Workflow Builder Module

User Manual - Console Interface

SONARWORKS WORKFLOW SYSTEM

Version 1.0

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1. Introduction

The Workflow Builder is a powerful visual tool for creating and managing workflow templates. It allows administrators to design custom forms with various field types, configure multi-level approval chains, and set access restrictions - all without programming knowledge.

Key Capabilities:

- Visual drag-and-drop form design
- 30+ field types including text, numbers, dates, files, ratings, signatures, and more
- SQL Object fields for dynamic dropdown data from database tables
- Field grouping with collapsible sections
- Multi-form and multi-screen workflow support
- Validation functions for conditional field behavior
- Configurable approval hierarchies with amount-based routing
- Organization-based access restrictions
- Workflow versioning and publishing control
- Dark mode support for comfortable viewing

NOTE: Only users with Admin privileges can access the Workflow Builder.

[Screenshot: Workflow Builder Interface Overview]

Figure: Workflow Builder Interface Overview

2. Accessing Workflow Builder

2.1 From Dashboard

Steps:

Step 1: Log in to the system with admin credentials

Step 2: From the Dashboard, click 'Workflows' in the navigation sidebar

Step 3: Click the '+ New Workflow' button

Step 4: The Workflow Builder opens in creation mode

2.2 From Workflow List

Steps:

Step 1: Navigate to Administration > Workflows

Step 2: Click 'New Workflow' to create a new workflow

Step 3: Or click the 'Edit' button on an existing workflow to modify it

[Screenshot: Workflow List with New Workflow Button]

Figure: Workflow List with New Workflow Button

3. Creating a New Workflow

Creating a workflow involves several steps: defining basic information, designing the form, configuring approvers, and setting access restrictions.

3.1 Workflow Creation Steps Overview

Step	Section	Purpose
1	Basic Information	Name, code, description, category
2	Form Builder	Design forms, add fields and groups
3	Approvers	Configure approval hierarchy
4	Access Restrictions	Limit who can use the workflow
5	Preview & Save	Test and save the workflow

[Screenshot: Workflow Builder Tabs/Steps]

Figure: Workflow Builder Tabs/Steps

4. Workflow Basic Information

4.1 Basic Information Fields

Field	Required	Description	Example
Workflow Name	Yes	Display name for the workflow	Purchase Request
Workflow Code	Auto	Unique identifier (auto-generated from name)	PURCHASE_REQUEST
Description	No	Detailed explanation of the workflow purpose	Submit requests for office supplies...
Category	Yes	Classification (Financial/Non-Financial)	Financial
Icon	No	Visual icon for the workflow	shopping_cart
Require Comment	No	Force comments on approval/rejection	Yes/No

4.2 Workflow Categories

Category	Description	Typical Use
Financial	Workflows involving monetary transactions	Purchase orders, expense claims, budget requests

Non-Financial	Workflows not involving money	Leave requests, document approvals, change requests

4.3 Entering Basic Information

Steps:

Step 1: Enter a descriptive Workflow Name

Step 2: The Workflow Code is auto-generated (can be modified)

Step 3: Select the appropriate Category

Step 4: Add a Description explaining the workflow's purpose

Step 5: Optionally select an icon from the icon picker

Step 6: Enable 'Require Comment' if approvers must provide reasons

Step 7: Click 'Next' or switch to the Form Builder tab

[Screenshot: Basic Information Form]

Figure: Basic Information Form

5. Form Builder

The Form Builder is where you design the data entry form that users will complete when submitting the workflow. You can add fields, organize them into groups, and configure validation rules.

