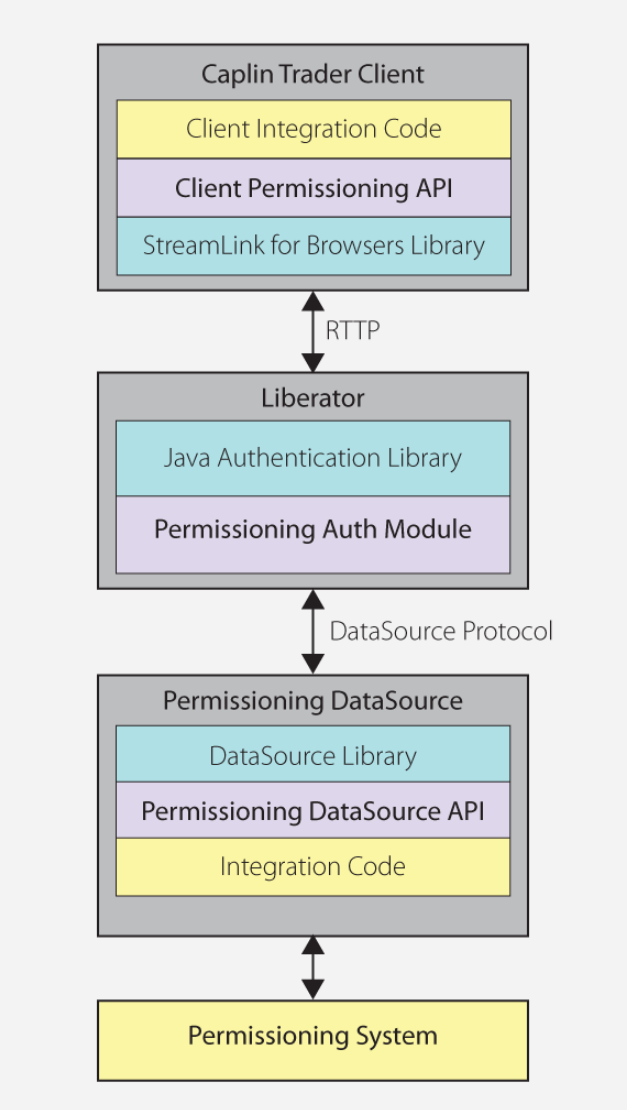
Customer feedback can only improve the quality of our product documentation, and we would welcome any comments, criticisms or suggestions you may have regarding this document.

Please email your feedback to documentation@caplin.com.

1.6 Acknowledgments

2 Permissioning Components

Caplin Trader consists of a number of components that interact to provide end users with a web-based financial trading application (see the document **Caplin Trader: Architecture**). The components that are used to integrate a Permissioning System with Caplin Trader are shown in the diagram below.



Simplified Caplin Trader architecture showing only permissioning components

When Caplin Trader Client interacts with Liberator, such as when an end user logs in or attempts to view or trade financial information, Liberator uses the services of a Permissioning Auth Module to decide if the interaction with Liberator is permitted or not. The Permissioning Auth Module enforces security constraints based on permissioning data provided to Liberator by the Permissioning DataSource.

Permissioning System

The Permissioning System is the source of the permissioning data that you want to integrate with Caplin Trader. Permissioning data identifies the end users that are authorized to interact with Liberator, and the financial products that these end users are permitted to view and trade.

Permissioning DataSource

The Permissioning DataSource is a DataSource Adapter that acts as the interface between Caplin Trader and your Permissioning System. Its purpose is to provide Liberator with the permissioning data that the Permissioning Auth Module will use to decide whether or not an interaction with Liberator is permitted.

To create a Permissioning DataSource, you write and compile a Java application that uses the Permissioning DataSource API. This simple API is built on top of the Caplin DataSource for Java API, allowing your application to send permissioning data to Liberator using the DataSource protocol, but without the need for your code to explicitly use the DataSource API.

Permissioning Auth Module

When a Permissioning DataSource is used to integrate Caplin Trader with a Permissioning System, the Liberator server must be configured to use the Permissioning Auth Module to make decisions about who is permitted to access the server and the type of access permitted. The Permissioning Auth Module is one of several authentication modules that are supplied with Caplin Trader, and uses the Java Authentication API to communicate with Liberator.

