



Informatica® RulePoint
6.1.2

Trading Use Case Example

Informatica RulePoint Trading Use Case Example

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Preface

This guide focuses on how financial firms can use RulePoint for creating alerting solutions for various trading requirements.

This guide describes the tasks you need to perform to configure RulePoint objects for various trading use cases, and guides you through the deployment process using working example configurations. Select the appropriate use case for your business environment.

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CHAPTER 1

Trading Use Case

This chapter includes the following topics:

- [Trading Use Case Overview, 7](#)
- [RulePoint Solution, 7](#)
- [High-Level Overview of Trading Use Cases Covered, 9](#)

Trading Use Case Overview

The foreign exchange market or the forex market is the world's largest market. With emerging market economies, the lucrative opportunity in the forex market continues to abound for investors. With the trading market open around the clock, investors trade currencies in all the financial centers of the world.

Large international banks that act as hedgers, providers, or dealers in the currency market require to monitor the movement of currency in the forex market by different types of traders. The foreign exchange market assists international trade and investment by enabling currency conversion. Providers need to deal cautiously with traders involving different currencies, as supervisory entity regulating its actions does not lie with forex. Banks need to check regulatory compliance of the currency traded and prevent a trader from exceeding the threshold for currency exchange specified for that country. Banks check how frequently a trader exchanges a currency pair in a day to rate the volatility of a currency pair in the market. Dealers need to analyze the forex market and accordingly buy and sell preferred currency.

Analyzing market data in fractions of a second, where currency values keep changing dramatically, makes trading in the forex market a challenge. It is critical to detect key opportunities or threats for the business as they occur and respond immediately.

RulePoint Solution

As forex markets need to adopt improved trading techniques, the intelligent use of RulePoint in monitoring key events will be essential in analyzing market data in fractions of a second.

The ability of RulePoint to accurately monitor currency fluctuations and help traders adapt in real time is key to the future profitability of FX traders in this rapidly evolving market. Using RulePoint, international bank or financial firms can track critical market conditions across multiple markets instantaneously. Investors can trade more intelligently in the FX market by implementing RulePoint to monitor and instantaneously execute a strategy to capture short-lived trading opportunities.

Proposed Data Model

The data model proposes using database tables that simulate trading data stored in a trading database.

The sample database tables include the country name, code, limit, and threshold values. Each country has a currency unit limit and threshold. If the conditions meet the defined rules, the bank approves currency trading.

The data model proposes using the following objects to explain a solution for the trading use cases that this document covers:

- Users for authentication and administration
- RSS Source
- SQL Analytic
- Topics
- Watchlists
- Custom analytic
- Custom Source
- File Source
- Advanced Rules, Templates, and Template Rules
- RTAM and Event Transformer Responders
- RTAM and Event Transformer Responses

Note: The sample XML file located in the `RULEPOINT_HOME/samples` directory contains all the configured RulePoint objects that you require for an end-to-end execution of RulePoint for the trading use cases that this document covers. You can create your own objects based on your requirement.

Implementation Approach

The model representation uses the following approach in implementing a RulePoint solution for the trading use case:

- The model uses an RSS Service that brings in real-time data from a money control site as events into the RulePoint system. The rss-feed is in rss format, which contains the title (currency code), description of the currency value type, date, author, categories, link, mimetype, and URI.

Note: If the RSS URL is down, provide a similar RSS feed URL to work with the use cases.

- After the source reads data, the configured advanced or template rules analyze if the trader can trade and has not crossed the country threshold limit, and simultaneously alerts the traders.
- The watchlists specify the forex regulation list, volatile areas where currency exchange is high, the preferred currencies for trading, high risk currencies that require approval, and the list of preferred banks for money transfer or exchange.
- The SQL analytics retrieve the currency threshold for a country and the country name from the currency lookup table that matches the country code. A custom analytic (string analytic) retrieves the country code from the country title.
- The event transformer response transforms one topic to another to determine currency buying or selling. The alerts are in the form of email or RTAM responses.

High-Level Overview of Trading Use Cases Covered

This document presents the trading use cases that you can solve using RulePoint. As a trading user, you must perform the specified tasks for an end-to end execution and understanding of RulePoint.

