Oracle Workflow Use and Administration Made Easier

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Rolta
About the Speaker

- Oracle Ace
- Over 35 years System Design and Support
- Over 20 years E-Business Suite support
- 14 years Oracle Workflow design and support
- Former OAUG President
- Over 100 presentations at multiple venues
- Co-Author *The ABCs of Oracle Workflow for E-Business Suite Release 11i and Release 12*
Agenda

• Overview/Business Benefit
• Workflow Suggestions by Role
• Workflow for End Users
  • Personal Worklist
  • Status Monitor
  • Diagnostic Reports
• Workflow for Super Users
  • Junior Administrator
  • Worklist Access
  • Workflow Related Concurrent Requests
Agenda

• Workflow for Administrators
  • Oracle Applications Manager
  • Administration Menus
  • Worklist Flexfields
• Workflow for Developers and DBAs
• References and More Presentations
Overview

- Presentation covers R12, but…. (if still on 11i)
- Workflow Functionality in Release 12 and Release 11i.10 (if patched to RUP7) are nearly identical
  - Forms may look different due to new R12 look-and-feel
- Focus on
  - Efficiency that empowers users
  - Setups that ensure proper operation
  - Administration methods that
    - Prevent trouble
    - Speed recovery when the unexpected happens
CALL CO-WORKER
(AGAIN)

CALL ORACLE (AGAIN)

NOTIFY HELP DESK

HELP DESK DISPATCHES
ADDITIONAL HELP

PROCESS TIME

CUSTOMER INQUIRY

OVERRIDE THROUGH
MANUAL PROCESS

RESOLVE THROUGH
SELF KNOWLEDGE

CUSTOMER GETS
PRODUCT

WITH TROUBLESHOOTING EDUCATION

$SSSSS$ NET SAVINGS
Workflow Troubleshooting by Role

- **Workflow End Users**
  - Personalize notification page
  - Monitor your own workflows
  - Run Diagnostic Reports for Functional Areas

- **Workflow Functional Super Users**
  - End User recommendations plus…
  - Run workflow specific concurrent programs
  - Junior Administrator
  - Worklist Access to SYSADMINs emails

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Workflow Troubleshooting by Role

- Workflow Administrators
  - Super User recommendations plus……
  - Worklist Flexfields
  - Troubleshoot all workflows using OAM and Administration Menus
  - Purge

- Workflow Developers/DBAs
  - Setup workflows properly
  - Avoid Cloning issues
WORKFLOW TROUBLESHOOTING
FOR END USERS
Improved Efficiencies for Users

• Provide end users tools for efficiency
  • Add ‘Personal Worklist’ to menus
  • Provide training for use of the status monitor and other features
• Set owner attribute in workflows where needed
• Provide access to diagnostic reports
  • Oracle Diagnostic Tool Responsibility
    • Security is built in – you can only access reports related to responsibilities you are assigned
Seeded User Menu

• Workflow User Web Applications
  • Advanced Worklist
  • Self Service Workflow
    • Home Page
    • Status Monitor
    • Notifications – same as Advanced Worklist
Personal Worklist

• Add the function ‘Personal Worklist’ to the Workflow User menu for additional features
Personal Worklist

- Personal Worklist additional Features

  - Personalize – create new views or change existing view
  - Simple Search – search for specific notifications
  - Export – downloads to .csv file format

TIP: Vacation Rules - Redirect or auto-respond to notifications.
TIP: Worklist Access - Specify which users can view and act upon your notifications.
Personal Worklist Simple Search

- Use Simple Search to search for specific notifications in your worklist
Personal Worklist Advanced Search

- Or Increase ability to find notifications in your worklist using Advanced Search

- Add Fields to search by

- "And" or "Or" search

- Add Fields to search by
Status Monitor

- Check the status of approval of your requisitions

**ORACLE** Self Service Workflow

- Click on status monitor
- Enter search criteria
- Click Go to search

Click the radio button next to a process
Then click the Notification History, Status Diagram or Participant Responses button
Status Monitor

- Notification History Page
  - All notifications sent by the workflow process selected
  - Click recipient name to send an email
  - Reassign if recipient is unavailable
Status Monitor

• Follow the green line to follow the process
Status Monitor

- Double click in the process box to drill down
Status Monitor

• Tabs below the status monitor provide information about the node
  • Notification has been sent to Catherine Baker
  • Catherine has not responded

Process has stopped here

Click on status tab to see who was notified
Status Monitor

- Errored items appear outlined in red
Status Monitor

- Participant Responses Tab shows responses to all the notifications for the workflow process selected.
Diagnostic Reports