5.1 Form Builder Interface

Area	Location	Function
Field Palette	Left sidebar	Drag fields from here to the form
Form Canvas	Center	Drop fields here to build your form
Field Properties	Right panel	Configure selected field settings
Form Tabs	Top of canvas	Switch between multiple forms (if any)

[Screenshot: Form Builder Interface Layout]

Figure: Form Builder Interface Layout

5.2 Adding Fields to Form

Steps:

Step 1: Locate the desired field type in the Field Palette

Step 2: Drag the field onto the Form Canvas

Step 3: Drop it at the desired position

Step 4: The Field Properties panel opens automatically

Step 5: Configure the field settings (name, label, validation)

Step 6: Click 'Save Field' or click elsewhere to save

5.3 Arranging Fields

- Drag fields vertically to reorder them
- Use the up/down arrows on field cards to move them
- Set column span (1-4) to control field width
- Group related fields using Field Groups

5.4 Removing Fields

Steps:

Step 1: Hover over the field you want to remove

Step 2: Click the delete (trash) icon

Step 3: Confirm the deletion in the dialog

Step 4: The field is removed from the form

> **WARNING:** Removing a field from a published workflow may affect existing submissions. Consider unpublishing first.

6. Field Types Reference

The Workflow Builder provides a comprehensive set of field types to capture different kinds of data.

6.1 Text Input Fields

Field Type	Description	Use Case
Text	Single-line text input	Names, titles, short answers
Textarea	Multi-line text input	Descriptions, comments, long text
Email	Email address with validation	Contact email addresses
Phone	Phone number field	Contact phone numbers
URL	Web address with validation	Website links
Password	Masked text input	Sensitive information

6.2 Numeric Fields

Field Type	Description	Use Case
Number	Numeric input (integers/decimals)	Quantities, counts
Currency	Money amount with currency symbol	Prices, costs, amounts

6.3 Date/Time Fields

Field Type	Description	Use Case
Date	Date picker (calendar)	Due dates, birth dates
DateTime	Date and time picker	Meeting times, deadlines
Time	Time-only picker	Appointment times, schedules

6.4 Selection Fields

Field Type	Description	Use Case
Select	Dropdown single selection	Categories, types, status
Multi-Select	Dropdown multiple selection	Tags, skills, features
Radio	Radio button single selection	Priority levels, options
Checkbox	Checkbox for boolean/multiple	Agreement, feature toggles
Checkbox Group	Multiple checkboxes as a group	Select multiple items
Toggle	On/Off switch control	Enable/disable features
Yes/No	Yes/No button selection	Simple binary questions

6.5 Special Fields

Field Type	Description	Use Case
File	File upload attachment	Documents, receipts
Image	Image upload with preview	Photos, screenshots
User	User picker from system users	Assign to, requested by
SQL Object	Dynamic options from database	Product lists, categories
Label	Display-only text label	Instructions, headings
Divider	Visual horizontal separator	Section breaks
Hidden	Hidden field (not visible)	System values, tracking data

6.6 Advanced Input Fields

Field Type	Description	Use Case
Rating	Star rating (1-5 or configurable)	Satisfaction ratings, scores
Slider	Numeric slider with min/max	Quantity, percentage selection
Color Picker	Color selection control	Theme colors, preferences
Signature	Digital signature capture	Approval signatures, consent
Rich Text	WYSIWYG formatted text editor	Detailed descriptions, notes
Icon	Icon picker from Material Icons	Visual indicators
Barcode/QR	Barcode or QR code scanner	Product tracking, asset IDs

Location	Location/map picker	Addresses, GPS coordinates
Table/Grid	Data table input	Line items, tabular data

NOTE: Some advanced field types (Barcode, Location, Signature) may require additional device capabilities.

6.7 Common Field Properties

Property	Applies To	Description
Field Name	All	Internal identifier (unique, no spaces)
Label	All	Display label shown to users
Required	All	Make field mandatory
Placeholder	Text fields	Hint text shown when empty
Default Value	All	Pre-filled value
Help Text	All	Additional guidance for users
Readonly	All	Display only, not editable
Hidden	All	Field exists but not visible
Column Span	All	Width (1-4 columns)
Min/Max Length	Text fields	Character limits
Min/Max Value	Numeric fields	Value range limits
Pattern	Text fields	Regex validation pattern
Options	Select fields	Available choices

[Screenshot: Field Properties Panel]

Figure: Field Properties Panel

7. SQL Object Fields

SQL Object fields allow you to create dynamic dropdowns that pull options from database tables defined in the SQL Objects management section. This is useful for data that changes frequently or is managed externally.

