Configuring a Windchill ProjectLink 7.0 Workflow and Lifecycle

This information only applies to:

Product Windchill PDMLink with ProjectLink, Revision 7.0, FCS. All other Revisions are not validated.

Last Updated: 11 June 2004

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Summary

.....Create the workflow

........Define the Properties of the Workflow

........Define the Custom Workflow

.....Create the lifecycle

.....Ad hoc use of the Workflow and Lifecycle

.....Enforce use of the workflow and lifecycle via a document template

Summary

This document illustrates how to configure a workflow and lifecycle for use in Windchill ProjectLink 7.0.

The business scenario covered within this tutorial enables core internal project participants to collaborate on the approval of a document by leveraging the Windchill ProjectLink workflow engine capabilities. After a document is fully approved, team members outside of the internal approval process will automatically be notified of this event via standard email communication.

Topics include creation of the workflow and lifecycle, creating an assignment task page to display disposition radio buttons and a hyperlink which points to the running workflow, enabling the new lifecycle / workflow for use within the organization, and
finally running the configured workflow by using either an ad-hoc document routing or by simply selecting the type of document during its creation.

Create the workflow

Note: This is a detailed summary of how to create the workflow. You may wish to use the existing, out of the box, Release Process workflow and perform a Save As to a new name. Should you decide to leverage the existing workflow, you will only need to create the Workflow Process Variable "procMgrLink", Expression robot, Observer Activity, as shown in the following example. Also edit the existing Approval Request Activity Instructions to create the link (procMgrLink) to the running workflow.
Log into Windchill ProjectLink as an Organizational Administrator for the organization you want the workflow to be used in.

Select the Organization tab

Select the Utilities link

Select the Workflow Administrator link
Select the Create button
Define the Properties of the Workflow

Select the Properties link
The name of this workflow is Custom Workflow.
Complete as shown in the image below.

Note about the purpose of this workflow. The Windchill ProjectLink “Approval” role will be required to approval the document. The Windchill ProjectLink “Reviewer” role will receive a task to review the document and add comments, if desired. Note that this step will not be required. The Windchill ProjectLink “Observer” role will NOT receive any tasks – only an email notification that the document was approved. There will be no user action required (to select the team members) when routing the document, as long as there are users assigned to the Windchill ProjectLink roles approver, reviewer, and observer. Verify that your project team members have users assigned to these three roles.
Select the Variables Tab

Select the create button
Name is PJL_Instructions_Variable
Type is java.lang.String

Full Control / Resetable
Select OK
Create another variable called PJL_Distribution_List
Type wt.team.Team

Select OK
Create another variable called procMgrLink. This will enable us to later create a link in the Assignment approval task that will let us see the running workflow.

Select OK
Summary of what variables you should have is shown below

<table>
<thead>
<tr>
<th>Name</th>
<th>Type Name</th>
<th>Visible</th>
<th>Required</th>
<th>Read Only</th>
<th>Reusable</th>
<th>DefaultValue</th>
</tr>
</thead>
<tbody>
<tr>
<td>it</td>
<td>vt: ObjectReference</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>primaryBusinessObj</td>
<td>vt: vti: W RO Object</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PNL_Instructions_V</td>
<td>java.lang.String</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PNL_Distribution_L</td>
<td>vt: beam: Team</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>procMsgLink</td>
<td>java.lang.String</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Select the errors tab and fill out accordingly.
Then select OK.
Define the Custom Workflow

Summary
Create a method robot

Select the ? link
Name, Robot Type, Parameter, and Specific State as shown above.
Select OK
Create an Execute Expression Robot.

This is the step explained earlier about creating a java expression to show a link in the workflow task that will take us to the running workflow.

Select the Expression hyperlink
Select the Expression tab
Enter this code:

Next line is start of code

String wfoId = self.toString();
wt.httpgw.URLFactory urlFactory = new wt.httpgw.URLFactory(); procMgrLink =
wt.httpgw.GatewayServletHelper.buildAuthenticatedHREF(
urlFactory,
"wt.enterprise.URLProcessor",
"URLTemplateAction",
"action=ProcessManager&appId=PDMLink&oid="+wfoId
);
System.out.println("Resolved the following link: 
"+procMgrLink);

Previous line is end of code

Use the Check Syntax to make sure all is well.

