

EBS Approvals List Creation, Limits and Rules

Karen Brownfield
Susan Behn





About the Speaker – Karen Brownfield

- 25 years E-Business Suite support
- GL SIG Board
- OAUG Board, former President
- Member ATG Customer Advisory Board
- Workflow SIG Board
- OAUG Board Liaison User Management SIG
- Over 100 presentations worldwide
- Co-author multiple books on E-Business Suite

About the Speaker – Susan Behn

- Over 20 years E-Business Suite development and support
- Member Oracle Proactive Support Customer Advisory Board
- Chair Oracle EBS User Management SIG
- Co-Chair Texas-Louisiana Oracle User Group TLOAUG
- OAUG Board Liaison User Management SIG
- Over 100 presentations at multiple venues
- Co-author multiple books on E-Business Suite



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 - R12.1.3, OBIEE **NEW** R12.2.5 public vision instances
 - Posted presentations on functional and technical topics

Agenda

- Introduction
- Important Employee / User Setups
- Employee – Supervisor / Job
- Position Hierarchy
- Approvals Management Engine (AME)
- AME Setup Migration
- References

Introduction

Approvals Purpose

- Ensure disposition of organization's assets or commitment to provide services or goods is done by appropriate personnel as per organization policy or per regulatory requirement
 - PO, Requisition, Supplier Creation
 - AP Invoices, Expense Reports
 - Journals
 - BOM, ECO
 - Intercompany
 - iRecruitment Offer
 - Inventory Lot changes
 - Returns from Customers, Credit Memos
 - Leases

Methods

- Requestor Designates / Overrides Approver
 - Employee/Supervisor
 - Job Level
 - Position Hierarchy
 - AME – find approvers based on business rules
-
- In addition to methods to generating routing, many non-AME approvals are based on amount limits, which may apply based on type of goods, accounting ranges, etc.

Levels

- Non-AME workflows may have functionality that shortens number of approvers
 - Choices
 - ▶ Go Up Management Chain
 - ▶ One Stop Then Go Directly
 - ▶ Go Directly to Person With Signing Authority
 - How method selected varies by type of transaction
 - ▶ GL Journal – Profile Option “Journals: Find Approver Method”
 - ▶ Internet Expenses - modify workflow (see MOS note 1228281.1)

Purchasing

- Default is Employee/Supervisor
- Position Hierarchy can be selected by Organization
 - Setup | Organizations | Financial Options, Human Resources tab, check box “Use Approval Hierarchy
- AME is determined by Profile Option – applies to entire application – overrides Organization option

General Ledger

- Whether to use JE Approval is set per Ledger
 - Setup | Accounting Setup Manager | Accounting Setups
 - Update Accounting Options, then click update for Setup Step that shows ledger name, go to page 2
 - Once selected, default is Employee / Supervisor
 - New for 12.1.3 and later – AME – profile option set at application level, but doesn't force ledgers not marked for JE Approval to use approvals – see MOS note 2038960.1

Payables / iExpenses

- Invoices – AME or none (set per Operating Unit)
 - Setup | Options | Payables Options, Approval tab
- Invoice Holds – AME or none (set per Operating Unit per Hold)
 - Setup | Invoice | Hold and Release Names
- Expense Reports – Supervisor or AME
 - AME use is determined by Payables AME profile option
 - ▶ For setups see Oracle Internet Expenses Implementation and Administration Guide – section “Setting Up Approval Rules”
 - Need to define Cost Center orgs and Approval Managers
 - ▶ See MOS note 261362.1
 - (Optionally) requires Job hierarchy

Important Employee / User Setups

Employee Setup

- Most approvals require approver to be employee (even contingent employees are setup here)
- Workflow uses employee email address

The screenshot shows the 'People' application window with the following details:

- Name:** Last: Stock, First: Pat, Title: Ms., Prefix: , Suffix: , Middle:
- Gender:** Female, **Action:** (dropdown)
- Person Type for Action:** (dropdown)
- Person Types:** Employee
- Identification:** Employee (dropdown), 24 (text), Social Security: 561-77-8990
- Office Details:** Office: , Location: , Mailstop: , Email: nobody@localhost, Mail To: Office
- Effective Dates:** From: 01-JAN-1987, To: , Latest Start Date: 01-JAN-1987 [EM]
- Buttons:** Address, Picture, Assignment, Special Info, Others...

User Linked to Employee

- If link is made prior to adding employee to user, email address in FND_USER not updated (it is in WF_LOCAL_ROLES)
 - Deleting/recreating link will update email, including replacing any email entered via this form
- If user linked to employee, any email entered here is ignored

The screenshot shows a 'Users' form with the following fields and values:

User Name	ATAYLOR	Person	Taylor, Mr. Andrew
Password		Customer	
Description	Taylor, Andrew	Supplier	
Status	Active	E-Mail	
Effective Dates		Fax	
From	06-JUN-2003		
To			

Additional fields include Password Expiration (Days, Accesses, None) and a highlighted E-Mail field.

Contingent Worker

- **Functionality Different per product**
 - **Example – Purchasing – MOS note 308124.1**
 - ▶ 11i – not allowed
 - ▶ R12 – new profile option “HR: Expand Role of Contingent Worker” defines if contingent worker can take up employee roles
 - **Raise and Approve Requisitions**
 - **Create, Maintain, and Approve Purchase Orders**
 - **Receive Goods and Services**

Employee / Supervisor Job

Declare Supervisor

- Assignment tab after querying employee
- Same screen used to assign job/position
- Approval assumes either only one level required (Expense Report w/o AME) or limits assigned to the person (Journal Approval w/o AME)

Assignment(Stock, Ms. Pat)

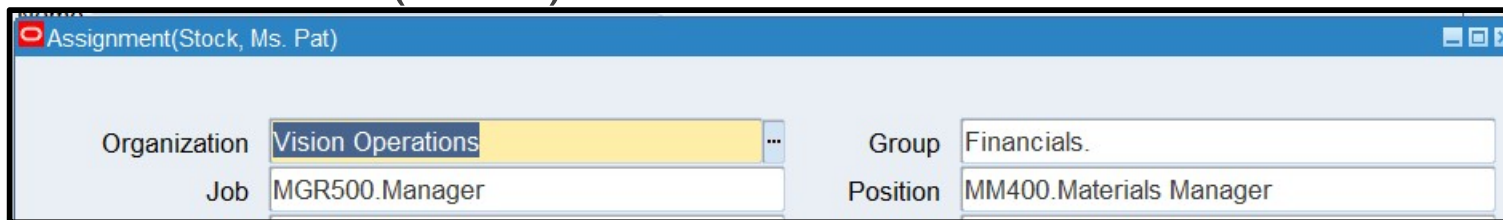
Organization	Vision Operations	Group	Financials.
Job	MGR500.Manager	Position	MM400.Materials Manager
Grade		Payroll	Vision Semimonthly
Location	V1- New York City	Status	Active Assignment
		Vacancy	
Assignment Number	24	Collective Agreement	
Assignment Category	Fulltime-Regular	Employee Category	

Salary Information | **Supervisor** | Probation & Notice Period | Standard Conditions | Statutory Information