- Need Oracle Diagnostic Tool Responsibility
- Starting in 12.0.6, RBAC is utilized for Diagnostics
  - See MOS Note: 753979.1
- Sample of workflow related user tests
  - Other workflow related tests are available

| Po Approval | This test collects all the data related to approvals for any purchasing document type. Use this test whenever a data collection of approvals data is required specific to a document. **Parameters:** Responsibility, Operating Unit, Document type and document number are required. Release number is only required when collecting workflow data for a release against a blanket or contract agreement. Leave this parameter blank in all other cases. To resolve any issues with the execution of this test, please refer to the Diagnostics FAQ. |
| Account Generator | This diagnostic test will help diagnose issues related to the PO Account Generator for non-OPM installations. This test is meant for items of type expense and inventory and not shop floor. To resolve any issues with the execution of this test, please refer to the Diagnostics FAQ. |
Diagnostics

- MOS Note: 1083807.1 shows full catalog for 12.1.3
- Look for Diagnostics in applications other than workflow

<table>
<thead>
<tr>
<th>Order/Line</th>
<th>Workflow Validation</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Close Ready Headers (without WF)</td>
<td>732137.1</td>
<td>This test lists open order headers that do not have open lines and WF-detais.</td>
<td>Setup</td>
</tr>
<tr>
<td>Lines In WFERROR/OMERROR</td>
<td>732143.1</td>
<td>This test lists lines that have WFERROR/OMERROR flows, but are no longer in error</td>
<td>Setup</td>
</tr>
<tr>
<td>Lines In Workflow Error</td>
<td>732145.1</td>
<td>This diagnostic test shows the summary of order lines that are stuck in Workflow</td>
<td>Setup</td>
</tr>
<tr>
<td>Order Headers Ready To Close</td>
<td>732183.1</td>
<td>This diagnostic test identifies order headers that are ready to be closed.</td>
<td>Setup</td>
</tr>
<tr>
<td>Orphan Workflows</td>
<td>732142.1</td>
<td>This diagnostic test identifies line flows that do not have corresponding order</td>
<td>Setup</td>
</tr>
<tr>
<td>Workflow Status</td>
<td>732147.1</td>
<td>This test prints the detailed information of Header/Line Workflow status</td>
<td>Setup</td>
</tr>
</tbody>
</table>
WORKFLOW TROUBLESHOOTING FOR SUPER USERS
Junior Administrator

- Allows limited Administration of workflows
  - By workflow Type (up to 10 per grant)
  - By administration action (view, retry, abort, etc)
    - Recommend View and Retry
- Applies only to Status Monitor, does not grant admin rights to events, notifications, etc
- OAUG Conference Paper Database
  - What’s New in Workflow: 11iRUP5, RUP6 and R12
    - Includes detail setup instructions for Junior Administrator
Worklist Access

- Grant access to SYSADMIN emails
- Must login as SYSADMIN to create grant

- Use Personal Worklist and Worklist Flexfields to show error message
- Enable Export button
RetryErrored Workflows

- Dates - based on error date – not on original start date
- Perform Commit
  - ‘No’ = commit at end
  - ‘Yes’ = commit after each retry

Parameters

<table>
<thead>
<tr>
<th>Item Type</th>
<th>PO Approval Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item Key</td>
<td></td>
</tr>
<tr>
<td>Process Name</td>
<td></td>
</tr>
<tr>
<td>Activity Label</td>
<td>DOCUMENT_MANAGER_FAILED_SYSADM</td>
</tr>
<tr>
<td>Errored On or After (DD-MON-RRRR)</td>
<td></td>
</tr>
<tr>
<td>Errored On or Before (DD-MON-RRRR)</td>
<td></td>
</tr>
<tr>
<td>Maximum Retries</td>
<td>5</td>
</tr>
<tr>
<td>Perform Commit</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Resend Failed/Error Workflow Notifications

- Resend notifications with a mail status of FAILED or ERROR
- Make corrections first such as email address corrections
Resend Failed/Error Workflow Notifications

• Caution
  • You don’t always want old notifications to be sent
    • Many workflow systems need cleanup and have orphaned workflows and notifications many years old
  • Consider first a SQL update to WF_NOTIFICATIONS to set MAIL_STATUS to null where STATUS = ‘CLOSED’ or ‘CANCELLED’
    • STATUS is the workflow status
    • MAIL_STATUS is the notification status
  • Refer to the workflow book for more details on cleanup of your workflow system
WORKFLOW TROUBLESHOOTING FOR ADMINISTRATORS
Workflow Administrator

