

Machine Reasoning  
KIE  
Enhanced Mortgage Business Process

**USER GUIDE**

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## REQUIREMENTS

Before you can use the KIE system, please ensure you have the following things:

- KIE software version 7.12. Ensure the KIE has 3 groups of user:
  - iss-group-requester
  - iss-group-manager
  - HR
- Internet access
- Real email (for demonstration purpose) (check your spam / junk email if you do not receive in Inbox)

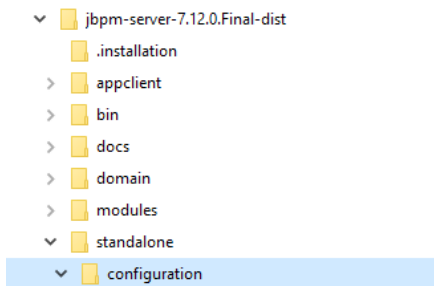
Since the system has been tested in iss-vm VM environment (<https://github.com/telescopeuser/iss-vm>), it is recommended that you deploy the system inside this environment too.



## INSTALLATION & PREPARATION

Please follow these steps to prepare the system before you are able to use it. It is assumed that you are familiar with KIE. We recommend that you follow all of these instructions inside iss VM environment:

1. Download the zip project file (<https://github.com/raycap/ISR-MR-KIE-Knowledge-Discovery/tree/master/SystemCode>)
2. Extract the zip project file. It should contains 2 items, one is standalone.xml and the other one the real project source code.
3. Locate your KIE software. From the base path of the software folder go to `./standalone/configuration` and replace standalone.xml with the one that is extracted from zip file. (to be safe please keep original standalone.xml somewhere)



4. Login to gmail account : [raycap.iss@gmail.com](mailto:raycap.iss@gmail.com) , password: raycap123. We will use this gmail account to send email. However usually you will be blocked by google security for the first time due to suspicious ip address (which comes from your computer). In case your ip get blocked please unblock it from this email. [\*]
5. Start your KIE software. It will also start spinning mail session. If this is the first time you run it on your computer you might get blocked. Please login to email account above to whitelist your computer. In case you are still experiencing the problem, please revert the standalone.xml back to original and start your KIE again.
6. Login with user account (recommended using `wbadmin` account to make sure you get all access).
7. Ensure you have created these groups and assign some people to each group (again, for your convenient you can assign your current / admin user to all of this group so you do not need to switch around):
  1. iss-group-requester
  2. iss-group-manager
  3. HR
8. Import the project source code, build and deploy the source code.
9. You can start using it.
10. If for some reason you still run KIE with original standalone.xml, the system will still be able to work. However you will get an error in the process of sending the email.

\* You can change the gmail account to any other gmail account. To do this, open imported standalone.xml and find [raycap.iss@gmail.com](mailto:raycap.iss@gmail.com). Change the email and password to your desired account:

```
<subsystem xmlns="urn:jboss:domain:mail:1.2">
  <mail-session name="default" jndi-name="mail/jbpmMailSession">
    <smtp-server outbound-socket-binding-ref="mail-smtp" tls="true">
      <login name="raycap.iss@gmail.com" password="raycap123"/>
    </smtp-server>
  </mail-session>
</subsystem>
```

Then when you import the project in KIE, under the settings inside the project, change the deployments item with your desired account:

Spaces » MR-Workshop » Mortgage\_Process\_ISS\_MR-1 » P master ▾

Mortgage\_Process\_ISS\_MR-1

Build Deploy Hide Alerts ⋮

Assets 36 Contributors 1 Metrics Settings

General Settings

Dependencies

KIE bases

External Data Objects

Validation

Deployments

Persistence

Save Reset

General Settings

Marshalling Strategies

Global

Event Listeners

Required Roles

Remoteable classes

Task event listeners

Configuration

Environment entries

Work Item Handlers

Work Item Handlers

Name	Value	Resolver	Parameters
Email	new org.jbpm.process.workitem.email.EmailWorkitemHandler("smtp.gmail.com", "587", "raycap.iss@gmail.com", "raycap123")	MVEL ▾	Parameters (0)
<a href="#">Add Work Item Handler</a>			

You can delete this item and create a new one with different email and password

## Sample Scenarios and Examples

We will guide you on how to use the system and fill in the form. We will divide the section based on feature we have.