You will find further information about the authentication modules supplied with Caplin Trader in the **Caplin Liberator: Administration Guide**.

Permissioning at the Client

The components of the Graphical User Interface (GUI) at the client can be tailored to match the permissions of the user who is currently logged in to Caplin Trader Client. An example would be to display information that the user is allowed to view, and to hide information that the user is not allowed to view. This information could be anything from pricing data for currency-pairs, to menu items, data grids, trade tiles, and tenors.

To add permissioning at the client, you must modify the client application by adding JavaScript code that uses the Permissioning API of Caplin Trader Client. This simple API can retrieve permissioning data from Liberator and is built on top of the StreamLink for Browsers library. StreamLink for Browsers provides communication between Caplin Trader Client and the Liberator server using the RTTP protocol.

3 Permissioning Concepts

We will now look at some of the permissioning concepts that allow Liberator to enforce security constraints on the end users of Caplin Trader.

3.1 Products

A product is an entity on which end users may be assigned permissions.

> **Note:** In other Caplin Trader documentation a "product" is a term that refers only to a financial instrument. In permissioning documentation (including this document) a "product" is any entity on which an end user may be assigned permissions (including financial instruments).

Examples of products are:

- "All FI Instruments"
- "FX Instrument GBPUSD"
- "LIBOR based swaps"
- "The Blotter"

You define products when you write the Permissioning DataSource application.

3.2 Actions

An action defines the interaction that a user can have with a product.

Examples of product actions are:

- "Viewing"
- "RFQ trading"
- "One-Click trading"

You define product actions when you write the Permissioning DataSource application.

3.3 Permissions

A permission determines whether an action on a product will be allowed or denied. When you define a permission you can also define a namespace. A namespace allows client applications to query related permissions, such as all permissions in the "tenor" namespace. If you do not define a namespace, then the permission will reside in the *default* namespace.

Examples of product permissions (each row in the table defines a permission):

Action	Product	Namespace	Authorization
Viewing	LIBOR based swaps	*default*	Allow
RFQ Trading	All FI Instruments	*default*	Allow

Action	Product	Namespace	Authorization
One-Click Trading	FX Instrument GBPUSD	Quick Trades	Deny
One month settlement	All Instruments	Tenor	Allow

Permissions are assigned to Users 7 and Groups 7 when you write the Permissioning DataSource application.

3.4 Users

A user represents an end user of Caplin Trader Client. A user can only log in to Caplin Trader if permissioning data to authenticate the user has been supplied to Liberator. Users can also be assigned permissions for the products streamed by Liberator.

Users are defined when you write the Permissioning DataSource application. Data for constructing each user would typically be read from a configuration file or persistent Permissioning System. The Demo Permissioning DataSource that is supplied with the reference implementation of Caplin Trader reads this data from an XML file (see **Caplin Trader: How To Create A Permissioning DataSource**).

3.5 Groups

Users can be arranged in groups, where every member of a group has the same permissions. A user can be a member of more than one group, and groups can be members of other groups. This allows an inheritance tree of permissions to be created.

In the example below, user X is a member of two groups:

- Group "FI Traders". This group is permitted "RFQ trading" on "All FI Instruments"
- Group "FX Traders". This group is permitted "RFQ trading" on "All FX Instruments"

Since user X is a member of "FI Traders" and "FX Traders", they will be able to trade both FX and FI instruments.

You will find another example of an inheritance tree in Example Permissioning Hierarchy 12.

When permissions in an inheritance tree are in conflict, conventions are used to determine the permission that is assigned to the user. These conventions are described in Permissioning Hierarchy Conventions 9.

Groups are defined when you write the Permissioning DataSource application. Data for constructing each group would typically be read from a configuration file or persistent Permissioning System. The Demo Permissioning DataSource that is supplied with the reference implementation of Caplin Trader reads this data from an XML file (see **Caplin Trader: How To Create A Permissioning DataSource**).

3.6 Accounts

Accounts are a special type of grouping. Users inherit permissions from *every* group that they are a member of, but *only* inherit permissions from the particular account that they are using.