The use cases covered in this document defines the proposed data model, the Rulepoint objects required to execute a solution for the specified use case, and the required tasks. You can import the samples provided in the RULEPOINT_HOME installation directory and explore the usage of RulePoint objects.

This document will cover the following trading use cases:

- Send an alert when the currency value goes below the desired value.
- Send an alert when the currency value goes above desired value.
- Send an alert when a trader exchanges a specific currency frequently in one day.
- Send an alert when a high risk currency value goes beyond the defined threshold value.
- Send an alert when a forex regulation currency exchange has crossed the country limit.
- Send an alert when a forex regulation currency needs compliance approval.
- Send an alert when a high risk currency has crossed the trade limit in a day.

CHAPTER 2

Before You Begin

This chapter includes the following topics:

- [Before You Begin Overview, 10](#)
- [Before You Begin Tasks, 10](#)

Before You Begin Overview

This document provides high-level information for creating RulePoint objects to execute the trading use cases.

It is therefore required that you complete the banking use case lessons, which gives a detailed understanding for creating, executing, deploying, processing, and viewing different RulePoint objects. For more information, see the *Banking Use Case Tutorial*.

Before You Begin Tasks

Complete the following tasks before you begin working with the trading use cases:

1. Run the script to create the required tables and populate the data for the use case located at `<RULEPOINT_HOME>/samples/CurrencyTrading/db/<database>`.
Use the required script based on database that you want to use. The four tables are COUNRTY_LIMIT, COUNTRY_LOOKUP, COUNTRY_THRESHOLD, and CURRENCY_LOOKUP.
2. Copy the currency trading custom jar from `<RULEPOINT_HOME>/samples/Currency_trading_UC/build` to the `<RULEPOINT_HOME>/custom` directory.
3. Create a project named **Currency Trading**.
4. Import the `Trading_Sample.xml` file into the project from `<RULEPOINT_HOME>/samples/CurrencyTrading/db/<database>`.
The XML file contains the configured Rulepoint objects that you require for the trading use case.
5. Edit the SQL connection properties to point to the database where you run the database scripts.

CHAPTER 3

RulePoint Design and Implementation

This chapter includes the following topics:

- [RulePoint Design and Implementation Overview, 11](#)
- [Use Case 1: Notify When the Currency Value Goes Below the Desired Value, 11](#)
- [Use Case 2: Notify when Currency Value Goes Above the Desired Value, 13](#)
- [Use Case 3: Notify Frequent Exchange of a Specific Currency Within One Day, 14](#)
- [Use Case 4: Notify when High Risk Currency Value Goes Beyond Threshold Value, 14](#)
- [Use Case 5: Notify when Forex Regulation Currency Exchange Crosses the Country Limit , 15](#)
- [Use Case 6: Notify when Forex Regulation Currency Needs Compliance Approval, 16](#)
- [Use Case 7: Notify when High-Risk Currency Crosses the Trade Limit Within a Day, 17](#)

RulePoint Design and Implementation Overview

This chapter provides a comprehensive coverage of the RulePoint objects necessary to create a solution for the trading functionality. The use cases are representations of common trading scenarios.

The use case model describes the objects implementation from source to target, and how the objects interact to process the events and generate alerts. The tasks give you an overview of the high-level steps and how you can use multiple conditions to generate appropriate alerts using RulePoint.

Use Case 1: Notify When the Currency Value Goes Below the Desired Value

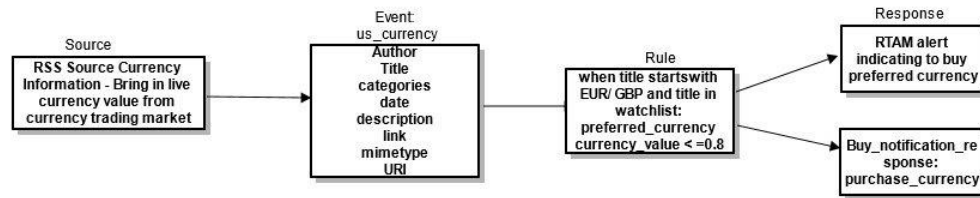
Send an RTAM alert notifying that the trader can buy that preferred currency if the events meet the following conditions:

- An event property title has a value `EUR/GBP`.
- The watchlist name is `preferred_currency` and contains values `EUR/GBP`.
- The topic property description contains `currency_value` less than or equal to 0.8

Simultaneously, generate a `buy_notification` event transformer response, which creates an event on the `purchase_currency` topic.

