

Custom Workflow Guide

Version 15.4



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Introduction to Custom Workflows

ImageQuest is a full-featured enterprise-level digital content management system. But it can do more than just store documents. Many ImageQuest users are aware of the Accounts Payable Workflow feature, which allows financial documents to flow through approval processes and validate against external general ledger systems. However, it is important to know that ImageQuest also allows customers to define their *own* workflows by making Custom Workflow Definitions. With Custom Workflows, customers can

- Set attribute values dynamically based on values of other attributes
- Generate approval tasks and route them to users or roles based on conditional logic
- Create parallel tasks
- Send notifications based on conditional logic
- Rotate pages
- Assign general ledger coding tasks
- And more!

This guide will walk through a simple example custom workflow in order to give a feel for how workflows can be configured with an intuitive drag-n-drop workflow designer.

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Requirements

- ImageQuest 15.4 must be installed and licensed
- The Workflow Engine module must be licensed
- At least one Document Type must be configured for use with a custom workflow
- Workflow Settings must be properly configured and enabled in IQadministrator
- For custom workflows with GL Code Approval tasks, an ODBC compliant data source for GL Codes must be available for lookup and validation.

Workflow Designer

Creating Your First Workflow

This section walks through creating a simple custom workflow definition, showcasing basic attribute operations, approval requests, and flow logic. This example uses a Document Type called "Invoice" with text attributes for invoice name and invoice number, a numeric currency attribute for invoice amount, and a list attribute for invoice status. The purpose of the workflow will be to set the invoice status of the document automatically for certain invoice amount values and to send the document for manual approval for other invoice amount values.

Custom workflow definitions can be viewed and managed on the Workflow Definitions screen of IQadministrator (which is only accessible to the ImageQuest administrator). To create your first workflow definition, click the "New" button. This opens the Workflow Designer.

Cabinet: DemoCabinet	~			IQadministrator						- 0	×
File											
DemoCabinet ^			Workflow Definitions						믊		
 Manage Users and Roles Manage Document Types Manage Document Groups Saved Queries Document Destruction Rules Destroy Deleted Documents OCR Settings Notification Rules Workflow Settings Workflow Settings Manage File Storage Configure IQfolder Configure IQmfp (OXPd) 		Custom Workflow D buttons at the bott file. Use the buttor shows details regar the ImageQuest Cu Id Workflo	efinitions allo m of the so: is in the grid ding differen stom Workfil Create	ows administrators to defin reen to create a new workt to activate/deactivate, ed it revisions of the workflow w Guide. Created On	e custom flow usin lit and im i, For dor Active	workflow g the Work port/exposed cumentation Running	processes ar fifow Designe t your existin n and details Completed	ound your business r or to Import an e ng workflows. Expan regarding this feat Current Definition	practic isting o nding a ure, ple	es, Us: lefinitic workfi ase re	e the in from ow ference
								Impo	rt	N	lew

There are four main areas in the Workflow Designer, designated as follows.

- 1. Activities Activities are actions or logical flow operators that can be added to your custom workflow. Examples would be setting a document attribute or making a decision about where an approval task should be assigned.
- Workflow Canvas This is where activities are dropped, connected, and edited to form a workflow. Each activity shows as an element on the canvas with a title and often some options. It is worth noting that some activities contain *other* activities, in which case you are able to drill down into parent activity's own canvas.
- 3. **Properties Panel** Each activity can have its own properties, such as Display Name or input/output variables. These can be edited in the Properties Panel.
- 4. **Variables** The Variables tab is used to define variables, which can be used for tracking workflow state, for storing and setting attributes, and for conditional logic.