In the example below, user Z has two accounts:

- Account A. This account allows "Viewing and RFQ trading" on "All Instruments".

- Account B. This account allows "Viewing" on "All Instruments".

In this case user Z is *only* permitted RFQ trading when using Account A.

Accounts are defined when you write the Permissioning DataSource application.

3.7 Rules

In addition to defining permissions, you must also define permissioning rules. Rules link permissions to user interactions, and are used by Liberator to decide which of the many permissions that have been defined will apply when a user attempts to interact with a product.

When Caplin Trader Client requests data from Liberator, or tries to publish data to Liberator, the Permissioning Auth Module inspects the content of the associated RTTP message and tries to match it with one or more of the defined rules. If a match is found then the rule will identify the permission that must be checked to determine whether this interaction with Liberator is to be allowed or denied.

If more than one rule matches an RTTP message, then every one of the identified permissions will be checked. If any one of these permissions denies access, then access to the product will be denied.

Rules *must* be defined for every interaction that involves Caplin Trader Client publishing data to Liberator, such as when a user attempts to trade a product. If a rule has not been defined for such an interaction, then the default permission is to *deny* the interaction.

Rules *cannot* be defined for interactions that involve Caplin Trader Client requesting data, such as when a user attempts to view a product. With this type of interaction a default rule is implemented, and the permission that has been defined for the "VIEW" action in the *default* namespace will be checked to see if the interaction is to be allowed or denied.

Simple Example of a Matching Rule

The following example shows a typical RTTP message that would be sent to Liberator when a user tries to spot trade a product.

RTTP Message

Message Subject	Message Fields			
	MsgType	*Trading-Type*	*Amount*	*Instrument*
/FT/TRADE	Execute	SPOT	1000000	/FX/GBPUSD

An example of a rule that would match this type of trade is:

- Check the user permission for the action "spot-trade" when the subject of the RTTP message to Liberator is "/FT/TRADE" and the "Trading-Type" is "SPOT". The product name to be checked is given by the "Instrument" field of the RTTP message.

Matching Rule

Subject Match	Field Match Criteria	Product Reference Field	Action	Namespace
/FT/TRADE	Trading-Type=SPOT	Instrument	spot-trade	*default*

In this case the permission that has been defined for the action "spot-trade" in the *default* namespace will be checked to see if the user is to be allowed or denied access to the product.

The permission must also match the product that is identified by the "Instrument" field of the RTTP message, which in this case is "/FX/GBPUSD".

An example of a permission that would apply to this type of trade is shown below.

Permission that would apply

Action	Product	Namespace	Authorization
spot-trade	/FX/GBP.*	*default*	Allow

The permission in the *default* namespace is checked since a namespace was not defined by the matching rule.

In this case "spot-trade" action on all "/FX/GBP" products will be allowed. The ".*" characters following "GBP" are metacharacters in a Java regular expression, such that "/FX/GBP.*" will match all GBP currency pairs.

Tip: You will find further information about Java regular expressions in the API documentation for the **java.util.regex** package, as supplied by Sun® Microsystems.

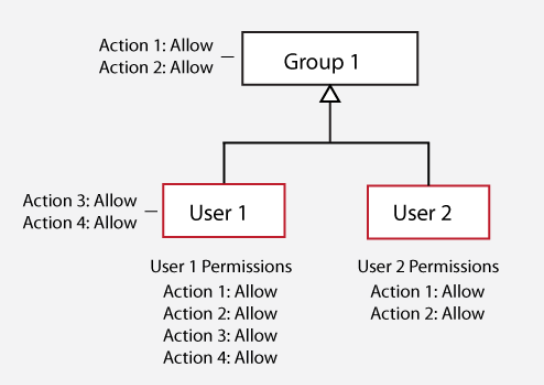
Rules are defined when you write the Permissioning DataSource application. Data for constructing each rule would typically be read from a configuration file or persistent Permissioning System. The Demo Permissioning DataSource that is supplied with the reference implementation of Caplin Trader reads this data from an XML file (see **Caplin Trader: How To Create A Permissioning DataSource**).

3.8 Permissioning Hierarchy Conventions

We will now look at permissioning hierarchies and how permissioning conflicts are resolved.