Name	Brown, Ms. Casey
Worker Number	30
Assignment Number	

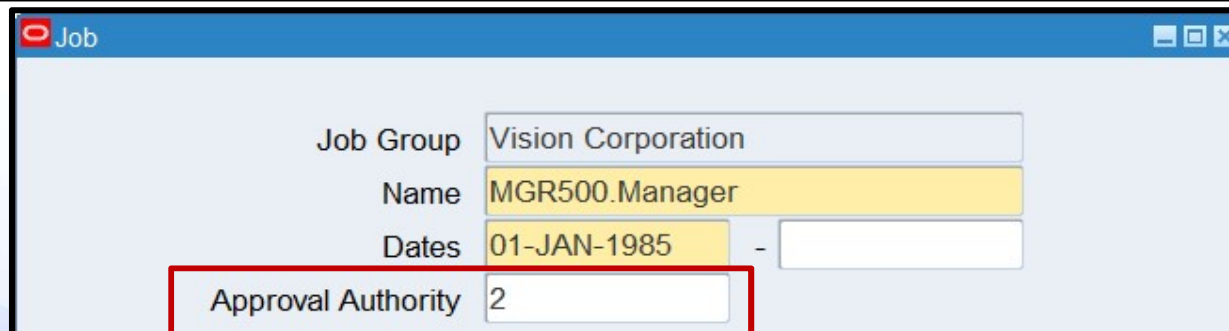
Job Hierarchy

- Job / Position tied to Business Group
- Approval Authority – rank from low to high
 - AME handles values up through 10
- Approvals either by
 - Authority assigned to job (Purchasing w/o AME)
 - Job Level (AME)



Assignment(Stock, Ms. Pat)

Organization	Vision Operations	Group	Financials.
Job	MGR500.Manager	Position	MM400.Materials Manager



Job

Job Group	Vision Corporation
Name	MGR500.Manager
Dates	01-JAN-1985 -
Approval Authority	2

Example of Assigning Limits by Job

Approval Groups

Operating Unit: Vision Operations
 Name: Manager Enabled
 Description: Manager approves up to \$25,000

Approval Rules

Object	Type	Amount Limit	Low Value	High Value
Document Total	Include	25,000.00		
Account Range	Include	25,000.00	00-000-0000-0000-000	99-999-9999-9999-9!

Objects

Find %

Object	Description
Document Total	The Total of the Document
Account Range	Accounting FlexField range
Item Category Range	Item Category FlexField Range
Item Range	Item FlexField Range
Location	Ship or Deliver To Location

Assign Approval Groups

Operating Unit: Vision Operations
 Position:
 Organization:
 Job: MGR500.Manager

Approval Assignments

Document Type	Approval Group	From	To
Approve Planned Purchase Order	Manager	19-FEB-1995	
Approve Purchase Requisitions	Manager	19-FEB-1995	
Approve Scheduled Releases	Manager	19-FEB-1995	
Approve Standard Purchase Order	Manager	19-FEB-1995	
Approve Planned Purchase Order	Vice President of Materials	07-NOV-2002	
Approve Purchase Requisitions	Vice President of Materials	07-NOV-2002	

Approval Groups

Operating Unit: Vision Operations
 Name: Vice President of Materials
 Description: Approves all

Approval Rules

Object	Type	Amount Limit	Low Value	High Value
Document Total	Include	99,999,999,999.00		
Account Range	Include	99,999,999,999.00	01-000-0000-0000-000	99-999-9999-9999-9!

Must Have "Unlimited Authority" Group

Example of Assigning Limits by Person

- Remember to assign someone unlimited authority



Ledger	Currency	Employee	Employee ID	Authorization Limit []
Vision Operations (US...	USD	Brock, Mr. Kim	30	100,000.00
Vision Operations (USA	USD	Brown, Ms. Casey	31	1,000,000,000.00
Vision Operations (USA	USD	Hof, Mr. David	295	50,000.00
Vision Operations (USA	USD	Langham, Ms. Kelly	297	10,000.00
Vision Operations (USA	USD	Seller, Mr. James	296	20,000.00
Vision Operations (USA	USD	Stock, Ms. Pat	25	20,000.00

Business Group Impact

- Employees, Operating Units, Jobs, Positions belong to one Business Group
- Cannot use Position Hierarchy
 - MOS note 356127.1, 291046.1
- Profile Option – HR:Cross Business Group – MOS note 257846.1, 224822.1
 - Forces job names to be unique across all Business Groups
 - Allows assignment of supervisor from another Business Group
 - ▶ Supervisor's job must exist in originating Business Group

Position Hierarchy

Defining Hierarchy Position Form

Position

Name MM400.Materials Manager

Open Under Review Approved Future Actions

Position Details Hiring Information Work Terms Additional Detail Budgets

Start Date 01-JAN-1987

Date Effective Name MM400.Materials Manager

Type Pooled Permanent Seasonal

Organization & Job

Organization Vision Operations Proposed End Date

Job MGR500.Manager Proposed End Date

Hiring Status

Status Active Start Date 01-JAN-1987 Proposed End Date

Location V1- New York City Status

Effective Dates From 01-JAN-1987 To Further Info [..]

Reporting To Evaluation Valid Grades Others...

Position Reporting To

Hierarchy	Name
Materials	BUY501.Buyer 1
Non-Materials	BUY502.Buyer 2
Vision ADB Material	BUY501.Buyer 1
Vision ADB Non-Material	BUY502.Buyer 2
Vision Services Material	BUY501.Buyer 1
Vision Services Non-Material	BUY502.Buyer 2

Position Form

Position Type

- None – position type not required, multiple holders allowed
- Single Incumbent – only one person can be assigned
- Shared – multiple holders allowed up to FTEs specified in Hiring Information tab
- Pooled – same as Shared, except not limited by number of FTEs (Public Sector only)

Defining Hierarchy

Position Hierarchy Form

- Must specify Hierarchy name, then query for a position you know is in the hierarchy
- If multiple holders, click LOV button and query

The screenshot shows the 'Position Hierarchy: 04-FEB-2016' form. The 'Name' field is 'Materials', 'Version Number' is '1', and 'Date From' is '01-JAN-1987'. The 'Position Name' is 'MM400.Materials Manager' and the 'Holder' is '** 15 Holders **'. The 'Subordinates' table lists 'FS250.Field Service Dispatcher' and 'MM001.Materials Manager', both with '** 2 Holders **'. An 'Exists In Hierarchy' checkbox is checked. The 'Holders' LOV is open, showing a list of employees with columns for 'Full Name', 'Employee Number', and 'Contingent'. The first row is 'Benson, Gale' with employee number 15.

