

RED HAT
SUMMIT

DECISION MANAGEMENT ON RED HAT OPENS SHIFT

using Red Hat Decision Manager v7

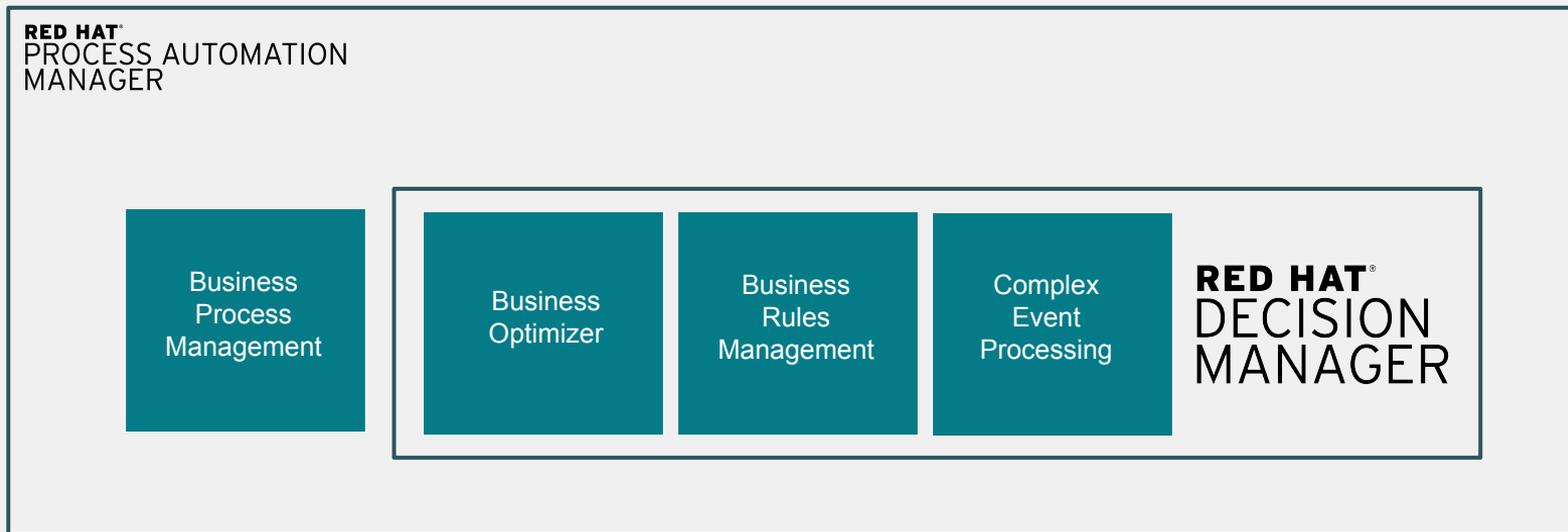
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Cloud-native application development has become the preferred model for crafting the innovative applications required of digital transformation strategy. Modern programming techniques now exploit shared-distributed cloud architectures, portable container technology and discrete microservices designed to quickly assemble logic, automate processes and adapt when needed.