😞 Informa Workflow Designer		2	- 🗆 X
File		3.	~
Search	Warlflaw Titlay New Warlflaw	Informa ImageOuest Core	Workflow Activities
▲ Document Approval			Activities
RequestApproval2	RootWorkflow Z. Expand All Collapse All	Search:	Clear
SendNotification		Misc	
A Document Attributes		DisplayName	RootWorkflow
🕒 GetTextAttribute		DocumentTypes	(Collection)
GetNumericAttribute			
🕒 GetIntegerAttribute			
🕞 GetListAttribute	RootWorkflow		
☐ GetDateTimeAttribute	Select the document types for this workflow:		
GetTrueFalseAttribute			
GetDocumentGroup	Mere Scan		
GetDocumentType			
SetTextAttribute			
SetNumericAttribute			
SetIntegerAttribute			
SetListAttribute			
SetDateTimeAttribute			
SetTrueFalseAttribute			
SetDocumentGroup	\bigtriangledown		
Custom Activities	Drop your workflow actions here.		
AssignDefaultGLCode			
GenerateGLCodeReport			
GLCodeApproval2			
InvoiceApproval			
MarkExportStatus			
RotatePages	Variables Imports 🔽 🗖 🗖		
Standard Activities			
Assign			
Assign <t></t>	4.		
Sequence			
Delay			
TryCatch			
< >			

First, give the workflow a name, as in the screenshot below. This is the name that will appear in the "Action" column in the Work Queue in IQdesktop.

몷	Informa Workflow Designer				
File	e				
Sea	arch		Workflow Title	Custom Approval Workflow	
4	Document Approval	^	Working Process		
	RequestApproval2		RootWorkflow		
	SendNotification				

Next, check the Invoice document type in the "RootWorkflow" activity on the canvas. This tells the workflow to execute whenever a new document of type Invoice is created in ImageQuest. Note: multiple document types may be selected to run the same workflow on multiple document types.

Next, let us set the Invoice Status attribute of the document to reflect that it has entered the workflow. Drag the "SetListAttribute" activity from the left onto the workflow canvas.



This adds a SetListAttribute activity to the canvas. Note that activities can be given custom names. We will call this one "Set Invoice Status" and select the "Invoice Status" as the attribute to be set.

\bigtriangledown
🔊 Set Invoice Status 🔶 🔗
Document Attribute
Invoice Status
New Value
Enter a new value
Auto-add new list items?
\bigtriangledown

Set the new value to be "In Process", which is one of the values in the invoice status list. Note that this must be in quotations marks to denote that we are providing a text value. Also, the value entered must exist in the list or the workflow will fail.

\bigtriangledown
Set Invoice Status 🔗
Document Attribute
Invoice Status
New Value
"In Process"
Auto-add new list items?

Now let us do some logic. First, add a Flowchart activity beneath the "Set Invoice Status" activity. A Flowchart activity allows for easy implementation of conditional workflow paths.

ExistsInCollection <t></t>		
Control Flow		New Value
DoWhile		"In Process"
Switch <t></t>		Auto add pow list itomo?
ForEach <t></t>		
If		\bigtriangledown
Parallel		
ParallelForEach		
Pick	Variables Imports	
While		
Flowchart Activities		
Flowchart		
FlowDecision		
FlowStep		
FlowSwitch	~	
< >		

Once the activity is added, rename it to "Approval Flowchart".

Auto-add new list items?
\bigtriangledown
္မွန္နဲ့ Approval Flowchart 🛛 📎
Double-click to view
\bigtriangledown

Double-click the activity to open the flowchart. Notice that certain activities like Flowchart activities have their own canvases. You can navigate up the canvas tree by using the links above the canvas.

Workflow Title:	Custom Approval Workflow			
RootWorkflow	Approval Flowchart		Expand All	Collapse All
				~
🖧 Approv	al Flowchart			
		Start		

The Approval Flowchart will set the invoice status to "Completed" for invoice amount values below \$100. For other values, a manual approval process will be invoked.

To achieve this, we must obtain the invoice amount value, which we will store in a variable for future reference. First, the variable must be created. Click the Variables tab near the bottom of the screen and then click into the "Create Variable" area.

Name	 Variable type	Scope	Default	
Create Variable				
Variables Imports			۹,	· 🛛 🗆

Enter *InvoiceAmount* as the variable name, then select "Browse for Types..." in the Variable Type dropdown.