Full Name	Employee Number	Contingent
Benson, Gale		15
Caruso, Mr. Anthony	375	
Chung, Rachel		11
Hamilton, Ms. Claudia	406	
Hawkins, Mr. Harold H.	408	
Kirk, Mr. Henk	1867	
Lopez, Mr. Christopher	407	
Miller, Mr. Dave	1868	
Norton, Linda	228	
Rosentrator, Donna	2407	
Smith, Ms. Laura	1288	
Stein, Mr. Alexander	405	
Stock, Ms. Pat	24	
Williams, Steve	1241	

Position Hierarchy Hierarchy Diagrammer Form

Diagram can also be Vertical or Interleaved

Name	Job	Organization

Properties

Position

Position Name: MM400.Materials Manager
 Position Type: Pooled
 Date From: 01-JAN-1987
 Date To:
 Job: MGR500.Manager
 Location: V1- New York City
 Hiring Status: Active
 Position Status:
 Organization: Vision Operations
 FTE:
 Bargaining Unit:
 Start Time: 08:00
 End Time: 17:00

MM400.Materials Manager

Job	Location
MGR500.Manager	V1- New York City

Full Name	Employee Number	Grade	Location
Smith, Ms. Laura	1288	200.2.Central	V1- New York City
Stein, Mr. Alexander	405		M1- Seattle Mfg
Stock, Ms. Pat	24		V1- New York City
Williams, Steve	1241		V1- New York City
Wilson, Peter			HR- New York

Position Assignment Position Holders

Hierarchy Reports

- Position Hierarchy Report

Parameters	
Effective Date	03-FEB-2016
Position Structure	Materials
Version	1 01-JAN-1987
Parent Position	EX140.Chief Financial Officer
Holders Shown	Yes

- MOS note 1561805.1 – provides script to show all hierarchies and who holds which position

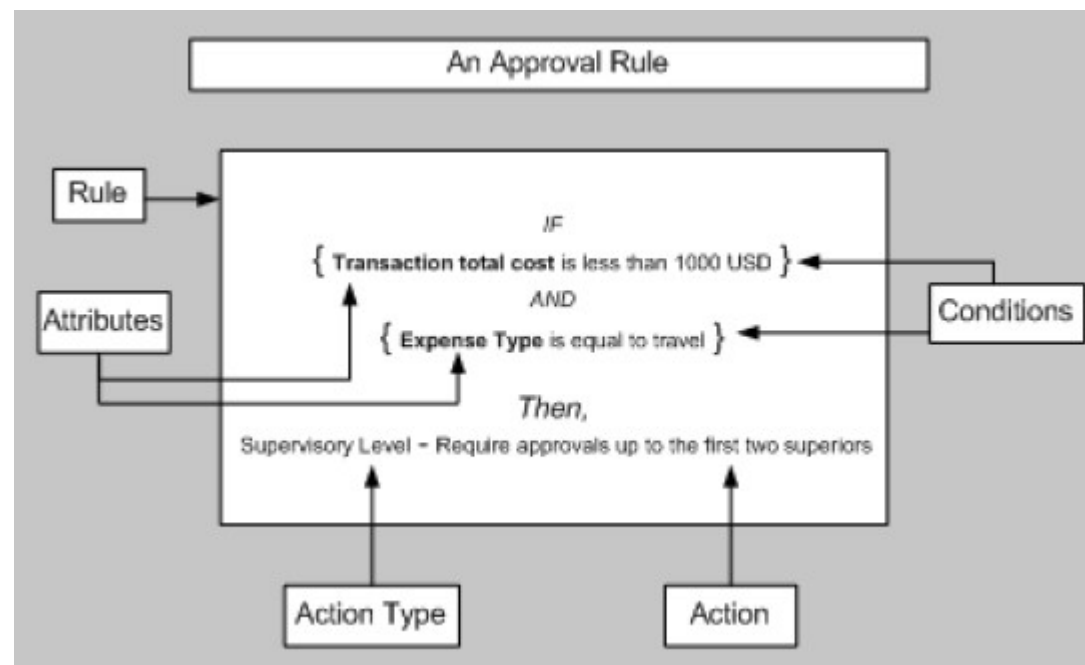
Hierarchy Points

- If multiple hierarchies exist, must specify hierarchy to use – differs per application
 - Example: Purchasing – hierarchy specified by Document Type
- If make changes to employees / positions, must run Fill Employee Hierarchy report
 - If BU has multiple OUs, create Security Profile with access to all OUs and assign this to profile option MO: Security for a responsibility that can run this program
 - ▶ MOS note 1999510.1
 - Can impact approvals in progress – MOS note 1539132.1

Approvals Management Engine (AME)

AME – Approval via Business Rules

- Business Rule – Travel transactions totaling < 1000 only require approval by the employee's immediate supervisor



Picture taken from Oracle Approvals Management Implementation Guide, Release 12.2 Part No. E48864-01

Advantages of AME

- Reduce approval cycle time
- Approval Rules can be developed by business users with minimal development assistance
- Approver Lists leverage off existing Oracle hierarchies (e.g. HR supervisor, HR position)
- Approver Lists can also leverage off custom hierarchies
- AME responds to changes such as organization hierarchies or rule changes
- AME is an alternative to workflow customization
 - Requires significant development expertise

R11i vs R12

- Operating Units
 - R11i – Rules are across operating units
 - ▶ Must create attribute to limit by OU
 - R12 – Rules are specific to operating unit
- Parallelization Features
 - Available to more transactions in R12
 - ▶ Parallel Approvals
 - ▶ Position Hierarchy
 - ▶ FYI Notifications
 - Not available for all transaction types – MOS note 338508.1
- Integrated with more applications in R12
 - R11i – 178 types; R12.1.3 – 272; R12.2.5 – 275

AME Access

- Usually enabled at Application level through profile option “AME:Installed”
 - Object must support approval through AME

```
SELECT fatl.application_name, attv.transaction_type_id, attv.description
FROM fnd_application_tl fatl, ame_transaction_types_v attv
WHERE attv.fnd_application_id = fatl.application_id
AND attv.end_date > SYSDATE
ORDER BY 1, 2;
```

- AME uses Oracle Role Based Access Model (RBAC) to access AME menus
 - Access must also be granted to desired transaction types
 - ▶ Functional Administrator Responsibility
 - Create Grant(s)
 - If same grant to be given to multiple people, create role, assign grant to role, then assign role to people

AME Access

- To control access to functions (actions on the data)
 - User Management Responsibility
 - ▶ (Initially only SYSADMIN has access to this responsibility)
 - Grant access to predefined role(s) (or create own)
 - ▶ *Approvals Management Business Analyst* – define business cases (i.e. attributes, conditions, groups, rules)
 - ▶ *Approvals Management System Administrator* – add transaction types, add approver types and view logs
 - ▶ *Approvals Management Process Owner* – view only access to Business Analyst functions
 - ▶ *Approvals Management System Viewer* – view only access to Administrator functions
 - ▶ *Approvals Management Administrator* – both Business Analyst and System Administrator

AME Building Blocks

- Transactions – object being approved
- From Administrator Dashboard
 - Configuration Variables
 - Rule Priority Modes
 - Forwarding Behaviors
- From Business Analyst Dashboard
 - Attributes
 - Conditions
 - Actions/Action Types
 - Approver Groups
 - Rules

Administrator Dashboard

Administrator Dashboard

This page displays the transaction types and their association with specific Oracle applications.
 * Indicates required field

