Program Agenda

1. Overview of Oracle Policy Automation
2. New features in August 2016 release
3. For more information
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2. New features in August 2016 release
3. For more information
Safe Harbor Statement

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle’s products remains at the sole discretion of Oracle.
Modern service delivery involves many kinds of policies

- Government Policies
- Regulations
- Service Policies
- Organizational Policies
- Legislation
- Product Policies
Customers expect simple, accurate and personalized advice
Required: Customer satisfaction, compliance and agility

Policy Automation
✓ Advise
✓ Audit
✓ Manage
Oracle Policy Automation helps across industries

Compliance automation
Warranty management
Needs Analysis
Sales bonus incentives
Complaint logging
Education course applications
Customer needs and on-boarding
Mobile inspections and ticketing
Claim eligibility
Payment determinations

Hundreds of customers in over 20 different industries, from large enterprises to small mid-market businesses
The Oracle Policy Automation difference

- Manage policies (Word and Excel)
- No need for custom development
- Deploy across multiple channels
- Provide detailed explanations
- Share logic with other apps
- Track and audit any decision
- Understand impact with what if analysis
- Manage complete policy lifecycle
Personalize Your Customer Interactions

Dynamic Interviews

- **Personalized Advice**
  - Provide precise advice tailored for each customer
  - Collect customer data more accurately and efficiently

- **Intelligent Interviews**
  - Build and pre-fill Interviews to only show relevant data and fields

- **Cross Channel Consistency**
  - Ensure a consistent experience regardless of channel – self-service, call center, mobile, or in-person

- **Personalized Explanations**
  - Provide documents that record data provided and explain decisions
Empower Policy Experts
Rule Modeling

Natural Language Policy Capture
- Model rules in Word and Excel
- Share easily with any policy expert

Intuitive Interviews
- Design interview layout and organize interactive advice screen

Policy Debugging
- Test before deploying

Built-in Data Mapping
- Out of the Box Integration to Oracle Service Cloud
- Easily map to data in other systems
Build Trust through Transparency

Policy History Tracking
• Empower agents to explain why a decision was made
• Avoid customer complaints

Handle New Obligations
• Easily manage changes using the structure and wording of the source material

Decision Audit Reports
• Empower auditors with detailed explanations of how each rule was applied for every customer decision
• View easily in a report
Simplify Policy Management
Policy Lifecycle

Policy Quality
- Leverage built-in quality tools to ensure policy changes converge quickly

Multi-language Support
- Create policies in your customer’s preferred language with streamlined translation management

Seamless Collaboration
- Collaborate between stakeholders
- Avoid conflicts
- Share changes
- Deploy the latest policies quickly
Easy to Integrate

- Integrate decision making with standard APIs to other applications or processes
- Deliver consistency across legacy and cloud architectures

Mobile Ready

- Deploy interviews to mobile devices
- Deliver policies to all parts of your organization
Understand the Impact of Policy Changes

Policy Analytics

Understand Impact of Revisions

- Easily analyze new or changes policies
- View the impact as it relates to each of your customers prior to changing

Policy Refinement

- Analyze and adapt policy outcomes to avoid unexpected results
- Provide feedback to policy makers

What-if Analysis

- View potential policy outcomes and impacts
- See outcomes side-by-side
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Highlights of Policy Automation August 2016 Release

✓ Enhanced interview statistics:
  Understand usage patterns and bottlenecks for interactive advice

✓ User type:
  Provide intuitive multi-channel advice with a single project

✓ Enhanced relationship handling:
  Simplify application integrations and relationship rules

✓ RuleScripts:
  Meet the needs of certain industries for specialized calculations
Maximize Self-service Success Rates

AUG 2016: Enhanced interview statistics

CAPABILITY HIGHLIGHTS

- **See trends at a glance** of the usage rates of each deployed interview
- **Report detailed statistics** for each project of interview length, time spent and how often abandonment occurs at each screen

KEY BENEFITS

- **Quickly detect changes in success rates** as customer demographics or scenarios change
- **Optimize interviews** to reduce abandonments and accelerate time to successful completion
Simplify Development of Application Connectors