Name	Variable type Scope Default				
InvoiceAmount	String 💙	Approval Flowchar	Enter a VB expres		
Create Variable	Boolean		L.		
	Int32				
	String				
	Object				
	Informa.ImageQuest.Core.Workflow.ApprovalState				
	Array of [T]				
	Browse for Types				
Variables Imports					

Search for "System.Decimal", select "Decimal" as shown below, and click "OK." (Note: numeric attribute values must be stored in Decimal variables.)

Browse and Select a .Net Type	?	×
Type Name: System.Decimal		
DecimalNumberConverter DecimalZeroNumberConverter		^
 Microsoft.VisualBasic [10.0.0.0] Microsoft VisualBasic CompilerServices 		
DecimalType		
 mscorlib [4.0.0.0] 		
System		
 System.Runtime.CompilerServices 		
DecimalConstant∆ttribute		~
OK	Can	cel

Next, it is time to get the invoice amount value to store in the variable. This is done by adding a GetNumericAttribute activity. After adding the activity to the canvas, change its name to "Get Invoice Amount" and select "Invoice Amount" in the Document Attribute dropdown. Also set *InvoiceAmount* as the Output Variable so that the attribute value is stored in the *InvoiceAmount* variable.

Search	Workflow Title: Custom Approval Workflow	
Document Approval		
RequestApproval2	RootWorkflow > Approval Flowchart	
SendNotification		
Document Attributes	🖧 Approval Flowchart	
GetTextAttribute		
🕒 GetNumericAttribute		
🕒 GetIntegerAttribute		
📑 GetListAttribute		Start
📑 GetDateTimeAttribute		
GetTrueFalseAttribute		Cat Invision Amount
GetDocumentGroup	_	
GetDocumentType		Document Attribute
🔊 SetTextAttribute		Invoice Amount
🔊 SetNumericAttribute		
🔊 SetIntegerAttribute		Output Variable
🔊 SetListAttribute		InvoiceAmount
🔊 SetDateTimeAttribute		
SetTrueFalseAttribute		

Finally, hover over the "Start" node until handles appear on the edges. Click and drag from the bottom handle to the Get Invoice Amount activity in order to connect them.



Now we want to make a decision based on the invoice amount value. First, add a FlowSwitch to the canvas. The FlowSwitch activity tells the workflow to follow different paths depending on certain conditions.



[Get Invoice Amount
	Document Attribute
	Invoice Amount
	Output Variable
	InvoiceAmount
	Switch

When placed, the FlowSwitch prompts to select a type. From the dropdown, select "Boolean".

Select the FlowSwitch and click the ellipsis in the Properties Panel to edit the expression.

Sy	System.Activities.Statements.FlowSwitch <syst< th=""></syst<>								
	Az↓	Search:			Clear				
	Misc								
L	Expres	VВ ег 🛄							
			_						

We will auto-complete the document if the value is less than \$100. To do this, write the following expression to check whether the *InvoiceAmount* variable is less than 100. Then click "OK."

Expression Editor		?	×
Expression (Boolean)			
InvoiceAmount < 100			
	OK	Ca	ancel

Next, add a SetListAttribute activity to the flowchart canvas. Rename the activity and enter the Document Attribute and New Value as shown below. Also, connect the Switch activity to the new SetListAttribute activity. Notice that a "Default" descriptor is added.

GetDateTimeAttribute	
GetTrueFalseAttribute	••••
GetDocumentGroup	
GetDocumentType	Switch
<table-of-contents> SetTextAttribute</table-of-contents>	
SetNumericAttribute	Default
🔊 SetIntegerAttribute	
🔊 SetListAttribute	Set Status to Completed
🔊 SetDateTimeAttribute	Document Attribute
🔊 SetTrueFalseAttribute	Tousice Status
🔊 SetDocumentGroup	Invoice Status
Custom Activities	New Value
AssignDefaultGLCode	"Completed"
GenerateGLCodeReport	
GLCodeApproval2	Auto-add new list items?
TavaicaAparoval	

Click on the "Default" descriptor and then uncheck "IsDefaultCase" in the Properties Panel. Next, set the Case value to "True". This tells the workflow to follow the path to the "Set Status to Completed" activity if the *InvoiceAmount* variable is less than 100. Next, we will define a path for when the *InvoiceAmount* is not less than 100.