Model Representation

The following figure shows the model representation of the RulePoint objects that you must configure for this use case:



Process Workflow for Alerting Currency Value Below Threshold

- Deploy the following objects:
 - Source: `currency_feed`
 - Rules: `buy_GBP`, `buy_EUR`
 - Responder: `at_rtam_responder`, `buy_notification`
- On the **Dashboard** tab, verify if events generate for the topic `us_currency`.
- Select the Event Processor, and verify if `buy_EUR` rule is activated.
You can view the response in the **Response** tab.
- If no events generate with title `GBP` and with `currency_value <= 0.8`, create a similar event:
 - Select the Default Source Controller.
 - From the **Topics** tab, create an event.
 - Provide the `currency_value <= 0.8`, and provide the topic property title as `GBP`.
The `buy_GBP` rule is activated.
- Select the Responder Controller, and verify if you can view an alert for `at_rtam_responder` and `buy_notification` responder.
- Log in to RTAM and verify if you can view the alert with subject `Buy: 1 United States Dollar = 0.73330 Euro` and body `Price = 0.73330`.
- View similar alerts for activation of rules `sell_MDG` and `sell_INR`.

Use Case 2: Notify when Currency Value Goes Above the Desired Value

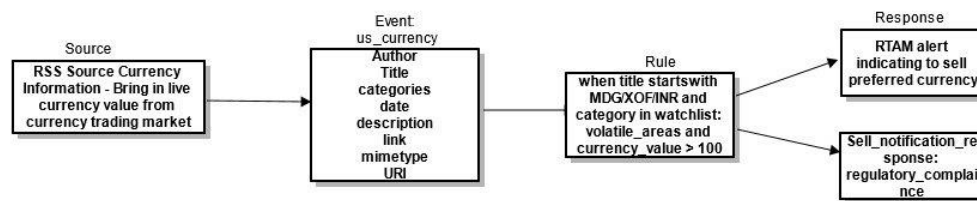
Send an RTAM alert indicating that you can sell the currency that has a title starting with MDG, XOF, or INR if the events meet the following conditions:

- An event property title has a value MDG/XOF/INR.
- The configured watchlist name is `volatile_areas`.
- The topic property description contains `currency_value > 100`.

Simultaneously, generate an event transformer response `sell_notification`, which creates an event on the `regulatory_compliance` topic.

Model Representation

The following figure shows the model representation of the RulePoint objects that you must configure for this use case:



Process Workflow for Alerting Currency Value Above Threshold

1. Deploy the following objects:
 - Rules: `sell_XOF`, `sell_INR`, and `sell_MDG`
 - Responder: `sell_notification`
2. On the **Dashboard** tab, select the event processor where you deployed the rules, and verify if `sell_XOF` rule is activated.

You can view the response in the **Response** tab.
3. If no events generate with title `MDG/INR` and with the currency value `> 100`, or `> 60` (for `INR`), create a similar event:
 - a. Select the Default Source Controller.
 - b. From the **Topics** tab, create an event.
 - c. Copy the event and provide the `currency_value > 100` in the description field.
 - d. Provide the topic property title as `MDG`. Create another event with title `INR` and provide the `currency_value > 60` in the description field.

The `sell_MDG` and `sell_INR` rules are activated.
4. Select the Responder Controller, and verify if you can view an alert for `at_rtam_responder` and `sell_notification_responder`.

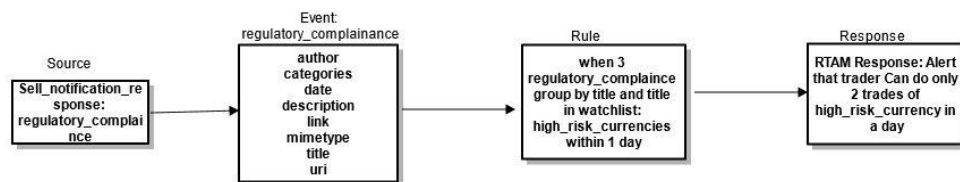
5. Log in to RTAM and verify if you can view the alert with subject `sell : 1 United States Dollar = 479.46568 West African Franc` and body `Price = 479.4656`.
6. View similar alerts for activation of rules `sell_MDG` and `sell_INR`.