7.1 What are SQL Objects?

SQL Objects are database table definitions that can be used as data sources for dropdown fields. They are managed in the Workflow Admin > SQL Objects section.

7.2 Creating an SQL Object Field

Steps:

Step 1: Drag 'SQL Object' field type onto the form canvas

Step 2: Configure the field name and label

Step 3: In the 'SQL Object' dropdown, select the data source

Step 4: Choose the 'View Type' (Dropdown, Multi-Select, Radio, or Checkbox Group)

Step 5: Set other properties as needed (required, readonly, etc.)

Step 6: Save the field

7.3 SQL Object Field Properties

Property	Description
SQL Object	The data source table to pull options from
View Type	How to display options: Dropdown, Multi-Select, Radio, or Checkbox Group
Display Field	Which column to show as the option label (auto-detected)
Value Field	Which column to store as the selected value (auto-detected)

NOTE: SQL Objects must be created in Workflow Admin > SQL Objects before they can be used in fields.

[Screenshot: SQL Object Field Configuration]

Figure: SQL Object Field Configuration

8. Validation Functions

Validation Functions provide powerful conditional logic for field behavior. They allow you to control when fields are valid, visible, required, or readonly based on other field values or conditions.

8.1 Available Validation Functions

Function	Description	Example
ValidWhen(condition, message?)	Field is valid when condition is true	ValidWhen(@{amount} > 0, 'Amount must be positive')
InvalidWhen(condition, message?)	Field is invalid when condition is true	InvalidWhen(@{status} == 'CLOSED', 'Cannot modify closed items')
CheckValid(condition, message?)	Validate field value against condition	CheckValid(LENGTH(@{code}) == 6, 'Code must be 6 characters')
VisibleWhen(condition)	Show field only when condition is true	VisibleWhen(@{showDetails} == true)
MandatoryWhen(condition, message?)	Field is required when condition is true	MandatoryWhen(@{type} == 'EXTERNAL', 'Required for external')
ReadOnlyWhen(condition)	Field is readonly when	ReadOnlyWhen(@{status} !=

	condition is true	'DRAFT')
HiddenWhen(condition)	Hide field when condition is true	HiddenWhen(@{userType} == 'GUEST')
RegexWhen(condition, pattern, message?)	Validate with regex when condition is true	RegexWhen(@{country} == 'US', '^\\d{5}$', 'Invalid ZIP')

8.2 Using Field References

In validation expressions, use @{fieldName} syntax to reference other field values:

Example: Field Reference Examples

@{amount} - References the value of field named "amount"
@{status} - References the value of field named "status"
@{department} - References the value of field named "department"

Expressions:
@{amount} > 1000 - True when amount exceeds 1000
@{status} == 'APPROVED' - True when status equals APPROVED
@{category} != '' - True when category is not empty

8.3 Adding Validation to a Field

Steps:

Step 1: Select a field in the form builder

Step 2: Expand the 'Validation & Transformation' section

Step 3: Enter validation expression in the 'Validation Expression' field

Step 4: Optionally add a custom error message

Step 5: Save the field

NOTE: Validation functions are evaluated in real-time as users fill out the form.

[Screenshot: Validation Expression Configuration]

Figure: Validation Expression Configuration

9. Field Groups

Field Groups allow you to organize related fields into collapsible sections, improving form usability and visual organization.

9.1 Creating a Field Group

Steps:

Step 1: Click 'Add Field Group' button in the Form Builder

Step 2: Enter a Group Name (e.g., 'Personal Information')

Step 3: Optionally add a Group Description

Step 4: Set the number of columns (1-4)

Step 5: Enable 'Collapsible' if users can expand/collapse

Step 6: Set 'Expanded by Default' preference

Step 7: Click 'Create Group'

9.2 Adding Fields to a Group

- Drag fields directly into the group container
- Or select the group when creating a new field
- Fields within a group are visually contained together
- Reorder fields within the group by dragging