If the *InvoiceAmount* is 100 or greater, we will send it for manual approval. To do this, add a RequestApproval2 activity to the canvas. Rename the activity, select the "Role" tab, and select an existing role as shown below. In this example, an approval work item will be generated for the "Custom Department" role.



The result of the approval task must be stored in a variable. Create a new variable called "ApprovalResult" and give it a type of "Informa.ImageQuest.Core.Workflow.ApprovalState." (If this is not in the dropdown, search for it.)

Name	Variable type	Scope	Default		
InvoiceAmount	Decimal	Approval Flowchart	Enter a VB expres		
ApprovalResult	Informa.Imag ×	Approval Flowchart	Enter a VB expres		
Create Variable	Boolean		-		
	Int32 String Object				
	Informa.ImageQuest.Core.Workflow.ApprovalState				
W THE REAL PROPERTY OF A	System.Double				
Variables Imports	System Decimal		L		

Next, in the Properties Panel for the Approve Invoice activity, type "ApprovalResult". This stores the result of the approval task in the ApprovalResult variable.

In	Informa.ImageQuest.Core.Workflow.Activities.Request							
•	Search: Clear							
	Approved	Result						
	CompletedByUser	Enter a VE	expre					
L	DisplayName	Approve Ir	nvoice					

Next, we must set the invoice status based on the result of the approval activity. To do this, add another FlowSwitch activity, this time with a type of "Informa.ImageQuest.Core.Workflow.ApprovalState." In the Properties Panel, set the Expression value to "ApprovalResult" so that the FlowSwitch activity evaluates based on the value of the ApprovalResult variable.

Search:	Clear
Misc	
Expression Approv	valResult

Finally, set the invoice status attribute based on the value of the ApprovalResult. As shown below, two SetListAttribute activities are adde. If the ApprovalResult is "Approved", the status is set to "Completed", and if the ApprovalResult is "Rejected", the status is set to "Rejected".

•	* · · · · · · · · · · · · · · · · · · ·
s	witch
Approved	Rejected
🔊 Set Status to Completed	🔊 Set Status to Rejected
Document Attribute	Document Attribute
Invoice Status V	Invoice Status V
New Value	New Value
"Completed"	"Rejected"
Auto-add new list items?	Auto-add new list items?

This completes the workflow. Zooming out, we can see an overview of the flowchart, which executes the following logic:

- If the Invoice Amount is less than 100, set the Invoice Status to "Completed".
- Otherwise, request approval from the Custom Department.
 - If the approval result is "Approved", set the Invoice Status to "Completed".
 - o If the approval result is "Rejected", set the Invoice Status to "Rejected".



To save the workflow, go to the File menu on the top-left of the window and choose "Save." Close the workflow designer by choosing File \rightarrow Close.

On the Workflow definitions screen, check the "Active" box for the workflow you just created in order to activate it.

	Workflow Definitions								묽		
Custor buttor file. U shows the Im	Custom Workflow Definitions allows administrators to define custom workflow processes around your business practices. Use th buttons at the bottom of the screen to create a new workflow using the Workflow Designer or to Import an existing definition fi file. Use the buttons in the grid to activate/deactivate, edit and import/export your existing workflows. Expanding a workflow shows details regarding different revisions of the workflow. For documentation and details regarding this feature, please refere the ImageQuest Custom Workflow Guide.					e om nce					
Id	Workflow Title	Created By	Created On	Active	Running	Completed	Current Def				
± 2	① 2 Custom Approval INFORMA\ 1/17/2018 ✓ 0 0 2 ✓ + →							→	×		
	E 2 Custom Approval INFORMA\ 1/17/2018 O 0 2										

Testing the Workflow

To test the custom workflow, simply import a document with the Invoice document type. First, we will test the scenario where the Invoice Amount is less than \$100. In this example, we import the following.