– 451 Research, 2018

Red Hat automation products



ON-PREMISE



PRIVATE

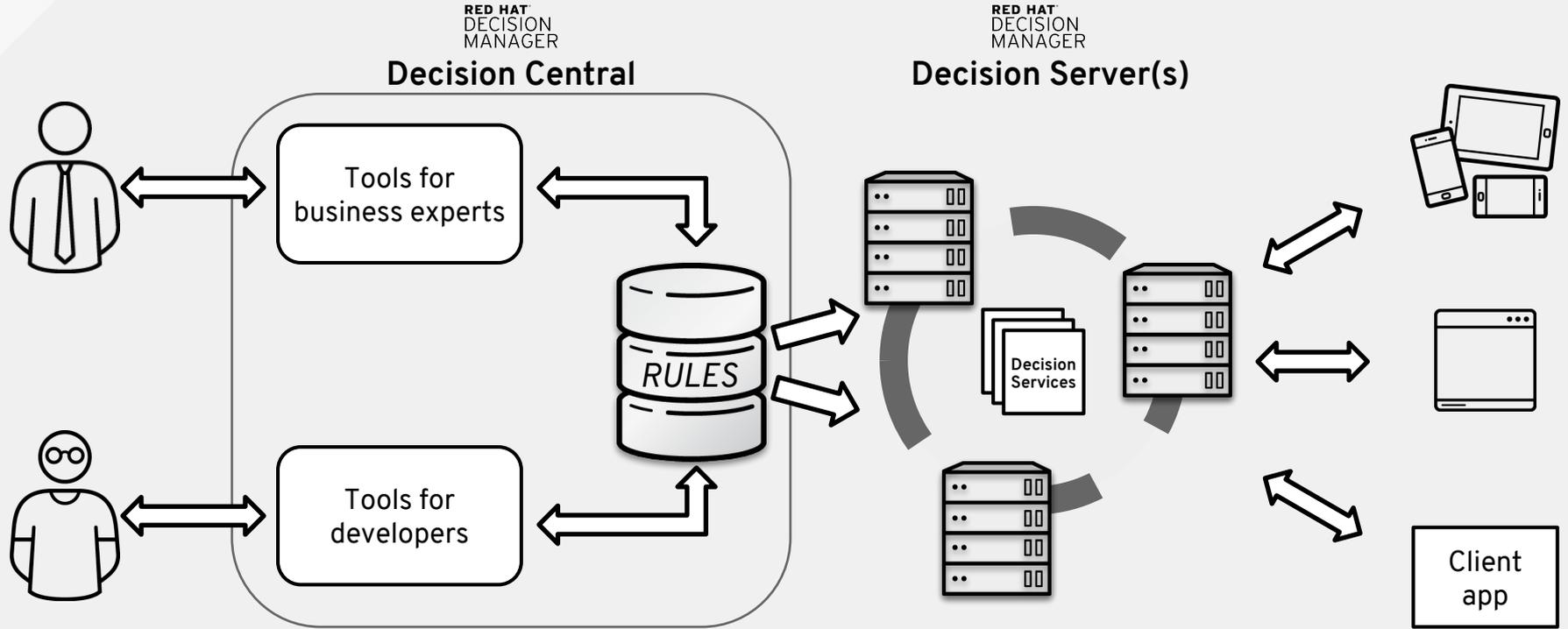


PUBLIC



CONTAINER

Architecture example



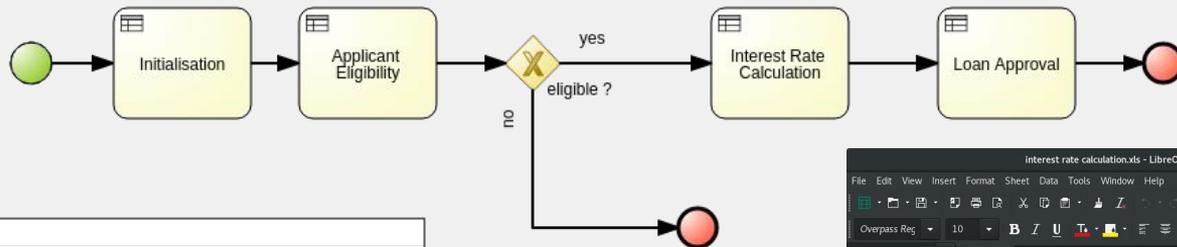
Author / Test

Deploy

Expose

Demo: Decision Service scenario

Description of the assets in the scenario



initialisation.drl - DRL

```

1 package com.redhat.demo.qib.loan_application.rules;
2
3 import com.redhat.demo.qib.loan_application.model.Applicant ;
4 import com.redhat.demo.qib.loan_application.model.Loan;
5
6 rule "Setting default values on Applicant"
7   ruleflow-group "initialisation-rules"
8   no-loop true
9   when
10    applicant : Applicant()
11  then
12    System.out.println("Rule fired : [" + drools.getRule().getName()+"]");
13    applicant.setEligible( true );
14    applicant.setMonthlyIncome (applicant.getYearlyIncome()/12);
15  end
16
17 rule "Setting default values on Loan"
18   ruleflow-group "initialisation-rules"
19   no-loop true
20   when
21    loan : Loan()
22  then
23    System.out.println("Rule fired : [" + drools.getRule().getName()+"]");
24    loan.setApproved( false );
25  end
  
```

interest rate calculation.xls - LibreOffice Calc

CONDITION	MIN AMOUNT	MAX AMOUNT	DURATION (years)	INTEREST RATE (%)	ACTION
Small - 7 years		300000		0.47	
Large - 7 years	300000	600000	7	0.70	
Very Large - 7 years	600000			0.96	
Small - 10 years		300000		0.72	
Large - 10 years	300000	600000	10	0.90	
Very Large - 10 years	600000			1.10	

too old applicant.rdsir - Guided Rules

Editor Overview Source Data Objects

EXTENDS: - None -

WHEN

- The applicant has more than years old
- There is a loan

THEN

- The applicant is not eligible
- The loan is rejected because " "
- Log rule name
(show options...)