Use Case 3: Notify Frequent Exchange of a Specific Currency Within One Day

When a trader exchanges a particular currency many times in a day, generate an RTAM alert to the purchase department. The rule states that if 10 events of the topic `us_currency` generated have the same title within a day, send an alert.

Model Representation

The following figure shows the model representation of the RulePoint objects that you must configure for this use case:



Process Workflow for Alerting Frequent Currency Exchange

1. Deploy the rule `volatile_stock_check_rule`.
2. On the **Dashboard** tab, select the Event Processor where you deployed the rules, and verify if `volatile_stock_check_rule` rule is activated.
3. If no events generate with title `volatile_stock_check_rule`, create 10 events on the `us_currency` topic with the same title `volatile_stock_check_rule`.
You can view the activations for the rule.
4. Log in to RTAM and verify if you can view the alert with subject `INR/USD: Very volatile stock - alert purchase department` and body `INR/USD: Very volatile stock - alert purchase department`.

Use Case 4: Notify when High Risk Currency Value Goes Beyond Threshold Value

Events generate on the topic `regulatory_compliance` through the event transformer responder in use case 2.

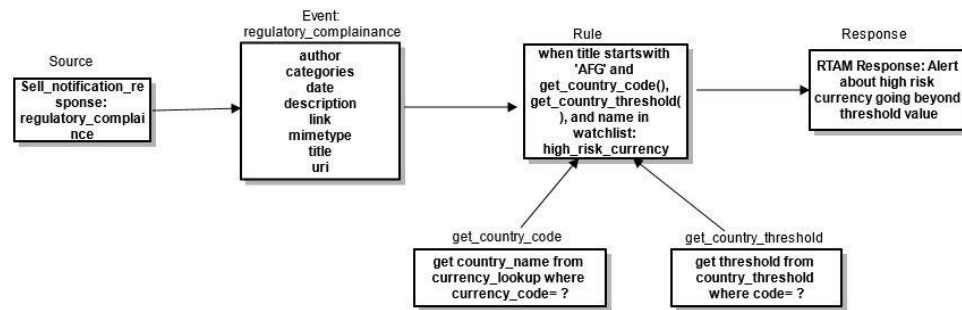
Configure an alert if the events meet the following conditions:

- The generated event and the code that the analytic `get_country_code ()` fetches have the same code AFG.

- The analyst `get_country_threshold ()` fetches the threshold that corresponds to the AFG title, and the currency that is purchased exceeds the threshold limit of 30,000.
- The watchlist `high_risk_currency` contains the currency name.

Model Representation

The following figure shows the model representation of the RulePoint objects that you must configure for this use case:



Process Workflow for Alerting Low Threshold for High Risk Currency

1. Deploy the rule `threshold_check_rule`.
2. On the **Dashboard** tab, select the Event Processor where you deployed the rules, and verify if `threshold_check_rule` rule is activated.
3. If no events generate with title `threshold_check_rule`, create event with title AFG and with currency purchased goes above threshold value of 30000.
You can view the activations for the rule.
4. Log in to RTAM and verify if you can view the alert with subject AFG is a high risk currency. Currency value cannot exceed more than 30001 and body threshold=30001.

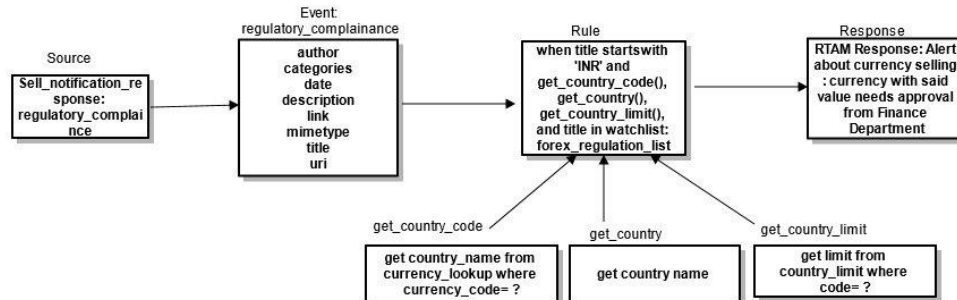
Use Case 5: Notify when Forex Regulation Currency Exchange Crosses the Country Limit