Import to ImageQuest							×
Invoice 2012-01-01.pdf	Page 1 of 3 <	> Zoor	m: Entire Pag	ge 🔹			
Select Document Type:							
Invoice ¥							
Invoice Name	Informa Softwar	e		PUR	CHASE ORDE	R	
Test Invoice 1 5	Purchase Order No: AD3224	-				_	
Invoice Number	Purchase Order Date: 11/30/20 Terms: Net 30 Ship Via: Delivery	38					
12345 5	Bill Te: Informa Software		Ship Te: Informa Softwar				
Invoice Amount	2300 Maltiand Center Parkway Suite 220 Maltiand, FL, 32751		2300 Mailland C Suite 220 Mailland, FL 32	ionitor Parkway 761			
\$98.00							
Invoice Status	PEN3456-B	Ball point pers, Black	200 2.3	s	70.00		
v 5	PAD8733-Y	Legal pad, Yellow	25 12	,	31.25		
	DVD4211	DVD 10 Peck	4 25.1	15	103.40		
1					ADDDOVED		
					AFFROTED		
	Notes:						
	Please ship by 12/1/20	008.					
Route							
Route To:							
۲ ک							
Message:							
<u>^</u>							
· · · · · · · · · · · · · · · · · · ·							
Perform text extraction or OCR for keyword searching					OK	Cano	cel

After importing, searching for the document reveals that its Invoice Status has automatically been set to "Completed," as is expected in this case. The Workflow History tab for the document shows that the custom workflow was run. The "Closed" status indicates that the workflow has completed.

Workflow History # ×											
.											
Workflow Name	Originator	Status	Started	LastUpdated	Message	Exported	ExportStatus				
E Custom Appro	Administrator (User)	Closed	1/15/2018 2:44:17 PM	1/15/2018 2:44:17 PM			DoNotExport				
🔒 History 📄	Notes 🛛 💽 Workf	low History	🙀 Active Work Items								

In the next example, the Invoice Amount is greater than \$100, so there should be an extra approval step. First, we import the document.

Import to ImageQuest							
Invoice 2012-01-01.pdf	Page 1	of 3 <	> Zoon	n: Entire	Page	•	
Select Document Type:							
Invoice 🗸							
Invoice Name		Informa Software	,		E	PURCHASE ORDER	
Test Invoice 2 5		Purchase Order No: AD3224					
Invoice Number		Terms: Net 30 Ship Via: Delivery					
654321 5		Bill Te: Informa Software 2020 Multiant Contex Reduces		Ship T Informa 2000 M	e: a Software failing Contact Parks		
Invoice Amount		Suite 220 Mailand, FL 32751		Suite 2 Maitian	20 46, FL, 32751		
\$250.00 to		Product Number	Product Description	Onder Ote	Unit Price	Ext Price	-
Invoice Status		PEN3456-B	Ball point perv, Black	200	2.35	70.00	-
V 5		PAD8735-Y	Legal pad, Yellow	25	1.25	31.25	
		orbier1	DAD IS PACK		20.99	10.0.00	
						APPROVED	
		Notes:					-
		Please ship by 12/1/20	08.				
Route							
Route To:							
V 5							
Message:							
^							
×							
Perform text extraction or OCR for keyword searching].					ОК	Cancel

After import, a search for the document reveals that its Invoice Status is "In Process."

Drag	Drag a column header here to group by that column												
X		8		CreateDateTime	PageCount	DocumentType	Invoice Name	Invoice Number	Invoice Amount	Invoice Status			
			7.	1/15/2018 2:44:13 PM		Invoice	Test Invoice 1	12345	\$98.00	Completed			
			7.	1/15/2018 2:47:52 PM		Invoice	Test Invoice 2	654321	\$250.00	In Process			

Also, the Workflow History panel shows that there is an active work item assigned to the Custom Department role for approving the document. The "Executing" status indicates that the workflow is still in process; in this case, it is pending the completion of the approval work task.