Single Inheritance

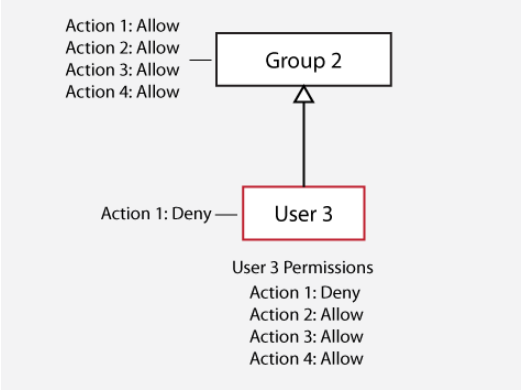
A user can be assigned their own permissions in addition to inheriting group permissions.



In this case, User 1 is assigned permissions and also inherits the permissions of Group 1, while User 2 is not assigned any permissions but inherits the permissions of Group 1.

Inheritance Masking

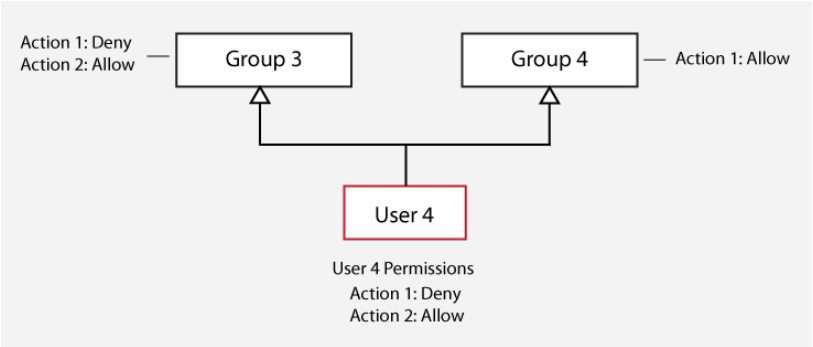
A permission assigned to a user or group masks permissions for the same action and product in parent groups.



In this case, the "Deny" permission assigned to User 3 for Action 1 masks the "Allow" permission for Action 1 in Group 2. The matching permission closest to the user in the permissioning hierarchy is always used to determine whether an action will be allowed or denied.

Multiple Inheritance Conflicts

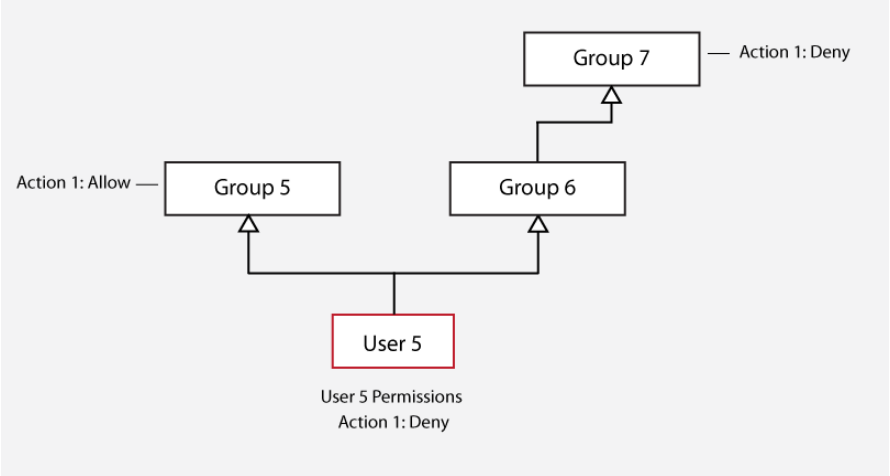
If a user is a member of more than one group and any of the inherited permissions deny an action, then this permission will override any inherited permissions that allow the action.



In this case, the "Deny" permission for Action 1 that User 4 inherits from Group 3 overrides the "Allow" permission for Action 1 that User 4 inherits from Group 4.