9.3 Field Group Properties

Property	Description
Group Name	Title displayed above the group
Description	Explanatory text below the title
Columns	Number of columns for field layout (1-4)
Collapsible	Allow users to expand/collapse the group
Expanded	Whether group is expanded by default
CSS Class	Custom styling class (advanced)

[Screenshot: Field Group with Multiple Fields]

Figure: Field Group with Multiple Fields

Example: Field Group Usage

Group Name: "Requester Information"
Fields:
- Full Name (Text, Column 1-2)
- Email (Email, Column 3-4)
- Department (Select, Column 1-2)
- Phone (Phone, Column 3-4)

Collapsible: Yes
Expanded by Default: Yes

10. Multi-Step Screens

For complex workflows with many fields, you can organize the form into multiple screens (steps). Users navigate through each screen sequentially.

10.1 Creating Multiple Screens

Steps:

Step 1: In the Form Builder, click 'Add Screen' button

Step 2: Enter a Screen Title (e.g., 'Step 1: Basic Information')

Step 3: The new screen tab appears at the top

Step 4: Click on a screen tab to switch to it

Step 5: Add fields to each screen as needed

10.2 Screen Properties

Property	Description
Screen Title	Name displayed in the step indicator
Screen Order	Sequence in which screens appear
Description	Instructions for the screen (optional)

10.3 User Experience

When users fill out a multi-screen workflow:

- A step indicator shows current position (Step 1 of 3)
- Navigation buttons: Previous, Next, Submit (on last screen)
- Validation occurs before moving to next screen
- Users can navigate back to previous screens
- Data is preserved when navigating between screens

[Screenshot: Multi-Step Form with Step Indicator]

Figure: Multi-Step Form with Step Indicator

11. Approver Configuration

The Approvers section defines who needs to approve workflow submissions and in what order. The system supports multi-level approval hierarchies with amount-based routing.

11.1 Approval Hierarchy Concept

Approvals proceed through levels sequentially:

- Level 1 approvers see the submission first
- After Level 1 approval, it moves to Level 2
- Process continues until all required levels approve
- Rejection at any level stops the workflow

11.2 Adding an Approver

Steps:

Step 1: Navigate to the 'Approvers' tab in Workflow Builder

Step 2: Click 'Add Approver' button

Step 3: Select the Approver Level (1, 2, 3, etc.)

Step 4: Choose the Approver (user or role)

Step 5: Set the Amount Limit (optional, for financial workflows)

Step 6: Configure notification preferences

Step 7: Click 'Save Approver'

11.3 Approver Properties

Property	Description
Level	Approval order (1=first, 2=second, etc.)
Approver	User or role who can approve at this level
Amount Limit	Maximum amount this approver can approve
SBU	Specific SBU this approver handles (optional)
Send Email Notification	Email approver when workflow arrives
Send Email Approval Link	Include approve/reject links in email
Escalation Days	Days before escalating to next level

11.4 Amount-Based Routing

For financial workflows, you can route approvals based on the amount:

Example: Amount-Based Approval Setup

Level 1: Department Manager - Up to $1,000

Level 2: Finance Manager - Up to $5,000

Level 3: Finance Director - Up to $25,000

Level 4: CFO - Up to $100,000

Level 5: CEO - Unlimited

If amount is $3,000:
- Level 1 approves (under their limit)
- Goes to Level 2 (amount exceeds Level 1 limit)
- Level 2 approves (within their limit)
- Workflow is fully approved

[Screenshot: Approver Configuration Panel]

Figure: Approver Configuration Panel

11.5 SBU-Specific Approvers

Different SBUs can have different approvers at each level:

- Leave 'SBU' empty for default approver (all SBUs)
- Assign specific user for specific SBU
- SBU-specific approver takes precedence over default

12. Access Restrictions

Access Restrictions control who can see and submit the workflow. You can restrict access by organizational unit.