Select OK / OK
Create an Activity
Select the Activity 1 Hyperlink
Name the activity Approval Request and add a description

Select the Activity tab

![Approval Request Properties dialog]

- Default
- Instructions
- Send Notification (the approver participants will get an email)

Note that electronic signature (Signing required) is currently not supported in Windchill ProjectLink

Instructions for your convenience are shown below.

Review and approve: {primaryBusinessObject}
All approvers must review this document and approve, request a revision or reject the document.
Enter comments in the discussion area.

Instructions from author:
{PJL_Instructions_Variable}

View Running Workflow:
Process Monitor: <a href="{procMgrLink}" target="_blank">Review Process</a>
Select the Participants tab. These are the Windchill ProjectLink team member roles that will get this activity.

Use the roles tab to add the appropriate roles (Approver and Reviewer). Remove the Creator role. If the Approver required check box is selected then either any, all, or number will need to approve this task. (Select All)

Note we will not be adding the Observer role here. We do not want the observers to receive the approval task but only to be notified that the task has been approved. Also, make sure your Windchill ProjectLink project has these roles and real users assigned to them in the team tab.
Select the Deadline Tab

Compete as shown. These are the mechanisms to create an escalation procedure. You may define what/when roles get notified.

Select the Create button
Use the Initialize From dropdown to select PJL_Instructions_Variable

Select OK
Repeat this for PJL_Distribution_List

Full Control / Resetable
Repeat this for procMgrLink

Summary of variables

<table>
<thead>
<tr>
<th>Name</th>
<th>Type Name</th>
<th>Visible</th>
<th>Required</th>
<th>Read Only</th>
<th>Resettable</th>
</tr>
</thead>
<tbody>
<tr>
<td>PrimaryBusinessObject</td>
<td>wtc.WObject</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Full_InstructionsVariable</td>
<td>wtc.long.String</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Full_DistributionList</td>
<td>wtc.long.String</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>procMgrLink</td>
<td>wtc.long.String</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Select OK
Select the Routing Tab  
Select Routing Type – Manual exclusive

Type in the three possible routing events Approve, Revise, and Reject.  
Note: These will automatically show up as radio buttons in the assignment task page for the user to enter their disposition of this task.

Java code begins on next line:

```java
//Get the object that represents this activity  
WfAssignedActivity mySelf = ((WfAssignedActivity)self.getObject());  
//Set result to "reject" if it has been chosen by all of the required users. In all other cases,  
set result to "Revise"  
result = WfTally.all(self, "Reject", "Revise");  
if (result != "Reject") {
    //Set result to "approve" if it has been chosen by all of the required users. In all other cases, set result to "Revise"  
result = WfTally.all(self, "Approve", "Revise");  
}
```

Java code ends on previous line.

Check Syntax to make sure all is well.
Select the errors tab

![Approval Request Properties dialog box]

- Select OK
- Create a new Activity
Select the Activity 2 hyperlink

Name the activity
Note: This activity is going to be an unattached workflow activity. The only purpose of this activity is to initialize the Observer role so that it will show up in the Route user interface “Define the Distribution List” when the user is actually routing the document. The bottom line is that unless users are selected during the route, they will not be part of the PJL_Distribution_List and will never receive notification from the workflow.

Select the Activity tab

![Diagram of Bogus Activity for Observer Properties](image)

Note that the send notification is unchecked. This is because we don’t want them to receive any tasks but only an email that the task has been approved. We will define the email robot later in this document.