→ **Quick Links**

- Configuration Variables
- Exception Log
- Setup Report
- Approver Types

Transaction Types

Filter: All

Create Transaction Type

Name	Transaction Type Key	Application	Update	Delete
AMW Audit Procedure Approval	AP	Internal Controls Manager (Obsolete)		
AMW Control Approval	CTRL	Internal Controls Manager (Obsolete)		
AMW Risk Approval	RISK	Internal Controls Manager (Obsolete)		
BOM ERES Bill of Materials Creation	oracle.apps.bom.billCreate	Bills of Material		
BOM ERES Bill of Materials Update	oracle.apps.bom.billUpdate	Bills of Material		
BOM ERES Operational Routing Creation	oracle.apps.bom.routingCreate	Bills of Material		
BOM ERES Operational Routing Update	oracle.apps.bom.routingUpdate	Bills of Material		
CE Bank Account Signing Authority Approval	CEBASIG	Cash Management		
CHECKLIST	CHECKLISTID	Human Resources		
CWB: Employee Eligibility	EMPELIG	Advanced Benefits		

Rows 1 to 30

Unused Approver Groups

This table displays the approver groups not used in any rules since the given number of days.
 * In last number of days

Name	Action	Date	User	Delete
US Partner Soft Fund Request Approval Group	Created	13-Jul-2004	EBUSINESS	
US Partner Special Pricing Request Approval Group	Created	13-Jul-2004	EBUSINESS	

Rows 1 to 20

Transaction Type Information Item Classes

- Page 2 shows levels at which approvers can be configured as well as hints to by what method (in this case by Project or Cost Center)

Transaction Type Details **Item Classes** Mandatory Attributes Review

Update Transaction Type: Item Classes Cancel Back Step 2 of 4 Next

* Indicates required field

Select	Item Class	Order Number	Parallelization	Sublist Mode	Delete
<input type="radio"/>	Distribution	1	Parallel	Serial	
<input type="radio"/>	Line Item	1	Parallel	Serial	
<input type="radio"/>	Header	2	Serial	Serial	
<input checked="" type="radio"/>	Project Code	1	Parallel	Serial	
<input type="radio"/>	Cost Center	1	Parallel	Serial	

Add Header Go

Item Class Details

Name Project Code

* Order Number 1

Parallelization Parallel

Sublist Mode Serial

* Query
select distinct aid.project_id
from ap_invoice_lines_all ail, ap_invoice_distributions_all aid
where aid.invoice_id = ail.invoice_id
and aid.invoice_line_number = ail.line_number
and ail.wfapproval_status = 'INITIATED'
and ail.invoice_id = :transactionid

Validate

Apply

Transaction Type Information Mandatory Attributes

- Select values can be changed

Transaction Type Details Item Classes **Mandatory Attributes** Review

Update Transaction Type: Mandatory Attributes Cancel Back Step 3 of 4 Next

Attribute	Usage Type	Query / Value
ALLOW_DELETING_RULE_GENERATED_APPROVERS	Static	False
ALLOW_REQUESTOR_APPROVAL	Static	True
AT_LEAST_ONE_RULE_MUST_APPLY	Static	False
EFFECTIVE_RULE_DATE	Static	<input type="text" value=""/> (example: 24-Feb-2016 19:45:00)
EVALUATE_PRIORITIES_PER_ITEM	Static	False
REJECTION_RESPONSE	Static	Stop all processing
REPEAT_SUBSTITUTIONS	Static	False
USE_RESTRICTIVE_ITEM_EVALUATION	Static	False
USE_WORKFLOW	Static	True
WORKFLOW_ITEM_KEY	Dynamic	<pre>select to_char(invoice_id) ' ' to_char(approval_iteration) from ap_invoices_all where invoice_id = :transactionId</pre> <input type="button" value="Validate"/>
WORKFLOW_ITEM_TYPE	Static	APINVAPR

Configuration Variables

Configuration Variables

To use any of the default configuration variables value in your transaction type, leave the specific Transaction Type variable field blank and click Apply.

Transaction Type:

General Configuration Variables

Variable Name	Description	Default	Transaction Type
Administrator Approver	An Administrator who should be notified in case of any exceptions in Approvals Management.	<input type="text" value="SYSADMIN"/>	<input type="text"/>
Allow All Approver Types	Whether Approvals Management allows all approver types	<input type="button" value="No"/>	<input type="button" value="Yes"/>
Allow All Item Class Rules	Whether Approvals Management allows to create subordinate item class rules	<input type="button" value="No"/>	<input type="button" value="Yes"/>
Allow For Your Information Notifications	Whether Approvals Management allows For Your Information notifications	<input type="button" value="No"/>	<input type="button" value="No"/>
Currency Conversion Window	How many days Approvals Management should look back, at most, to find a currency-conversion rate	<input type="text" value="120"/>	<input type="text"/>
Distributed Environment	Whether Approvals Management runs in a distributed-database environment (yes or no)	<input type="button" value="No"/>	
Production Functionality	What types of production-rule functionality are allowed	<input type="button" value="No production rules"/>	<input type="button" value="All production rules"/>
Purge Frequency	How many days temporary Approvals Management data ages before being purged	<input type="text" value="15"/>	<input type="text"/>
Record Approval Deviations	Whether to record approval deviations or not	<input type="button" value="No"/>	<input type="button"/>
Repeated Approvers	How many times to require an approver's approval, in the absence of forwarding	<input type="button" value="Once per transaction"/>	<input type="button"/>

- Controls runtime behavior
- Default applies to all transaction types

Rule Priority Modes

- Prioritizes a transaction type's rules and, at run time, remove from the set of rules that would otherwise apply, those rules of insufficient priority
 - Low numbers indicate higher priority

Rule Priority Modes

This table displays the rule priority modes for each rule type.

Name	Default	Transaction Type
Combination	Disabled <input type="button" value="v"/>	<input type="button" value="v"/>
List Creation	Disabled <input type="button" value="v"/>	<input type="button" value="v"/>
List Creation Exception	Disabled <input type="button" value="v"/>	<input type="button" value="v"/>
List Modification	Disabled <input type="button" value="v"/>	<input type="button" value="v"/>
Substitution	Disabled <input type="button" value="v"/>	<input type="button" value="v"/>
Pre List Approver Group	Disabled <input type="button" value="v"/>	<input type="button" value="v"/>
Post List Approver Group	Disabled <input type="button" value="v"/>	<input type="button" value="v"/>
Production	Disabled <input type="button" value="v"/>	<input type="button" value="v"/>

Forwarding Behaviors

- For the listed situation, determines how AME is to treat both the forwarder and forwardee when request for approval is forwarded

Forwarding Behaviors

This table shows how the approver list should be recalculated when a designated approver forwards an approval.