Multiple Inheritance Conflicts in a Complex Hierarchy

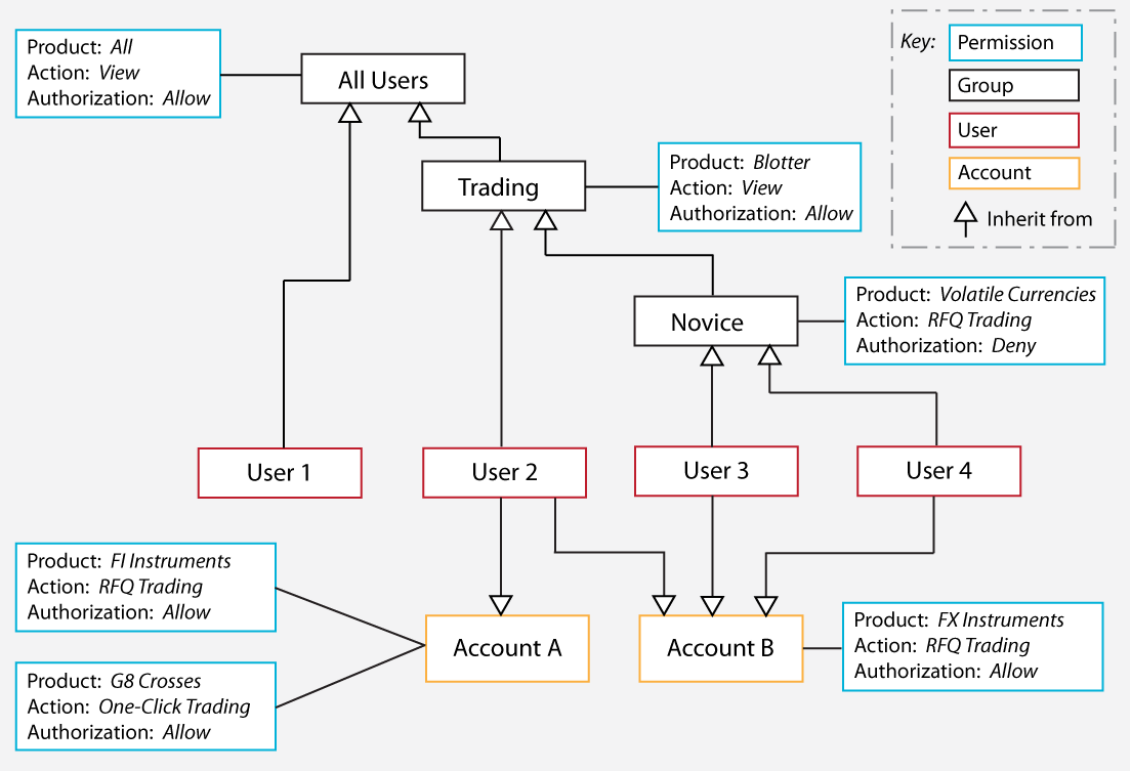
"Deny" permissions also override "Allow" permissions in more complex hierarchies.



In this case, the "Deny" permission that User 5 inherits from Group 7 overrides the "Allow" permission that User 5 inherits from Group 5. Group 5 was compared to Group 7 because Group 6 had no permission to compare.

3.9 Example Permissioning Hierarchy

The diagram below shows a permissioning hierarchy that uses the permissioning concepts introduced in this section. In this example, all permissions reside in the *default* namespace.



Example permissioning hierarchy

From this diagram you will see that users have been assigned permissions through inheritance.

User 1 is a view only user

- Allowed to view all products (inherited from "All Users")

User 2 is an experienced trader

- Allowed to view all products (inherited from "All Users")
- Allowed to view a blotter of previous trades (inherited from "Trading")
- Allowed to RFQ trade FI Instruments, but only when using Account A
- Allowed to One-Click trade G8 Crosses, but only when using Account A
- Allowed to RFQ trade FX Instruments, but only when using Account B

User 3 and User 4 are novice traders with the same product permissions

- Allowed to view all products (inherited from "All Users")
- Allowed to view a blotter of previous trades (inherited from "Trading")
- Allowed to RFQ trade FX Instruments *that are not volatile currencies* (inherited from "Novice"), but only when using Account B

4 Complex Permissioning Rules

Simple permissioning rules 8 were introduced when we discussed permissioning concepts 6. We will now look at how to construct more complex permissioning rules.