AUG 2016: Enhanced relationship handling

**CAPABILITY HIGHLIGHTS**

- **Move data around** within the policy data model using a concise rule syntax to simplify output mapping to connected applications
- **Natural language rule additions** for modeling data associations are ideal for many industry scenarios

**KEY BENEFITS**

- **Easily integrate policy automation** with a wider variety of applications, without customized connector development
- **Support financial and product analysis scenarios** with any number and type of data relationships

![Diagram showing relationship handling between the household, the person, the application, and the applicant.](attachment:image-url)
Tailor Interview Behavior to Different Audiences

AUG 2016: Service Cloud user type

CAPABILITY HIGHLIGHTS

- Tailor interview behavior for the different Service Cloud user types: Agent, Contact and Anonymous

KEY BENEFITS

- Ensure high user satisfaction by providing specific feedback and instructions to different types of users, from a single deployed policy model
Resolve Industry-specific Automation Challenges
AUG 2016: Implement specialized algorithms in RuleScripts

CAPABILITY HIGHLIGHTS
• Use industry-standard JavaScript to extend what’s possible with OPA rules
• Hide script complexity from the business policy authors

KEY BENEFITS
• Realize the benefits of Policy Automation for a wider array of use cases
• Partners can encapsulate and share powerful algorithms to add value for policy automation customers

✅ Financial planning: iterative solvers
✅ Bankruptcy: sorting and prioritization
✅ Fraud: anomaly detection
✅ Insurance: regression analysis
✅ Product substitution: closest match

Experimental in August 2016 release
Feature Deep Dive

Screen-level interview statistics
Enhanced interview statistics – Overview

See trends at a glance and identify interview bottlenecks

- 30-day trend indicators
- Dashboard charts
  - Across deployments
  - For each deployment
- New metrics
  - Interview duration and screens visited
- Analyse success rates at screen level
  - Visualize typical interview paths
Enhanced interview statistics – 30-day trend
See rolling 30-day usage trends for all deployments

See month-to-month usage trend
- On deployments home page, for every active deployment

Visual indicator shows net change
- Compares rolling 30 day period
- New deployments +100% when used
- After 30 days shows percent increase

Includes usage across all channels
- Drill into deployment for details

**Deployments**

<table>
<thead>
<tr>
<th>Status</th>
<th>Deployment Name</th>
<th>30 Day Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td>CopyrightPermissions</td>
<td>-3%</td>
</tr>
<tr>
<td>✔️</td>
<td>DMVDocGuide</td>
<td>-2%</td>
</tr>
<tr>
<td>✔️</td>
<td>Health Diagnosis</td>
<td>+7%</td>
</tr>
<tr>
<td>✔️</td>
<td>HealthyEating</td>
<td>-5%</td>
</tr>
<tr>
<td>✔️</td>
<td>LoanApplication</td>
<td>0%</td>
</tr>
</tbody>
</table>
Enhanced interview statistics – Dashboard charts
Quickly see usage information most relevant for your deployments

✓ Three charts showing site statistics
  • Defaults to 30-day usage by agents, sessions and web services (assess and answer services only), for all deployments

✓ Three charts for each deployment
  • Defaults to #screens visited, screen success analysis, and interview durations

✓ Easily change the defaults at any time
Enhanced interview statistics – Interview duration

Analyze interviews by time spent

- See where advice takes the longest
  - See the percentage that fall within each group, by duration to nearest minute

- Filter
  - By agents vs. non-agents

- Compare
  - Between deployment versions
  - With other deployments
Enhanced interview statistics – Interview length

Analyze interviews by number of screens visited

- Understand the number of screens users are interacting with to get advice
- Filter
  - By agents vs. non-agents
- Compare
  - Between deployment versions
  - With other deployments
Enhanced interview statistics – Screen analysis

Identify opportunities for interview improvements and simplification

- See success rates at the screen level
  - Percent that visit
  - Percent that proceed past
  - Percent that successfully complete

- Visually understand usage patterns
  - See screens where big drop-offs occur
  - See screens that are never used
Enhanced interview statistics – Chart configuration

Easily configure the charts for whole site and for deployments

- Use preset chart types or create custom charts for any metric
- Customize time range
  - From 24 hours to 2 years
- Filter by channel
  - Filter by agents vs. non-agent usage
  - For raw session counts, also filter by web services (assess/answer only)
  - Note: Interview service included in interview statistics
Feature Deep Dive