Name	Default	Transaction Type
Forward to previous approver in same chain of authority	Forward to Forwardee and Forwarder	
Forward with approval to previous approver in same chain of authority	Forward to Forwardee Only	
Forward to subordinate in same hierarchy, but not in same chain of authority	Repeat Forwarder	
Forward with approval to subordinate in same hierarchy, but not in same chain of authority	Forward to Forwardee Only	
Forward to approver already in list, but not in same hierarchy	Forward to Forwardee Only	
Forward with approval to approver already in list, but not in same hierarchy	Forward to Forwardee Only	
Adhoc approver, forward to approver already in list.	Forward to Forwardee Only	
Adhoc approver, forward with approval to approver already in list.	Forward to Forwardee Only	

Forwarding Behavior Choices

- Ignore – treats as approval
- Forwardee Only – add forwardee to approver list
- Forwardee then Forwarder – add both to approval list
- Skip Forwarder – extend chain of authority starting with forwardee, but skip forwarder
- Repeat Forwarder – extend chain of authority starting with forwardee and include forwarder
- Remand – add to approver list all approvers between the forwardee and the forwarder including the forwarder

Business Analyst Dashboard

If Transaction Type in the list, click appropriate link

The screenshot displays the Business Analyst Dashboard with two main sections. The 'Transaction Types' section contains a table with columns for Name, Application, Rules, Test, and Setup. The 'Approval Process Setup' section contains a list of steps: 1. Select the transaction type, 2. Define the components, 3. Define the approval rules, and 4. Test Workbench. Red arrows point from the 'Setup' column of the Transaction Types table to the 'Approval Process Setup' section. A blue arrow points from the 'Approval Process Setup' section to the 'Future Active Rules' and 'Future Inactive Rules' sections.

Name	Application	Rules	Test	Setup
EAM Permit Release Approval	Enterprise Asset Management			
EAM Work Order Release Approval	Enterprise Asset Management			
Payables Invoice Approval	Payables			
OIE Expense Reports	Payables			
OZF: Soft Fund Request	Trade Management			

Approval Process Setup

- Select the transaction type**
- Define the components**
Approvals Management uses these components within the approval rules.
Attributes
Define attributes to fetch business facts for a specific transaction.
Conditions
Define conditions to evaluate attributes within rules. If all conditions in a rule are true when the rule is active for the transaction.
Action Types
Enable action types to specify the action to take if a rule is active for a transaction.
Approver Groups
Define approver groups to contain approvers who are usually members of peer groups such as payroll or expenses department.
- Define the approval rules**
Approval Rules determine the approvers or FYI notification recipients required for a business transaction.
Rules
- Test Workbench**
Define test cases or test real transactions to verify the approval setup, rules and associated approvers.
Test Workbench

Quick Links

- Configuration Variables
- Setup Report

If Transaction Type not in list, select here, then click one of links indicated by arrows

Attributes

- Variables that represents business data (e.g. invoice amount, supplier, etc.)
- Can be static (constant value) or dynamically retrieved at runtime (SQL query)
- Basic attributes seeded for all transaction types
 - Existing attributes can be modified
 - SUPERVISORY_NON_DEFAULT_STARTING_POINT_PERSON_ID – Update to start with a different person
- Create additional attributes for anything linked to transaction id for header (invoice id, requisition id)
 - If transaction has header and multiple lines, attribute can be a list (project for each line, requestor for each line)

Attributes

Rules Test Workbench **Setup**






Attributes | Conditions | Action Types | Approver Groups

















Attributes

This page enables you to view attributes present in your transaction type, create new, and reuse existing attributes to specify the business components of a transaction such as total amount, a percent discount, and a person's salary.

Search

Attribute Category: All
 Item Class: All
 Data Type: All
 Name:
 Go Clear

Create Use Existing Attribute      Rows 1 to 30

Attribute ▲	Description ▲	Category	Usage Type	Item Class ▲	Data Type ▲	Update	Delete
LINE_ITEM_STARTING_POINT_PERSON_ID	person ID of the first approver in the line item's chain of authority	Required	Dynamic	Line Item	Number		
PO_MATCHED_INVOICE	Does this invoice have any po matched distributions?	Others	Dynamic	Header	String		
PROJECT_RELATED_INVOICE	Does this invoice have any project related distributions?	Others	Dynamic	Header	String		
REJECTION_RESPONSE	How AME responds to a rejection	Mandatory	Static	Header	String		
REPEAT_SUBSTITUTIONS	Should AME apply Substitution rules on Surrogates and ad-hoc Insertees	Mandatory	Static	Header	Boolean		
REQUIRE_TAX_CALCULATION	User defined value indicating whether tax should be calculated on an invoice before approval	Others	Static	Header	Boolean		
SUPERVISORY_NON_DEFAULT_STARTING_POINT_PERSON_ID	person ID of non-default supervisor approver for the supervisory-level approval type	Required	Static	Header	Number		
SUPPLIER_INVOICE_AMOUNT	Invoice Amount	Others	Dynamic	Header	Currency		

Attributes

Name PROJECT_RELATED_INVOICE	Name LINE_ITEM_STARTING_POINT_PERSON_ID
Item Class Header	Item Class Line Item
* Description Does this invoice have any project related distributions?	Description person ID of the first approver in the line item's chain of authority
Data Type String	Data Type Number
Approver Type None	Approver Type HR People
Value Set <input type="text"/>	Value Set <input type="text"/>
Usage Type Dynamic	Usage Type Dynamic
* Value select decode(count(*),0,'N','Y') from ap_invoice_distributions_all where invoice_id = :transactionId and project_id is not null	* Value SELECT requester_id FROM ap_invoice_lines_all WHERE invoice_id = :transactionId AND wfapproval_status = 'INITIATED' ORDER BY line_number

Name ALLOW_REQUESTOR_APPROVAL
Item Class Header
Description whether to allow requestors to approve their own transactions (when the rules do so)
Data Type Boolean
Approver Type None
Value Set <input type="text"/>
Usage Type Static
* Value true

Conditions

- Represent the *IF* part of an approval rule
- Evaluate the value of attributes at runtime
- Result can either be true or false

The screenshot displays the 'Conditions' application interface. At the top, there are tabs for 'Regular' and 'List Modifiers'. Below this is a 'Search' section with filters for 'Item Class' (set to 'All'), 'Condition Type' (set to 'All'), and an 'Attribute' input field. There are 'Go' and 'Clear' buttons. Below the search section is a toolbar with icons for 'Create', refresh, save, settings, and print. The main area contains a table with the following data:

Condition ▲	Item Class ▲	Condition Type ▲	Update	Delete
APPROVE_MATCHED_INVOICE_LINES is False	Line Item	Ordinary		
PO_MATCHED_INVOICE in (N)	Header	Ordinary		
PO_MATCHED_INVOICE in (Y)	Header	Ordinary		
PROJECT_RELATED_INVOICE in (N)	Header	Ordinary		
PROJECT_RELATED_INVOICE in (Y)	Header	Ordinary		

Rows 1 to 15

Conditions

Update Condition: APPROVE_MATCHED_INVOICE_LINES is False

Condition Type Ordinary
Attribute APPROVE_MATCHED_INVOICE_LINES
Data Type Boolean
Item Class Line Item

► Show rules using this condition

Details

APPROVE_MATCHED_INVOICE_LINES is false

Update Condition: PO_MATCHED_INVOICE in (N)

Condition Type Ordinary
Attribute PO_MATCHED_INVOICE
Data Type String
Item Class Header

► Show rules using this condition

String Values

String Value	Delete
N	

Update Condition: SUPPLIER_INVOICE_AMOUNT is greater than 5000 and less than or equal to 10000,USD

Condition Type Ordinary
Attribute SUPPLIER_INVOICE_AMOUNT
Data Type Currency
Item Class Header

► Show rules using this condition

Details

Currency Code USD

SUPPLIER_INVOICE_AMOUNT is greater than 5000 and less than or equal to 10000

Condition Types

- Ordinary
 - Compare attribute to value or range
- Exception
 - Used in List Creation Exception Rule Types
- List Modifier
 - Checks for presence of specified approver in specified Order