4.1 Matching the RTTP Message Subject

Java regular expressions and wildcards can be used when you define a rule.

- Subject Match can be a regular expression. For example "/F." would match "/FT" and "/FI", since the "." metacharacter will match any single character.
- The string "/ALL" is treated as a wildcard in Subject Match, but only when placed at the end of the string. For example "/FT/ALL" would match "/FT/TRADE" and "/FT/VIEW", and is therefore equivalent to the regular expression "/FT/.*".

Tip: You will find further information about Java regular expressions in the API documentation for the **java.util.regex** package, as supplied by Sun® Microsystems.

4.2 Field Match Criteria

A rule can have zero or more Field Match Criteria that map RTTP message fields and values. All field mappings described by Field Match Criteria must be present in the RTTP message, otherwise the rule will not match the message. In the example below, the rule will only match an RTTP message if the message field "Trading-Type" has the value "SPOT", and the message field "SIDE" has the value "Buy".

Example Rule

Subject Match	Field Match Criteria	Product Reference Field	Action	Namespace
/FT/TRADE	Trading-Type=SPOT, SIDE=Buy	Instrument	spot trade	*default*

If the rule does not define any Field Match Criteria, then the RTTP message fields will be ignored when the rule is being matched to the message.

You will notice from the above example that it is not necessary to include the "Instrument" value of Product Reference Field in the Field Match Criteria when you define the rule. Product matching is described in The Product Reference Field 14.

4.3 The Product Reference Field

The Product Reference Field of a rule identifies the field in the RTTP message that contains the name of the product. If the rule matches the message, then the permission for the product will be checked to see if the action is to be allowed or denied (see the example rule in Field Match Criteria 13).

Matching All Products

The Product Reference Field can be given the special value "ALL_PRODUCTS" (equivalent to the Java regular expression ".*"), in which case the rule will match any product permission. We will now look at an example RTTP message and a matching rule that uses this special value.

RTTP Message

Message Subject	Message Fields			
	MsgType	*SIDE*	*Amount*	*Instrument*
/FX/ONECLICK	Execute	Buy	500000	/FX/USDGBP

An example of a rule that would match this type of trade is shown below.

Matching Rule

Subject Match	Field Match Criteria	Product Reference Field	Action	Namespace
/FX/ONECLICK		ALL_PRODUCTS	ONE-CLICK	*default*

In this case the permission that has been defined for the action "ONE-CLICK" in the *default* namespace will be checked to see if the user is to be allowed or denied access to the product. Since the rule does not define a value for Field Match Criteria, the value of RTTP message field "SIDE" is ignored when the rule is being matched to the RTTP message.

An example of a permission that would apply to this type of trade is shown below.

Permission that would apply

Action	Product	Namespace	Authorization
ONE-CLICK	/FX/USDGBP	*default*	Allow

In this case "ONE-CLICK" action on "/FX/USDGBP" will be allowed, since the rule states that the permission applies to all products in the *default* namespace.

Using Java Regular Expressions

The Product Reference Field can be a Java regular expression, in which case every field of the RTTP message that matches the regular expression will be considered to contain the name of a product. Java regular expressions can be used to define rules for multi-leg trading, as shown in the following example.

RTTP Message

	Message Fields			
Message Subject	*L1_*	*L2_*		
/TRADE/FX	/FX/GBPUSD	/FX/USDJPY		

An example of a rule that would match this type of trade is shown below.

Matching Rule

Subject Match	Field Match Criteria	Product Reference Field	Action	Namespace
/TRADE/FX		L\d_	TRADE	TRADER

The "\d" in the regular expression of the Product Reference Field will match any digit. In this case the permission that has been defined for the "TRADE" action in the "TRADER" namespace will be checked to see if the user is to be allowed or denied access to the products identified by fields "L1_" and "L2_".

An example of the permissions that would apply to this type of multi-leg trade is shown below.

Permissions that would apply

Action	Product	Namespace	Authorization
TRADE	/FX/GBPUSD	TRADER	Allow
TRADE	/FX/USDJPY	TRADER	Allow

In this case "TRADE" action on the products "/FX/GBPUSD" and "/FX/USDJPY" will be allowed, since the rule states that the permission applies to each of these products. If the user did not have "Allow" permission for each of these products, then the multi-leg trade would be denied.