- Set to Responsibility
  - Workflow Administrator Web Applications
- Ensure patches do not reset value
  - AutoConfig parameter s_wf_admin_role
- Add ability to run concurrent requests to menu and create appropriate request group
- Ensure SYSADMIN and user assigned to Mailer have this responsibility
Workflow Directory Services User/Role Validation

• Symptoms
  • Not receiving notifications
  • Missing responsibilities for users
• MOS Note: 429852.1
  • Follow recommendations based on current release
• MOS Note: 1246824.1
  • Run “Workflow Directory Services User/Role Validation “ with argument values as 10000:Yes:Yes:No:Null
  • Run “Synchronize WF Local Tables” with default values
Workflow Directory Services User/Role Validation

- Run Twice
  1. Fix Dangling User/Roles
     - Fix Dangling User/Roles=Yes
       - Removes association from WF_LOCAL_USER_ROLES if user or role is missing
     - Add Missing User/Role Assignments=No
  2. Add Missing User/Role Assignments
     - Fix Dangling User/Roles=No
     - Add Missing User/Role = Yes
       - Adds missing associations in the WF_LOCAL_USER_ROLES to have corresponding user/role assignments in the WF_USER_ROLE_ASSIGNMENTS table
CRM Workflow Issues

Synchronize Workflow Roles

• **Symptom**
  - Workflow errors with “‘x’ is not a valid role or user name” error message

• **Resource Manager enables group and Team members to receive Workflow notifications**
  - This program synchronizes all attributes and records in the workflow `wf_local_*` tables with the mismatching records in Resource manager
Preferences

• Users can change the notification type preference via the preferences button
• Remove preferences button by setting profile option General Preferences Show Flag to No
• Changing global preference does NOT override preferences set individually
Incorrect Preferences Cause Problems

• If users are not getting emails or emails display incorrectly, check the email style in the preferences

• If users choose summary email styles, the summary email notification must be scheduled in the mailer setup
Worklist Flexfields

• Allows display of attributes from message body in the notification worklist
  • Allows value to be seen without having to open the notification
  • Only Available Using Personal Worklist
• Specific to particular workflow therefore best used when creating special view for that workflow
• What’s great about this?
  • Create personal worklist view to separate notifications by type
    • PO Approval more important than Invoice Approval so respond to these first
  • Create personal worklist view to see error messages
Worklist Flexfields - Create Flexfield Rule

- Example – Add the error text to the worklist
  - Workflow Administer creates flexfield rules
  - End Users can access the flexfields created
  - Click Create Rule to assign message attribute to flexfield
Worklist Flexfields - Create Flexfield Rule

- Name the rule and leave other attributes as shown

Click Next
Worklist Flexfields - Create Flexfield Rule

- Select the System: Error workflow using display name
Worklist Flexfields - Create Flexfield Rule

- Select the message attributes you want to add to the worklist for the workflow chosen in step 2
Worklist Flexfields - Create Flexfield Rule

- Map the message attributes to a mapped column based on data type (Text, date, etc…)
- Click the Find Conflicts button to confirm no duplicate mappings
Worklist Flexfields - Create Personal Worklist View

• Use the Personalize button to create a new view
Worklist Flexfields - Create Personal Worklist View

• Click the Rename Columns button to assign a name to the attributes created
• This will be the column name on the worklist
Worklist Flexfields - Create Personal Worklist View

- Limit the search to WFERROR workflows
Worklist Flexfields - Sample Views for WFERROR

Errors from Events

Errors from Item Types
OAM vs Workflow Administration

- **OAM Workflow Page**
  - Use to monitor the workflow system as a whole
  - Research all errors
    - Drill down to workflow type and process
  - Set up mailer
  - Monitor Agents and Queues
- **Workflow Administration Menus**
  - Troubleshoot specific errors
  - Troubleshoot specific notifications
OAM Dashboard

- Notification mailer will not show if notification mailer is not activated
  - Notifications still appear in worklist
- All other icons should be green
  - Background Engines, Purge and Control Queue Cleanup show if concurrent requests scheduled
  - If Mailer is down, Service Components will be, must click to check if issues with other listeners
OAM – Throughput

- If mailer is down, notifications waiting will continue to grow
  - Common in cloned environments
  - See workflow book for proper cloning steps
- Processed
  - STATUS = OPEN
  - MAIL_STATUS = SENT
- Waiting
  - MAIL_STATUS = MAIL
OAM – Work Items