Update List Modifier: Any approver is HR People: Yuhov, Sebastian

* Indicates required field

Any Approver	Approver Order	Any Approver
Final Approver	Approver Type	HR People
FND Users	* Approver Name	Yuhov, Sebastian
HR People		
HR Positions		

Actions / Action Types

- Represent the *Then* part of an approval rule
- Provide instruction to AME when an approval rule has been satisfied
- Determine the approvers and number of approvers
- Action Types are grouping of Actions
 - Action Type – routing is by job/position/supervisor
 - Action – how many levels required

Action Types / Actions

Action Type	Description	Example
Absolute-job-level	~Ascends HR supervisor hierarchy ~Based on specific job level	Require approvals up to at most job level six <ul style="list-style-type: none">• Specific purchase types
Relative-job-level	~Ascends HR supervisor hierarchy ~Based on job level relative to requester's job level	Require approvals at least four levels up <ul style="list-style-type: none">• Pay changes

- At Most – go no higher than job level specified
- At Least – go to job level specified (or one higher if one specified doesn't exist)

Action Types / Actions

Action	Description	Example
Manager-then-Final-Approver	~Ascends HR supervisor hierarchy ~Supervisor and final approver are required to approve	Require approval up to first supervisor and level six final approver <ul style="list-style-type: none">• Capital with CFO approval
Supervisory-Level	Ascends HR supervisor hierarchy a specified number of levels	Require approvals up to three supervisors <ul style="list-style-type: none">• Expenses

Action Types / Actions

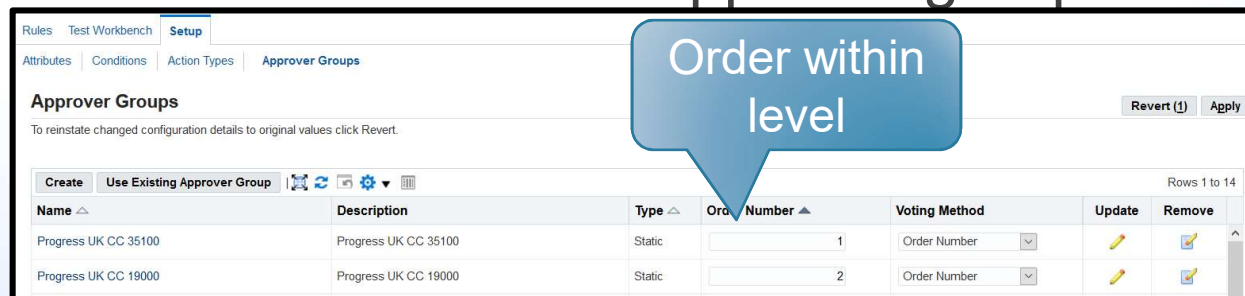
Action Type	Description	Example
HR-Position	Ascends HR position hierarchy up to a specified position	Require approvals up to Accounting Manager <ul style="list-style-type: none">• HR approvals
Approver-Group Chain-of-Authority	~Ascends custom approver hierarchy ~Builds chain-of-authority type approver list	If transaction item is related to a project <ul style="list-style-type: none">• Approver groups based on project roles

Action Types / Actions

Action	Description	Example
Final-Authority	Grants final authority to an approver by ending the approval chain when target approver is reached	If Approver is Susan Behn, allow final approval <ul style="list-style-type: none">• VP Approval• CEO
Pre and Post Chain-Of-Authority	Approvers are added before or after normal chain-of-authority list build for a transaction	Require IT pre-approval for hardware purchase <ul style="list-style-type: none">• Accounting and Technical

Approval Group

- Ordered set of one or more approvers (static group) or list which is dynamically generated at rule evaluation time (dynamic)
- Typically used for pre- or post-approval rules
 - Can be used as chain of authority (Example: project managers)
- Lists ones seeded or created for transaction type
 - Use Existing Approver Group – can search for groups created for other transaction types, but typically only work as model to create custom approver group



Order within level

Name	Description	Type	Order Number	Voting Method	Update	Remove
Progress UK CC 35100	Progress UK CC 35100	Static	1	Order Number		
Progress UK CC 19000	Progress UK CC 19000	Static	2	Order Number		

Static Approver Group

Update Approver Group :Operations CEO Cancel Apply

* Indicates required field

► Rules Using the Approver Group

Details

Name: Operations CEO

* Description: Operations CEO

* Order Number: 19

Usage Type: Static

Dynamic Approver Group requires a SQL.

Group Members

Enter members for the static approver group.

Approver Type	Approver	Order Number	Delete
HR People	HR People: Tucker, William	1	

Add Another Row

Note: A red box highlights the Usage Type dropdown and the table row. A blue callout bubble points to the Order Number field in the table with the text "Order within group".

Dynamic Approval Group

Update Approver Group:Project Manager Cancel Apply

* Indicates required field

► **Rules Using the Approver Group**

Name	Project Manager
* Description	Project Manager - Used for OIE
Usage Type	Dynamic
Query	<pre>select 'person_id': person_id from APPS.PAFV_KEY_MEMBERS where project_number in (select project_number from ap_expense_report_lines_all where report_header_id = :transactionId) and project_role = 'Project Manager' and sysdate between start_effective_date and END_EFFECTIVE_DATE</pre>

Dynamic Approver Group requires a SQL.

Validate

Usage Type Dynamic

Query

```
select 'person_id':||person_id
from APPS.PAFV_KEY_MEMBERS
where project_id in (select project_id
from ap_invoice_distributions_all
where invoice_id = :transactionId)
and project_role = 'Project Manager'
and sysdate between start_effective_date and
END_EFFECTIVE_DATE
```

Either 'person_id':person_id
or 'fnd_user':user_id or
'<wf_roles_orig_system' | <wf
_roles.orig_system_id>

Voting Method

- Serial – one-at-a-time, if order number same then AME breaks tie arbitrarily, all must approve
- Consensus – parallel, all must approve
- First Responder Wins – parallel, first response determines response for group
- Order Number – notified in sequence of order number, if order number same then notified in parallel, all must approve

Rules

- Putting it all together
 - Condition using attributes
 - If true, selecting action type that builds approver list
 - ▶ Approver list may be approver group
- Can have multiple rules each yielding a different list of approvers
- Rules re-evaluated during each approval iteration

Rule Types

- List-Creation
 - Generate Chain-of-Authority Approver Lists
 - ▶ IF INVOICE_AMOUNT > \$500K, THEN REQUIRE APPROVALS UP TO 2 SUPERVISORS
- List-Creation Exceptions
 - Uses one ordinary condition (on same attribute as List Creation) and one exception condition
 - ▶ IF INVOICE_AMOUNT < 1000 AND (Exception) COST_CENTER IS IN (0743) THEN REQUIRE APPROVALS UP TO 2 SUPERVISORS
- Combination
 - Combination of actions
 - ▶ IF REQUESTOR IS 'JOHN DOE', REQUIRE PRE_APPROVAL FROM TEAM LEAD, POST_APPROVAL FROM AP MANAGER