loan approval.gdst - Guided Decision Tables

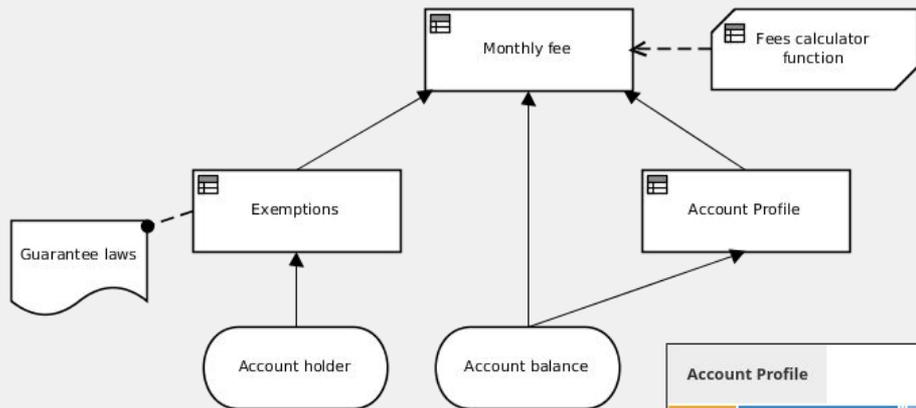
Editor Columns Overview Source Data Objects

#	Description	loan : Loan		applicant : Applicant	loan	
		Min Amount	Max Amount		Approved ?	Comment
1	Rejected - amount too low		1000		<input type="checkbox"/>	"amount too low"
2	Rejected - amount too high	1000001			<input type="checkbox"/>	"amount too high"
3	Rejected - debt ratio too low	1001		> 30	<input type="checkbox"/>	"debt ratio too low"
4	Rejected - insufficient credit score	1001		<= 300	<input type="checkbox"/>	"insufficient credit score"
5	Approved - sufficient credit score	1001	100000	<= 301	<input checked="" type="checkbox"/>	"sufficient credit score"
6	Rejected - insufficient credit score	100001	400000	<= 30	<input type="checkbox"/>	"insufficient credit score"
7	Accepted - sufficient credit score	100001	400000	<= 30	<input checked="" type="checkbox"/>	"sufficient credit score"
8	Rejected - insufficient credit score	400001	500000	<= 30	<input type="checkbox"/>	"insufficient credit score"
9	Accepted - sufficient credit score	400001	500000	<= 30	<input checked="" type="checkbox"/>	"sufficient credit score"
10	Rejected - insufficient credit score	500001	1000000	<= 30	<input type="checkbox"/>	"insufficient credit score"
11	Accepted - sufficient credit score	500001	1000000	<= 30	<input checked="" type="checkbox"/>	"sufficient credit score"

(demo)

Demo: simple Decision Service with DMN

Description of the DMN model



Exemptions				
U	Account holder.age	Account holder.employed	Exemptions	Description
1	-	false	"Exempted"	
2	[18..25]		"Exempted"	
3	>65	true	"Exempted"	
4	-		"Standard"	

Account Profile			
U	Account balance	Account Profile	Description
		"Standard", "Defaulting", "Premium"	
1	<0	"Defaulting"	
2	[0..100000]	"Standard"	
3	>100000	"Premium"	

```

Monthly fee
if Exemptions = "Exempted"
then
  0
else
  Fees calculator function(Account balance, Account Profile)
  
```

(demo)

References

Red Hat Decision Manager v7

<https://developers.redhat.com/products/red-hat-decision-manager/overview/>

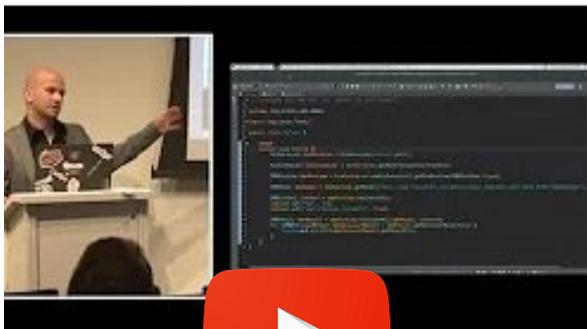
Demos:

<https://github.com/jbossdemocentral/rhdm7-install-demo>

<https://github.com/jbossdemocentral/rhdm7-qlb-loan-demo-repo>

Want to know more about DMN?

A more detailed introduction to Drools and DMN, and other materials



https://youtu.be/fXYD_HE7ufc

- DMN specification: <http://www.omg.org/spec/DMN>
- Drools Website: <http://drools.org>
Specific Chapter for Drools DMN support in the documentation
- Videos:
https://youtu.be/fXYD_HE7ufc
<https://youtu.be/C0u3ZDiH3ek>

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