4.4 The Action Reference Field

We have already looked at how you can define the action for a rule in the Action field of the rule. Rules can also be defined that derive the action from a field in the RTTP message.

In the following example, we look at a rule that uses the Action Reference Field to identify the field of the RTTP message that defines the action.

RTTP Message

Message Subject	Message Fields		
	Tenor	*Trading-Type*	*Instrument*
/TRADE/FX	1Month	RFQ	/FX/GBPUSD

An example of a rule that would match this type of trade is shown below.

Matching Rule

Subject Match	Field Match Criteria	Product Reference Field	Action	Action Reference Field	Namespace
/ALL		Instrument		Tenor	TenorPermissions

The rule matches since the subject of the RTTP message is "/TRADE/FX", which matches "/ALL" in the Subject Match field of the rule.

An example of the permission that would apply to this type of trade is shown below.

Permissions that would apply

Action	Product	Namespace	Authorization
1Month	.*	TenorPermissions	Allow

In this case "RFQ" trading with a tenor of one month will be allowed. The permission matches because:

- The Action Reference Field of the rule identifies "Tenor" as the RTTP field that defines the action.
- The "Tenor" field of the RTTP message has the value "1Month".
- The permission allows "1Month" action for all products in the "TenorPermissions" namespace.

5 Additional Permissioning Capabilities

We will now look at some additional permissioning capabilities.

5.1 Subject Mapping

When a user attempts to view data, a default rule is implemented (see Rules 8). This default rule states that the Permissioning Auth Module must check the user's permission in the *default* namespace for "VIEW" action on the product identified by the subject of the RTTP message. If the action is permitted, then Liberator will stream data to the user for the requested product.

Subject mapping allows the subject of an RTTP message to be modified by Liberator. Subject mapping is transparent to the user and could be used, for example, to provide preferential data to selected users. Subject mapping is optional, and only one subject mapping can be applied to each user.

Subjects are mapped using the `User.setSubjectMapping()` method of the Permissioning DataSource API, by specifying a subject pattern and subject suffix. If the user attempts to view data where the subject of the RTTP message matches the subject pattern, then the subject suffix will be appended to the subject of the RTTP message when Liberator requests the data from the pricing DataSource.

To view the data, the user must be permitted "VIEW" action in the *default* namespace for the product identified by the *modified* subject of the RTTP message.

When Liberator streams the data to the user, the data will be streamed using the *original* RTTP message subject, but for the product identified by the *modified* RTTP message subject.

> **Tip:** For a complete description of the Permissioning DataSource API, please refer to the **Permissioning DataSource API** documentation.

Simple Example of Subject Mapping

The following example shows how subject mapping can be applied to a user when Liberator supports price tiering. In this example the subject pattern is the regular expression "/PRICES/FX/.*" and the subject suffix is "-tier2".

Applied subject mapping

Subject Pattern	Subject Suffix
/PRICES/FX/.*	-tier2

If the user attempts to view "/PRICES/FX/GBPUSD", Liberator will request the data from the DataSource provider for "/PRICES/FX/GBPUSD-tier2". When Liberator streams the data to the user, it will be streamed from
"/PRICES/FX/GBPUSD-tier2" but using the original RTTP message subject "/PRICES/FX/GBPUSD".

An example of a permission that would apply to this type of data request is shown below.

Permission that would apply

Action	Message Subject	Namespace	Authorization
VIEW	/PRICES/FX/.*-tier2	*default*	Allow

In this case VIEW action on "/PRICES/FX/GBPUSD-tier2" will be allowed, since "/PRICES/FX/.*-tier2" matches all "-tier2" currency pairs in "/PRICES/FX" and the authorization is "Allow". Note that the permission matches the *modified* message subject, and not the *original* message subject.

5.2 User Attributes

A user can be assigned any number of attributes in the form of name/value pairs. User attributes are not processed by the Permissioning Auth Module 5, and therefore do not affect permissioning directly, but can be accessed by the client application to provide miscellaneous contextual information about the currently logged in user.

A typical use would be to send information to Caplin Trader Client about the maximum tradable amount that users are permitted to trade.