Rule Types

- List-Modification
 - Used to extend or reduce final approver authority
 - ▶ IF INVOICE_AMOUNT > 5000 AND PAYGROUP IS 'COMPEQUIP' AND ANY APPROVER IS GERALD JONES GRANT FINAL AUTHORITY
- Substitution
 - Allows an approver on approver list to be substituted for another person
 - ▶ IF ANY APPROVER IS GERALD JONES, THEN SUBSTITUTE SUSAN BEHN FOR THE APPROVER
- Pre- and Post-List
 - Approvers are inserted either before or after the normal chain-of-authority approver list
 - ▶ IF LINE_TYPE IS 'TAX', THEN REQUIRE PRE_APPROVAL FROM TAX DEPARTMENT

Rule Types

■ Production

- Must verify your transaction type supports this
 - ▶ Ensure Configuration Variable “Production Functionality” not set to “No production rules”

Production Functionality What types of production-rule functionality are allowed No production rules All production rules

Update Rule: Invoice Header Match Check Cancel Apply

* Indicates required field

Item Class: Header * End Date: 31-Dec-4712

Rule Type: Production

* Name: Invoice Header Match Check

* Start Date: 30-Jan-2006
(example: 28-Jan-2016)

▶ Other Instances of this Rule

Conditions

Add Condition

Condition	Condition Type	Item Class	Remove
SUPPLIER_INVOICE_MATCHED in (Y)	Ordinary	Header	
APPROVE_MATCHED_INVOICES is False	Ordinary	Header	

Actions

Add Action

Action Type	Action	Remove
Production rule	NO INVOICE APPROVAL REQUIRED/INVOICE MATCHED	

All production rules
No production rules
Per-approver production rules
Per-item production rules

Rule Example

Rules Test Workbench Setup

Rules >

Rule: Vision Services Project Related Invoice > \$0 Requires Project Mgr Approval

Name: Vision Services Project Related Invoice > \$0 Requires Project Mgr Approval End Date: 31-Dec-4712

Rule Type: List Creation
Item Class: Header
Start Date: 14-Nov-2002

Conditions

Condition	Condition Type	Item Class
SUPPLIER_INVOICE_TYPE_LOOKUP_CODE in (STANDARD, Standard, standard)	Ordinary	Header
PO_MATCHED_INVOICE in (N)	Ordinary	Header
PROJECT_RELATED_INVOICE in (Y)	Ordinary	Header
TRANSACTION_SET_OF_BOOKS_ID is equal to 62	Ordinary	Header
SUPPLIER_INVOICE_AMOUNT is greater than or equal to 0,USD	Ordinary	Header

Actions

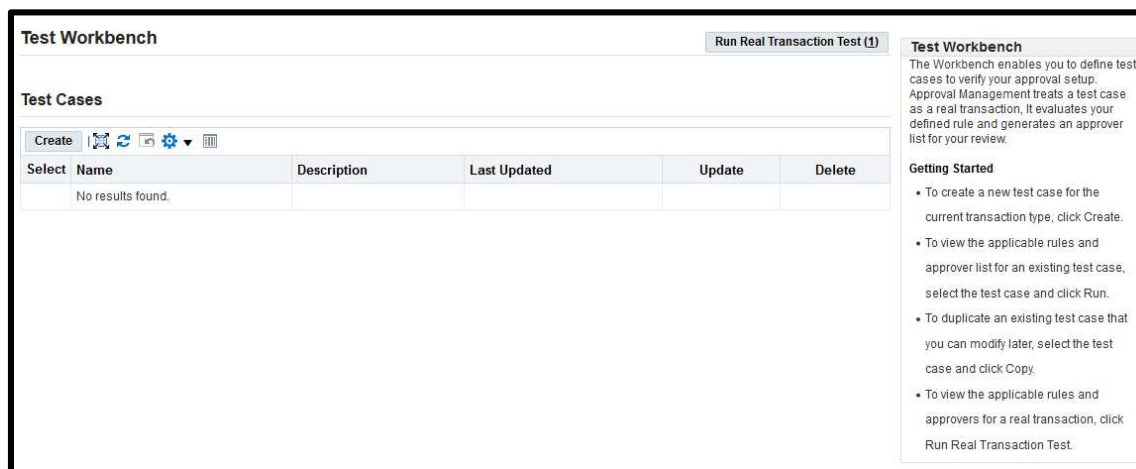
Action Type	Action
approval-group chain of authority	Require approval from Project Manager

Test Workbench

- 11i.AME.B and R12 provide a test workbench to allow defined business rules to be evaluated and tested against transactions
- Test workbench allows user to verify various aspects of setups
 - Are attribute values, particularly custom attributes, retrieving values correctly?
 - Does the invoice satisfy the appropriate rule?
 - Is the proper approver chain being generated for the transaction based on the rule chosen?

How Test Workbench Works

- Either
 - Create a Test Case by specifying values for all attributes
 - ▶ Click Create, enter applicable values, click 'Run Test Case (2)'
 - Create a transaction and note transaction_id
 - ▶ Click 'Run Real Transaction Test (1)', enter Transaction Id, click Go



The screenshot displays the 'Test Workbench' interface. At the top, there is a tab labeled 'Run Real Transaction Test (1)'. Below this, the 'Test Cases' section features a toolbar with 'Create', 'Refresh', 'Settings', and 'Help' icons. A table with columns 'Select', 'Name', 'Description', 'Last Updated', 'Update', and 'Delete' is shown, with the message 'No results found.' in the first row. To the right, a sidebar titled 'Test Workbench' provides an overview and a 'Getting Started' section with four bullet points: 1. To create a new test case for the current transaction type, click Create. 2. To view the applicable rules and approver list for an existing test case, select the test case and click Run. 3. To duplicate an existing test case that you can modify later, select the test case and click Copy. 4. To view the applicable rules and approvers for a real transaction, click Run Real Transaction Test.

Test Case Using Transaction ID

Real Transaction Test Cancel Save for Later (1) Run Test Case (2)

* Indicates required field

* Transaction Id

TIP Transaction ID is the ID of a real transaction which AME uses to evaluate rules and generate approvers.

Expand All | Collapse All

Focus	Transaction Data	Value
	Parameters	
	Mandatory Attributes	
	Transaction ID:193901	
	Header Attributes	
	Transaction ID:193901	
	Line Item Attributes	
	Cost Center Attributes	
	Project Code Attributes	
	Distribution Attributes	
	Distribution ID:2678295	
	Distribution ID:2678297	
	Distribution ID:2678296	
	Distribution ID:2678293	
	Distribution ID:2678294	

Test Case Using Transaction ID

Test Workbench > Real Transaction Test >

Run Real Transaction

[View Approval Process Stages \(1\)](#)

To review the process stages that Approvals Management took to arrive at the applicable rules and approver list, click View Approval Process Stages.

Transaction ID 193901

Applicable Rules

Details	Description	Class	Rule Type	Category
▶	Vision Services Project Related Invoice > \$0 Requires Project Mgr Approval	Header	List Creation	Approver

Final Processed Approver List

Details	Order Number	Approver Type	Approver	Category	Status
▶	1	HR People	Hamilton, Anne	Approver	

Test Case Using Transaction ID

Test Workbench > Real Transaction Test > Run Real Transaction >

View Real Transaction Approval Stages

This page displays the various stages that Approvals Management goes through to determine the applicable rules and the final approver list.