### A. Form Validation

First the user will need to fill in the form. There are many parts to be filled. Some of the fields will go through validation, and if it does not pass validation the system will not go through the next process and it will ask the user (from iss-group-requester group) to repair it.

[Home](#) > [Manage Tasks](#) > **Task: 2**

#### 2 - Correct Data

[Work](#) [Details](#) [Assignments](#) [Comments](#) [Admin](#) [Logs](#)

Outputs:

Application

Error details

Error and cause

Wrong NRIC format. NRIC is not in the correct format.

Down Payment

50

Applicant

Name

Raymond

Citizenship \*

☒ Singaporean ☐ Permanent Resident ☐ Foreigner

Nationality \*

Singapore

NRIC / FIN ⓘ

G102123A

### B. Enhanced Knowledge Discovery for Approval suggestion

When everything has been validated, the system will divide the process into 2 parts, application procedure and documents check. Enhanced knowledge discovery has been added into application process wise. At the end of the process, when the user (iss-group-manager) is asked to give approval, the system also display its suggestion on whether to approve it or not. This decision is created by looking into statistics data of past outcome and its relation with many fields, such as citizenship, age, job, and house.

[Home](#) » [Manage Tasks](#) » **Task: 3**

## 3 - Final Approval

[Work](#) [Details](#) [Assignments](#) [Comments](#) [Admin](#) [Logs](#)

Inputs: (Machine Reasoning Assisted Approval)

## Application

Mortgage amount

50000

☒ Inlimit Machine Reasoning

Down Payment

50

Years of amortization

2

## Applicant

Name

Raymond

Citizenship \*

☒ Singaporean ☐ Permanent Resident ☐ Foreigner

Nationality \*

Singapore

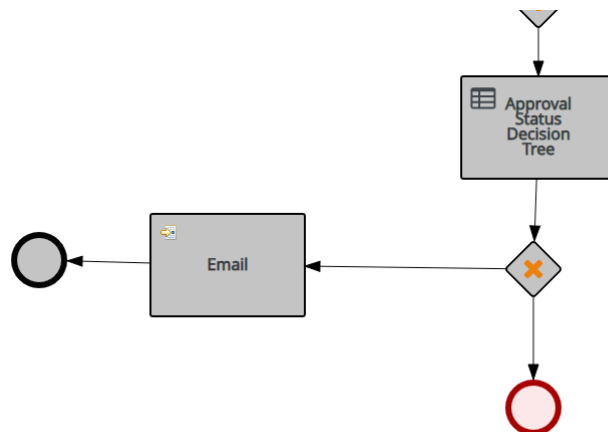
### C. Documents Approval

The second parallel part of the process is documents approval. Another user group (HR) will be asked to verify all documents (there is a list of documents submitted in the initial form). For application to pass, it will require both approval (documents approval from HR group and application approval from iss-group-manager).

Task	Process Definition Id	Status	Actual Owner	▼ Created On	Errors	Actions
Documents Approval	Mortgage_Process.MortgageApprov...	Ready		04-Mar-2019 00:15:33	0	⋮
Final Approval	Mortgage_Process.MortgageApprov...	Ready		04-Mar-2019 00:15:33	0	⋮

#### D. Combined Approval Result and Email Notification

Both application and documents approval will be checked together. If one of them is not approved, the system will send email notification regarding rejection of the whole application along with the reason. The email will be send to email account that is filled in the form.



#### [Rejected] Mortgage Loan Application



raycap.iss@gmail.com <raycap.iss@gmail.com>  
12:18 AM



To: ray-cap@hotmail.com

Dear Sir/Madam Thank you for submitting mortgage application to us. Unfortunately your application is rejected with reason: rejected on Application Please contact our admin for more details. Thank you.  
This is computer generated message.



Virus-free. [www.avg.com](http://www.avg.com)