Service Cloud interview user type property
Configure multi-channel Service Cloud interviews for each audience

✓ Single deployed interview for Agent, Contact and Anonymous users
  • Tailor interview behavior for the different Service Cloud user types
  • E.g. provide agents with links to internal policy and detailed reasons for the decision, without compromising the customer experience

✓ Works with any Service Cloud connection
  • No special version requirements
Interview user type – Authoring
Easily reference the Service Cloud user type in rules and screens

- Access the Service Cloud user type in any rule or screen logic
  - Map in any attribute from the built-in `<user type>` option – which uses the corresponding value list
- No additional configuration needed
  - Attribute set when interview is launched
  - Agent desktop = Account
  - Customer portal = Contact (if logged in) or Anonymous (if not)
Interview user type – User experience
Responsive multi-channel interview content

- Define interview specific behavior for each audience
  - Show or hide information on screens
  - Generate certain forms only for agents
  - Even tailor rule logic if appropriate

Contact

Agent
Feature Deep Dive

Enhanced Relationship Handling
Enhanced relationship handling—Overview

Simplify connectors and relationship rules

- Simplify development of Connectors
  - Move data around within the policy data model itself
- Closely model policy intent
  - Powerful rule language additions are easy to use and match with source material
- Ideal for many industry scenarios
  - E.g. financial services, retail, higher education, benefit payments and more
Enhanced relationship handling – Move data
Easily mirror data to suit your data mapping requirements

- Create data models that match the connected application’s schema
  - Separate input and output entities, mirroring the inputs as needed
- Validate, remove or correct records
  - Use rule logic to define which output records are required
- Sample project provided
  - Retail Discounts example has been updated

Input data
- the order
  - the order line item
    - LI 1
    - LI 2
    - LI 3

Output data
- the updated order
  - the updated order line item
    - LI 1
    - LI 2
Enhanced relationship handling – Move data

How to Mirror Entity Data

✔ Create a relationship from the mirror entity to the original entity
  • Example: if ‘the updated order’ is a mirror of ‘the order’, create a relationship from the updated order to the order

✔ Use new Exists For function to create the mirror entity instances

✔ Use the For function to mirror data

✔ Sample project provided (Retail Discounts)
Enhanced relationship handling – Move data

How to Mirror Child Entity Data

- When mirroring child entity data, use the ForScope function
  - Ensures only instances belonging to the corresponding parent entity are mirrored
  - End result is an identical mirror

- Add conditions to ‘validate’ data
  - Only move data belonging to valid entity instances

- Use the For function to mirror data
Enhanced relationship handling - Associations

Share data between entity instances

- Make decisions based on data shared across relationships
  - Effect of combining data can now be calculated and saved
- Model more complex rules
  - Easily manage relationships such as those found in Medicaid, and some higher education and loan application scenarios

North University will accept Frank’s enrolment
South University will not accept Frank’s enrolment
North University will not accept Sarah’s enrolment
South University will accept Sarah’s enrolment
Enhanced relationship handling - Associations
How to share data between entity instances

To share data between entities:

- Create a child entity of entity A and a relationship from the child to entity B
- Use new Exists For function to infer the existence of the child entity
- Use the For function to move data from A and B into the child entity

Create rules that reason with data from both entities

- Input data on inferred entities is not currently supported
Enhanced relationship handling – Iterative instances

Create chains of inferred entity instances

✔ Model policy or calculations that rely on inductive logic. Great for:
  • Repayments
  • Customer loyalty
  • Points tallies/pooling

✔ Use existing Exists syntax
  • Relationship now shows as complete allowing inductive logic

✔ Check logic in test cases and Debugger
Enhanced relationship handling – Documentation

Worked Examples

✓ New step by step instructions for working with entities and relationships
✓ Detailed worked examples for the most common and complex scenarios:
  • Including new entity functions
✓ Quickly understand and apply with a project zip provided inline for each worked example
✓ Publicly available for use by customers and partners
Feature Deep Dive

RuleScripts
RuleScripts – Overview

Implement algorithms needed to deliver powerful vertical solutions

✓ Define rules using Javascript
  - Set and access any policy model data
  - High performance execution
  - Treated just like Word and Excel rules