Transaction ID 193901

Applicable Rules

Final Applicable Rules

Details	Description	Class	Rule Type	Category
▶	Vision Services Project Related Invoice > \$0 Requires Project Mgr Approval	Header	List Creation	Approver

Item Productions

Item Class	Item Id	Variable Name	Variable Value
No results found.			

Default Approver List

Details	Approver Type	Approver	Category	Status
▶	HR People	Hamilton, Anne	Approver	

Approver List After Suppressing Repeated Approvers

Details	Approver Type	Approver	Category	Status
▶	HR People	Hamilton, Anne	Approver	

Final Approver List






Details	Order Number	Approver Type	Approver	Category	Status
▶	1	HR People	Hamilton, Anne	Approver	





Test Case Library

- Create test cases necessary to test rules
- Save test cases
- If any business rule changes or is added, can run tests

Test Workbench Run Real Transaction Test (1)

Test Cases

Select Test Case: Run Copy | Create     

Select	Name 	Description	Last Updated 	Update	Delete
<input type="radio"/>	Invoice id 193901	project approval	10-Feb-2016		

AME Setup Migration

- See MOS note 1168883.1
- Uses FNDLOAD
- Available for
 - Conditions
 - Groups
 - Action Type Usages
 - Rules
- Not Available for entities specific to an instance
 - Static Approval Groups
 - List Modification Conditions

Planning for AME

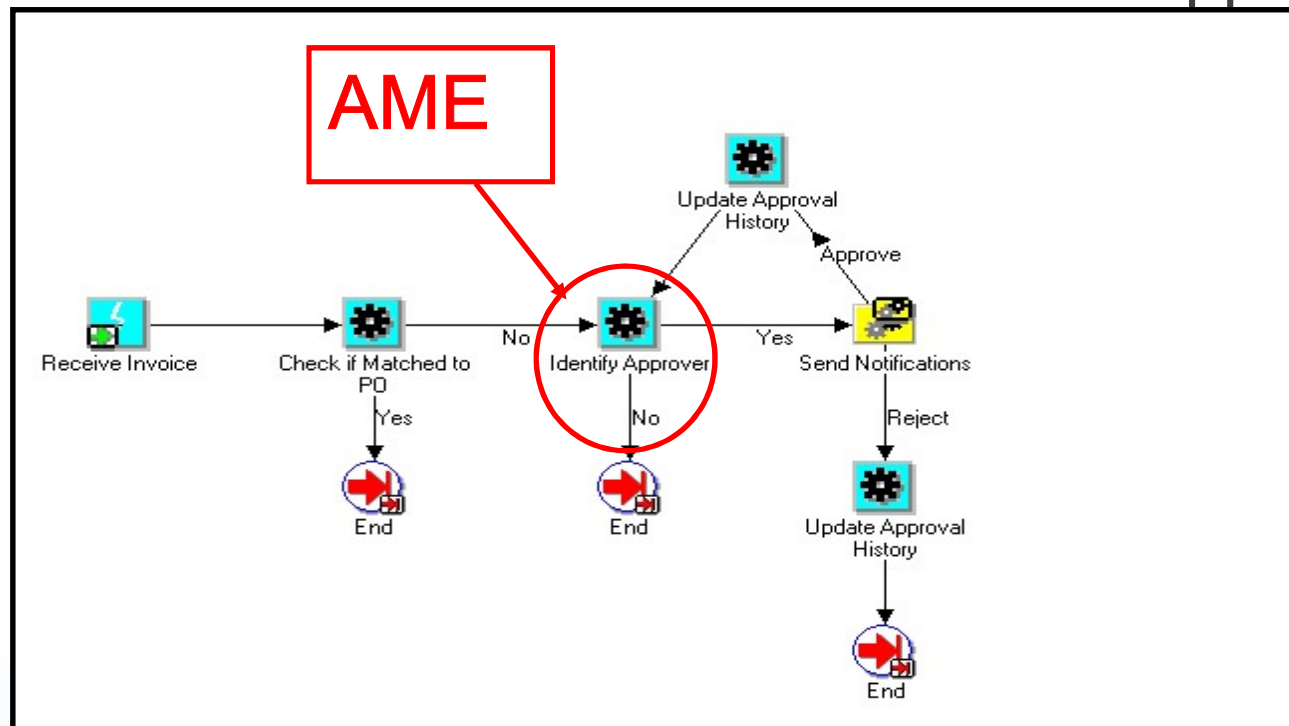
- Plan for all corporate rules using flow charts or decision trees
 - Gain support from the management team and users
 - Provides basis for testing
 - Improves overall logic by identifying combinations
 - Identify alternatives
 - Remember to consider special cases
 - Who approves CEO's transactions
 - Speeds implementation process
 - Identifies potential problems

AME and Approval Workflows

- Approval routing is controlled by AME rules via workflow
- Approval workflow sends request to AME to find approvers
- AME sends person_id or user_id back to workflow
- Workflow sends notification to person or user identified by AME
- Workflow continues to send notifications until
 - Approval from authorized approver is reached
 - Invoice is rejected
 - Approver list is exhausted

AME and Approval Workflow

- Invoice Approval Workflow *Identify Approver* node calls the AME API to identify next approver
- Workflow sends the notification and records approval history



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- 1168883.1 – How To Migrate AME Setups From One Instance To Another
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- 471125.1 – Configuring Parallel Approvers Notification
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- 338508.1 – Approvals Management (AME) Error “Oracle Approvals Management has Found Parallelisation Configuration whereas the Context in which AME invoked Using AME_API Does Not Support Parallelisation”

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- Business Group Impact
 - 257846.1 – How Will Setting “Hr: Cross Business Group” Profile To Yes Affect HR Applications?
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 - 261362.1 – Supplement for Implementing Auto Orgs

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 - 293315.1 – 11.5.10 FAQ for Approvals Management (AME) Integration for iProcurement and Purchasing
 - 1207863.1 – Master Reference for AME Based Requisition Approval in R12
 - Notes listed in here not repeated in slides
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 - 1077318.1 – With Position Hierarchies, How Can I Setup System to Route to Certain Approvers Based on Data on the Document?
 - 1502702.1 – In Release 11i Are Contingency Workers Included in Purchasing's Positional Hierarchies?
 - ▶ No for 11i, Yes for R12
 - 308124.1 – Contingent Worker Appears in Position Hierarchy But Cannot Approve
 - 291046.1 – Purchase Requisition Approval Across Business Groups

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 - 1561805.1 – How To Extract The Purchasing Position Hierarchy
- Payables / iExpenses
 - 251770.1 – FAQ on Internet Expenses with Multiple Approval Chains and Oracle Approvals Management Engine
 - 1606056.1 – APXIIMPT – Is It Possible To Import Invoices With Approval Not Required
 - 1228281.1 – What approval methods are available for use with Internet Expenses?

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 - 1371982.1 – Approvals Management Engine (AME) Usage and Setup in AGIS
 - 785167.1 – Advanced Global Intercompany Troubleshooting AGIS Workflow White Paper



Thank you!!

Karen.Brownfield@Infosemantics.com

Susan.Behn@Infosemantics.com