- Hovering mouse over bar yields exact count
  - Active includes errored processes
- Click on bar to drill down
  - Drill down also available by clicking on (or X) next to Purge in dashboard section and selecting view

Active Value: 34442
Error Value: 14132
OAM – Work Items Drill down

• Shows errored work items by item type
• Workflow types with high error counts most likely indicate a problem in the process

Click on item type hyperlink to drill down further.
Tips – Refresh Button

• OAM forms do not perform new queries (unless refresh button is pressed)
• Schedule the following programs for refresh
  • Workflow Agent Activity Statistics concurrent Program
  • Workflow Mailer Statistics Concurrent Program
  • Workflow Work items Statistics Concurrent Program
OAM – Work Items Drill down

- Shows process in error for item type

Click on process name hyperlink to drill down further

Default is 30 days
OAM – Work Items Drill down

- Shows specific workflows in error for specific process
- Abort All and Retry All buttons unique to OAM

Select workflow and launch workflow monitor
--Same as admin menus
OAM – Work Items Drill down

Also includes links to Activity History, Participant Responses and Workflow Details

--Also in admin menus
Activity History Link

Click notification status link to view and respond (if Open) to notification.
Activity History Activity Section

- Participant Responses – view list of all notification activity and status

Click on the notification icon to see response details
Activity History Activity Section

- Participant response detail including any notes
- Also available from Participant Responses link

**Notification Response Details**

- **Notification Subject**: Journal batch JE Approval Example 17-AUG-2011 23:40:31 requires your approval.
- **Respondent**: Stock, Pat
- **Original Recipient**: Brown, Casey
- **Notification Sent**: 17-Aug-2011 23:41:23
- **Response Received**: 17-Aug-2011 23:54:09
- **Response**: Approve

**Signature Details**

This notification did not require a signature.

**Additional Response Information**

This notification asked the respondent to provide the following information. Some or all fields may be blank.

Comment
Activity History Hierarchy Section

- Expand the list to show child workflows

<table>
<thead>
<tr>
<th>Focus Process Name</th>
<th>Status</th>
<th>Workflow Type</th>
<th>Item Key</th>
<th>User Key</th>
<th>Owned By</th>
<th>Started</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invoice Approval - Main</td>
<td>Error</td>
<td>AP Invoice</td>
<td>83994_1</td>
<td></td>
<td></td>
<td>20-Sep-2004 07:18:33</td>
<td></td>
</tr>
</tbody>
</table>

- Click the process name hyperlink to show activity history for the child workflow

Click the Error hyperlink to get the full error stack
Workflow Details Link

- Workflow attributes
- Shows all values related to the workflow process including error messages
- Partial list shown here
- Workflow administrator can edit attributes and rewind/restart process
Workflow Administration

- Troubleshooting tools are in Status Monitor and Administration tabs
Workflow Administration - Status Monitor

- Search for specific workflows here
- Activity history, status diagram, participant responses and workflow detail same as OAM

Need invoice id

Look for items in error
Workflow Administration - Administration

• Notification search in this window allows search for notifications for others
Overview

• My Oracle Support Notes
  • 378287.1 or 1320509.1 – “Latest ATG News”, “E-Business Workflow Information Center”
  • 461431.1 – "Script to Check What Workflow Related Patches Are Installed in EBusiness Suite R12"
    • One-offs not usually included
  • 336843.1 or 275379.1 – "Oracle Workflow Diagnostic Script wfreleases.sql (Release 11i)", "Script to Check What ATG/Workflow Related Patches Are Installed In EBusiness Suite"
    • Includes very few one-offs
  • 342459.1 – “E-Business Support Diagnostics Overview"
    • Click 'R12 Catalog' or '11i Catalog' to get current list of Diagnostics
  • 135266.1 – "Oracle HRMS Product Family – Release 11i and 12 Information"
    • HR patches are important for valid Directory Services functionality even when only running shared HR
Workflows MUST be configured

- Timeouts
- Example – REQAPPRV
- Timeout not defined
Workflows MUST be configured

- Performers
  - Example – APEXP
  - Who is informed if rejected
Workflows MUST be configured

- Account Generators
- If Using Projects, MUST customize POWFPOAG, POWFRQAG, PAAPINVW
Workflows MUST be configured

• Attributes
  • Example – CREATEPO, POERROR
  • Auto Create Allowed
  • Auto Approval Allowed
  • Is contact required
Workflow Performance