Select the Participants tab
Use the roles tab to add the Observer role.
Remove the Creator role

All other tabs can be left to the default
Select OK
Create a method robot

Select the ? hyperlink
Name is Set State Approved
Robot Type Set State
Specific State Approved
Select OK
Create a method robot

Select the ? hyperlink
Set as shown and select OK
Create an Activity

Select Activity hyperlink
**Revise and Resubmit Properties**

<table>
<thead>
<tr>
<th>General</th>
<th>Activity</th>
<th>Participants</th>
<th>Deadline</th>
<th>Variables</th>
<th>Routing</th>
<th>Transitions</th>
<th>Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name:</strong></td>
<td>Revise and Resubmit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Category:</strong></td>
<td>Default</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Responsible Role:</strong></td>
<td>Process Initiator</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Description:</strong></td>
<td>Activity to revise a document in which one or more of the approvers requested a revision.</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

Name is Revise and Resubmit
Select the Activity tab

Send Notification

Instructions shown below for your convenience

One or more of the approvers requested that you revise {primaryBusinessObject}.
See comments in document discussion forum.

Please revise {primaryBusinessObject} and complete this task to resubmit for approval.

Create or update review instructions and include comments regarding changes since prior review (if any).
Select the Variables tab

Select the create button
Complete as shown
Select OK
Select the errors tab

```
Revise & Resubmit Properties

Error Handling Policies

- Notify the responsible role if there is an error
- Notify the responsible role on abort
- Abort if there is an error
- Abort the parent process (if any) on abort
```

Select Ok
Create the email notification robot “Notify By Email”

Select the Notification link
Name is Document Approved
Select the recipients tab

Use the Roles tab to add the Observer Role

Use the Variables tab to add PJL_DistributionList
Select the Message tab

Compete as shown (Use the Variable button for the {primaryBusinessObject})
Select OK
Create a method robot

Select the ? hyperlink
Complete as shown – Select OK
Create the email notification robot “Notify By Email”
Select the notification hyperlink
Name is Document Rejected
Select the Recipients tab
Use the Variables tab to add PJL_Distribution_List

Select the message tab

Select OK
Create an Or connector and an End
Use the Action icon to connect everything as shown (13 places)
Select the ? hyperlink
Select the Start dropdown from the Approve event. Select OK
Select the ? hyperlink
Select the Start dropdown from the Reject event
Select OK
Select the ? hyperlink.
Select the Start dropdown from the Revise event
Select OK
Loop Link and Start from the Complete event
Select OK
Use File / Save to save the workflow
Then Exit the workflow editor.
Select the new workflow and use the “Checkin” button. The Cabinet should show “System” and the context should show the administrator’s organization.
Create the lifecycle
Log into Windchill ProjectLink as an Organizational Administrator where you want the lifecycle to be used in.

Select the Organization / Utilities tab

Select the Lifecycle Administrator
Select the existing Approval Life Cycle and choose the Save As button. Note: Do NOT modify the existing lifecycle.

The name is CustomLifecycle
Select OK
Select the new lifecycle and select the Update button
Select In Work phase, Workflow tab, then the Browse button

To always use the latest workflow iteration
Select the “CustomWorkflow” workflow.
Select OK / OK
Select the new life cycle and pick the Check In button / OK.

The context should show the organization of your Organization Administrator.

Make sure the lifecycle is enabled and there is a check box for routing. When routing a document in Windchill ProjectLink, these enabled routing lifecycles will be displayed in the Route user interface.

*Clear your Tomcat Work directory and restart your method server.*
Congratulations you are now ready to use the configured workflow and lifecycle by leveraging an ad-hoc routing.

Select See Actions from a document / Select Route
Select the Custom Lifecycle routing

Select Next

Note that all the team members are automatically populated from the project team roles.

Select Next
Enter any instructions
Select OK

This concludes the process to initiate the workflow. You may now proceed with the assigned tasks to verify that all team members are included in the approval. Also verify that the observer role receives an email that the document was finally approved.

Below is the new assignment task page we have created.
Workflow Process we are using

Instructions

Disposition Radio Buttons

New link to the running workflow
Navigating the “Review Process” Hyperlink, we now see the running workflow
Enforce use of the workflow and lifecycle by leveraging a document template.

To create the document template:

**YOU MAY NEED LOG IN AS THE EXCHANGE ADMINISTRATOR**

Select the Organization Tab

Create Type
Give it a name
Use the Custom Lifecycle you have created.
Now create a document, which will use the new document type and workflow.
Browse to your document

Give it a name

Select the new document type / OK

The configured workflow will automatically be launched and your business process scenario will be enforced.