W	/orkflow His	story												ųх
Wo	rkflow Name		Originator		Status	Sta	arted	LastUpdated	Message		Exported		ExportStatus	
Ξ (Executing Custom Approval Administrator (User)		Executing	1/1	15/2018 2:48:04 PM	1/15/2018 2:48:04 PM					DoNotExport			
	Work Items													
	Assigned To Approval St		ate	Completed On		Completed By	Revision	Revision		Comment				
	Custom Depa	artment	(Role)	Pending							0			
ť	History	Not	es 📴 W	/orkflow Histo	ory 🙀 Active Wo	rk Items								

Looking in the Work Queue for a member of the Custom Department role, we see that a work item is pending completion. Here, we open the work item and choose to reject it.

<u> </u>	6	Action	Assigned To		Work Item Age	CreateDateTime	PageCount	Docu
-8		Custom Approval Workflow	Custom Department (Role)		Invoi		
	-8	Complete Workflow Task					>	<
	Doc	cument Attributes		Wo	rkflow Task			
	Doci	ument Type: Invoice	~	Provi provi	ide comments on thi ided. Once your ta	is workflow task in the sp sk is completed select Ap	pace proved or	
	Invoi	ice Name		Reje	cted below and click	Complete.		
	Test	Invoice 2	5	Invoi	ice was reviewed ar	nd rejected.		^
	Invoi	ice Number						
	6543	321	¢					
	Invoi	ice Amount						
	\$250).00	¢					
_	Invoi	ice Status						
-	In Pr	ocess	v 5					
5								
	-							
_								
-								~
				0	Approved	Rejected		
						Complete	Cancel	
						Complete	Cancer	

Searching for the document reveals that the Invoice Status has now been updated to "Rejected." If we had instead approved the work item, the Invoice Status would have been set to "Completed."

Drag a	Drag a column header here to group by that column												
×		8		CreateDateTime	PageCount	DocumentType	Invoice Name	Invoice Number	Invoice Amount	Invoice Status			
			-	1/15/2018 2:44:13 PM		Invoice	Test Invoice 1	12345	\$98.00	Completed			
			7	1/15/2018 2:47:52 PM		Invoice	Test Invoice 2	654321	\$250.00	Rejected			

The Workflow History panel shows details regarding the status of the workflow and the related work item(s).

V	Workflow History											
ų.												
Workflow Name Originator Status						Started	LastUpdated	Message		Exported		ExportStatus
Ξ	Custom Approval Administrator (User) Closed		Closed		1/15/2018 2:48:04 PM	1/15/2018 2:53:07 PM					DoNotExport	
Work Items												
	Assigned To Approval State		ite	Completed On		Completed By	Revision		Comme		nt	
	Custom Departme	nt (Role)	Rejected		1/15/2018 2:52:59 PM		John Smith/jsmith (User)		0		Invoice was reviewed and r	
Ň	🔒 History 📄 📔 I	lotes 📴 V	Vorkflow Histor	ry 🙀 Active Wo	rk Iter	ns						

Other Notes

Below are a few important items to note when working with custom workflows.

- Workflow definitions cannot be renamed once created.
- Workflow definitions cannot ever be deleted once a work item has been processed.
- Once a workflow definition has been used to process a document, a subsequent edit to the workflow definition is saved as a revision to the original definition. *Documents introduced under the old definition revision will continue using the old definition* while new documents will use the new revision. Thus, a workflow definition may have multiple active revisions at once.

Closing Notes

This guide was meant to be a high-level overview of the Custom Workflow feature in ImageQuest. While this example was simple, Custom Workflows can be used to facilitate complex business processes requiring multiple stages of approval, general ledger coding, and data reconciliation with external systems. Please reach out to Informa Software for further help and instruction.