12.1 Restriction Types

Restriction By	Description	Example
Corporate	Limit to specific corporates	Only Holding Company users
SBU	Limit to specific SBUs	Only Finance SBU users
Branch	Limit to specific branches	Only Head Office branch
Department	Limit to specific departments	Only IT Department

12.2 Setting Access Restrictions

Steps:

Step 1: Navigate to the 'Access' tab in Workflow Builder

Step 2: Check 'Restrict by Corporate' if needed, then select corporates

Step 3: Check 'Restrict by SBU' if needed, then select SBUs

Step 4: Check 'Restrict by Branch' if needed, then select branches

Step 5: Check 'Restrict by Department' if needed, then select departments

Step 6: Users must belong to at least one selected unit to access

NOTE: If no restrictions are set, the workflow is available to all users.

[Screenshot: Access Restrictions Configuration]

Figure: Access Restrictions Configuration

13. Publishing Workflows

13.1 Workflow States

State	Description	User Access
Draft	Not yet published	Visible only to admins
Published	Live and active	Available to permitted users
Unpublished	Temporarily disabled	Not accessible to users

13.2 Publishing a Workflow

Steps:

Step 1: Complete all workflow configuration

Step 2: Click 'Save' to save the workflow as draft

Step 3: Review all settings using the Preview function

Step 4: Click 'Publish' button

Step 5: Confirm the publish action

Step 6: Workflow is now live and available to users

13.3 Unpublishing a Workflow

To temporarily disable a workflow:

Steps:

Step 1: Navigate to the workflow in the list

Step 2: Click the 'Unpublish' button

Step 3: Confirm the action

Step 4: Workflow becomes inaccessible to users

Step 5: Existing submissions continue to process

NOTE: Unpublishing does not delete the workflow or affect existing submissions.

14. Editing Existing Workflows

14.1 Opening a Workflow for Editing

Steps:

Step 1: Navigate to Administration > Workflows

Step 2: Find the workflow in the list

Step 3: Click the 'Edit' button (pencil icon)

Step 4: The Workflow Builder opens with the workflow loaded

14.2 Editing Considerations

When editing published workflows, consider:

- Changes apply to new submissions only
- Existing submissions retain original field structure
- Adding required fields may affect user experience
- Removing fields doesn't delete data from existing submissions

TIP: For major changes, consider creating a new workflow version instead of editing.

14.3 Workflow Versioning

The system tracks workflow versions automatically. When you edit and save a published workflow, the version number increments.

15. Workflow Preview

Before publishing, use the Preview function to see how the workflow will appear to users.

15.1 Using Preview

Steps:

Step 1: Click the 'Preview' button in the Workflow Builder

Step 2: A dialog opens showing the form as users will see it

Step 3: Test field interactions and validation

Step 4: Navigate through screens (if multi-step)

Step 5: Close the preview to return to editing

15.2 What to Check in Preview

- All fields are visible and properly labeled
- Field groups display correctly
- Required fields are marked with asterisk
- Dropdown options are correct and complete
- Field layout and column spans look good
- Multi-screen navigation works
- Validation messages appear correctly

[Screenshot: Workflow Preview Dialog]

Figure: Workflow Preview Dialog

16. Best Practices

16.1 Form Design Best Practices

- Keep forms as simple as possible - only ask for necessary information
- Group related fields together using Field Groups
- Use clear, descriptive labels (not internal codes)
- Provide help text for complex fields
- Use appropriate field types (e.g., Email for emails, not Text)
- Set sensible default values where applicable
- Mark truly required fields, not everything

16.2 Approval Chain Best Practices

- Keep approval chains short (2-3 levels when possible)
- Use amount-based routing to reduce unnecessary approvals
- Set realistic escalation timeframes
- Enable email notifications for timely approvals
- Consider SBU-specific approvers for large organizations

16.3 Naming Conventions

Element	Recommended Format	Example
Workflow Name	Title Case, descriptive	Purchase Request Form
Workflow Code	UPPER_SNAKE_CASE	PURCHASE_REQUEST
Field Names	camelCase	requestorName
Field Labels	Title Case	Requestor Name
Group Names	Title Case	Payment Details

16.4 Testing Recommendations

1. Preview the workflow thoroughly before publishing
2. Test with a small group of users first
3. Verify email notifications are received
4. Test the full approval chain with test submissions
5. Check access restrictions work as expected