✓ Ideal for certain industry scenarios
  - Loan repayment calculations
  - Debtor prioritization
  - “Best fit” catch up payment analysis
  - Fraud detection
RuleScripts – Create script documents

Script documents are much like Word and Excel documents

- Add script documents to a project on the Rules tab
- Scripts open in the default .js editor
- Free form content within each script document
  - A special comment denotes which Javascript functions are RuleScripts:
    ```javascript
    // RuleScript(monthly_repayment) <- (final_balance, loan_amount, num_periods)
    function SolveRepayment(global) {
    ```
RuleScripts – Define rules in JavaScript
Work directly with the policy data model in each RuleScript function

✓ Attributes and relationships are accessed via the *global* parameter
  • A name must be assigned to each attribute and relationship before it can be used in a script
  • Attempts to set or get something not in the RuleScript declaration will be denied

✓ Special uncertain and unknown values
  • Uncertain === null
  • Unknown === undefined
RuleScripts – Access entity instances
Easily work with each entity instances

// RuleScript(total_age) <- (children, child_age)
function TotalAges(global) {
    var total_age = 0;

    if (global.children != null )
        global.children.forEach(
            function(child) { total_age += child.child_age; } );

    global.total_age = total_age;
}

✓ Easily access entity instances
  • Random access with get()
  • Simple iteration with forEach()
  • These methods work even on empty and unknown containment relationships

✓ Work with entity attributes just like for global
  • E.g. child.child_age
RuleScripts – Create entities
Script the creation of reference data or inferred objects

✓ Create entities via standard Javascript object arrays
  • An identifying attribute value must be supplied
  • Any number of other attributes can also be set for each entity instance

```javascript
// RuleScript(children, child_name, child_age) <- ()
function MakeChildren(global) {
  global.children.update([[child_name: "Alice", child_age: 7],
                          {child_name: "Bob", child_age: 15}]);
}
```
RuleScripts – Work with reference relationships
Read and write reference relationships, too

✓ Also read and write other relationships
  • The built in power of Javascript can make this very simple

```javascript
// RuleScript(happy_children) <- (children, child_happy)
function DetermineHappyChildren(global) {
  var children = global.children.get();
  if (children == null)
    global.happy_children = children;
  else
    global.happy_children = children.filter(
      function(child)
        { return child.child_happy; });
}
```
RuleScripts – Debugging
Works directly in the standard Policy Modeling debugger

RuleScripts execute when debugging
• Just like rules, they execute whenever data they depend upon changes
• `Console.log` output appears in the logging panel
RuleScripts – Guidelines and restrictions

How and where can RuleScripts be used?

<table>
<thead>
<tr>
<th>Policy Automation Platform</th>
<th>RuleScripts Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle Public Cloud</td>
<td>Experimental</td>
</tr>
<tr>
<td>Private cloud – Java 7</td>
<td>Experimental</td>
</tr>
<tr>
<td>Private cloud – Java 8+</td>
<td>Not yet available</td>
</tr>
</tbody>
</table>

- RuleScripts are intended only for use cases that really need them!
  - Do NOT use when rules need to be updated by business users
  - DO use for algorithms that are not easily expressed using built in rule functions

- RuleScripts are currently experimental
  - Must be manually turned on for each project that wants to use them
  - Syntax may change in future versions

- RuleScripts are tightly sandboxed
  - Cannot access web services or perform any other I/O
  - Will be terminated if they take too long to execute
Other Enhancements
Other enhancements

- For projects with large Excel rule tables – e.g. with lots of reference data
  - Debug and deploy are now much faster
  - Starting interviews is now much faster
- For projects with Service cloud connections
  - Interviews are no longer limited to submitting 100 Service Cloud objects
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Where to get more information

Background

• Oracle Service Cloud: https://cloud.oracle.com/service-cloud

Documentation


Forums

• RightNow: http://communities.rightnow.com/groups/eedd6685ae/summary
Social Media Resources

http://www.youtube.com/user/OraclePAVideos

https://www.facebook.com/OraclePolicyAutomation

https://twitter.com/OracleOPA

http://www.linkedin.com/groups/Oracle-Policy-Automation-3431282/about

https://blogs.oracle.com/OPA/

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Hardware and Software
Engineered to Work Together