Events are generated on the topic `regulatory_compliance` through the event transformer responder in use case 2. Generate an RTAM alert stating that the trader needs approval from the Finance department to sell the currency, if the events meet the following conditions:

- The generated event has a title that starts with `INR`.
- The currency code and country name in `get_country_code()` and `get_country()` match with the title.
- The country limit `get_country_limit()` is `> 100000`.
- The currency is listed in the watchlist `forex_regulation_list`.

Model Representation

The following figure shows the model representation of the RulePoint objects that you must configure for this use case:



Process Workflow for Alerting Currency Exchange Crossing the Country Limits

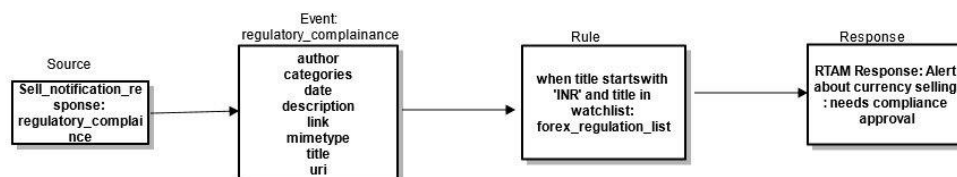
1. Deploy the rule `compliance_check_limit`.
2. On the **Dashboard** tab, select the event processor where you deployed the rules, and verify if `compliance_check_limit` rule is activated.
3. If no events generate with title `threshold_check_rule`, create event with title `INR` and with currency purchased goes above country limit of `100000`.
You can view the activations for the rule.
4. Log in to RTAM and verify if you can view the alert with subject `1 United States Dollar = 61.49795 Indian Rupee needs approval from Finance Department` and body `Code = INR`.

Use Case 6: Notify when Forex Regulation Currency Needs Compliance Approval

Events are generated on topic `regulatory_compliance` through the event transformer responder in use case 2. If the event generated in the process has a property title with value starting with `INR` and the watchlist `forex_regulation_list` lists the title, generate an RTAM alert.

Model Representation

The following figure shows the model representation of the RulePoint objects that you must configure for this use case:



Process Workflow for Alerting Need of Compliance Approval for Forex Regulation Currency

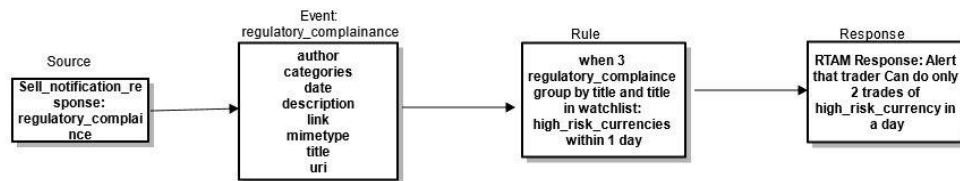
1. Deploy the rule `compliance_check_rule`.
2. On the **Dashboard** tab, select the Event Processor where you deployed the rules, and verify if `compliance_check_rule` rule is activated.
3. Log in to RTAM and verify if you can view the alert with subject `sell: 1 United States Dollar = 61.49795 Indian Rupee needs compliance approval` and body `Price = INR/USD`.

Use Case 7: Notify when High-Risk Currency Crosses the Trade Limit Within a Day

Events are generated on the topic `forex_regulation_list` through the event transformer responder in use case 2. If three similar events generate in a day that have the same title and the watchlist `high_risk_currencies` lists the currency title, send an alert that indicates that the trader cannot trade more than twice in a day for the currency listed in the high-risk category.

Model Representation

The following figure shows the model representation of the RulePoint objects that you must configure for this use case:



Process Workflow for Alerting Trading that Crosses Limits Within a Day

1. Deploy the rule `trade_limit_check_rule`.
2. On the **Dashboard** tab, select the Event Processor where you deployed the rules, and verify if `trade_limit_check_rule` rule is activated.
3. Log in to RTAM and verify if you can view the alert with subject `Can do only 2 trades of XOF in a day` and body `trade limit= 2`.