Defining and Retrieving User Attributes

In the Permissioning DataSource Adapter, user attributes are defined in Java using the `com.caplin.permissioning.User.setAttribute()` method of the Permissioning DataSource API. In the following example, the maximum tradable amount for a user is set to 5 million USD.

```
/* create new user with login name trader1 */
User maxTradeUser = new User(trader1);

...

/* set the max tradable USD (millions) */
maxTradeUser.setAttribute(maxTradeUSD, 5);
```

Tip: The document **Caplin Trader: How To Create A Permissioning DataSource** describes how to create a custom Permissioning DataSource adapter.

In the client application, user attributes are retrieved in JavaScript using the `caplin.security.permissioning.PermissionService.getUserAttribute()` method of the Caplin Trader Client Permissioning API. In the following example, the maximum tradable amount in USD is retrieved for the currently logged in user.

```
/* get the max tradable USD (millions) */
maxTradableUSD =
    caplin.security.permissioning.PermissionService.getUserAttribute(maxTradeUSD);
```

Tip: The document **Caplin Trader Client: How to Add Permissioning At The Client** describes how to modify the appearance and behaviour of Caplin Trader Client to match the permissions of the currently logged in user.

6 Further Reading

If you would like to know how to create a custom Permissioning DataSource adapter, or how to add Permissioning to Caplin Trader Client, then the following documents provide this information. You may also be interested in reading some of the other Related documents.

How to create a Permissioning DataSource adapter

A Permissioning DataSource adapter is required to integrate Caplin Trader with a Permissioning System. The document **Caplin Trader: How To Create A Permissioning DataSource** describes how to create a custom Permissioning DataSource adapter by writing an application that uses the Permissioning DataSource API. The document also discusses the Demo Permissioning DataSource that is provided with the reference implementation of Caplin Trader from release 1.2.8.

How to add Permissioning at the Client

The appearance and behaviour of Caplin Trader Client can be tailored to match the permissions of the currently logged in user. You will find further information about how to do this in the document **Caplin Trader Client: How To Add Permissioning At The Client**.

7 Glossary of terms and acronyms

This section contains a glossary of terms, abbreviations, and acronyms used in this document.

Term	Definition
Account	A user must trade using an account. An account can be assigned permissions that allow users of the account to **action** certain products.
Action	The interaction that a user can have with a **product**.
API	Application Programming Interface
Caplin Platform	A suite of software products for on-line financial trading and Web delivery of real-time market data.
Caplin Trader	Caplin Trader is a complete platform and toolkit for building multi-product trading portals. It is built on the **Caplin Platform**.
Caplin Trader Client	Caplin Trader Client is a Web application written in Ajax that provides a rich trading workstation in a browser.
DataSource	DataSources are software adapters within the **Caplin Platform** that connect the Platform to external sources of real time data and external **Permissioning Systems**. In other Caplin documents DataSources are also called DataSource adapters.
Demo Permissioning DataSource	The Demo Permissioning DataSource is an example of a **Permissioning DataSource** application that gets its permissioning data from an XML file.
Group	A logical grouping of zero or more **users** and other groups, such that each group can be assigned zero or more **permissions**.
Liberator	Caplin Liberator is a bidirectional streaming push server designed to deliver market data and trade messages over any network that supports Web traffic.
Permission	Determines whether an **action** on a **product** will be allowed or denied.
Permissioning Auth Module	One of several authentication modules that are supplied with **Caplin Trader**.
Permissioning DataSource	A **DataSource** adapter that acts as the interface between **Caplin Trader** and your **Permissioning System**.
Permissioning System	The source of the permissioning data that you want to integrate with **Caplin Trader**.
Product	In permissioning documentation (including this document) a "product" is any entity on which a **User** may be assigned **permissions** (including financial instruments). In other **Caplin Trader** documentation a "product" is a term that refers only to a financial instrument.
Rule	Rules link **permissions** to user interactions, and are used by **Liberator** to decide which of the many permissions that have been defined will apply when a **user** attempts to interact with a **product**.
SDK	Software Development Kit
User	An end user of **Caplin Trader Client**.

Index

- T -

- U -

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