• OAUG Conference Paper Database - 2011
  • Workflow Performance Tuning in Release 12
    • Replace slide recommending parameters for SYSADMIN with a recommendation to “Change Framework User from SYSADMIN to User Dedicated to running the Mailer”
    • See next Slide for explanation
Workflow Mailer

• Mailer User
  • Must be a workflow administrator
    • Will force administrator to be a responsibility
  • Should have following responsibilities only
    • System Administrator
    • Responsibility used as workflow administrator
  • Should not be a user with other duties

• Why not SYSADMIN
  • Performance: SYSADMIN usually has too many of own emails due to WFERROR emails
  • Manageability: Enabling log for SYSADMIN includes many other functions than mailer thus hampering troubleshooting
Workflow Mailer

- Do NOT sign into Mailer email account to monitor activity (marks emails as read, won’t go to EBS)
- If using inbound, use the Test Mailer functionality to ensure both types of messages can be processed
- Cloned instances
  - Cannot share same inbound mailer account
  - Cloned instance will “steal” emails from production
- Use Override Notification Mailer Address
- If shut down mailer, change mailer preferences globally and for individual users
  - Stored in FND_USER_PREFERENCES
  ```
  UPDATE fnd_user_preferences
  SET preference_value = 'QUERY'
  WHERE preference_name = 'MAILTYPE'
  AND preference_name != 'QUERY';
  ```
Queries for Error Message From Errored Activity

SELECT  
wiasv.item_type
       ,wpa.process_name || ':' ||
       wiasv.activity_label activity
       ,wiasv.item_begin_date ,wiasv.item_end_date
       ,wiasv.activity_begin_date
       ,wiasv.activity_end_date ,wiasv.item_key
       ,REPLACE (wiasv.error_message, CHR(10), '; ')  error_message
       ,REPLACE (wiasv.error_stack, CHR(10), '; ')  error_stack
FROM  wf_item_activity_statuses_v wiasv
       ,wf_process_activities wpa
WHERE wiasv.activity_id = wpa.instance_id
    AND wiasv.error_message IS NOT NULL
    AND wiasv.activity_status_code = 'ERROR'
ORDER BY 1 ASC, 2 ASC, 3 DESC;
Queries for Error Message
From WFERROR – Errored Item Type

```
SELECT Wf_Notification.GetAttrText(notification_id, 'ERROR_ITEM_TYPE') errored_workflow,
       Wf_Notification.GetAttrText(notification_id, 'ERROR_ACTIVITY_LABEL') errored_activity,
       begin_date_sent,
       REPLACE (subject, CHR (10), '; ') subject,
       REPLACE (Wf_Notification.GetAttrText(notification_id, 'ERROR_MESSAGE'), CHR (10), '; ') error_message,
       REPLACE (Wf_Notification.GetAttrText(notification_id, 'ERROR_STACK'), CHR (10), '; ') error_stack
FROM wf_notifications
WHERE MESSAGE_TYPE = 'WFERROR'
  AND message_name = 'RESET_ERROR_MESSAGE'
  AND status = 'OPEN'
ORDER BY 1 ASC, 2 ASC, 3 DESC;
```
Queries for Error Message

From WFERROR – Errored Event

```sql
SELECT Wf_Notification.GetAttrText(notification_id, 'EVENT_NAME') error_event,
       Wf_Notification.GetAttrText(notification_id, 'EVENT_KEY') event_key,
       begin_date sent,
       REPLACE (Wf_Notification.GetAttrText(notification_id, 'ERROR_MESSAGE'), CHR (10), '; ') error_message,
       REPLACE (Wf_Notification.GetAttrText(notification_id, 'ERROR_STACK'), CHR (10), '; ') error_stack
FROM wf_notifications
WHERE MESSAGE_TYPE = 'WFERROR'
  AND message_name = 'DEFAULT_EVENT_ERROR'
ORDER BY 1 ASC,
         3 DESC;
```
Summary

- Workflow is for everyone
- Everyone benefits from
  - Better information
  - Smoother performance
  - Less errors, reduced frustration, increased throughput
  - Enablement to perform assigned tasks
    - Increased efficiency
    - Happier Employees
    - Reduced turnover
    - Lower costs
Release 12 Books by Rolta Employees

The ABCs of Workflow for Oracle E-Business Suite Release 11i and Release 12

Available from Amazon.com, Barnes & Noble (bn.com), Lulu.com

The Release 12 Primer – Shining a Light on the Release 12 World
Questions?

Thank You!

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